



Mixed Species Management and Facility Design



NC Zoo's Watani Plains

- African Savannah
 - 40-acres
 - Heavily-turfed
 - Dotted with shade trees
 - 2-acre lake
 - Large pond
 - Mud wallows
 - Artificial termite mounds that double as feeders
- 
- A photograph of a savanna landscape. In the foreground, several antelope-like animals, possibly reedbuck or similar, are grazing in a grassy field. They have light brown bodies with white stripes. In the background, there are more animals, including a larger dark-colored one, and several trees. A large tree trunk is visible on the left side of the image. The overall scene is a lush, green savanna.

Species list

Bongo

Fringe-eared oryx

Nile lechwe

Sitatunga

Thomson's gazelle

Common Waterbuck

Greater kudu

Ostrich

Spur-winged geese

White rhino



Challenges

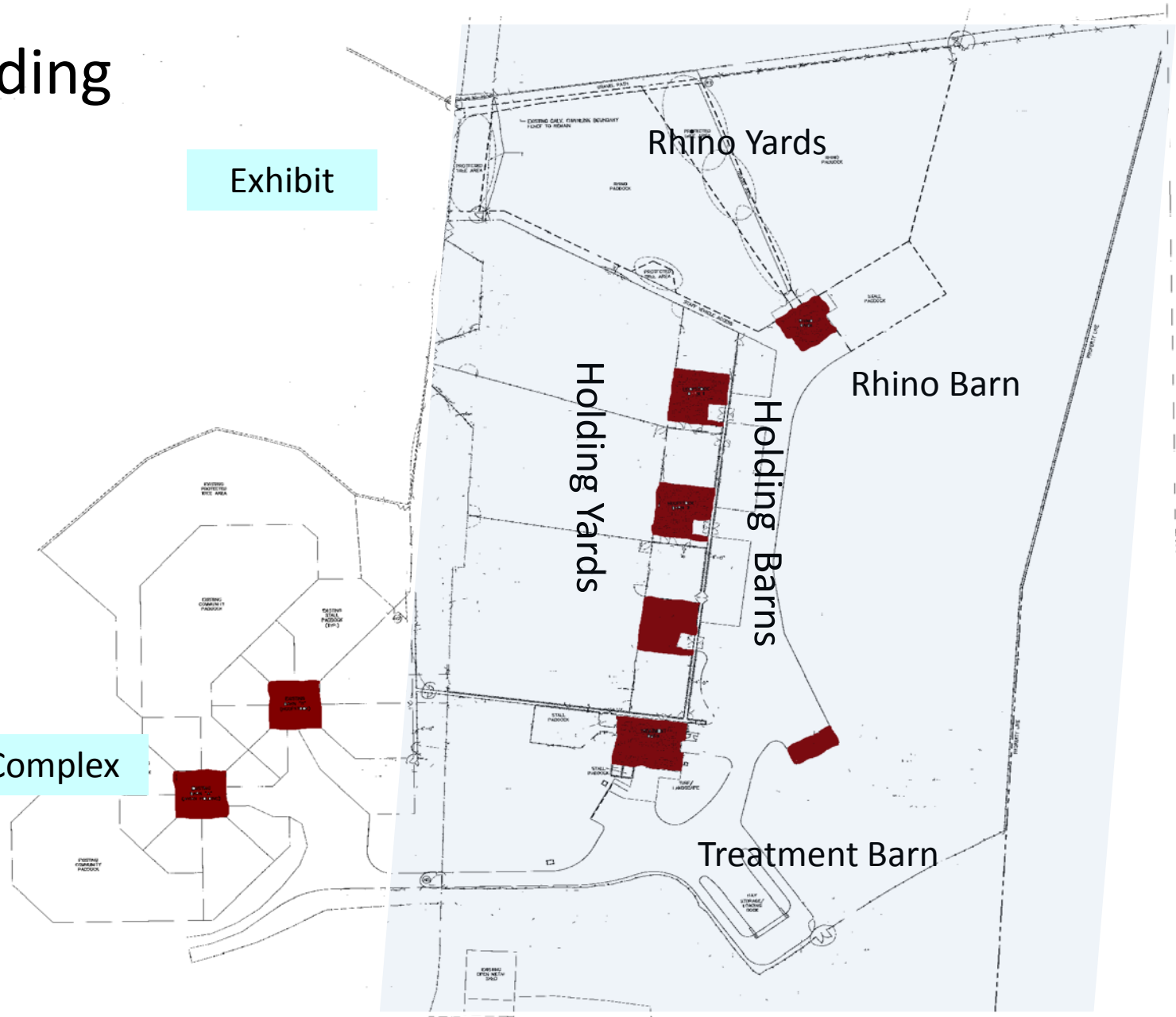
- **Insufficient winter housing**
 - **Herd dynamics**
 - **Logistics for capture and restraint**
 - **Managing breeding herds**
 - **Managing nutrition**
- 
- A scenic landscape featuring a herd of deer in a field, a lake, and snow-covered trees. The deer are gathered in a grassy field in the foreground, with a calm lake reflecting the sky in the middle ground. The background is filled with dense evergreen trees heavily laden with snow. In the foreground on the right, there are bare tree branches with some remaining yellow and orange leaves, suggesting a late autumn or early winter setting.



