City of Stamford
Environmental Protection Board
888 Washington Boulevard
Stamford, CT 06904
(203) 977-4028

APPLICATION FOR A PERMIT TO CONDUCT REGULATED ACTIVITIES

1. APPLICANT

Name of Applicant: Wayne A. Clarke, ASLA

Home Address: 12 Blackall Road, Milford, CT 06460

Telephone: (203) 273-6704 Email address: wclarkelsa@gmail.com

Business Address: 12 Blackall Road, Milford, CT 06460

Business Phone: (203) 273-6704

Title of Project (if applicable): _____

Applicant's Interest in the Property (check where appropriate)
Owner: __ Agent: X Lessee: __ Lessor: __ Other: _____
(Specify)

2. OWNER

Name of Subject Property Owner: Drs. Taras and Cynthia Kucher

Home Address: 131 Bentwood Drive, Stamford, CT

Telephone: (203) 329-8309 Email address: taraskucher@yahoo.com

Business Address: 85 Old Kings Highway North. Darien, CT

Business Phone: 203-299-1579

If the applicant is not the owner of record, the owner must provide signed correspondence authorizing the applicant to file this application to conduct regulated activities.

3. LOCATION / DESCRIPTION

a) Address of the subject property: PARCEL

b) Geographical location in sufficient detail to allow identification of the subject property on the "Inland Wetlands and Watercourses Map"
(include orientation sketch)

Lot Number: 6 List Number: 0012413
Subdivision #: 8403,8141 T-Map Number: 39
Total Acreage: 2.0009 Assessor's Card #: N007
Zone: RA3 Block Number: 400

c) Is the Property is located within 500 feet of a Municipal Boundary?
Yes: ___ (*See Instructions Section III "Special Notification"*) No: X

c) Is the Property is located within a drinking water supply watershed?
Yes: X (*See Instructions Section III "Special Notification"*) No: ___

e) The Property is serviced by (check where appropriate)
Septic system: ___ Sewer: ___ / Private well: X Municipal water: ___

4. REGULATED ACTIVITIES

a) License is sought to conduct the following regulated activities
(check where appropriate)

Alteration: ___ Deposition: X Construction: ___ Removal: X

Pollution: ___ Obstruction: ___ Other (Specify): planting

b) The proposed activities will affect the following (check where appropriate)

Wetland soils: ___ Watercourse: ___ Open water: ___

Floodplain: ___ Open space/Conservation easement (CE): ___

Upland Review Area (URA) [1]: X Other (Specify): _____

c) Purpose and brief description of the activities for which authorization is requested:
Extension of gently sloping lawn area for family recreation on a parcel consisting of generally steeply sloping land. Filling and retaining required.

d) Existing Conditions – Area Totals of Entire Property
   i) Square feet of Wetlands: 20,000 sf
   ii) Linear feet of Watercourse: 50 lf
   iii) Square feet of Open water: 0
   iv) Square feet of Floodplain: 0
   v) Square feet of Open space/CE: 0
   vi) Square feet of URA: _____

e) Proposed Conditions – Total Area Affected
   i) Square feet of Wetlands affected: 0
   ii) Linear feet of Watercourses affected: 0
   iii) Square feet of Open water affected: 0
   iv) Square feet of Floodplain affected: 0
   v) Square feet of Open space/CE affected: 0
   vi) Square feet of URA affected: 5000sf
   vii) Square feet of Wetlands created: 0

5. STANDARD NOTIFICATION REQUIREMENT

Names and addresses of individuals notified of this pending application as required by "The Inland Wetland and Watercourses Regulations of the City of Stamford" *(See Instructions Section II for details)*

Name Address

SEE ATTACHED LIST

(Attach additional sheets if necessary)

NEIGHBORS W/IN 500’

Kim Qvistorff Et Al
140 Bentwood Drive
Stamford, CT 06903

Mary E. Arden-Cordone
136 Bentwood Drive
Stamford, CT 06903

Mathew Roshan Et Al
112 Bentwood Drive
Stamford, CT 06903

David Todrin, Et Al
94 Bentwood Drive
Stamford, CT 06903

Lester Cohn (LU) Et Al
88 Bentwood Drive
Stamford, CT 06903

AQUARION WATER CO OF CT
(0 ERSKINE RD 0 FARM RD)
600 LINDLEY ST
BRIDGEPORT, CT 06606-0000

Stanley G. Lee, Et Al
85 Bentwood Drive
Stamford, CT 06903

Jules H Caplove II
91 Bentwood Drive
Stamford, CT 06903

Steven Lanefski
135 Bentwood Drive
Stamford, CT 06903

Estate of Ruth Millet (123 Bentwood Drive)
600 Summer Street
Stamford, CT 06901-4404

Star Meadow Ranch, LLC (579 Erskine Rd)
58 Stirrip Road
Riverside, CT 06878

PROJECT NARRATIVE describing the proposed regulated construction activity in upland review areas: (100 feet from a designated intermittent drinking water stream and 50 feet from wetland soils).

5. Proposed activity and its purpose within upland review areas:

General: Accessibility with buffer from sensitive and regulated areas

-Planting mitigation concepts:

a) Removal of the existing above ground pool and surrounding composite deck (wood structure) totalling 1,800 sf. The pool was underutilized and is in a state of disrepair and apparently does not hold water. The deck without the pool is hazardous. All material would either be reused in constructing the new deck extension or safely disposed off site. The earth beneath the deck would be immediately stabilized with fast germinating grass seed and heavy sterile hay mulch as necessary to minimize erosion.

   2. In order to make the site's generally steeply sloping land more accessible for lawn related activities in the rear garden, it is proposed to create a gently sloping lawn area for family recreation. Filling and retaining of approximately 270 cubic yards of clean/screened fill and topsoil is proposed for that purpose. Retaining walls would be either created from native stone imported to the site or prefabricated concrete retaining units. Masonry walls would replace cement with drainage through the walls with weep holes at 10 foot intervals. A typical turf grass seed mix would be used to stabilize this new material and to create a durable lawn. Since this lawn extension is contiguous to the septic leaching field, there would be no cutting into the existing grade with the exception of trenching for shallow wall footings not to exceed 1'-0" in depth no less than 20 feet from the leaching field.

   3. Low walls are also proposed along the west side of the drumlin to retain soil for planting in areas of exposed ledge.

b) Erosion controls would be secured and maintained to protect wetland soil from erosion from construction activities.

c) Mitigation: Native plants would be installed along the entire perimeter of wetland soil within the buffer (upland review area). This would shield the wetlands from human activity and provide food and cover for wildlife. Organic fertilizers and shredded bark mulch derived from native species would be used in establishing the planting and stabilizing disturbed soil.

d) The alternative to creating the gently sloping lawn in the rear garden would be to keep the terrain at its present 14% slope. This is not ideal for safe outdoor recreation such as volleyball, badminton etc. It would be the only location for such lawn recreation within this property.

e) Minimum maintenance of lawn along wetland would be done using organic products only.

