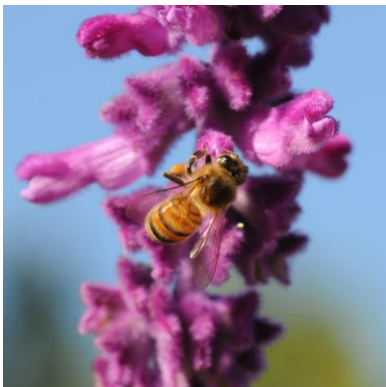




UC DAVIS
 COLLEGE OF AGRICULTURAL
 & ENVIRONMENTAL SCIENCES



Honey Bee Haven



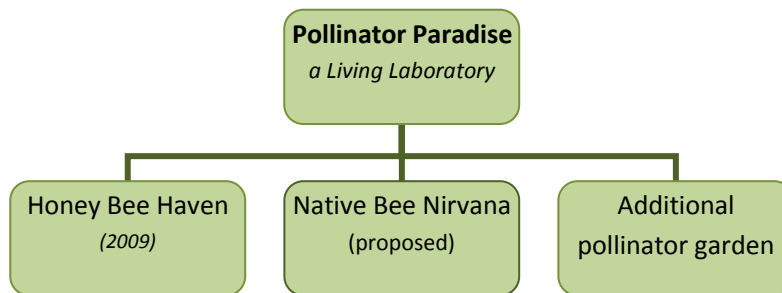
Photos by Kathy Keatley Garvey



Competition Justification

Concern for the health of honey bee (*Apis mellifera*) colonies is at an unprecedented high. Through an effective public information campaign, ice cream-maker Häagen-Dazs® (Dreyer’s Grand Ice Cream) has helped to direct the attention of consumers, policymakers and the media to the plight of these tiny agricultural workers. Häagen-Dazs® has built thoughtfully on UC Davis’ strong reputation and leadership in agricultural research by issuing a “call to action” for consumers to contribute to the university’s honey bee research program. The public has responded generously through private contributions to UC Davis honey bee research, demonstrating Häagen-Dazs’® effectiveness at inspiring the public to take action for the sake of the bees.

Building on this successful alliance, the Department of Entomology at UC Davis will break ground on a series of pollinator demonstration gardens as a kick-off for the second year (2009) of the “HD loves HB” campaign. The “Pollinator Paradise” demonstration will be a living laboratory; a series of interconnected gardens, each catering to a specific pollinator. The first phase of the project will be highlighted by a design competition for the most creative and functional Honey Bee Haven garden.



The purpose of the Honey Bee Haven garden is to provide a year-round food source for honey bees. Seasonal shortages in their food supply can exacerbate health problems for honey bees already challenged by factors such as stress, disease, pesticides and climate change. Some or all of these factors may be culprits in “colony collapse disorder,” in which an entire colony will abandon its hive. The honey bee colonies at UC Davis have long endured seasonal food shortages and unreliable variety in their floral diet.¹ The grounds immediately surrounding their home at the Harry H. Laidlaw Jr. Honey Bee Research Facility do not provide a consistent source of bee-attracting flower crops. The Honey Bee Haven garden will serve to correct this problem, providing for the nutritional needs of the colonies.

¹ The UC Davis colonies are under the watchful eye of colony manager Sue Cobey who closely monitors colony foraging and takes last-resort measures to supplement their diet (sugar water and pollen substitute) when nectar and pollen quantities are insufficient.

Project Goal

The goal of the Honey Bee Haven garden is to provide a year-round food source for honey bees at the Harry H. Laidlaw Jr. Honey Bee Research Facility.

Design Requirements

The winning design will occupy the specified ½ acre site and be installed at a cost of \$65,000. Additionally, the contest winner will:

- Provide a year-round food source for the Laidlaw Research Facility honey bee colonies. The year-round food source will include a variety of plant species that exhibit a seasonal balance of blooming plants during spring, summer and fall. Please see Attachment A for a recommended honey bee plant list; plants were specifically chosen with site in mind.
- Provide a bee-accessible water source for Laidlaw Research Facility honey bee colonies. The water source may be incorporated into the irrigation system. See below for water source specifications:
 - The edge surface must be rough and at a slope of no more than 45*
 - The location must be sunlit and at a safe but viewable distance from visitor pathways
 - To accommodate numerous bees, the water source must have a surface area of at least 1 sq ft.
- Adhere to “River-Friendly Landscape Guidelines” (please see except in Attachment B, review of whole document is recommended). Whole document is available at:
http://www.sacramentostormwater.org/SSQP/Riverfriendly/Documents/RiverFriendly_Guidelines.pdf
- Include minimal hardscaping such as environmentally-friendly paths accessible to visitors. Paths will serve for education and outreach to the general public by means of guided tours with UC Davis Entomologists. See below for path specifications:
 - Path must be compliant with ADA standards
 - Path must be permeable to water; a preference will be given to recycled materials (e.g., decomposed gravel)
 - Path system should include access from the North, East and South sides of the garden plot
 - Path system will link to existing bike path (see Attachment D, Aerial photograph or AutoCAD schematic)
- Offer attractive screening for both the structures on site (see image 1 and 4 in Attachment D, Site Photographs).
- Inspire the development of honey bee gardens in a variety of settings, including backyards, public gardens, agricultural easements, urban rooftops, etc.

Maintenance Requirements

The winning design will offer a maintenance program that is both low-cost and environmentally friendly. The program will adhere to the basic guidelines set forth in page 17 of “A Guide to Green Maintenance and Operations” (Attachment C). The garden will require zero insecticide application and the use of herbicides will be absent or limited to minimal application of organic compounds. Plants in the garden will be under the care of a volunteer gardening crew of 5-10 individuals. This crew must be able to support the plants’ maintenance in a 3 hour period on a weekly basis.

The Site

The UC Davis Department of Entomology has a 76-year-old honey bee research program that has worked to meet the pollination needs of California’s \$42 billion dollar agricultural industry. Today, they are working to address the nation’s growing concern about bee health and the recent sharp decline in bee populations.

The Harry H. Laidlaw Jr. Honey Bee Research Facility is an 8200 sq ft. building that includes laboratories, honey bee food processing rooms, glassed observation hives and offices for bee breeders, geneticists, pollinator specialists and bee stock managers. The building is also home to approximately 70 bee colonies (more than THREE MILLION bees!).