The Holding

Exhibit

Old Complex



Renovation Goals

- Provide more winter housing
 - Accommodate large herds of mixed species antelope
 - Improved Management of veterinary cases
 - Sort individuals
 - Accommodate surplus antelope
 - Add quarantine space
 - Allow for operant conditioning
- 
- A photograph of a herd of antelope in a grassy field. In the background, there is a pond and a dense forest of green trees. The antelope are of various species, including some with large, curved horns. The scene is set in a natural, outdoor environment.

Goals (continued)

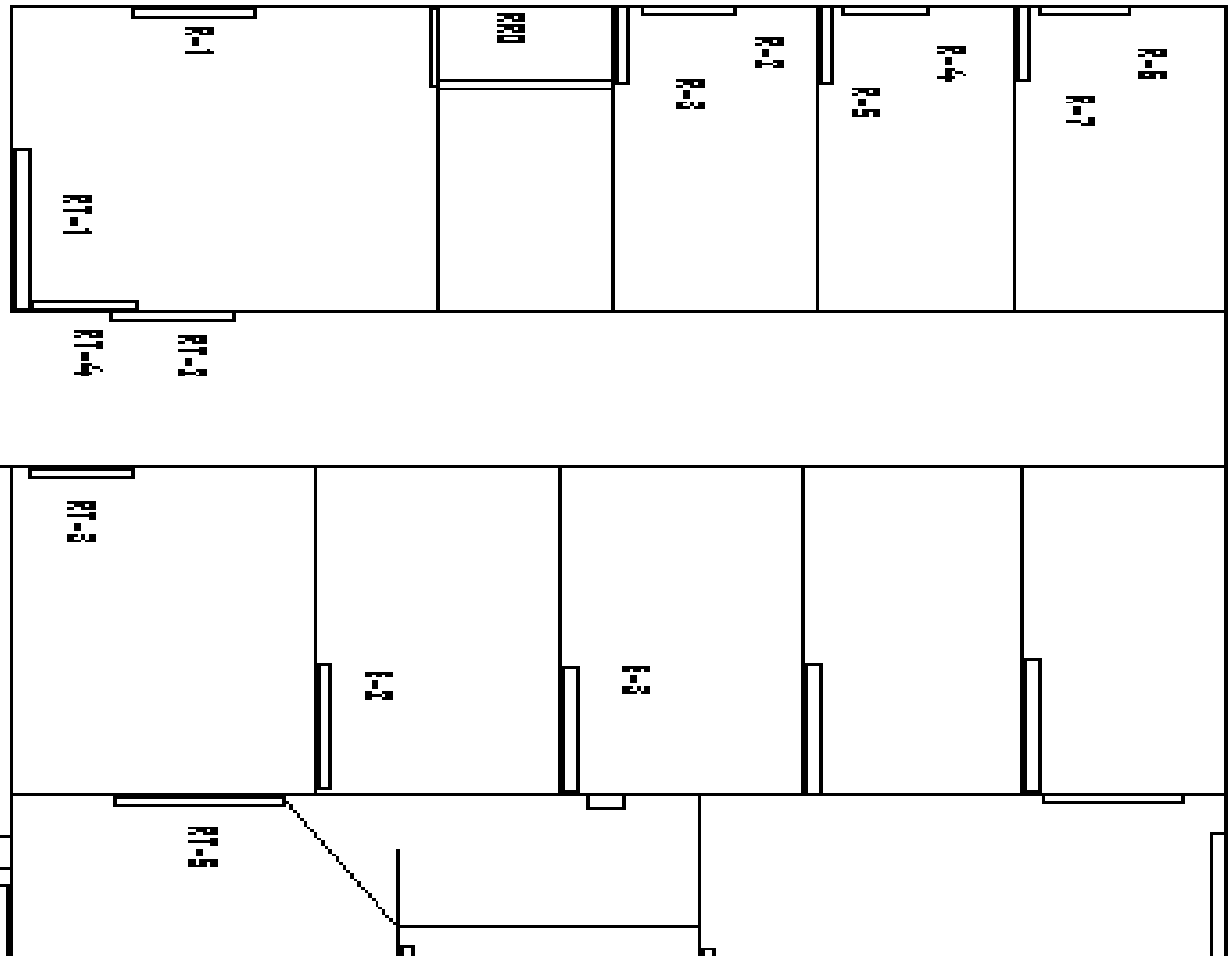
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- **Enhance rhino breeding program**
 - **Accommodate surplus animals**
 - **Manage pre-shipment**
 - **Add quarantine space**
 - **Accommodate “teaser” male**
 - **Accommodate special situations, e.g. veterinary, reproduction**
 - **Add retirement space**