6. Biological Narrative:

GLACIALLY FORMED WETLANDS IN CONNECTICUT
Wetlands in glacially scoured hollows and depressions are numerous throughout Connecticut. These wetlands are formed in either shallow soils over bedrock or over areas with compact glacial till, both which impede drainage. Wetlands on compac[glacial ttill generally have a strongly fluctuating water table and surface flooding following periods of heavy rain.

The upland areas on the subject property are largely underlain with ledge as evidenced in the exposed areas of the drumlins on and off of the property.

WETLANDS CLASSIFICATION
Small pocket of Forested Wetland surrounded by steeply rolling drumlin topography: dominated by woody vegetatlon. Broad-leaved Deciduous Red Maple, Black Oak, Herbaceous vegetation includes Skunk Cabbage and Sedges intermittently flooded: Substrate is usually exposed and only flooded for variable periods without detectable seasonal periodicity.

A variety bird and animals associated with these conditions include Red and Gray Fox, White-Tailed Deer, Bobcat, Owl, Red-Tailed and other species of hawk, and songbirds,

EXISTING CONDITIONS LAND USE
Existing lawn within Udohorthents area.
Surroundings: Single family residences on wooded lots. Cal-de-sac with low volume vehicular movement with several lots served.
Topo, gentle (wetlands) to steeply sloping terrain ranging from 3% in some paved areas to 100% (1:1) in drumlin area.
Hydrology: wetlands soils, slopes at or less than 1%; poorly drained, intermittent stream draining wooded swamp from property to east , runoff to Mianus reservoir to north approximately 1000 feet to north.
Geology:. Glacial till, moraine, escarpment to east, Outcroppings on the drumlin.

Septic tank and fields per City Health Dept records located on plans.

Structures: single family residence, shed, veg garden

Proposed improvements objectives

1. Extend outdoor living space at the main level of the house.
2. Maximum efforts in planning and execution of work to minimize impact to regulated areas.
3. Mainly native and related species suited to the terrain and exposures would be introduced within the URA
4. Planted buffer food, shelter, separation,
5. No disturbance to existing septic tank or fields avoiding soil compaction. Absolutely no cutting of soil within 25' of leaching fields. 230 cy
6. -Grading and retaining walls respond to the topography minimizing disturbance= 30 cy stone mortar
7. Pathway through buffer native stone steps up to top of drumlin over 6" traprock base
8. Deck extension for wrap around access outside sun room slightly within URA.
9. 190 lf retaining wall varying from 4.5' ht to 0 extending 33' beyond the existing pool deck but outside of the wetland upland review area.
10. Extend upper lawn to the perimeter of the URA.

PLANTING: all natives along wetland and intermittently within ura. See plant list.

-Remove all Barberry, Mile a minute vine, Wisteria, from property.

-All species benefit wildlife. Client wishes to view birds.

Deer browsing protection: spray plants for at least 3 seasons to repel deer browsing until plants established.

-Specification of erosion controls: biodegradable log erosion coir barriers in lieu of silt fence to eliminate trenching near sensitive soils and proximity to intermittent stream.

-Erosion controls to be established and maintained per CT D.E.E.P. standards.

Unavoidable adverse impacts temporary only

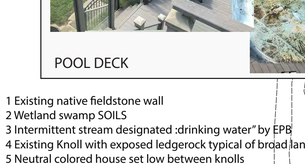
Ledgerock removal not anticipated…adjustments to be made in field to minimize disturbance. Some leveling of base areas of walls may be necessary for solid bonding. Planting would greatly increase buffer from human activity and benefit wildlife with food and shelter as described on plant list matrix. Erosion controls would be maintained until all areas up grade are stabilized. No disturbance to septic leaching area.

POOL DECK

WOODED WETLAND

UPPER DECK

SUNROOM



WEST BORDER

STREET VIEW

1 Existing native fieldstone wall
2 Wetland swamp SOILS
3 Intermittent stream designated :drinking water" by EPB
4 Existing Knoll with exposed ledgerock typical of broad landscape
5 Neutral colored house set low between knolls
6 Limit of wetland soil
7 Existing Lawn
8 Existing woodland
9 Existing vegetable garden
10 Existing shed
11 Existing lawn
12 plant bed along perimeter of pool deck
13 limit of regulated wetland review area
14 Wooded knoll
14a
15 existing pond
16 Existing 36" diameter Black Oak
17 top of knoll level with exposed granite ledge
18 steep escarpment 60% slope
19 Drinking water setback from intermittent stream (see 3)
20 Existing septic fields per City records. Confirm in field with licensed septic professional.
20a Existing composite pool/deck .
21 Existing composite deck at main living level
22 Existing spa on deck
23 Existing composite steps to remain
24 ledgerock outcrop
25 Existing septic tank
26 Existing points on septic "as built" needing to be verified.
27 Existing parking
28 Open level surface suitable for court sports (repaving needed)
29 Two car garage
30 well buried @ 50gpm (original reading)
31 Existing low retaining wall great sitting location in shade with views to garage area games.
32 Existing front entrance drop off/parking steep cross pitch
33 existing 2 story residence with full basement
34 Existing drive entry with steep transition at road.
35 Paved cal de sac
36 Massive glacial erratic stone
37 Existing neighboring residence set down low
38 Sun porch floor 4'+ above grade.
39 Air conditioning condensers
40. Existing bluestone entry
41. Speciman Cutleaf Japanese Maple
42. foundation plantings
43. Existing driveway grade steep on approach to front door.
44. Barberry Azalea, Andromeda, Burning Bush
45. Speciman Blue Atlas Cedar
46. Very steep drive
rrig
lighting
pave drive

N/F STAR MEADOW RANCH, LLC

LOT NO. 6
MAP NO. 8,403 S.L.R.
AREA = 2.0009 +/- ACRES

Bentwood Drive

sunrm
family
assumed ff el 282.00
foyer
deck
kitchen
family

Property boundaries, existing structures, paved areas and wetlands/setbacks taken from "Dependent Resurvey" (existing conditions update: 08/09/23 in accord with standards of Class A-2 survey by Robert T. Hamilton Professional Land Surveyors LLC, Stamford, CT

SEPTIC NOTES

"As Built" received 1-27-1984
For: Mr and Mrs. Lawton Hammett
131 Bentwood Dr Lot#6
Stamford, CT
By: Stright Co. Inc.
84 Knickerbocker Avenue
Stamford, CT