Please see Attachment D for the following site-specific information:

1. Aerial photograph
2. AutoCAD schematics
3. Site photographs
4. Domestic water map
5. Electricity map
6. Soil profile

City Profile

The City of Davis was founded in 1868 as a small agricultural community. One-hundred years ago in 1908, the University of California, Davis established itself at the heart of the city. Following the traditions of its early history in agriculture, UC Davis is now recognized internationally for contributions in agriculture and environmental sciences.

Located in the flat Central Valley, just 11 miles west of Sacramento, Davis is in the agricultural heart of the state. Fields surrounding the town produce a variety of crops including almonds, a honeybee pollinated commodity.



The Central Valley climate is Mediterranean, characterized by hot, dry summers and cool, wet winters. Rainfall is limited to the winter and early spring months.

Average:	Temperature			Rain Inches	Humidity		
	Period	Min.	Mean		Max.	4:00 AM	Noon
January	37	46	54	3.69	90	73	69
April	46	60	74	1.54	86	48	46
July	57	77	97	0	77	37	28
October	49	64	79	0.98	78	45	39
Annual	47	62	76	17.28	83	50	46

Source: University of California, Davis

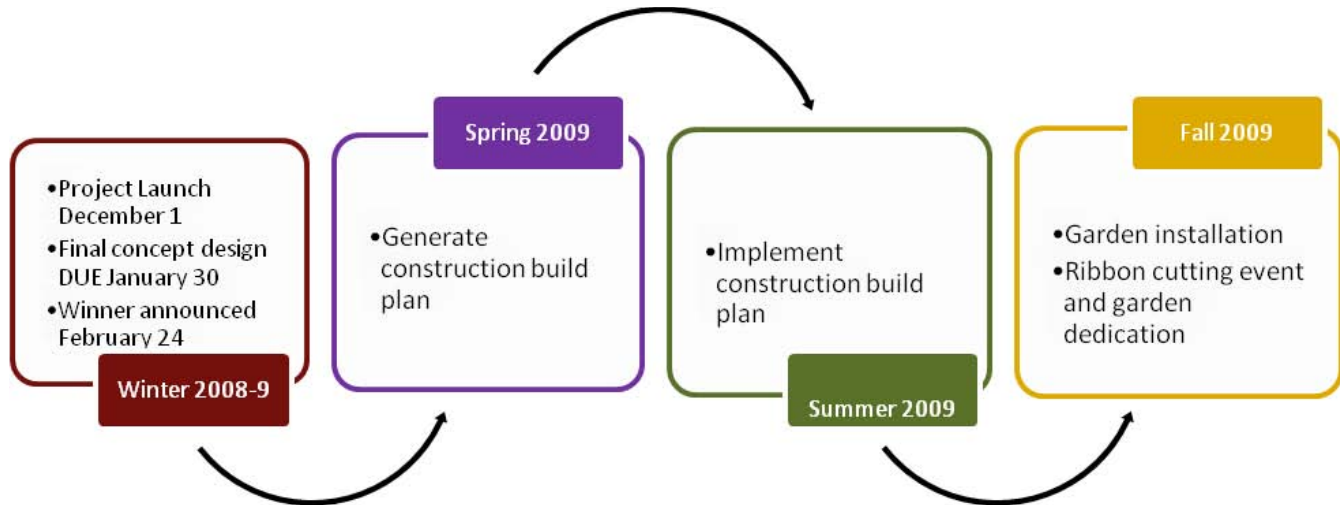
Available Research

- www.helpthehoneybees.com
- <http://entomology.ucdavis.edu/dept/beebio.cfm>
- <http://nature.berkeley.edu/urbanbeegardens/index.html>
- <http://www.xerces.org/>

Attachment E: case studies of example gardens



Schedule



Eligibility

This is a nationwide competition, open to any individual or group able to complete a design proposal for the Honey Bee Haven garden. Project submissions must meet the parameters set forth in this document in order to be considered.

Submission Requirements

Please submit the following for the Honey Bee Haven on or before January 30, 2009:

1. Rendered site plan
Please submit the rendered site plan at a scale of 1"=20' on 11x17" paper.
2. Planting plan
Please submit the planting plan at a scale of 1"=20' on 11x17" paper.
3. Maintenance program
4. Estimated construction cost
Winning design will be value engineered (if necessary) under the designer's supervision to meet budget constraints.
5. Additional construction details to build specific features such as the water source

Please send submissions to:

California Center for Urban Horticulture
CA&ES Dean's Office
1 Shields Ave
Davis, CA 95616-8571

UC DAVIS
COLLEGE OF AGRICULTURAL
& ENVIRONMENTAL SCIENCES



Please refer questions to:

Missy Borel, Program Manager
California Center for Urban Horticulture
Email: mjborel@ucdavis.edu or ccuh@caes.ucdavis.edu
Phone: 530-752-6642

Competition Award

The design chosen for the Honey bee Haven garden will be announced on February 24, 2009 at the kickoff of year two in the 'HD loves HB' campaign. The winning designer will have the opportunity to oversee the construction of their design as well as receive publicity through Häagen-Dazs® (Dreyer's Grand Ice Cream) and the University of California. The celebratory garden dedication and ribbon cutting event will be held in October of 2009. Local dignitaries and the public will be invited to view the garden, learn about honey bees and enjoy ice cream. A bronze plaque at the entrance to the Honey Bee Haven garden will name the designer(s) and thank them for their many contributions to the health of the honey bees. An additional prize will be gifted to the winning designer or team at the time of the ribbon cutting.

Judges

Melissa Borel, Program Manager, California Center for Urban Horticulture – UC Davis

Dr. David Fujino, Executive Director, California Center for Urban Horticulture – UC Davis

Dr. Lynn Kimsey, Chair of the Department of Entomology, UC Davis

Aaron Majors, Construction Department Manager, Cagwin & Dorward Landscape Contractors

Diane McIntyre, Senior Public Relations Manager, Häagen-Dazs® Ice Cream

Heath Schenker, Professor of Environmental Design, UC Davis

Jacob Voit, Sustainability Manager & Construction Project Manager, Cagwin & Dorward Landscape Contractors

Ellen Zagory, Director of Horticulture, UC Davis Arboretum – UC Davis

Attachment A



Recommended Honey Bee Plant List

The plants chosen for this list were selected for their ability to survive and thrive in many Central Valley conditions. Plants highlighted in **yellow** have preformed particularly well and are designated UC Davis Arboretum All-Stars. For information on each All-Star plant including sun/shade regimes, please visit http://arboretum.ucdavis.edu/arboretum_all_stars.aspx.

