

Building a Disease Vector Education Center and Science Museum at AMCD

James H. Richard Weaver

Anastasia Mosquito Control District

120 EOC Drive

St. Augustine FL 32092



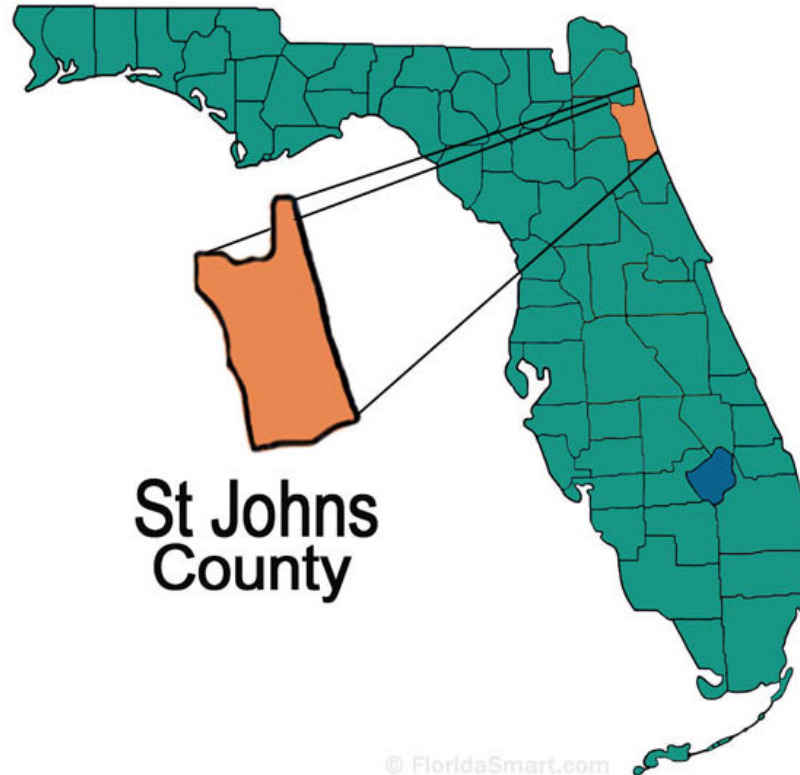
AMCD Disease Vector Education Center



Disease Vector
Education Center & Science Museum



Anastasia Mosquito Control District is located in the Northwest portion of the State and on the east the Atlantic ocean and the intracoastal waterway and on the west the St. Johns River



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AMCD Disease Vector Education Center



History

- 2003 Dr. Rui-De Xue started work at AMCD.
- 2005 Dr. Xue became Director and started our education department.
- 2017 Dr. Xue attended the 6th International Forum for Surveillance and Control of Mosquitoes and Vector-borne Diseases in Nanjing, China where he visited Jiangsu CDC's pest and vector gallery sparking the idea of bringing a similar concept to AMCD's new facility. Dr. Xue presented the idea to the AMCD Board of Commissioners and they allowed him to further explore the idea.
- 2018 Dr. Xue and our education specialist, visited a number of pest and vector education facilities to include the Wuxi Center for Disease Control and Prevention, and the Nanjing Vector Disease Museum in China. Building layouts, pictures and ideas were brought back to the newly formed district education center development committee and research started in earnest.

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History

- Early 2019 the location, on the AMCD campus, building size and general layout of the facility was decided.
- Late 2019 and early 2020 a planning committee met with past and present AMCD Board members, representatives from the local School Board, local Department of Health, Department of Agriculture, Department of Plant Industry (DPI), University of Florida Entomology Department, representatives from the mosquito control industry, the general public including outreach to local service organizations like the Kiwanis and Rotary clubs. Meetings were held both locally and in Gainesville Fl. Extensive notes were taken and a large list of museum components and display ideas were developed.
- 2020 a contract was signed for the development of a site plan, the site construction (underground utilities and building pad), and having an architect develop building plans from the committee's recommendations.

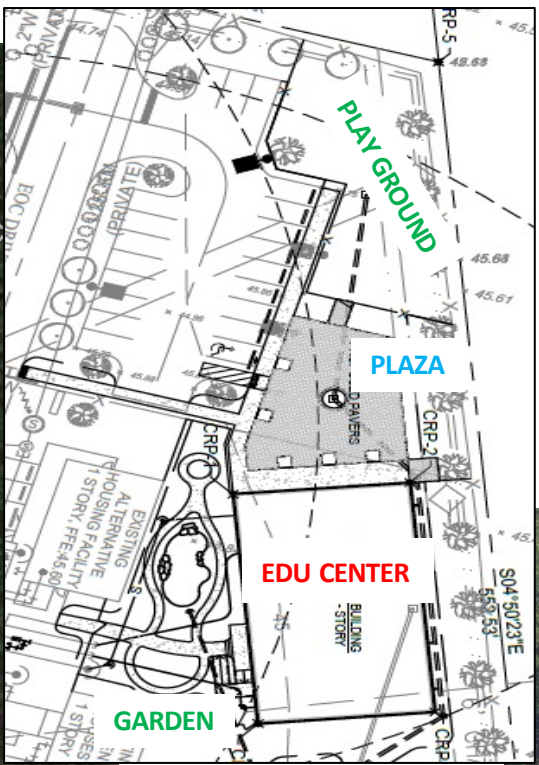
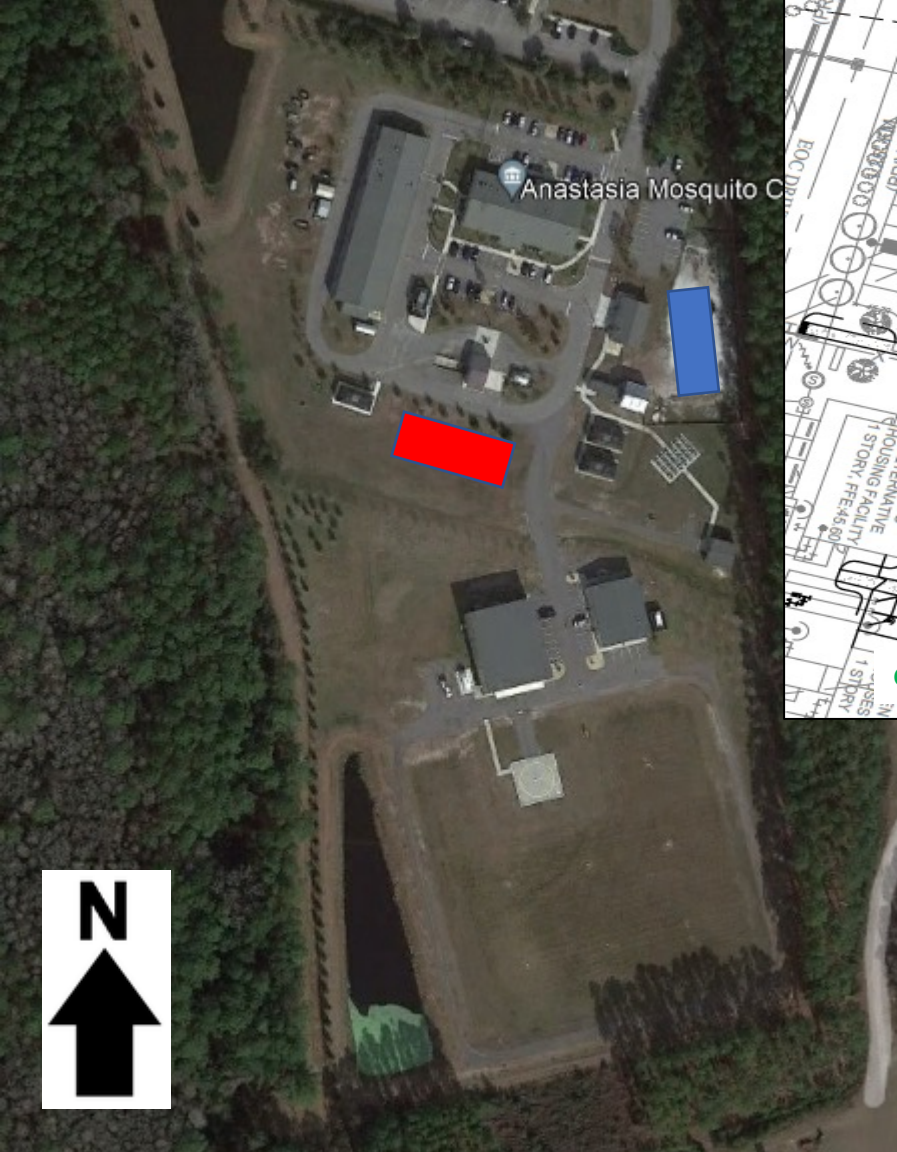
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History