Sketch showing septic system 12/7/1966
For: Harry Bennett
#6 Bentwood Road
Stamford, Connecticut
By: D and S Septic Tank Company, Inc.
Crescent Street
South Norwalk, Connecticut

"As built" (8-2-20)
Laurel Hill Inc.
34 Nob Hill Lane
Stamford, CT

0 40 80
plan scale

LEGEND

- existing condition/improvement note ref
- contour elevation
- ledge rock outcrop/glacial till or eratic
- boulder
- stepping stone
- existing tree
- fire pit
- lawn
- gravel
- mulch or wood chips
- fence
- evergreen tree
- fruit tree
- composite deck
- utility pole
- W= existing water well
- distribution box
- 1500 gallon septic tank new tank
- property boundary
- limit of wetland soil
- City building setback
- wetlands setback
- intermittent watercourse

Existing Conditions

131 Bentwood Drive
Stamford, CT

10-25-23

scale: as shown

REVISIONS

Wayne A. Clarke
LANDSCAPE ARCHITECTS
353 Moose Hill Road Monroe, CT 06468
(203) 273-6704 www.WC-LA.com
wclarke@wc-la.com

EC-1

1 12” Crab
2 And 8’h 6’w
3,4 Bar
5 3”Crab
6 Double Bar
7 Bar
8 4” Crab
9 3” Crab
10 5” Cherry
11 And
12 24” BO
13 A. Beech 15’
14 E. alatus
15 Barb
16 Box
17 B Atlas Cedar
18 N. Stevens Holly
19 bar
20 4x4 Box
21 Mag Jane
22 Grasses
23 Holly
24 B Oat Grasses
25 Spirea
26 Deutzia
27 Box/Andr
28 N Spruce
29 Mag
30 Privet 20’ ht
31 W Pine
32 J Maple
33 Bar
34 Hyd Rose
35 8” Twin Rm

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39 Air conditioning condensers
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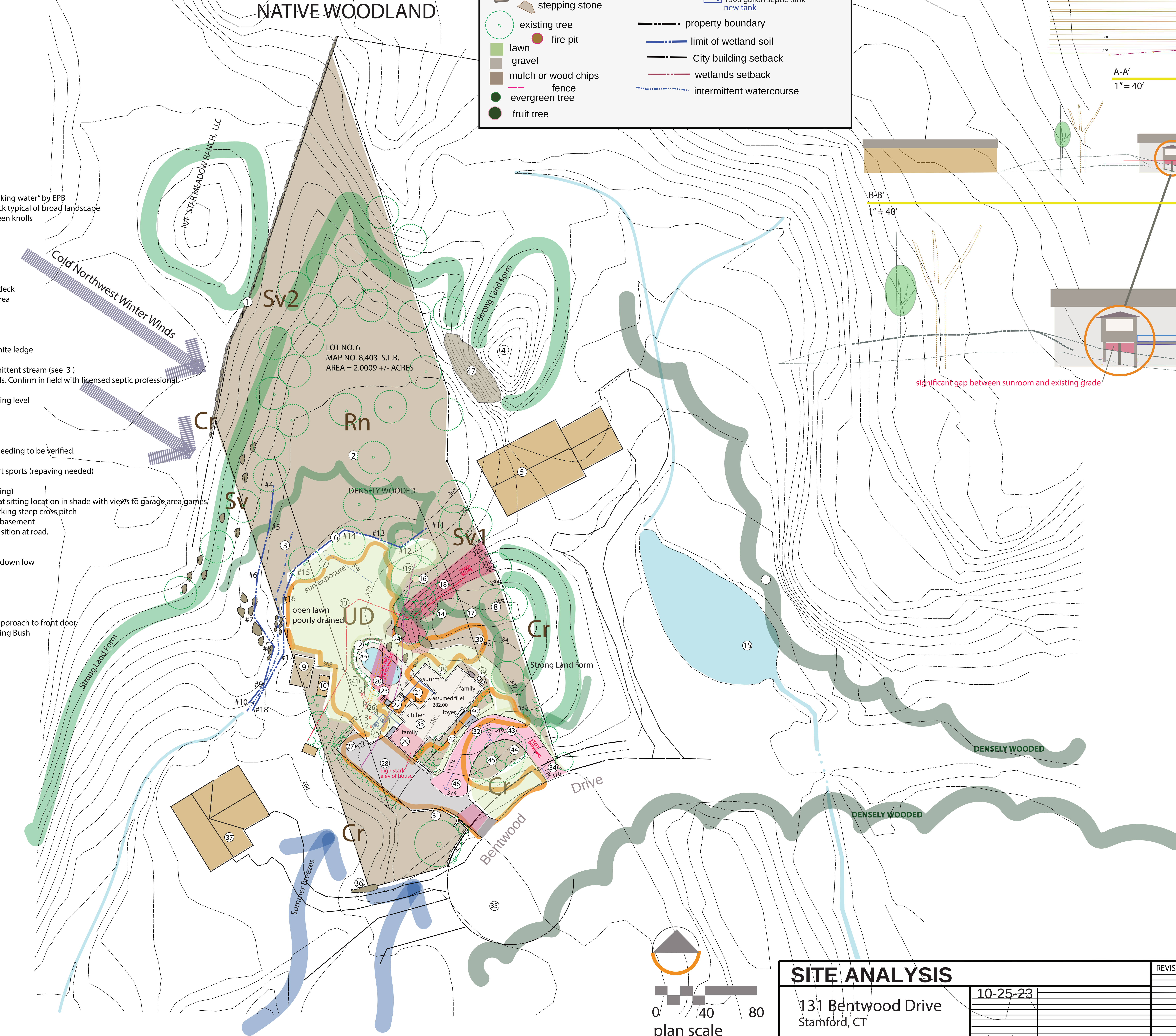
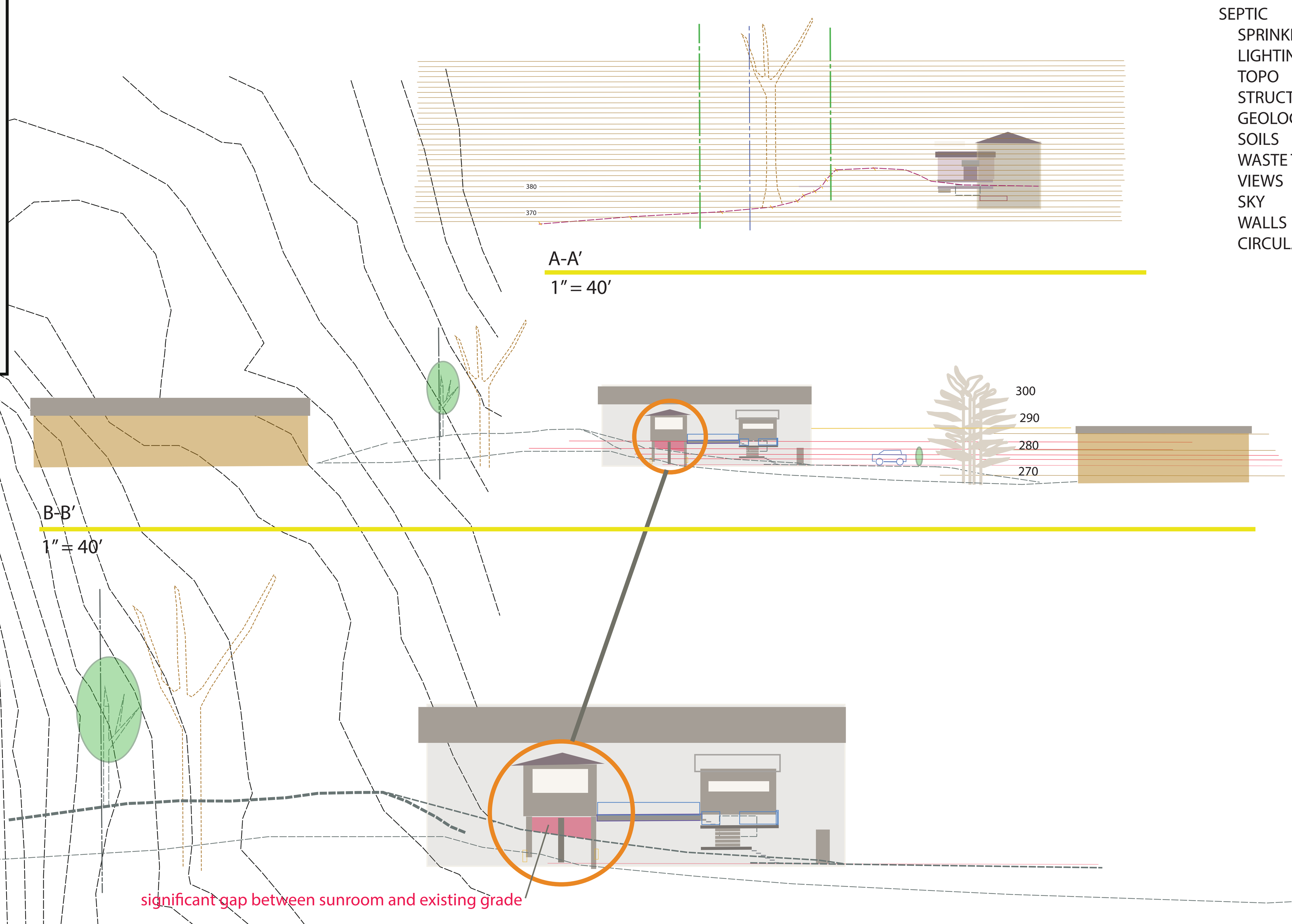
45. Speciman Blue Atlas Cedar
46. Very steep drive
47. Large rock escarpment
rrig
lighting
pave drive