Honey bee Plant List

Plant	blooming season:	Spring	Summer	Fall
Perennials				
<i>Agastache foeniculum</i> anise hyssop			X	X
<i>Angelica pachycarpa</i> angelica				X
<i>Aster cordifolius</i>				X
<i>Aster laterifloru</i> 'Prince'				X
<i>Aster lateriflorus</i> 'Lady In Black'				X
<i>Aster</i> 'Purple Dome' purple dome Michaelmas daisy			X	X
<i>Ballota pseudodictamnus</i> false dittany			X	
<i>Bulbine frutescens</i> cape balsam		X		X
<i>Calamintha nepeta</i> calamint			X	X
<i>Caryopteris incana</i> 'Bluebeard'			X	X
<i>Cerastigma plumbaginoides</i> dwarf plumbago			X	X
<i>Coreopsis grandiflora</i> largeflower tickseed		X		
<i>Dasyllirion wheeleri</i> desert spoon			X	
<i>Erigeron karvinskianus</i> Santa Barbara dairy		X	X	X
<i>Erigeron</i> 'W. R.' Wayne Roderick seaside daisy		X	X	X
<i>Eriogonum giganteum</i> Saint Catherine's lace			X	
<i>Eryngium planum</i> 'Blue Hobbit'			X	
<i>Euphorbia mellifera</i> honey spurge		X		
<i>Gaillardia grandiflora</i> blanket flower			X	
<i>Gaillardia aristata</i> 'Arizona Sun'			X	
<i>Heliopsis helianthoides</i> oxeye sunflower			X	X
<i>Heliopsis</i> Maximillan sunflower				X
<i>Heteromeles arbutifolia</i> toyon			X	
<i>Heuchera</i> 'Lillian's Pink'		X		
Lillian Henningsen's coralbells				
<i>Heuchera maxima</i> island alumroot		X		
<i>Heuchera</i> 'Rosada' Rosada coral bells		X		
<i>Hunnemannia fumariifolia</i> Mexican tulip poppy			X	
<i>Hyssopus officinalis</i> hyssop			X	
<i>Lavandula</i> 'Goodwin Greek Grey'		X	X	X
Goodwin Creek lavender				
<i>Lavandula stoechas</i> 'Otto Quast'		X		
Otto Quast Spanish lavender				
<i>Lessingia filaginifolia</i> var. <i>californica</i> 'Silver Carpet' silver carpet California-aster			X	X
<i>Limonium perezii</i> perennial statice			X	
<i>Lonicera</i> species honeysuckle			X	

<i>Lotus scoparius</i> deerweed	X	X	X
<i>Lotus</i> hairy canyon clover			X
<i>Monardella villosa</i> coyote mint		X	
<i>Nepeta</i> species catmint	X	X	
<i>Nepeta x faassenii</i> hybrid catmint		X	X
<i>Ocimum gratissimum</i> perennial basil		X	X
<i>Oreganum</i> 'Betty Rollins' dwarf oregano		X	
<i>Oreganum</i> species Oregano, including dittany		X	
<i>Perovskia atricarpifolia</i> Russian sage		X	X
<i>Prunella vulgaris</i> or <i>grandiflora</i> selfheal		X	
<i>Salvia apiana</i> California white sage	X	X	
<i>Salvia clevelandii</i> Cleveland sage			
<i>Salvia greggii</i> autumn sage	X	X	X
<i>Salvia millifera</i> sage	X		
<i>Salvia officinallis</i> sage			
<i>Salvia</i> 'Bees Bliss'	X		
<i>Salvia x jamensis</i>	X	X	X
<i>Scopularia species</i> figwort			
<i>Sedum spectabile</i> sedum			X
<i>Solidago californica</i> goldenrod			X
<i>Silphium lancinata</i> compass plant			X
<i>Teucrium species</i> germander	X		
Shrubs/trees			
<i>Arbutus andrachne</i> Turkish madrone		X	X
<i>Baccharis pilularis</i> coyote bush			X
<i>Berberis aquifolium</i> 'Compacta' compact Oregon grape	X		
<i>Berberis</i> species barberry	X	X	
<i>Callistemon lanceolatus</i> bottlebrush	X	X	
<i>Caryopteris clandonensis</i> blue spirea		X	X
<i>Caryopteris incana</i> bluebeard			X
<i>Ceanothus</i> 'Concha' Concha ceanothus	X		
<i>Ceanothus maritimus</i> 'Valley Violet' violet maritime ceanothus	X		
<i>Ceanothus x pallidus</i> 'Marie Simon' Marie Simon ceanothus		X	
<i>Ceanothus</i> 'Ray Hartman' Ray Hartman California lilac	X		
<i>Cephalanthus occidentalis</i> button willow	X		
<i>Cercis occidentalis</i> western redbud	X		
<i>Cercocarpus betuloides</i> var. <i>blancheae</i> island mountain mahogany	X		
<i>Cercocarpus montanus</i> mountain mahogany	X		
<i>Chrysothamnus nauseosus</i> rabbit brush			X
<i>Citrus</i> species (Orange, Lemon, Lime)	X		
<i>Cotoneaster</i> species cotoneaster	X		
<i>Crataegus laevigata</i> English hawthorn	X		
<i>Crataegus phaenopyrum</i> Washington hawthorn	X		
<i>Echium candicans</i> Pride of Madeira	X		