- 2020 During Covid (AMCD never closed) a book was developed that outlined all the exterior and interior components of the education center. This book was finished September 2020 and included the final details of the interior layout, and section by section, detailed, written descriptions of all the display areas and display components with photographic and illustrated examples of the displays, and lists of links to web sites for reference.
- This book was given to the architects for the development of the blueprints and used as part of the RFP documents and as part of the contract documents for the construction of the education center.
- In February 2021 Board meeting, the job was awarded to a general contractor with the lowest qualified bid, to build a turn key museum, to include exterior components, steel building, and all interior displays.
- Work started in March of 2021.
- In spring of 2022 AMCD staff took over, from the general contractor, building of all the interior exhibits and display components.

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The new Education Center building is located in the north-east corner of our campus, visible as you enter our front gate (Blue rectangle)



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What is the Education Center?

It is a multifaceted center for learning about vector borne diseases, their vectors with an emphasis on mosquitoes, their effects on humans and animals, and how humans strive to control the spread of these diseases

It is for both children and adults and will specialize in school tours but be open to the general public

We also teach about entomology and have a large collection of pinned insects

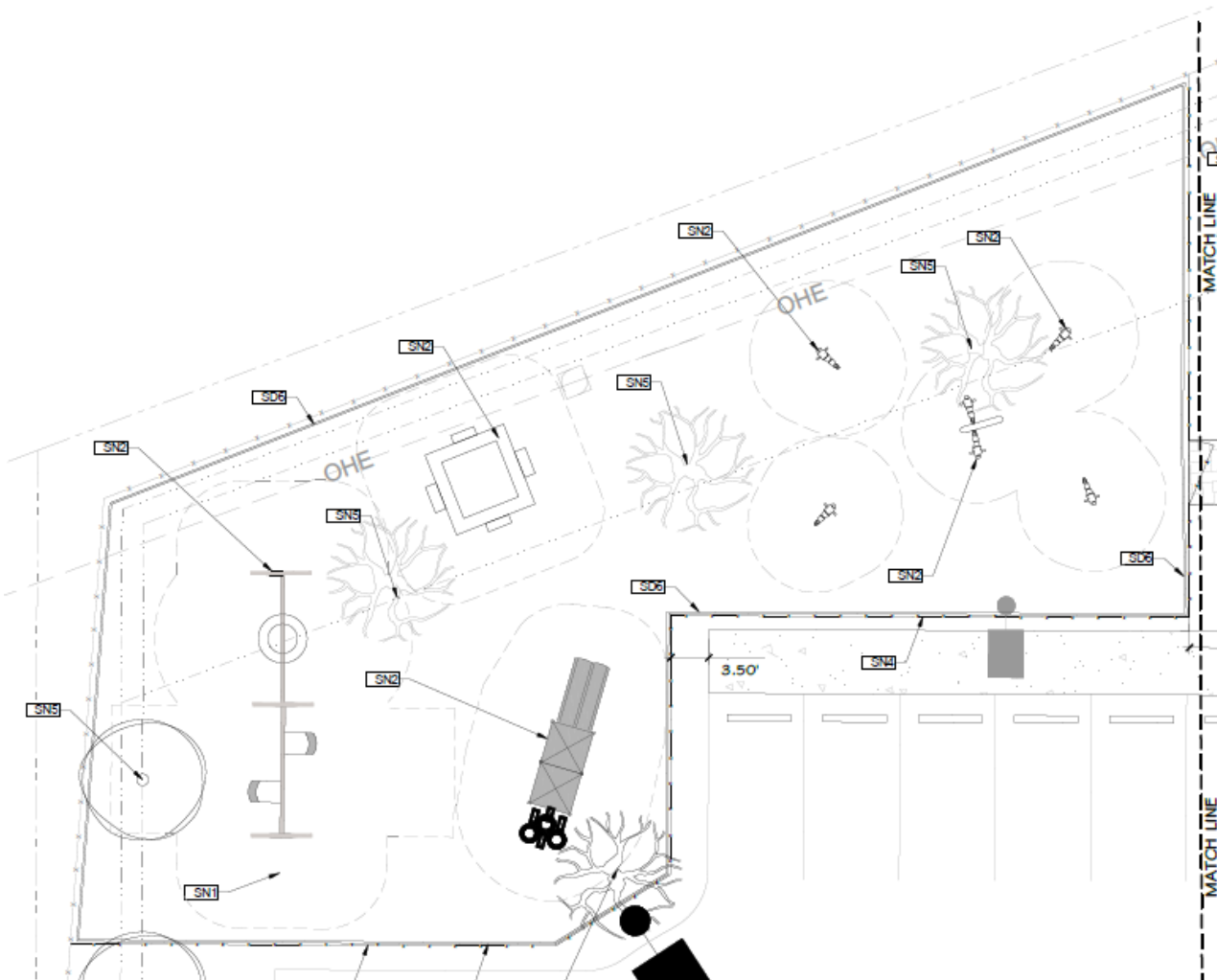
It is fun! Taking a complicated subject and presenting it with interactive, visual, audible and tactile displays that excite guests!



Contract cost: \$2,469,355.00

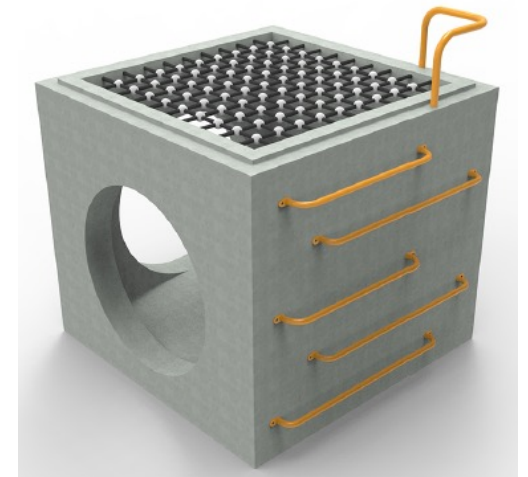
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Outdoor Exhibits: Playground



Both local and school children will be able to burn off excess energy and learn! there is:

- A large bucket of water being dumped out, the slide is the water with tires being stairs
- Storm drain climber
- Swing set
- Dragonfly teeter-totter
- Mosquito & Bee spring riders
- Turtle spinner
- Cattail spinner



Concept Drawings

Each piece of playground equipment has an interpretive sign with a mosquito related message



Dump and Cover! Explains how mosquitoes breed in containers and tires



Explains that mosquitoes can breed in storm drains



Dragonfly larva can eat mosquito larva



Certain mosquito species grow on cattails



How some mosquito species feed on reptiles (turtles)



How mosquitoes can be pollinators like our friends the bees

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Outdoor Exhibits: Garden



This area is accessed from the main exhibit hall and is a natural extension of the education center, the garden features:

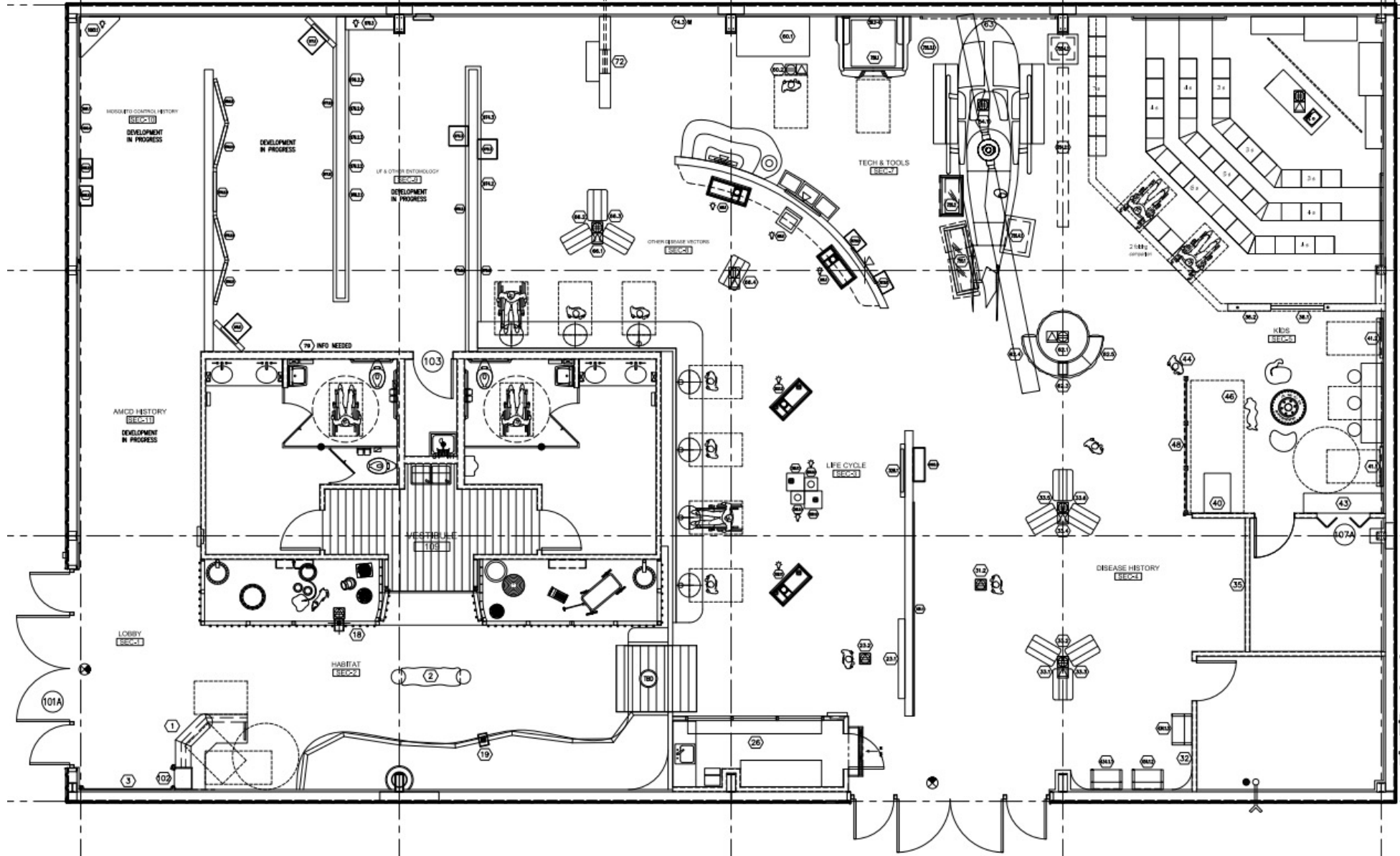
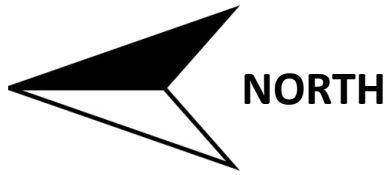
- Plants that both attract and repel mosquitos, including plants like Bromeliads
- Water feature with Gambusia fish
- Bat house with information that gently dispels the notion that bats alone can reduce mosquito populations



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Indoor Exhibits

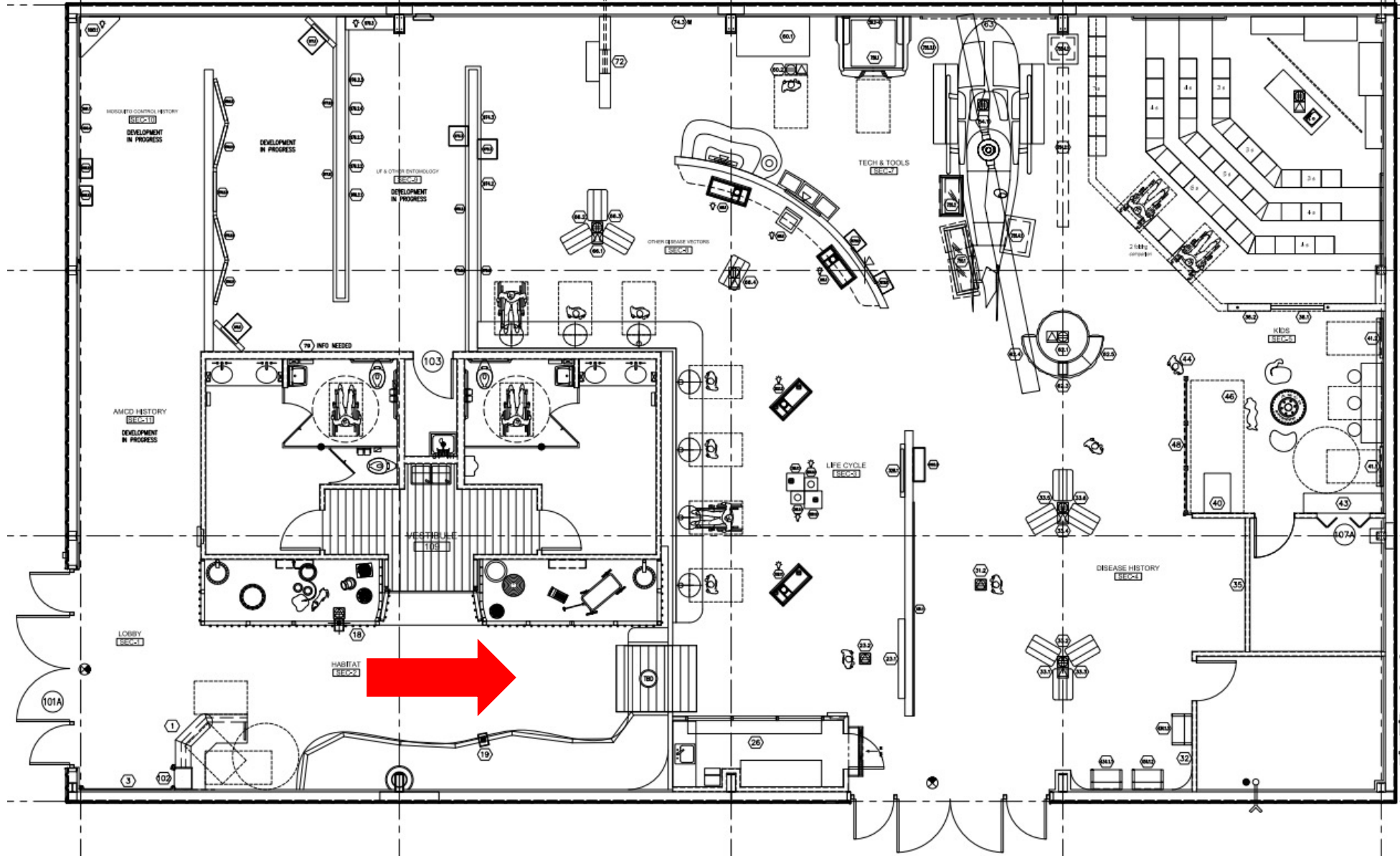
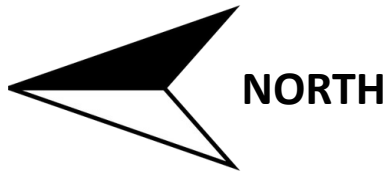
The floor plan takes you in a circle around the “Cracker House” (bathrooms) taking you through 11 distinct sections