sun exposure

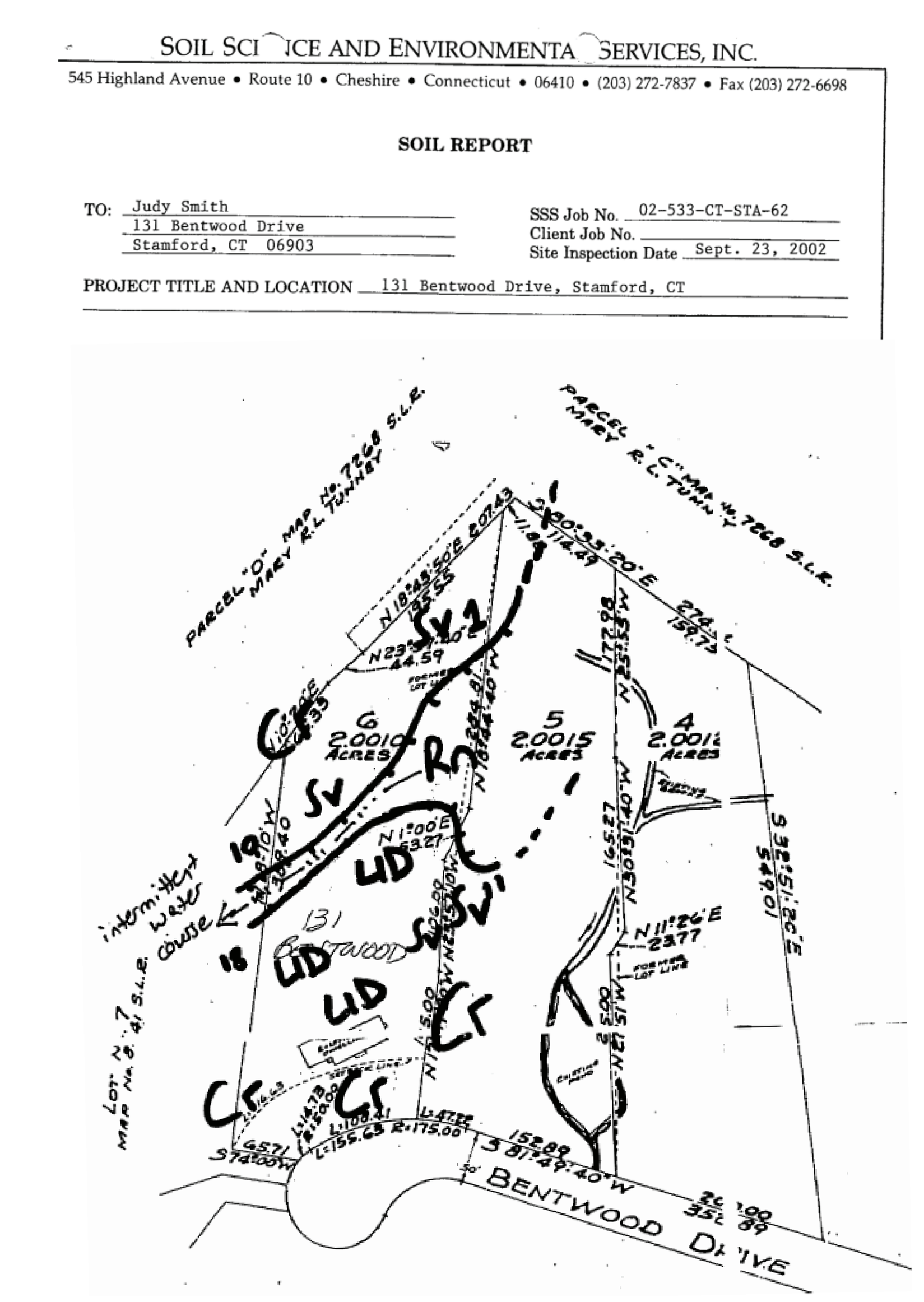
LEGEND

- (5) existing condition/improvement note ref
- 25 contour elevation
- ledge rock outcrop/glacial till or erratic
- boulder
- stepping stone
- existing tree
- fire pit
- lawn
- gravel
- mulch or wood chips
- fence
- evergreen tree
- fruit tree
- composite deck
- utility pole
- OW= existing water well
- distribution box
- 1500 gallon septic tank new tank
- property boundary
- limit of wetland soil
- City building setback
- wetlands setback
- intermittent watercourse