<i>Eriodictyon californicum</i> Yerba Santa	X		
<i>Eriogonum fasciculatum</i> California buckwheat		X	
<i>Eriogonum grande rubescens</i> buckwheat		X	
<i>Escallonia rubra</i> red escallonia		X	
<i>Heteromeles arbutifolia</i> toyon		X	
<i>Isomeris arborea</i> bladderpod	X	X	
<i>Lagerstroemia</i> hybrids and cultivars crape myrtle		X	
<i>Leptospermum scoparium</i> New Zealand tea tree		X	X
<i>Leucophyllum frutescens</i> cenizo 'Texas Ranger'		X	
<i>Leucophyllum langmaniae</i> 'Lynn's Legacy'		X	
Lowrey's everblooming Cimarron rainsage			
<i>Ligustrum japonicum</i> privet		X	
<i>Prunus ilicifolia</i> holly leaved cherry		X	
<i>Ribes aureum</i> golden currant	X		
<i>Ribes malvaceum</i> chaparral currant	X		X
<i>Ribes viburnifolium</i> evergreen currant	X		
<i>Rosmarinus officinalis</i> rosemary	X	X	X
<i>Rhamnus californica</i> coffeeberry	X	X	
<i>Rhus integrifolia</i> lemonade berry	X		
<i>Rhus ovate</i> sugar bush	X		
<i>Rosa rugosa</i> 'Hansa'	X	X	X
<i>Rosa x odoratus</i> 'Mutabilis'	X	X	X
<i>Salix species</i> willow	early		
<i>Salvia microphylla</i> mint bush sage	X	X	X
<i>Sarcococcus humilia</i> sweet box	X		
<i>Syringa x laciniata</i> cut leaf lilac	X		
<i>Teucrium chamaedrys</i> wall germander		X	
<i>Trichostema lanatum</i> woolly bluecurls		X	
<i>Xylosma congestum</i> xylosma			X
Biennials			
<i>Galucium flavum</i> yellow horn poppy	X		
<i>Madia elegans</i> tarweed		X	X
<i>Melilotus albus</i> var. <i>annua</i> 'Hubam' white sweet clover	X	X	X
<i>Phacelia tanacetifolia</i> phacelia	X		

Attachment B



Excerpt, "River-Friendly Landscape Guidelines"

2

River-Friendly Landscaping Menu of Best Practices



RIVER-FRIENDLY LANDSCAPING MENU OF BEST PRACTICES

1 Landscape Locally



- 1. Evaluate climate, exposure and topography
- 2. Assess the soil and test drainage
- 3. Survey and protect flora & fauna
- 4. Consider the potential for fire
- 5. Use local, natural plant communities as models

2 Landscape for Less to the Landfill



- 1. Select appropriate plants:
 - A. Choose plants to match the microclimate & soil conditions
 - B. Choose plants that can grow to their natural size in the space allotted them
 - C. Replace sheared hedges with plants that can grow to their natural shape & size
 - D. Do not plant invasive species
- 2. Keep plant debris on site:
 - A. Grasscycle
 - B. Produce mulch from plant debris
 - C. Compost plant debris
- 3. Prune selectively and properly
- 4. Water and fertilize judiciously
- 5. Use goats for controlling weeds and creating firebreaks
- 6. Use salvaged items & recycled content materials
- 7. Reduce and recycle construction waste
- 8. Separate plant debris for recycling

3 Nurture the Soil



- 1. Remove and store topsoil before grading
- 2. Protect soil from compaction
- 3. Defend against erosion
- 4. Amend the soil with compost before planting
- 5. Grasscycle
- 6. Mulch regularly
- 7. Aerate compacted soils
- 8. Feed soils naturally
- 9. Avoid synthetic, quick release fertilizers
- 10. Minimize the use of chemical pesticides

• See chapter 4, Summary of River-Friendly Landscaping Benefits to view list of practices categorized by design, construction and maintenance.

4 Conserve Water



- 1. Create drought resistant soils with compost & mulch
- 2. Grow California natives or Mediterranean plants
- 3. Minimize the lawn
- 4. Implement hydrozoning - group plants by water needs
- 5. Design for on-site rainwater collection, recycled water and/or graywater use
- 6. Design and install high efficiency irrigation systems
- 7. Install a dedicated meter to monitor landscape water use
- 8. Manage irrigation according to need
- 9. Maintain the irrigation system so every drop counts
- 10. Request an irrigation audit

5 Conserve Energy



- 1. Plant and protect trees to moderate building temperatures
- 2. Reduce the heat island effect: shade paved areas
- 3. Shade air conditioners
- 4. Design lighting carefully
- 5. Choose and maintain equipment for fuel conservation
- 6. Specify local products & suppliers

6 Protect Water & Air Quality



- 1. Use Integrated Pest Management:
 - A. Prevent pest problems
 - B. Train your staff to identify and monitor pest & beneficial populations
 - C. Educate your clients
 - D. Control pest problems with physical & mechanical methods
 - E. Control pest problems with biological controls
 - F. Control pest problems with the least toxic pesticide as a last resort
- 2. Eliminate high input decorative lawns
- 3. Keep soil covered
- 4. Choose and maintain your materials, equipment & vehicles carefully
- 5. Keep organic matter where it belongs
- 6. Minimize impervious surfaces
- 7. Plant trees
- 8. Maintain and manage the irrigation system carefully
- 9. Design a system to capture and treat water

7 Create & Protect Wildlife Habitat



- 1. Diversify
- 2. Choose California natives first
- 3. Provide water & shelter
- 4. Eliminate the use of pesticides
- 5. Conserve or restore natural areas & wildlife corridors

Attachment C



Excerpt, "A Guide to Green Maintenance and Operations"

Landscaping

Commercial landscapes are a benefit to the owner and the community, but they can also consume high inputs of water and energy and generate an abundance of plant debris.

Increasing the resource efficiency of a landscape starts with building healthy soil, selecting plants that are compatible with the climate, exposure and topography of the site, and not over-planting. Trees and shrubs can also be planted to increase a building's cooling or energy retention.

Maintaining a "bay-friendly" landscape requires minimizing the use of chemical pesticides, mulching regularly, watering systems to conserve water, and selecting appropriate plants and shrubs when replanting.

Try to incorporate the following features into any landscaping maintenance plan.



Photo: Richard M. Rollins

Landscaping Resources

For more information, see StopWaste.Org's **Bay-Friendly Landscaping Program** at www.BayFriendly.Org. Download or order the Bay-Friendly Landscaping Guidelines or by calling 877-STOPWASTE (786-7927). Also, see information about "Bay-Friendly Qualified Landscape Professionals" and sample landscaping maintenance contract specifications.

Action Items and Purchasing Strategies:

When replanting, select California native species or Mediterranean plants appropriate to the site and adapted to the region's annual rainfall.