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Indoor Exhibits

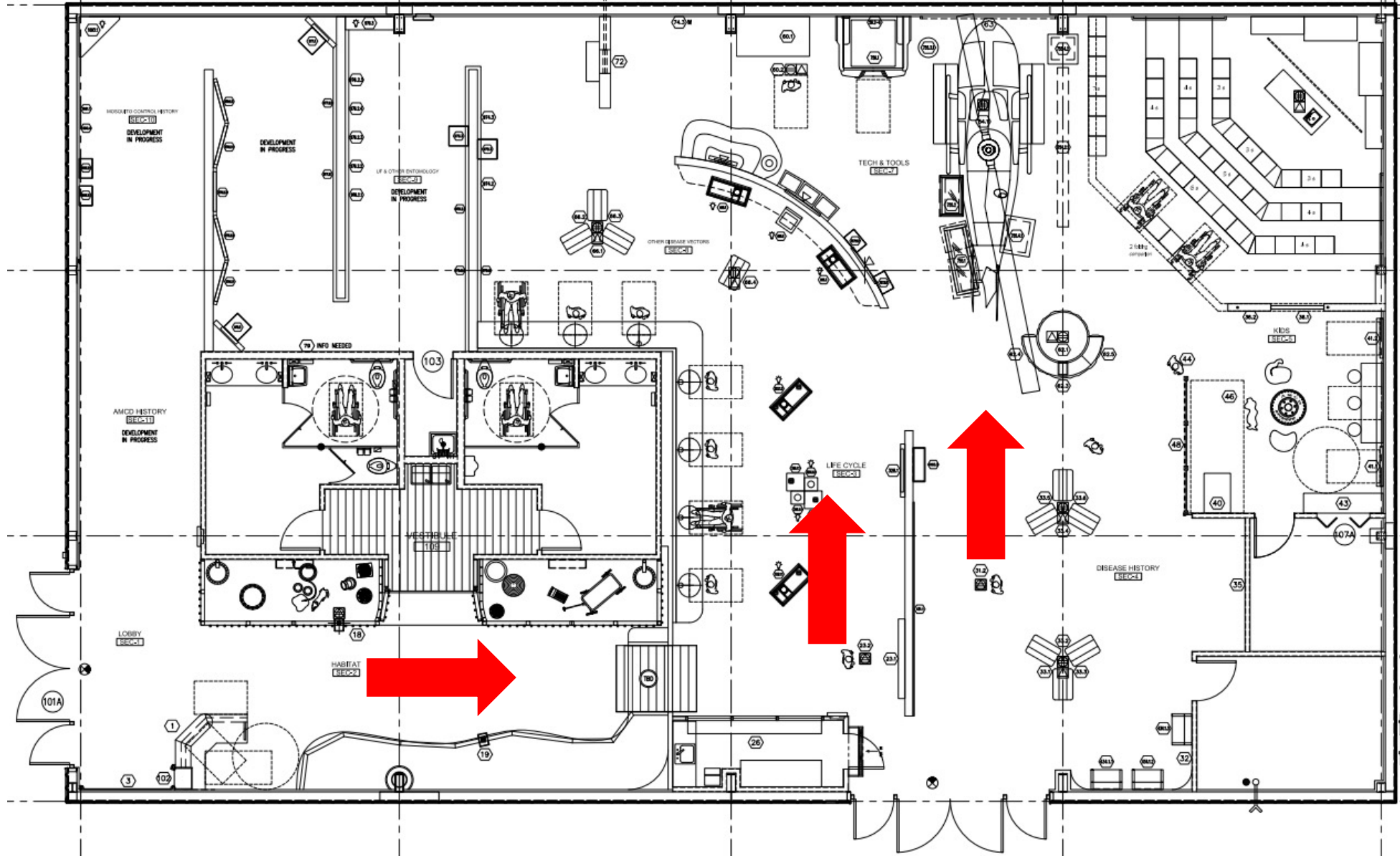
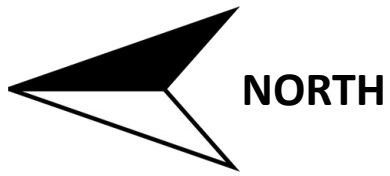
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Indoor Exhibits

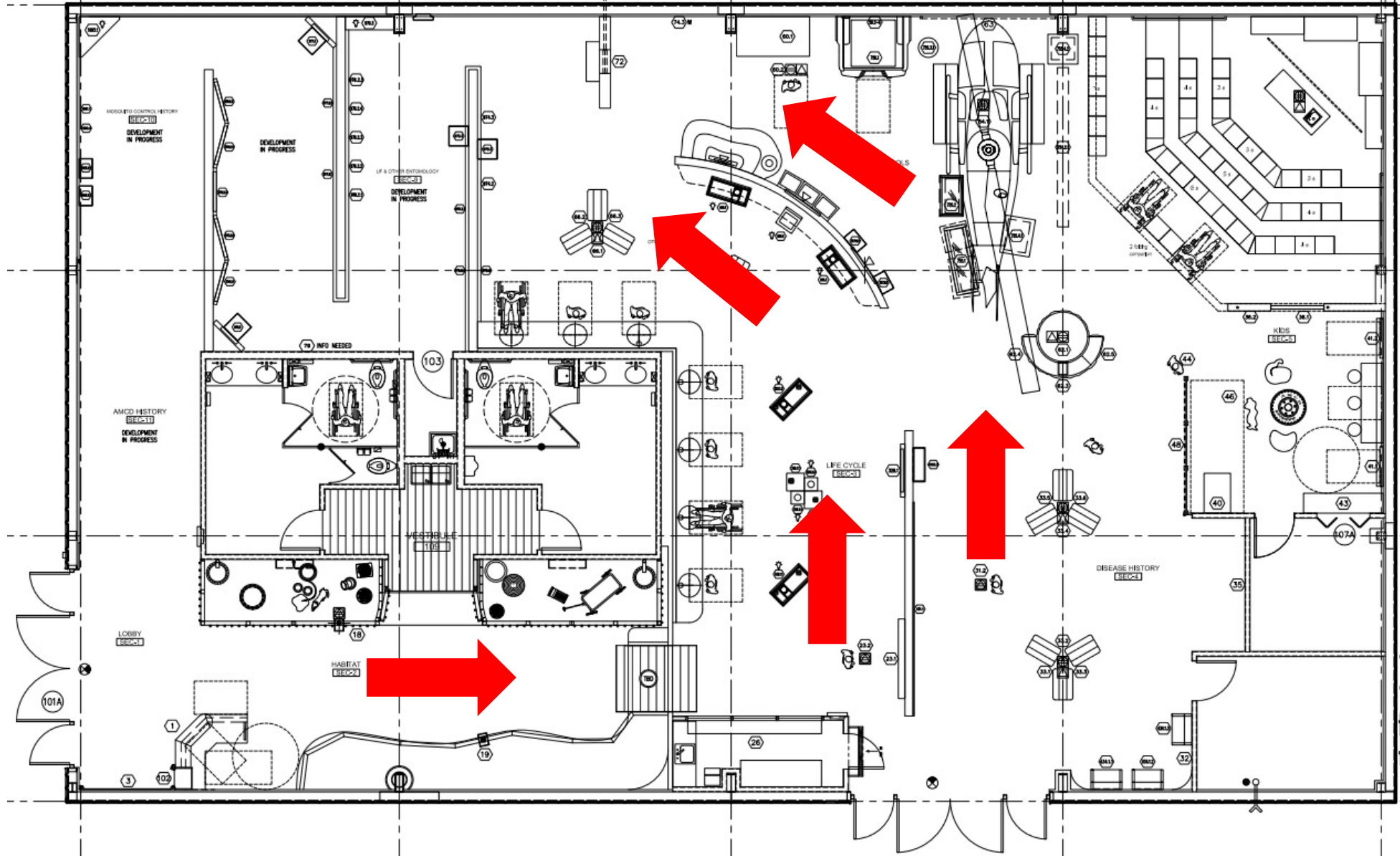
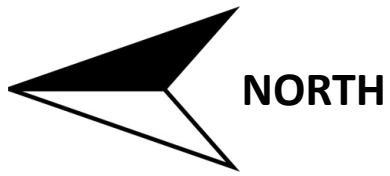
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Indoor Exhibits