DO: ADD VEG
WELL
SEPTIC
SPRINKLER
LIGHTING
TOPO
STRUCTURES
GEOLOGY
SOILS
WASTE TREATMENT
VIEWS
SKY
WALLS
CIRCULATION



WETLAND SOILS

Ridgebury, Leicester and Whitman extremely stony fine sandy loams (Rn). These are poorly and very poorly drained, moderately coarse textured glacial till soils.

NONWETLAND SOILS

Charlton-Hollis fine sandy loams (Cr). These are deep, moderately deep and shallow to bedrock, well drained, moderately coarse textured, friable glacial till soils.

Sutton fine sandy loam (Sv). This is a deep, moderately well drained, moderately coarse textured, friable glacial till soil.

Udorthents, smoothed (UD). This is a well to moderately well drained disturbed soil that has had two (2) feet or more of its original soil surface excavated or filled.

SITE ANALYSIS

131 Bentwood Drive
Stamford, CT

10-25-23

scale: as shown

REVISIONS

Wayne A. Clarke
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EC-2

MAP NO. 8,403 S.L.R.
AREA = 2.0009 +/- ACRES

0 20 40

1 Existing native fieldstone wall
2 Wooded wetland swamp
3 Intermittent stream designated :drinking water" by Stamford EPB
4 Existing Knoll with ledge typical of broad landscape
5 Neutral colored house set low between knolls
6 Limit of wetland soil line
7. Native wetland buffer planting at edge of existing lawn: trees/shrubs/perennials.
8 Existing woodland to remain. Planting (Laurel, Azalea, Rhododendron, etc. along lawn) between existing trees as practical.
9 Existing vegetable garden
10 Existing shed
11 Raised/stepped lawn with 1'-6" ht retaining walls with shallow footings in proximity to septic leaching area 280 lf
12 Low walls with Lowbush Blueberry, dwarf Pine, Spruce, Heather, along east edge approximately 3' out from new deck and minimum 5' from septic fields.
13 Setback from wetlands soil limit (50')
14 Bluestone steps 6 @ 8'
15 Composite deck (with space between boards) over sloped embankment in gravel. 623.68 sf w railing: 110 lf @ 6' = 18 sections
15a 36" dbh Black Oak
16 100' intermittent stream drinking water review area limit
17 Berm plantings and boulders embedded mimicing natural terrain. Low retaining walls with shallow footings. Dogwood, laurel, Shagbark Hickory, etc.
18 1'6" high stone walls as amphitheatre to views and lawn "stage" below.
19 12' x 12' shaded sitting. Wildlife observation. Vines growing on wire structure. Perennials surround.
20a Existing septic fields per City records. Confirm in field with licensed septic installer.
20b Existing pool deck to be removed 835.20 sf. 20c: Existing septic tank
21 Level lawn behind stepped wall (1.5' ht) follow contours of drumlin. Selective tree removal.
22 Masonry steps with lawn treads.

24 Native stone wall retaining as much as 4 feet.
25 Pergola (9'x13') (top loovers as roof) kitchen beneath (9' long). Composite deck
26 Existing deck at main living level. Existing spa on deck to remain.
27 Leveled garden space north of sunroom with firepit/fountain (5k) and bluestone in lawn (5k) (10k conc walls) earth (5k) Additional soil adds to permeability.
28 Sunroom improvements including retractable door and basement (mudroom) entry
29 Stepped hillside with walls planted embankment (herbs, native and companion draught tolerant perennials, dwarf conifers.)
30 Bluestone in lawn or gravel
31 Front parking 2 cars pervious surface 493 sf
32 Add two steps at front entrance to reduce drive grade.
33.Strip/repave existing driveway compacted to 2" min).
34 Remove asphalt/replace with lawn reducing impervious surfaces 178 sf
35 Add two steps at front house entry.
36 Slope of driveway made less steep (14.5% from 16%).
37 Sunken stone/sand fire pit surrounded by natural boulders for seating.
38 Remove excess paving and plant to screen garage and soften high house corner 384 sf
39 Sliding gate 6. ht x 16' wide.
40 6' high fence to contain sports balls.
41. Asphalt drive area at garage with additional asphalt northeast corner 41x12 to be used for sports.
42. Raised grade with up to 5'- retaining wall @ 142 lf. 4' safety fence with vine. 300 cy screened fill + 65 cy topsoil in place lawn. Additional soil adds to permeability.
43. Three story wood structure home.
44. Pathways connecting garage side door and existing deck stairs to gardens to the north.
45. Possible reserve septic area. Confirm with licensed engineer as required by law.
46. Paved cal de sac
47. Massive glacial erratic stone
48. Existing neighboring residence set down low
49. Relocated trampoline with surround guard (5' drop off of new wall).
50. Possible location for dry well detention offseting increase in impervious surfaces.
51. Outdoor shower below existing deck.
52. Pathway with natural steps up steep knoll (position staked in field).
53. Woodland garden with Mountain Laurel, Fern, Azalea, Mt. Andromeda, etc. Lawn or gravel. Selective clearing.
54. Plant bed as wetland buffer in front of Red Maple (to avoid disturbing roots/competion).
55. Permeable grid set in lawn with gravel beneath for sunning (furniture), etc. resists soil compaction.