The North Carolina Zoo's Watani Grassland Reserve African Plains Barns Complex



E/R Barn



Rhinos on exhibit



Termite mound feeders

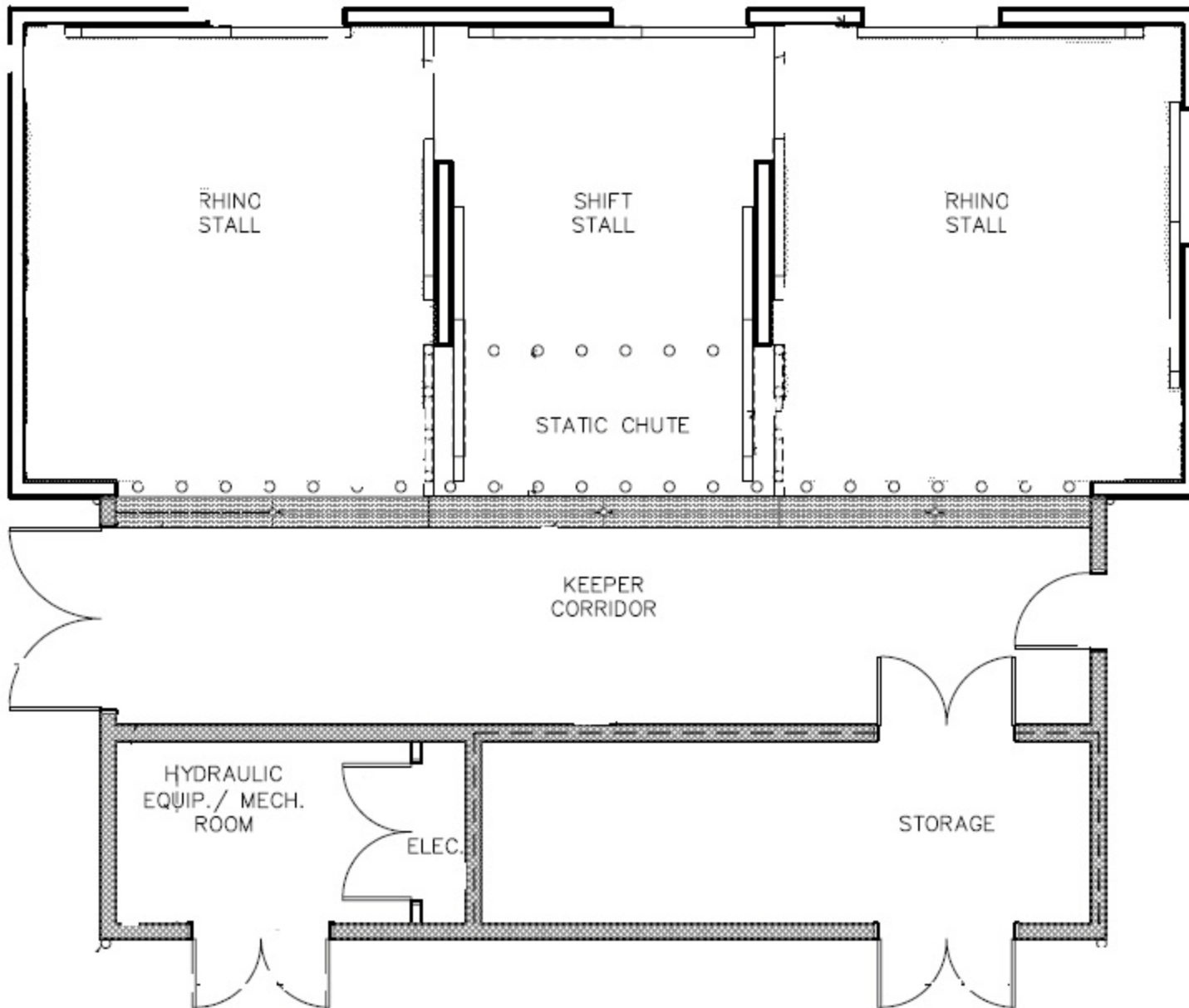


Alfalfa creep



Heated shelter

Rhino Annex aka Surplus Rhino Holding



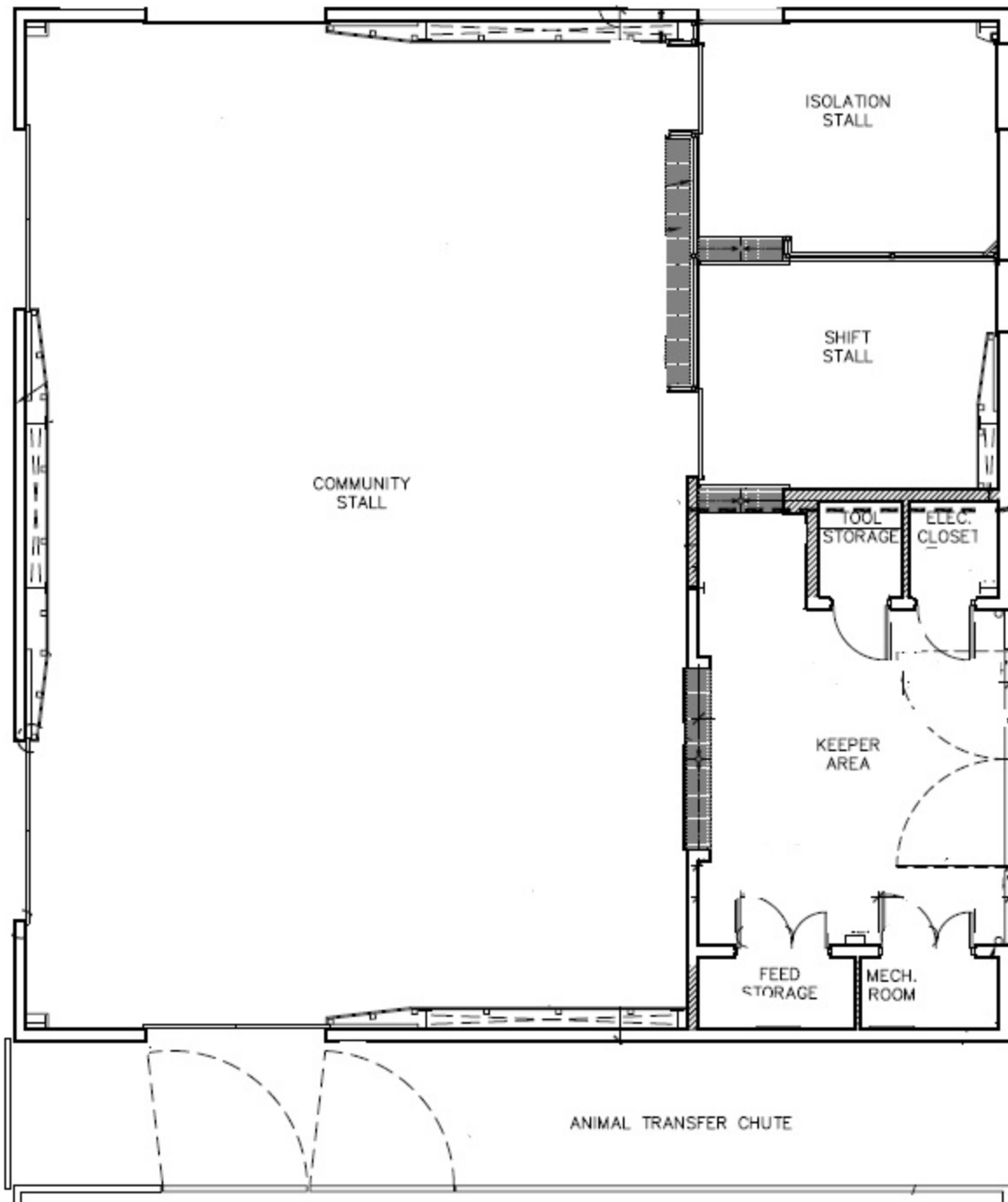
- 20'x20' holding stalls x2
- 13'x20' shift stall
- Static training chute
- In-Floor Radiant Heat
- Supplemental radiant overhead heating
- Resilient flooring



Two 1-acre holding paddocks
Small side holding yard

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Hoofstock Holding Barn

- 55'x35' community stall
- Two 15'x12' holding stalls
- In-floor radiant heating
- Large doors operated by hydraulics
- Access to chute system