Mulch regularly. Mulch conserves water, enhances the growth of plants and improves the appearance of the landscape. It can also simplify your operations by suppressing weed growth.

Compost plant debris. Separate plant debris for delivery to a composting or processing facility. Disposal costs will be reduced and the material will be processed into useful mulch or compost for someone else to use. Alternatively, composting on-site returns organic matter to the soil, reduces pollution associated with transporting waste, disposal costs and costs for purchasing mulch or compost.

Purchase compost that is produced from feedstock that includes at least 50%, by volume, regionally generated plant debris and/or food scraps. Also specify that compost has less than 0.5% physical contaminants (by volume). Procuring regionally helps the markets for local plant debris and food scraps collection and composting programs. The compost should be processed in accordance with California Code of Regulations, Title 14, Chapter 3, Article 7, Sections 17868.2-3 to promote pathogen reduction and weed seed kill and minimize heavy metal concentrations.

Avoid synthetic quick-release fertilizers. Slow release fertilizers make nutrients available to the plants when they are needed, so their efficiency increases and they are therefore often a better value.

Minimize the use of chemical pesticides. Minimizing pesticides reduces water pollution and help support soil life, promoting resistance to plant disease. Costs may then be reduced in the long run.



Avoid the use of cleaning chemicals outdoors. Instead, use non-toxic alternatives for pressure washing, painting, moss removal, cleaning up minor oil leaks and car washing, for example.

Install and maintain high efficiency watering systems. These limit evaporation and runoff, help prevent disease and minimize weed growth, and water bills can be lower. Remember to change irrigation timing to match the season's need and water accordingly.

Limit impervious surfaces. Install permeable substitutes for walkways, gathering spaces and common areas because of their ability to help control stormwater drainage and retain less heat.

Use Integrated Pest Management (IPM). Preventing pests in the first place is critical to eliminating the need for pesticides, thereby reducing pollution and protecting the Bay. Control pest problems with physical and biological methods. Insects and other pests can be an integral part of your landscape and left uncontrolled at an acceptable level, unless they cause an unacceptable level of damage. Beneficial organisms can be used to feed on pests, reducing the need for pesticides. As a last resort, use the least amount of toxic pesticide to control pest problems.



Photo: Lane Hartwell

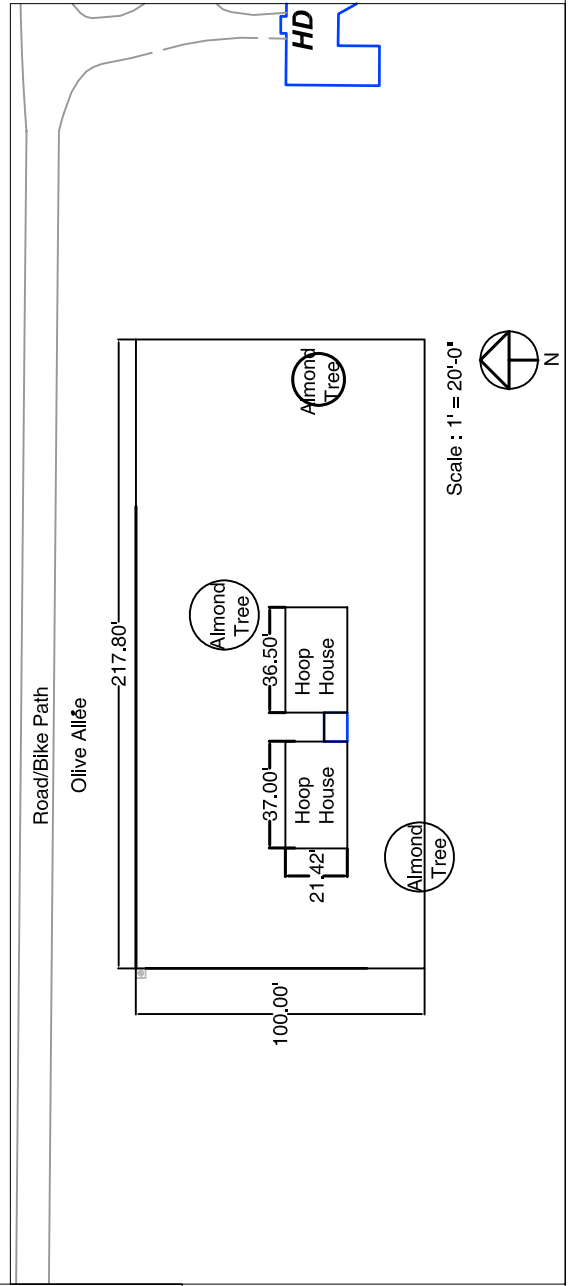
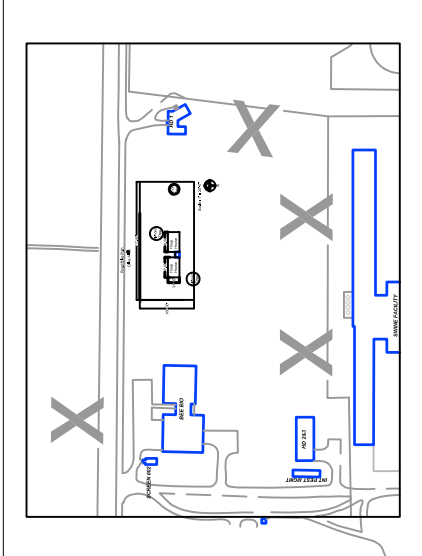
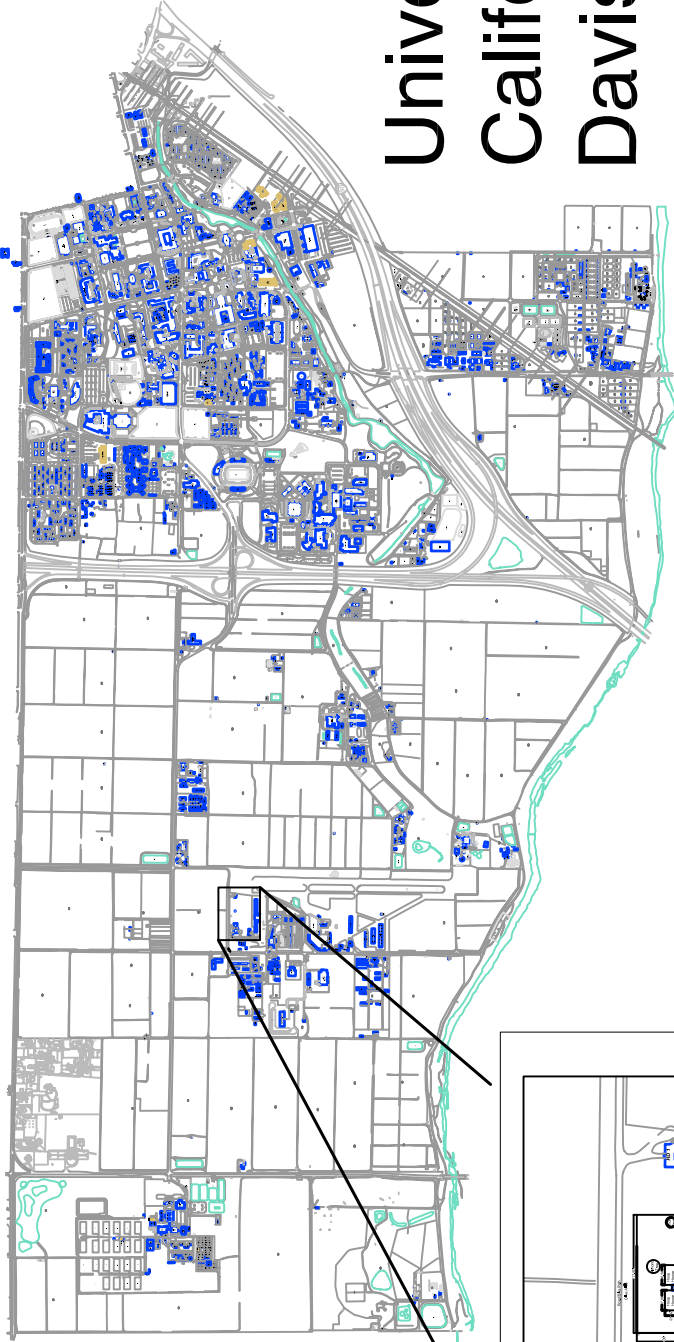
Attachment D