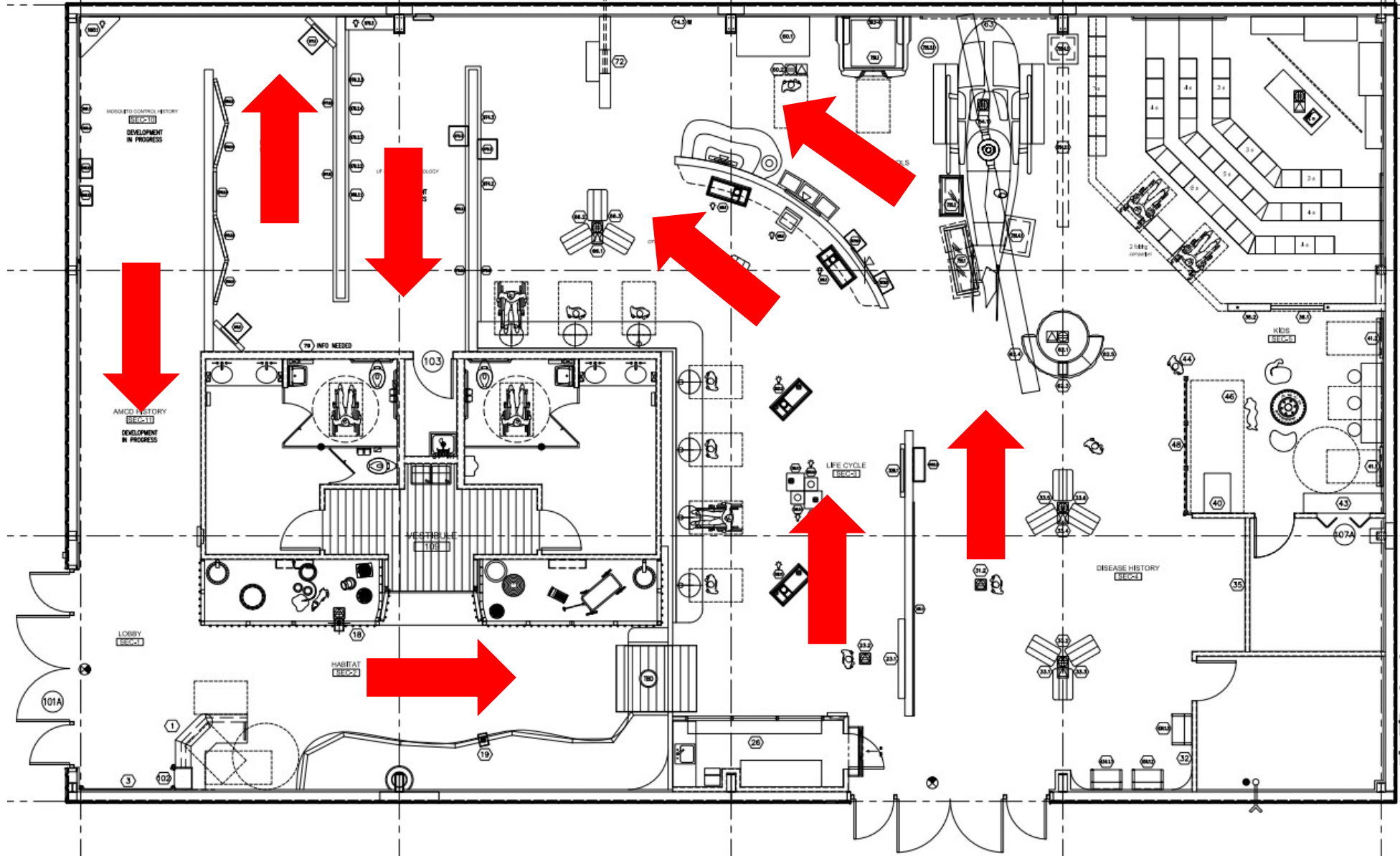
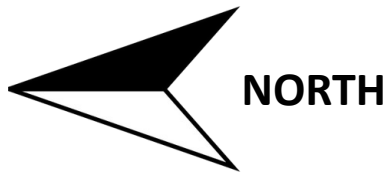
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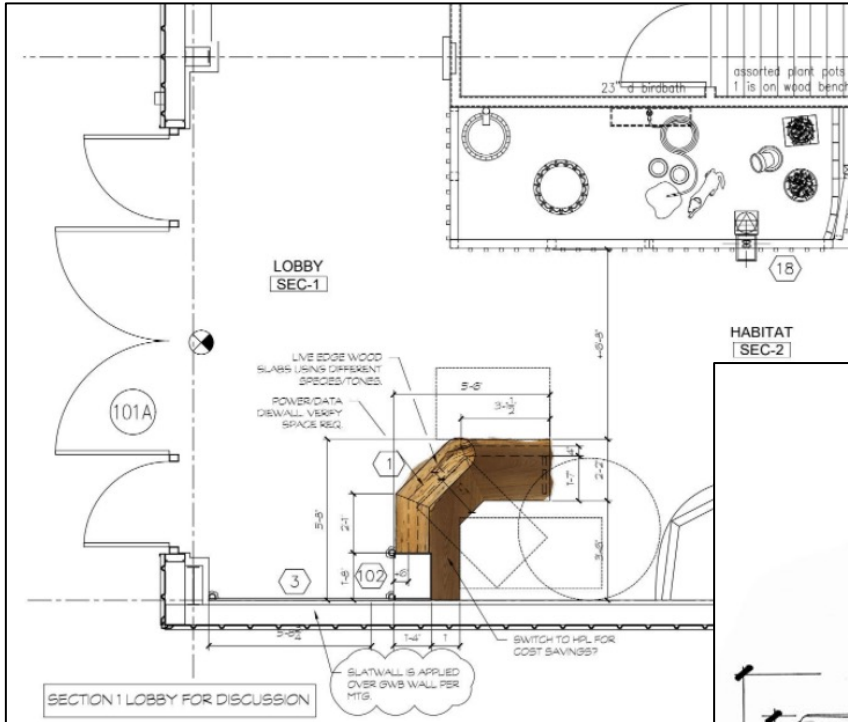
Indoor Exhibits

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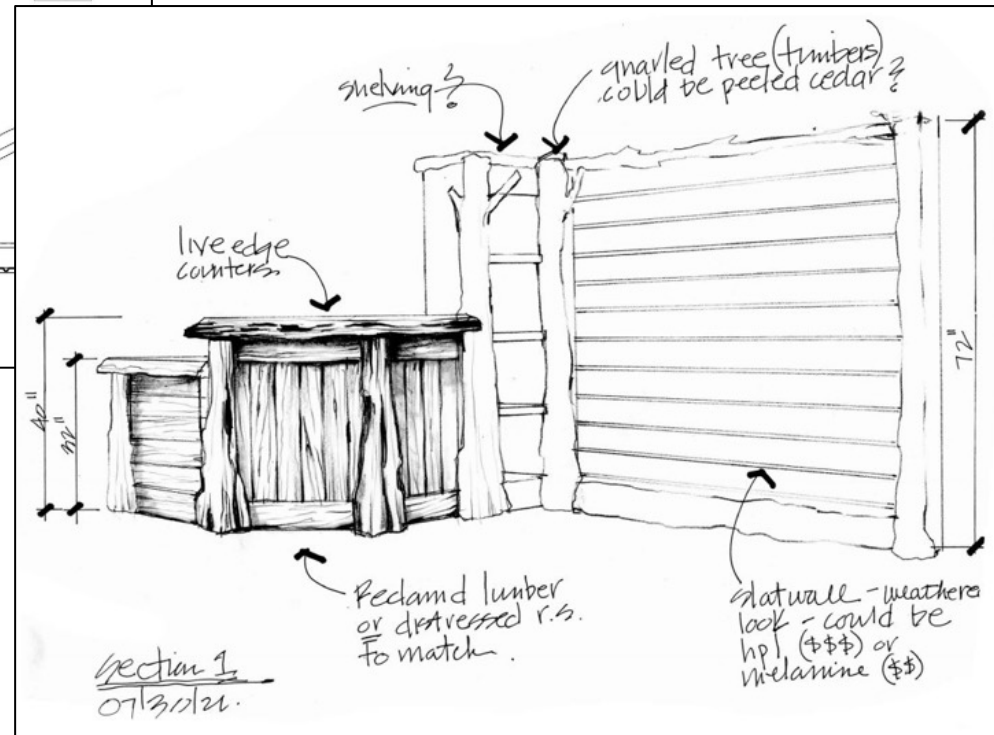
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Indoor Exhibits: Section 1 Lobby