EXISTING VEGETATION
1 12" Crab
2 And 8'h 6'w
3,4 Bar
5 3"Crab
6 Double Bar
7 Bar
8 4" Crab
9 3" Crab
10 5" Cherry
11 And
12 24" BO
13 A. Beech 15'
14 E. alatus
15 Barb
16 Box
17 B Atlas Cedar
18 N. Stevens Holly
19 bar
20 4x4 Box
21 Mag Jane
22 Grasses
23 Holly
24 3 Oat Grasses
25 Spirea
26 Deutzia
27 Boxl'andr
28 N Spruce
29 Mag
30 Privet 20' ht
31 W Pine
32 J Maple
33 Bar
34 Hyd Rose
35 8" Twin Rm
36 Hardwoods

Native Wet Meadow Perennials:
Back: Mf, Ana, Ai, Vh, Oc, Cp, Cs, Iv, Md

Native perennials
Ah, Sn, Vv,Ech, Ls, Pd
Si, Lsp, Rf, Ba, At, Za, Vi,
Pp, Ep,Vn

existing lawn

assumed fl el
282.00

sun
family
kitchen
foyer
family

Bentwood Drive

LEGEND
#11 Wetland flag location
PATH STONES
Existing vegetation
Direction of drainage
Existing non lawn area including woodland and plant beds
New planting area
Boulder mimicking ledgerock
pv1 perspective sketch viewpoint
masonry wall
engineered drywell
New Lawn
Existing Lawn

Topographic contour delineation taken from City of Stamford, Connecticut Assessment Parcel Map 39
Field checking with hand level shows conformity with topographic elevations and forms shown on this plan.
Buildings, property lines and existing paved areas based upon "Dependent resurvey" by Hamilton Surveyors, Stamford, CT 8/9/23