Site Details

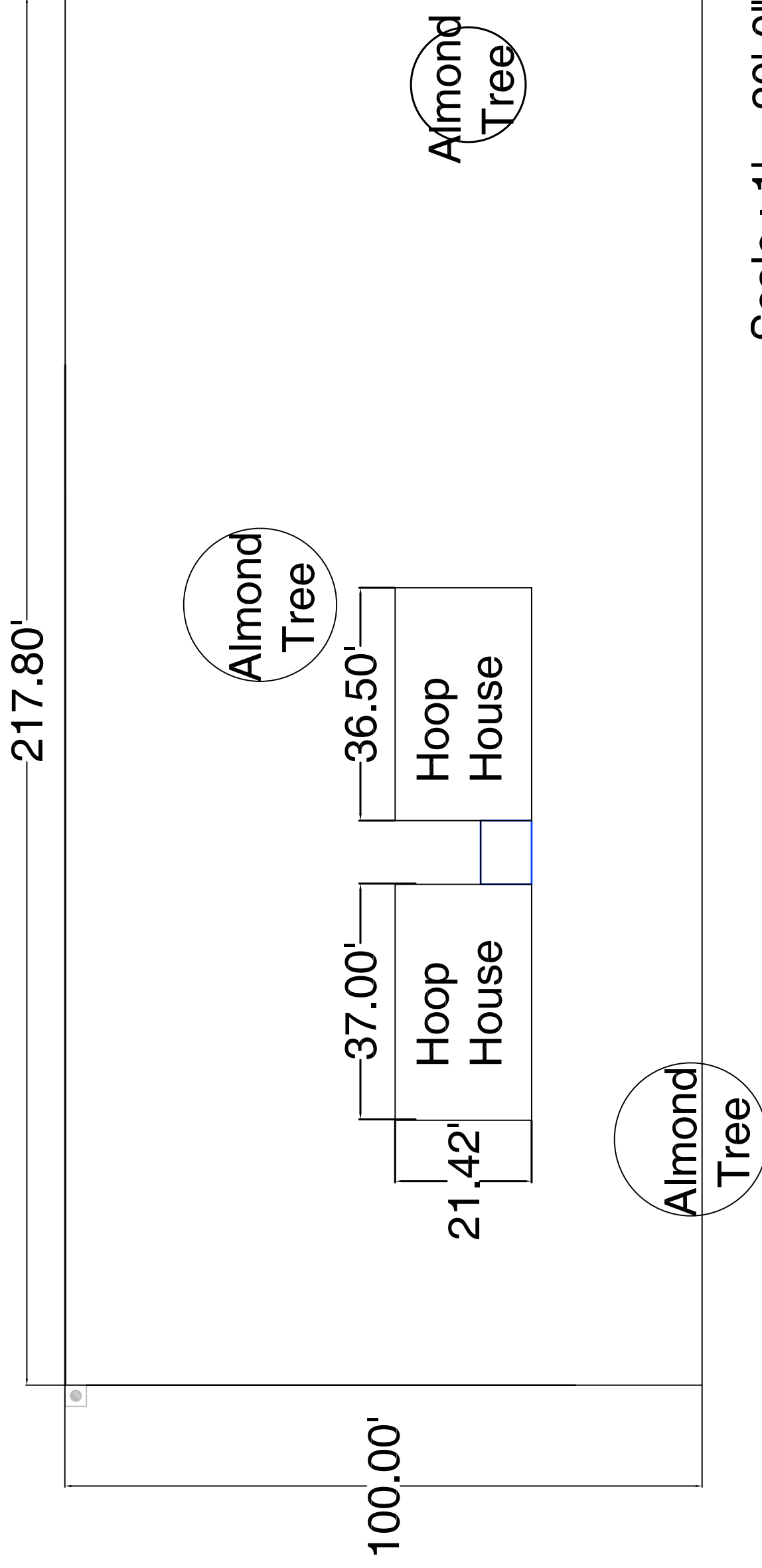


University of California, Davis

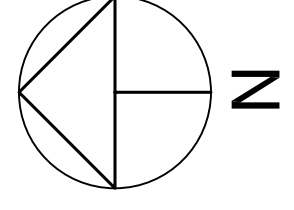


Road/Bike Path

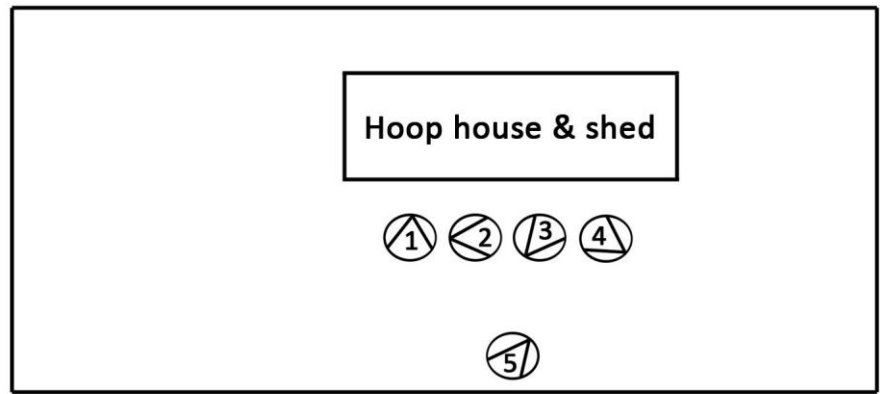
Olive Allée



Scale : 1' = 20'-0"