As you walk into the entrance you will see a “Cracker House” to the left, a “Swamp with a big live oak” on the right and a “Salt Marsh” straight ahead:

- The lobby has a small retail area made to blend into the swampy outdoor theme
- The sales counter and slatwall is made from reclaimed wood



Pictures show the set development from blueprint, to artist sketch to finished display

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Indoor Exhibits: Section 2 Habitats & Food Sources



Cracker House:

- This display is a live version of the classic mosquito control drawing seen in pamphlets that will physically show all the breeding spots around a home
- This will also show food sources like a dog in the yard and the guest (human)



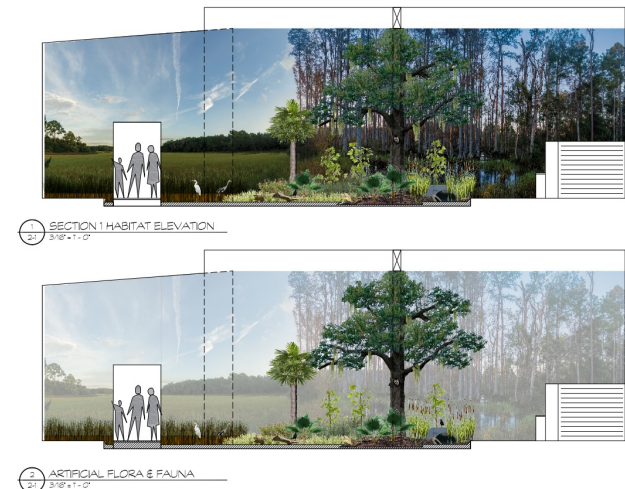
Potential mosquito habitats in and around your home

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Indoor Exhibits: Section 2 Habitats & Food Sources

Swamp:

- The centerpiece is a large oak tree with a tree hole and lots of migratory birds
- This part of the display also has a representation of a ditch with trash, freshwater flood pools and a shallow pond
- There are many animals to include a racoon, alligator, migratory birds and turtles



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Indoor Exhibits: Section 2 Habitats & Food Sources

Salt Marsh:


- This part of the display shows a salt water tidal area with water and low tide, crab holes and native plants
- There is a wood walkway that leads into the salt marsh (really into the main display area)
- Animals in this area include wading birds, crabs, beach mice

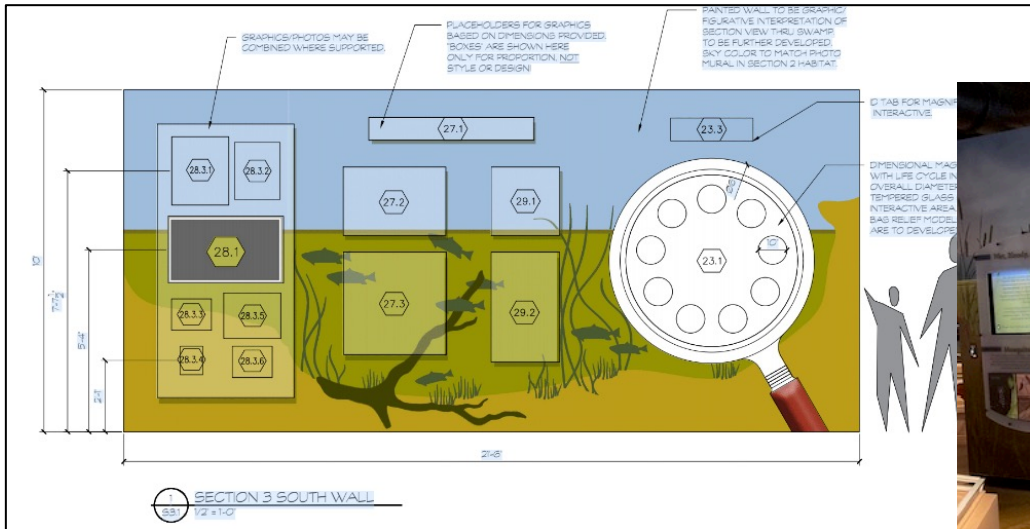


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Indoor Exhibits: Section 3 Life Cycle & Pinned Mosquitoes

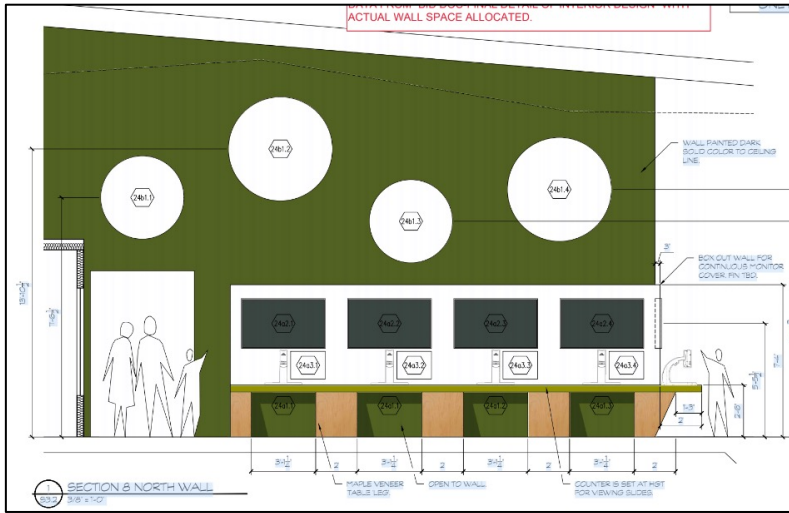
This section has:

- Pinned mosquitoes, with magnifiers 
- Interpretive sign showing the scientific classification of mosquitoes
- Life cycle electronic game in magnifying glass
- Mosquito reproduction video
- Interpretive sign showing the difference between male and female mosquitoes
- Working insectary with large window for guests to see inside



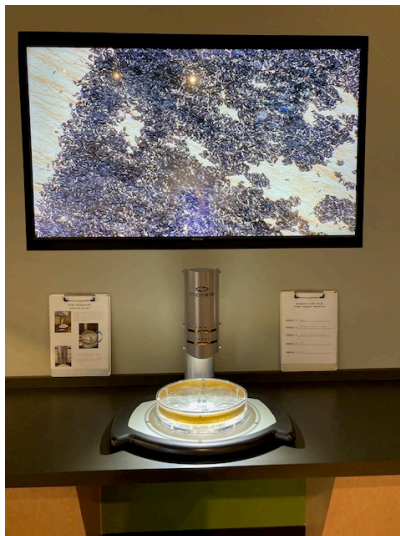
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Indoor Exhibits: Section 3 Life Cycle & Pinned Mosquitoes



Section 3 continued:

- Mosquito eggs & Mosquito egg raft models
- Video microscope's with mosquito sample's
- Large micron microscope pictures of mosquitoes
- Giant mosquito on leaf above insectary



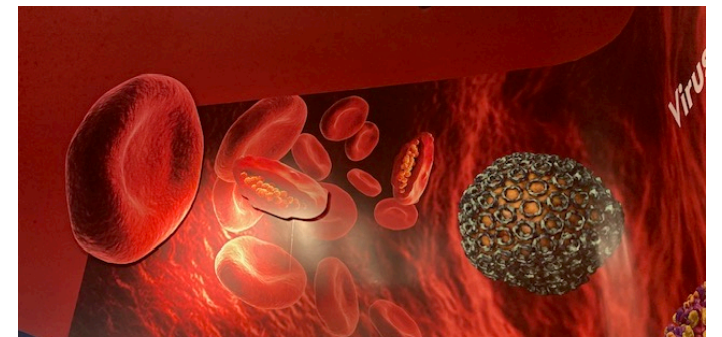
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Indoor Exhibits: Section 4 Mosquito Disease History