Proposed work in upland review areas

131 Bentwood Drive
Stamford, CT

2-14-24	grotto hot spring theatre
3-8-24	
4-4-24	detailed planting ura

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MP2

	BOTANICAL NAME	COMMON NAME	HT/SPR	FRUIT	FLOWER	SOIL	SUN	OTHER DESCRIPTION	COMPANION	LINK
	Hypericum									
	Microbiota decussata									
	Stephanandra incisa Crispa									
	Juniperus conferta									
	Rosa x "Coral Drift"									
	Foamflower **Tiarella cordifolia**									
	FERNS									
	Onoclea sensibilis	Sensitive Fern								
	Osmunda regalis	Royal Fern								
	Polystichum acrostichoides	Christmas Fern	1-3' ht							
	Caltha palustris	Marsh Marigold			4-6 Yel	Bog	Full Sun to Full Shade	Drought Tolerant Attracts Butterflies Pollinators		
	Woody plants									
	Amelanchier canadensis	Downy Shadblow								
Am	Aronia melanocarpa	Black Chokeberry	3 – 6 ft./3 – 6 ft.		WHT MAY	WET DRY		WATER: Irregular to seasonal inundation		
Ca	Clethra alnifolia	Summersweet				WET				
Co	Cephalanthus occidentalis	Buttonbush	6 – 12 ft./: 12 – 15 ft.		5-8 WHT	WET		Water Tolerance: MHW and above or permanent inundation (0 – 12 in.)Drought tolerance: High Wildlife Value: Attracts butterflies and other beneficial insects		
Cr	Cornus racemosa	Gray Dogwood	10-15'/10-15'spr	Drupe Wht Aug-Sept, pedicels remain red into late fall and early winter	5-6 WHTish 10 days	WET	SUN	water tolerant, strongly multi stemmed erect growing suckering shrub wants sun		
Cs	Cornus stolonifera	Redosier Dogwood	7-9' ht/10'	wht	5-6 dull wht	WET				https://extension.umn.edu/trees-and-shrubs/redosier-dogwood
Hv	Hamamelis vernalis	Vernal Witchhazel	6-10'/8-10'		2 Yellow	WET	SUN PART SH	small very fragrant flowers		
Ig	Ilex glabra	Inkberry	6 – 12 f/ 6 – 12 ft			WET	SUN	Water Tolerance: Seasonal inundation Drought tolerance: High Wildlife Value: Provides cover and food for birds and mammals		
Io	Ilex opaca	American Holly	25-60'ht	red drupe sometimes orange or yellow	3-6 WHT GRN	Dry , Wet	Sun , Part Shade , Shade	Berries attract many bird and small mammal species. Also provides cover and nesting sites. Larval plant for Henry's Elfin butterfly. Moist, well-drained, acidic soils. Acid-based, Sandy, Sandy Loam, Medium Loam. Not so good in clay. Native to southeastern US Native Habitat: Shaded woods and stream and river banks. Uplands and lowlands. Primarily an understory tree.		
Iv	Ilex verticellata	Winterberry	7-8'/7-8'	10-3 red berries	white spring flower	WET	SUN PART SH			
Kl	Kalmia latifolia	Mountain Laurel	5-15'/5-15'		6 WHT	Water: Medium	Part shade	gnarled, multi-stemmed, broadleaf evergreen shrub or small tree that is native to Eastern North America (New England south to the southern Indiana, Louisiana and the Florida panhandle) where it is found in a variety of habitats including open rocky or sandy woods, cool meadows, balds, mountain slopes and woodland margins.		
Lb	Lindera benzoin	Spicebush	6-12'/6-12'	Scarlet, 9	4 Gr Wht, Yel frag	WET	SUN SHADE	deep shade no flower, flowers attract birds, butterflies Eastern Tiger Swallowtail, Spicebush Swallowtail		
Rm	Rhododendron maximum	Rosebay Rhododendron	4-15'ht		6 WHT	Moist	shade	30' ht south,		
Rv	Rhododendron viscosum	Swamp Azalea	9-15' ht		9 WHT					
Rp	Rosa palustris	Swamp Rose	2 – 7 ft./4 – 6 ft.			WET	SUN PART SH	Water Tolerance: regular inundation 0-3" Light: Full sun to partial shade/sun Wildlife Value: Provides food source for many bird species		
Sc	Sambucus canadensis	American Elder	6 – 12 ft./ 6 – 12 ft		White 8-9	MOIST DRY	SUN PART SH	Water Tolerance: Seasonal inundation Light: Full sun to partial shade/sun to full shade Wildlife Value: Source of food for birds and hoofed browsers SUCKERS PROFUSELY		
Sd	Salix discolor	Pussy Willow	20-25'/10-15'		male catkins 3	WET	SUN	shrub like spreading	An important source of food for flycatchers, warblers, catbirds, chickadees, and goldfinches. Ruffed grouse, squirrels, turtles, muskrats, beaver, deer, and rabbits feed on parts of the plant. Warblers and vireos use willow as nesting sites.	
Va	Vaccinium angustifolium	Lowbush Blueberry	2' high/wide						In the blueberry shrub's natural habitat, there would be multiple layers of plant life. The upper canopy would consist of pines and other conifer species. The understory below might have smaller trees like dogwood. Along the shrub layer, blueberries, rhododendrons, and azaleas would grow. The herbaceous layer could have a mix of wildflowers and ferns. And lastly, the ground cover might be filled with aromatic and small-flowered herbs.	
Vc	Vaccinium corymbosum	Highbush blueberry	; 12 ft./ 4 – 6 ft.		White 4-7	WET	SUN	Water Tolerance: Seasonal inundation Wildlife Value: Source of food for wildlife		
Vd	Viburnum dentatum	Arrowwood	8-10/8-10'	9-12 blue	6 white	WET	SUN PART SH	The shrub attracts butterflies, bumblebees, and other native bees. Fruit attracts small mammals birds such as the eastern bluebird, northern flicker, gray catbird, and American robin (Lady Bird Johnson). The plant is also a caterpillar and larval host to the hummingbird moth and a nectar source to red admiral butterflies.		https://treea.umn.edu/arrowwood-viburnum-dentatum#:~:text=The%20shrub%20will%20tolerate%20being,that%20is%20neutral%20to%20acidic.
Vnu	Viburnum nudum	Newport Viburnum	5-12'/5-12'		4-5 WHT	Medium to wet	SUN PART SH	Flower Showy, Fragrant, Good Fall Attracts: Butterflies Fruit: Showy, Edible		
	Vines									
Cvi	Clematis virginiana	Woodbine	12-20'/3-6'		8-10 WHT	Medium to wet	Full sun to part shade	Flower: Showy, Fragrant Native Range: Eastern North America		
Ls	Lonicera sempervirens	Trumpet Honeysuckle	8-15'ht/3-6'	showy Inedible red berries form in late summer to early fall and can be ornamentally attractive	5-6 Scarlet orange yellow	Medium	some shade, but best flowering is in full sun	Birds, Hummingbirds, Butterflies Best in humusy, organically rich soils with good drainage		
	Perennials	PERENNIALS								
Ah	Amsonia hubrichtii	Thread leafed bluestar	height of 4' -5 with a 4' spread		6-7 Blue	WELL DRAINED	SUN PART SH	Threadleaf Bluestar has proven to be adapted to a wide variety of sites in USDA Zones 5-9. Plants are adaptable to sunny or partly sunny sites in most well drained soils.		https://www.newmoonnursery.com/plant/Amsonia-hubrichtii
Ai	Asclepias incarnata	Swamp milkweed	4 – 6 ft.		pale pink 6-8	WET	SUN PART SH	Water Tolerance: Seasonal inundationWildlife Value: Source of food for Monarchs and pollinatorsLight: Full sun to partial sun/shade		
Ana	Aster novae-angliae	New England aster	3-6' tall with 2-3' spread.		8-10 blue purp	MOIST TO WET	SUN	Attracts Wildlife Butterflies, Moist to Wet	Asclepias incarnata, Rudbeckia subtomentosa, Monarda fistulosa, Liatris spicata and Andropogon gerardii..	https://www.newmoonnursery.com/plant/Aster-novae-angliae
At	Asclepias tuberosa	Butterfly Milkweed	1 – 3 ft.		or May through July	Dry , Moist.	SUN PART SH	Full sun to partial sun/shade	Wildlife Value: Monarch butterfly host plant; attracts butterflies and other pollinators	
Ba	Baptisia australus	False Indigo	3 – 4 ft.		4-7 Blue/violet	WELL DRAINED	SUN	Full sun	Source of food for pollinators	
Cg	Chelone glabra	Turtlehead	2-3'ht/2' spr		9-10 WHT	WET TO MOIST	SUN PART SH	Full Sun to Partial Shade, deer resist, wet to moist	Acorus americanus, Caltha palustris, Iris versicolor, Lobelia siphilitica, or Osmunda cinnamomea.,	https://www.newmoonnursery.com/plant/Chelone-glabra
Cv	Carex vulpinoidea	Fox sedge	2-4 ft/2-4 ft			WET TO MOIST	PART SHADE TO FULL SUN	wet moist, 3-4' spacing,Attracts Wildlife Pollinators Songbirds Following disturbance it acts as a pioneer species and forms a valuable community service covering the ground and holding the soil., Partial Shade to Full Sun Plants are pest resistant and unpalatable to deer and other herbivores.		https://www.newmoonnursery.com/plant/Carex-vulpinoidea
Ech	Echinacea purpurea,	Purple Coneflower	2-4' tall with 2' spread.		pink mid-summer and continues for about a month.	MOIST TO MESIC	SUN TO PART SUN	Habitats include open woodland edges and clearings, savannas, moist to mesic blackland prairies, meadows, limestone glades and roadsides.Plants have fibrous roots and form small colonies from short thick rhizomes. Attracts Wildlife Butterflies Songbirds	Coreopsis major, Rudbeckia hirta, Monarda fistulosa, Liatris spicata, Schizachyrium scoparium and Andropogon gerardii.	
Ep	Eupatorium purpureum	Joe Pye Weed	4-7'/3-4'		mid-summer until autumn, deep pink rose7-10	Irregular inundation and upland	Full sun to partial sun/shade to full shade		Large, pink flower clusters grace the tall stems of Joe Pye weed in summer. The blooms have a light vanilla fragrance and attract various pollinators. In the fall, this native perennial produces attractive seed heads, which can last well into winter. The seeds are a food source for American goldfinch, Carolina wren, dark-eyed junco, and tufted titmouse. Zone 4-9	
		GOLDENROD						Plants are indigenous to low open woods, dry wooded slopes, rich calcareous woodlands, savannas, lightly shaded river banks and seeps, thickets, edges of woodlands and bottomland forests. Plants tolerate shade but tend to decline as the canopy matures and shade becomes denser. "fragrant flowers attract butterflies, skippers, moths and native bees. Moths of several caterpillars feed on the foliage. Attracts Wildlife Butterflies Songbirds Pollinators" " This native perennial blooms in late summer into fall with bright yellow flowers. Some goldenrod varieties feature large flower clusters held at the tops of tall stems; others boast gracefully arching stems holding single rows of blossoms. Different species of goldenrod come from environments with widely differing soil conditions. These native habitats range from sunny meadows to salty seaside spaces and soggy bogs so do some research to select a variety that fits your site conditions. Zone 4-8"		
Hc	Hibiscus coccineus	Scarlet rose mallow	5-8' tall with a spread of 2-3'.		6-9 red	WET TO MOIST	FULL SUN PART SHADE	Butterflies HummingbirdsFull Sun to Partial Shade wet to moist	Asclepias incarnata, Eupatorium perfoliatum, Helianthus angustifolius, Lobelia cardinalis and Panicum virgatum.	https://www.newmoonnursery.com/plant/Hibiscus-coccineus
Iv	Iris versicolor	Blue Flag	2-3' tall with a 2-3' spread.		6-7 Blue	WET	FULL SUN PART SHADE	Full Sun to Partial Shade Hummingbirds	Iris versicolor mingles cheerfully with Asclepias incarnata, Carex muskingumensis, Chelone glabra, Eupatorium perfoliatum, Osmunda cinnamomea and Rhexia virginica.	https://www.newmoonnursery.com/plant/Iris-versicolor
La	Lythrum alatum	Winged Loosestrife	1-4'/2'		6-9 Lavendar	BOG	Full Sun to Partial Shade	Butterflies Pollinators deer resistant		https://www.newmoonnursery.com/plant/Lythrum-alatum
Ls	Liatris scariosa	Savanna Blazing Star	2-4'ht/		Red-purp 8-10	UPLAND	FULL SUN PART SUN SHADE	Attracts pollinators Full sun to part sun/shade upland		
Lsp	Liatris spicata	Blazingstar	1-6.5' ht		Purp 7-8	seasonal inundation and upland	Full sun to part sun/shade	seasonal inundation and upland Full sun to part sun/shade Attracts pollinators and songbirds		
Oc	Osmunda cinnamomea	Cinnamon Fern				WET MOIST	SUN SHADE			https://www.gardenia.net/plant/osmunda-cinnamomea-cinnamon-fern
Md	Monarda didyma 'Gardenview Scarlet'	Gardenview Scarlet beebalm	2-3'/2-3'		6-8	Moist to Wet	Full Sun to Partial Shade	Full Sun to Partial Shade Moist to Wet Deer Resistant Butterflies Pollinators Hummingbirds	Fox sedge (Carex vulpinoidea) Tall coreopsis (Coreopsis tripteris) Sweet black-eyed Susan (Rudbeckia hirta) Dense blazing star (Liatris spicata)	https://www.newmoonnursery.com/plant/Monarda-didyma-Gardenview-Scarlet