Site Photographs



Not to Scale



Image 1



Image 2



Image 3

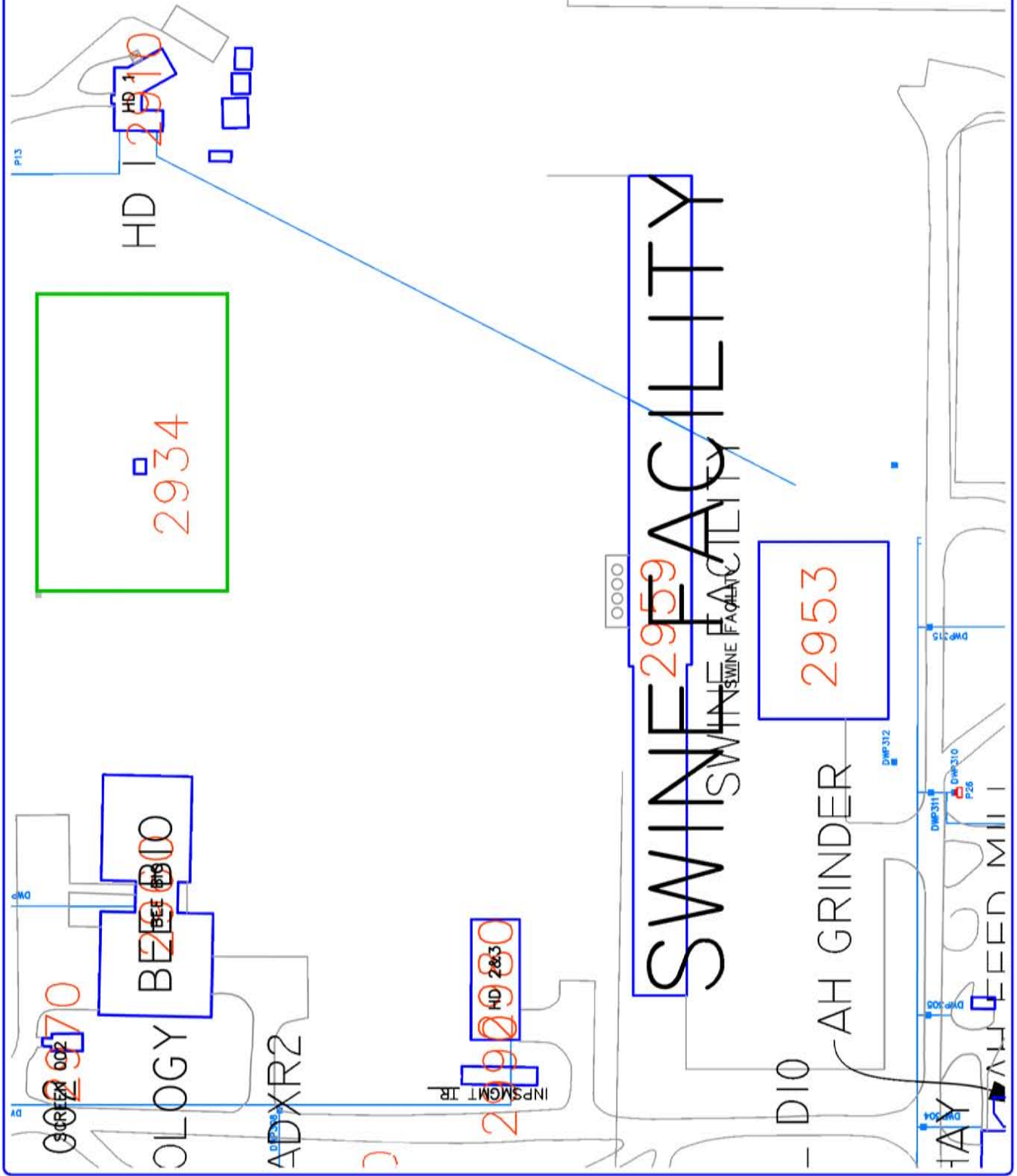


Image 4



Image 5





Domestic Water

**Honey bee Haven
Garden Site**

August 2004



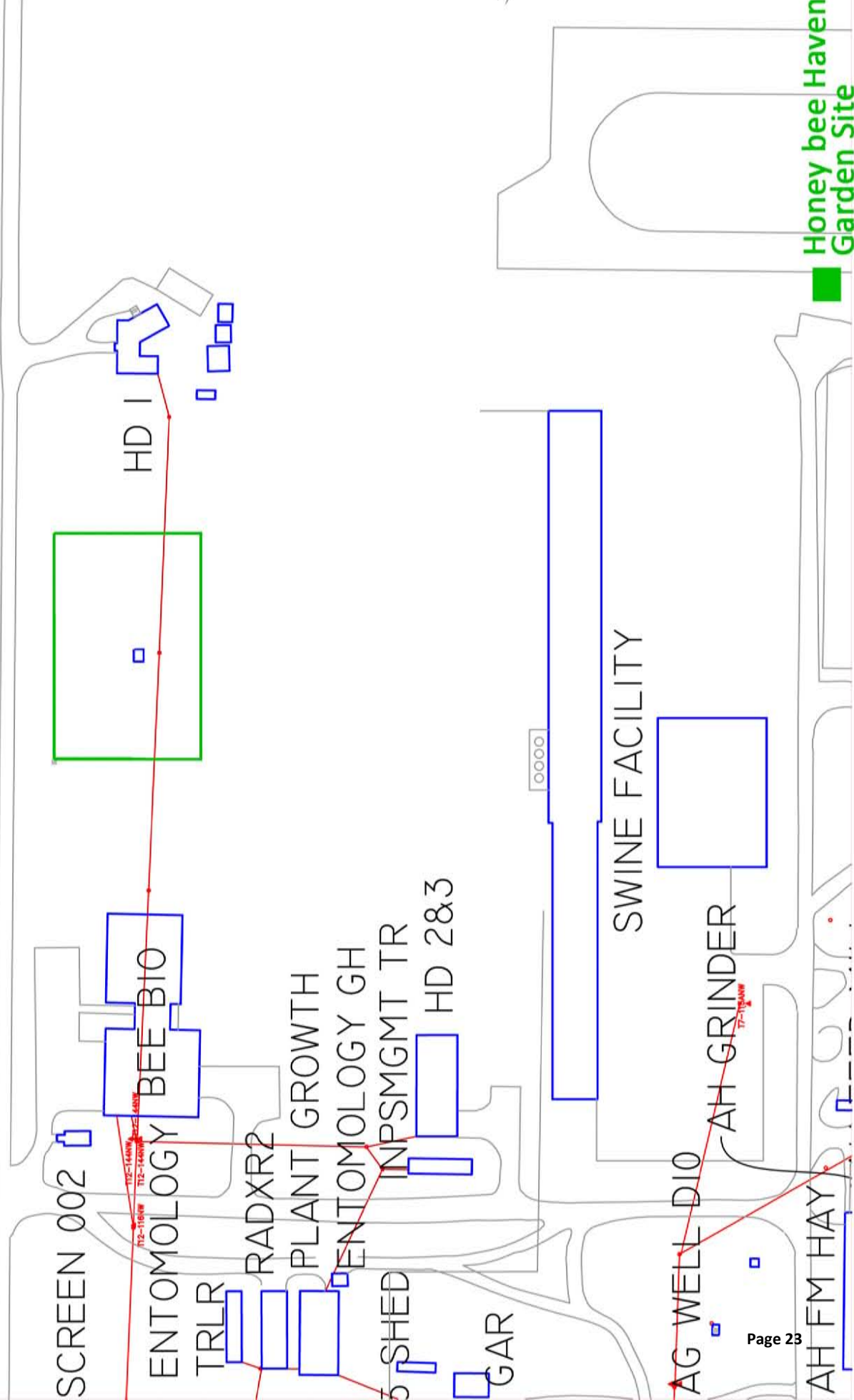
TERCERO SITE
DOMESTIC WATER
VALVES & FIRE HYDRANTS



DATE: 12-28-04
DRAWN: LAMMER
ADDRESS: NA
PATH: PROJECTS
SCALE: NA
NO. SCALE: NA
ZONE: NA
PROJECT: CAAH
MANAGER: NA
LAYOUT: D

NO.	REVISION
1	Page 22

X X X X X



Honey bee Haven
Garden Site

Site Soil Profile

Information below and image to the right were collected from the California Soil Resource Lab. Please see <http://casoilresource.lawr.ucdavis.edu/> for original data source. The primary soil type, Yolo Series, is a homogenous silt loam.



Queried map unit polygons in yellow, queried point in red.

Map Unit Composition

Map units consist of 1 or more soil types, commonly referred to as "components".

Component Name	% of Map Unit	Component Type
Soil Type 1 Yolo	85	Major Soil Type
Soil Type 2 Sycamore	2	<i>Inclusion</i>