This section has:

- Wall dedicated to the various mosquito borne diseases, has examples of the different viruses and large models of diseases
- 6 two sided kiosks that will display images and information on mosquito diseases: Malaria, Dengue, Yellow Fever, West Nile Virus, Eastern Equine Encephalitis and Dog Heart worm



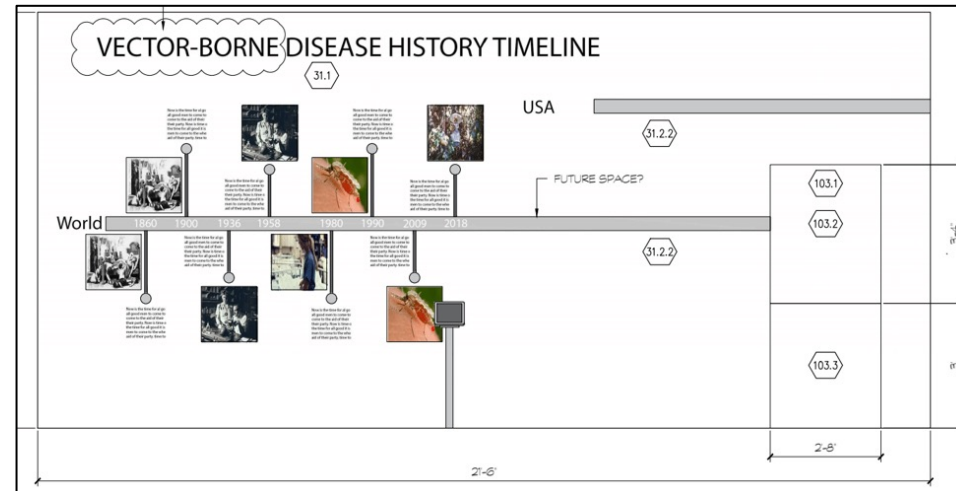
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Indoor Exhibits: Section 4 Mosquito Disease History



Section 4 continued:

- Timeline of Vector-Borne Disease and Modern Medical Entomology, this will be interactive with ability to choose a time and view in-depth data on each event on a tablet
- Florida timeline/interpretive sign
- An interactive computer generated heat map showing mosquito disease origin locations growing to the current coverage worldwide






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Indoor Exhibits: Section 5 Kids area



This section has:

- WSP toss game (like corn hole but with small bean bags into a storm drain)
- Coloring area: Tire table in a “puddle” of water with plastic “seats” of larva, pupa and eggs
- 2 spin games, 1 will be life cycle 
- Live insect and animal display 
- Live ant farm 



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Indoor Exhibits: Section 5 Kids Area

Section 5 continued:

- Microscopes with insects and insect parts
- Cartoon adult mosquitoes flying, on wall
- Mosquito Technician photo opportunity



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Indoor Exhibits: Section 6 Classroom



Classroom:

- Seating for about 50, sunken amphitheater style
- Wet lab with power, data, sink, hot & cold water, RO water
- Full A/V system with screen for PowerPoint presentations or showing movies
- Cabinets with displays (glass) and storage (solid door)
- Mosquito movie posters



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Indoor Exhibits: Section 7 Mosquito Control Technology & Tools



This section has:

- Bell 206 flight simulator (real aircraft) with a choice of missions to fly
- Truck ULV display with truck bed, ULV machine and video examples of spraying
- Bed net display with a real bed and bed net and interactive tablet
- Old & new thermal fogger examples
- Back pack ULV fogger display (in and on packing crates)



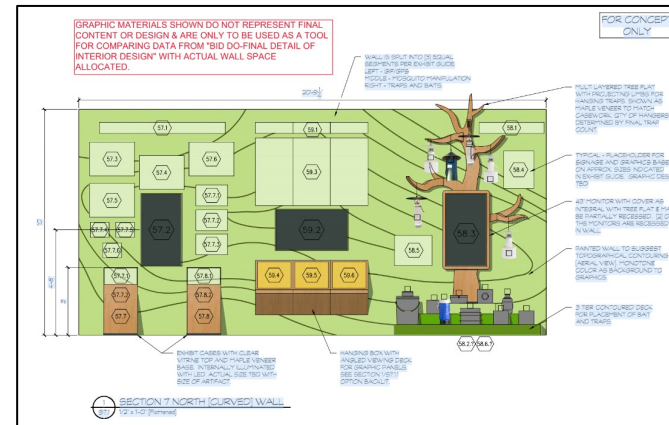
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Indoor Exhibits: Section 7 Mosquito Control Technology & Tools



Section 7 continued:

- Display that outlines the use of GPS and GIS in mosquito control
- Display that shows other control methods like SIT and IIT
- A mosquito “Trap Tree” that displays various hanging and ground based trapping methods
- Mosquito aquatic predators: a fish tank full of Gambusia and a interactive tablet with information on aquatic predators

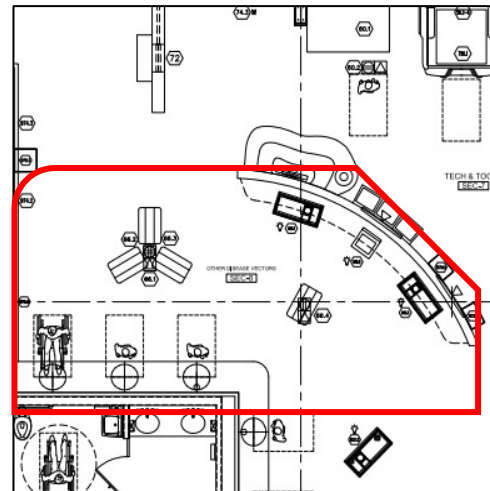


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Indoor Exhibits: Section 8 Anthropoids of Public Health Importance

This section has:

- Features other disease vectors like ticks, lice, flies, fleas, triatome bug and others
- Pinned examples of these vectors with magnifier
- Video microscope's with other vector sample's (like section 3)
- Large micron microscope pictures of other vectors (like section 3)
- 4 kiosk that will display images and information on the 4 anthropoids of public health importance (like section 4)
- Interpretive signs & photos on wall behind pinned examples



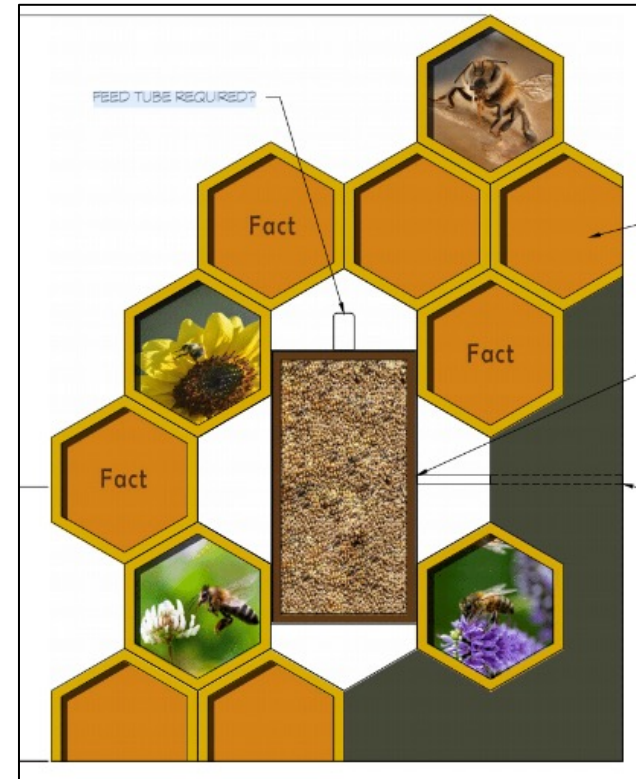
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Indoor Exhibits: Section 9 Entomology is Fun



This section has:

- Hanging bee hive ceiling grid
- Observation bee hive exhibit (real indoor bee hive)
- Bug models: Bee Mimic Fly, Honey Bee