Mf	Monarda fistulosa	Wild Bergamot	1.5 – 5 ft.ht		6-9 Pink-purp	Dry to well drained soil/Seasonal to regular inundation		Dry to well drained soil/Seasonal to regular inundation Attracts hummingbirds and pollinators fragrant		
Ms	Matteuccia struthiopteris	Ostrich Fern	fronds up to 5 feet long and 3 feet wide.					prefer shade or partial shade. light, highly organic soil with ample moisture during their growing seasonyear-round mulch is recommended.5 feet high and about 2 to 3 feet tall, and spreads over time to form large, glorious colonies.		https://www.waysidegardens.com/matteuccia-struthiopteris-48442.html?gad_source=1&gclid=CjwKCAjwte-vBhBFEiwAQSv_xfQeS8l0KA2jo4LI5lgbyQ_NkFEdNYUPTDsATfnCmoZEYBDG4U-hoCYJ0QAvD_BwE
Pd	Penstemon digitalis	beardtongue	2-4'ht		4-6 WHT	Seasonal inundation to upland	Full sun or partial shade/sun	Seasonal inundation to upland Full sun or partial shade/sun Provides food and cover		
Pp	Phlox paniculata	Fall Phlox	3 – 6' ft.		7-9 Pk Lav	Upland	Partial shade/sun to full shade	Partial shade/sun to full shade Attracts hummingbirds Upland		
Pv	Physostegia virginiana	Obedient plant	3-4' tall and spread to 2-3'		8-9 pink	moist or average soil. Dry to Moist	Full Sun to Partial Shade	https://www.newmoonnursery.com/plant/Physostegia-virginiana		
Rf	Rudbeckia fulgida	Orange Coneflower	1.5 – 3.5 ft.		7-10 Yellow-orange	Irregular inundation and upland	Full sun to partial shade/sun	Irregular inundation and upland Full sun to partial shade/sun Attracts pollinators and songbirds		
Si	Scutellaria incana	hoary Skullcap	1.5 – 3.5 ft.		6-9 Blue-violet	Upland	partial sun/shad to full shade	partial sun/shad to full shade Attracts hummingbirds and other pollinators Upland Deer and rabbit resistant		
Sn	Symphyotrichum novae-angliae	New England Aster	3 – 6 ft.		6-9 Light pink/purple	irregular inundation and upland	FULL SUN	Source of food for Monarchs and pollinators irregular inundation and upland		
Vh	Verbena hastata	Blue vervain	2-6' tall with 1-2' spread.		7-8 purp	moist or wet soi	full or part sun	slender upright perennial with multiple stems and short rhizomes butterflies pollonators.	Soft stemmed bulrush (Scirpus validus (tabernaemontani))Marsh marigoldMarsh marigold (Caltha palustris)Prairie sedgePrairie sedge (Carex bicknellii)Spotted Joe pye weedSpotted Joe pye weed (Eupatorium maculatum)Blue flagBlue flag (Iris versicolor)Smooth blue asterSmooth blue aster (Aster laevis)Purple stemmed asterPurple stemmed aster (Aster puniceus)	https://www.newmoonnursery.com/plant/Verbena-hastata
Vl	Vernonia lettermannii 'Iron Butterfly'	Ironbutterfly	2-3' tall with an equal spread		8-10 purp	average to dry soils	SUNNY SITES	Butterflies Pollinators sunny sites with average to dry soils. Plants tolerate clay, rocky and gravelly soils, alkaline pH, drought and temporary inundation by water.	Baptisia australis, Asclepias tuberosa, Ceanothus americanus, Monarda fistulosa or Rudbeckia hirta.	https://www.newmoonnursery.com/plant/Vernonia-lettermannii-Iron-Butterfly
Vn	Vernonia noveboracensis	New York Ironweed	3 – 7 ft. ht		8-9 Purple	wet sites or gardens with average moist acidic soil	sunny SITES	Seasonal inundation Full sun to partial sun/shade Attracts butterflies		
Vv	Veronicastrum virginicum	Culver Root	4-8'//2-4'		white summer	moist to mesic wet meadows	sunny	Plants are indigenous to moist to mesic Blackland prairies, sand prairies, wet meadows, savannas, openings and borders of woods, thickets and banks of rivers, creeks and ditches.They originate from a sturdy taproot and can expand into larger clumps from underground rhizomes.Flowers provide pollen and nectar to many species of long-tongued and short-tongued bees, beneficial wasps, Syrphid flies, butterflies and moths.	Asclepias incarnata, Aster puniceus, Eupatorium fistulosum, Rudbecia maxima, Panicum virgatum or Vernonia noveboracensis.	
Za	Zizia aptera	Meadow zizia	1 – 3 ft. ht		5-6 Yellow	upland	Full sun to partial sun/shade			
V	Veronica									
N	Nepeta									
	Narcissus									
	Lillium									
	Scabiosa									