Soil Type 3 Zamora	2	<i>Inclusion</i>
Soil Type 4 Soboba	2	<i>Inclusion</i>
Soil Type 4 Reiff	2	<i>Inclusion</i>
Soil Type 6 Loamy alluvial land	2	<i>Inclusion</i>
Soil Type 7 Brentwood	2	<i>Inclusion</i>
Soil Type 78 Arbuckle	2	<i>Inclusion</i>

Map Unit Aggregated Data

Generalized soils information within this map unit.

Farmland Class:	prime farmland if irrigated
Available Water Storage (0-100cm):	18.66 cm
Max Flood Freq:	None
Drainage Class (Dominant Condition):	Well drained
Drainage Class (Wettest Component):	Well drained
Hydric Conditions:	Partially hydric
Min Water Table Depth:	N/A
Min Bedrock Depth:	N/A

Attachment E



Case Studies: garden examples

Garden Examples



Fairway Mill Creek, Visalia, CA

Brian Kempf



UC Davis Arboretum Terrace Garden

Ellen Zagory



UC Davis Arboretum Storer Garden

Ellen Zagory



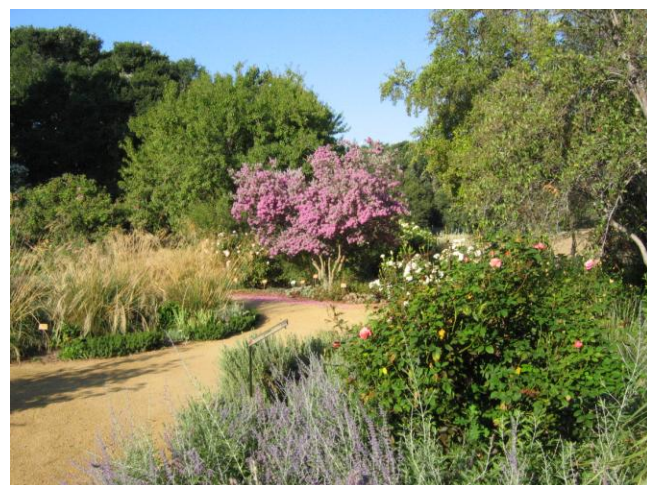
UC Davis Arboretum Storer Garden

Ellen Zagory



UC Davis Arboretum Storer Garden

Emily Griswold



UC Davis Arboretum Storer Garden

Ellen Zagory