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Indoor Exhibits: Section 9 Entomology is Fun



Section 9 continued:

- Wall displays with pinned insect examples, video, interpretive signs and photos
- FDAC, Department of Plant Industry display
- Bug models: Golden Orb Weaver, Dung Beetle, Robber Fly, Green Orchid Bee, Black Widow



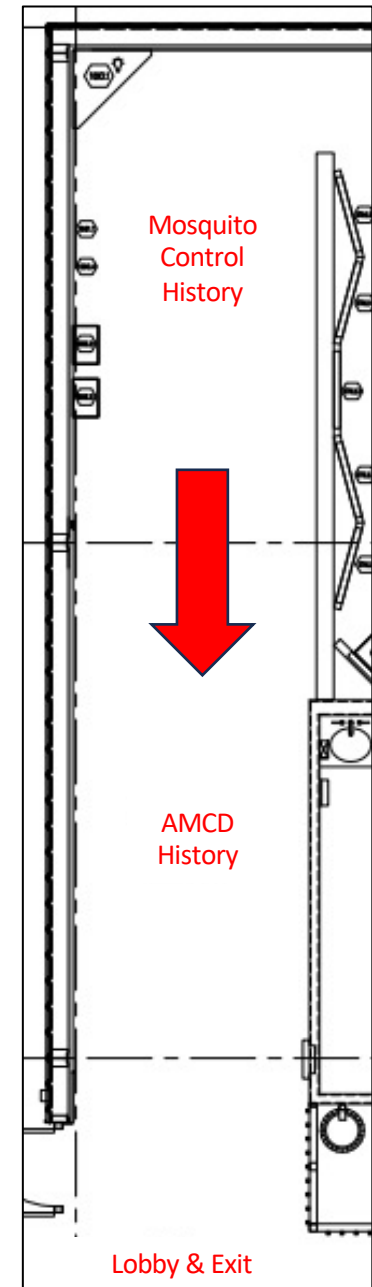
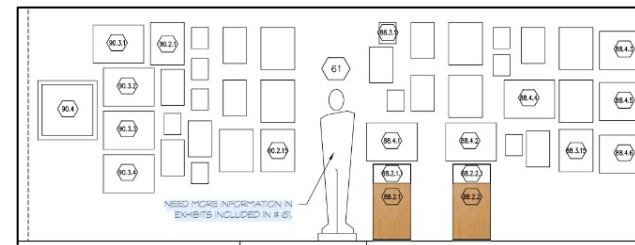
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Indoor Exhibits: Section 10 Mosquito Control History



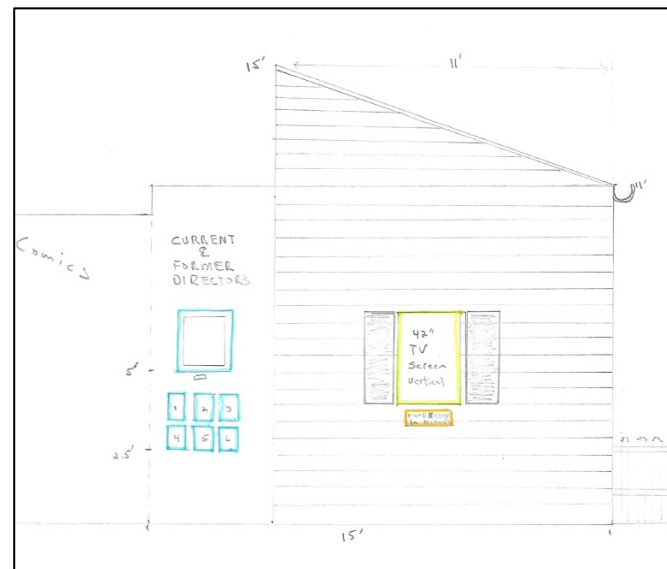
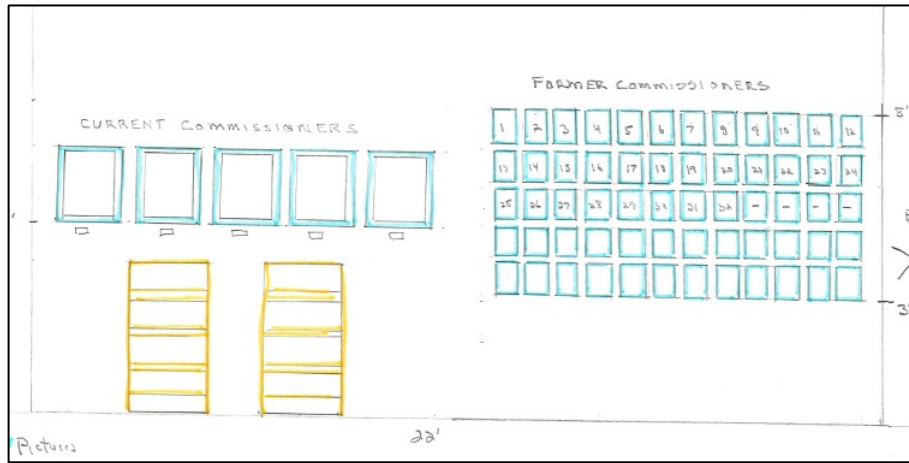
This section will have:

- Mosquito Control in Florida with a video history with pictures and captions
- Marsh management interpretive sign
- USA mosquito control development and pioneers interpretive sign
- US military's contribution to mosquito control display
- FMCA history display
- AMCA history display
- History of and improvement of pesticides used in mosquito control "Going Green"
- Mosquito control in comics



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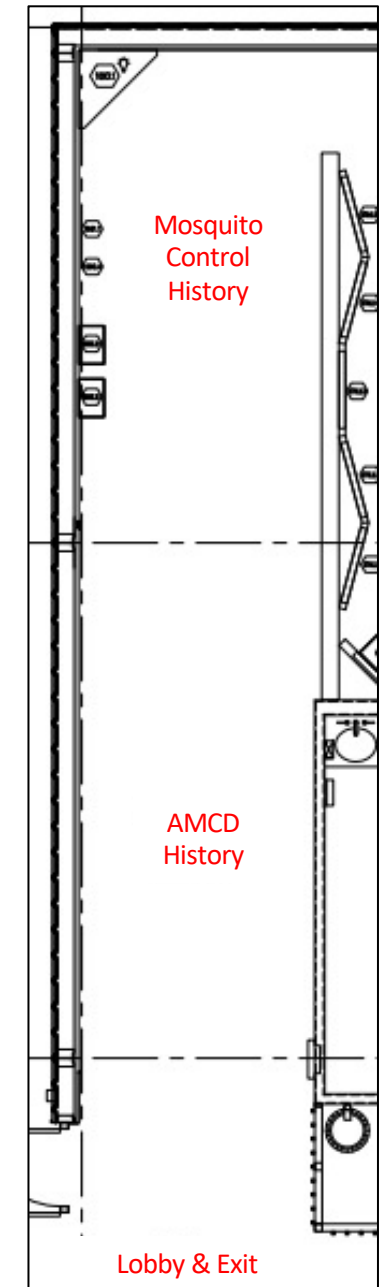
Indoor Exhibits: Section 11 AMCD History



Good example of
concept drawings
verses set design
and finished
product

This section will have:

- Pictures of all the past Commissioners
- Pictures of Current Commissioners
- Pictures of past Directors
- Picture of current Director
- Video screen (Disguised as a window in the cracker house) showing history of AMCD through pictures
- Pamphlets



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AMCD could use HELP with:

- Contributions of mosquitoes and other disease vectors for our pinned displays
- History of mosquito control districts and old photos





AMCD Board of Commissioners
AMCD staff
American Long Ray
Artistic Contractors
Aslyn Baringer
Central Life Sciences
Clarke
Compass Group Constriction
Dr. Nathan Burkett-Cadena
Dr. Jonathan Day
Lindahl Design
N8 Creative Studios
Richard Albrecht

QUESTIONS?

If we have time, or see me after!

REMINDER:

**AMCD will be holding it's 19th Annual Arbovirus
Surveillance and Mosquito Control Workshop
March 26 – 28, 2024**