ANIMAL TRANSFER

Hoofstock Holding Barns



35'x50' community stalls




2 small culling/holding stalls




Access to chute system



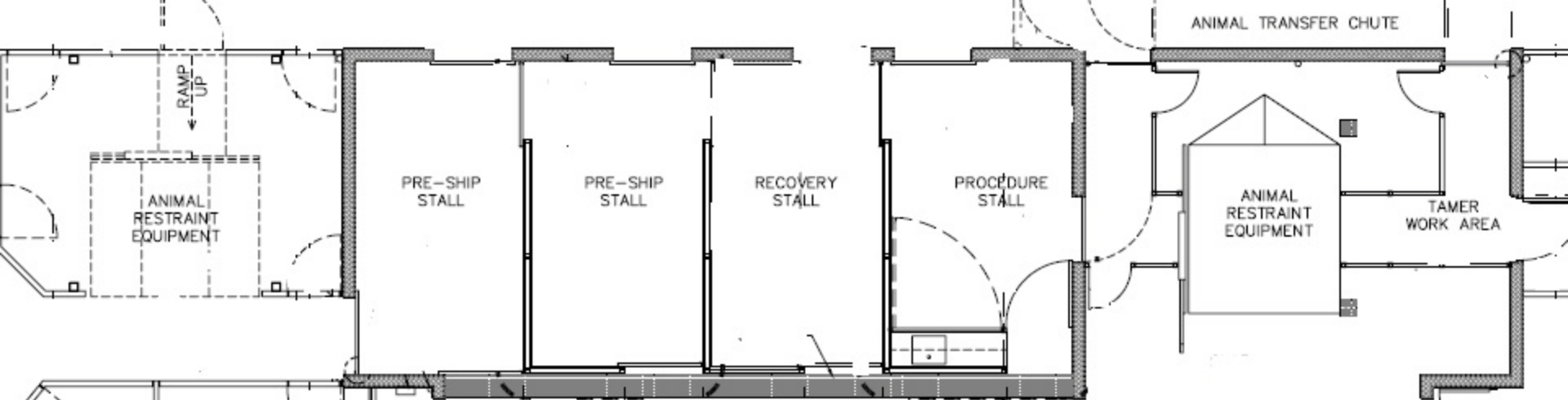
Holding



**Large front
paddocks x3**
~ 1 acre each



Smaller side paddocks x4
~ 75'x75' each



Hoofstock Treatment Barn

- Hydraulic tamer
- Drop floor tamer
- Six 10'x20' stalls
 - Procedure
 - Recovery
 - Holding x2
 - Hand-rearing x2
- Quarantine yard
- Small stall paddocks x2



- Keeper office with restroom
- Food prep kitchen w/ ice machine & W/D
- Workshop/ storage

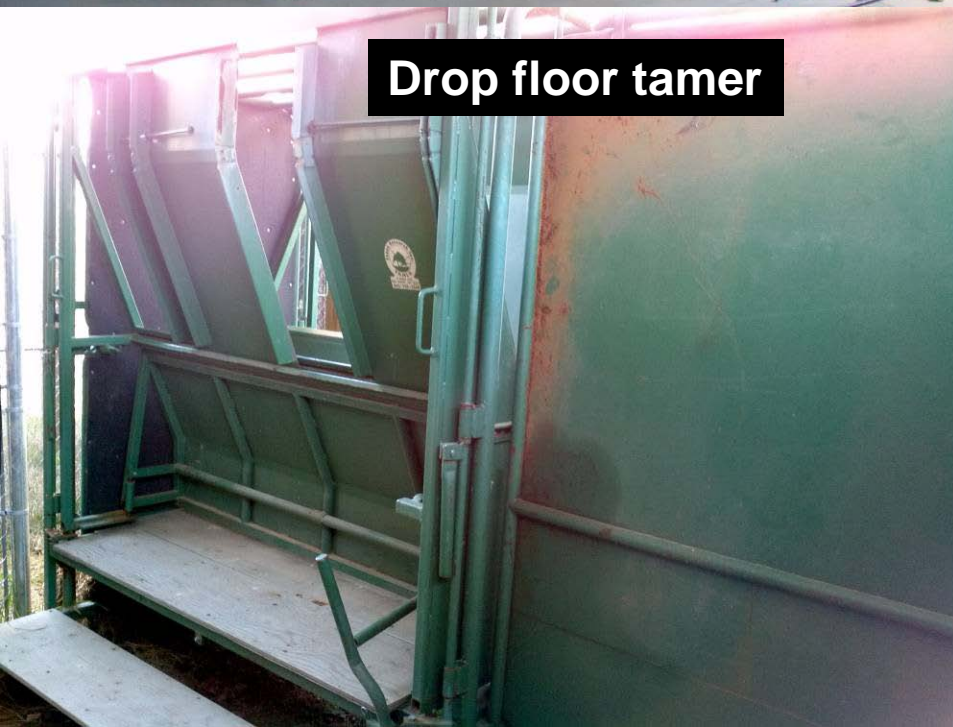
Hydraulic tamer



Animal perspective



Drop floor tamer



Animal perspective





Procedure



Recovery



Holding

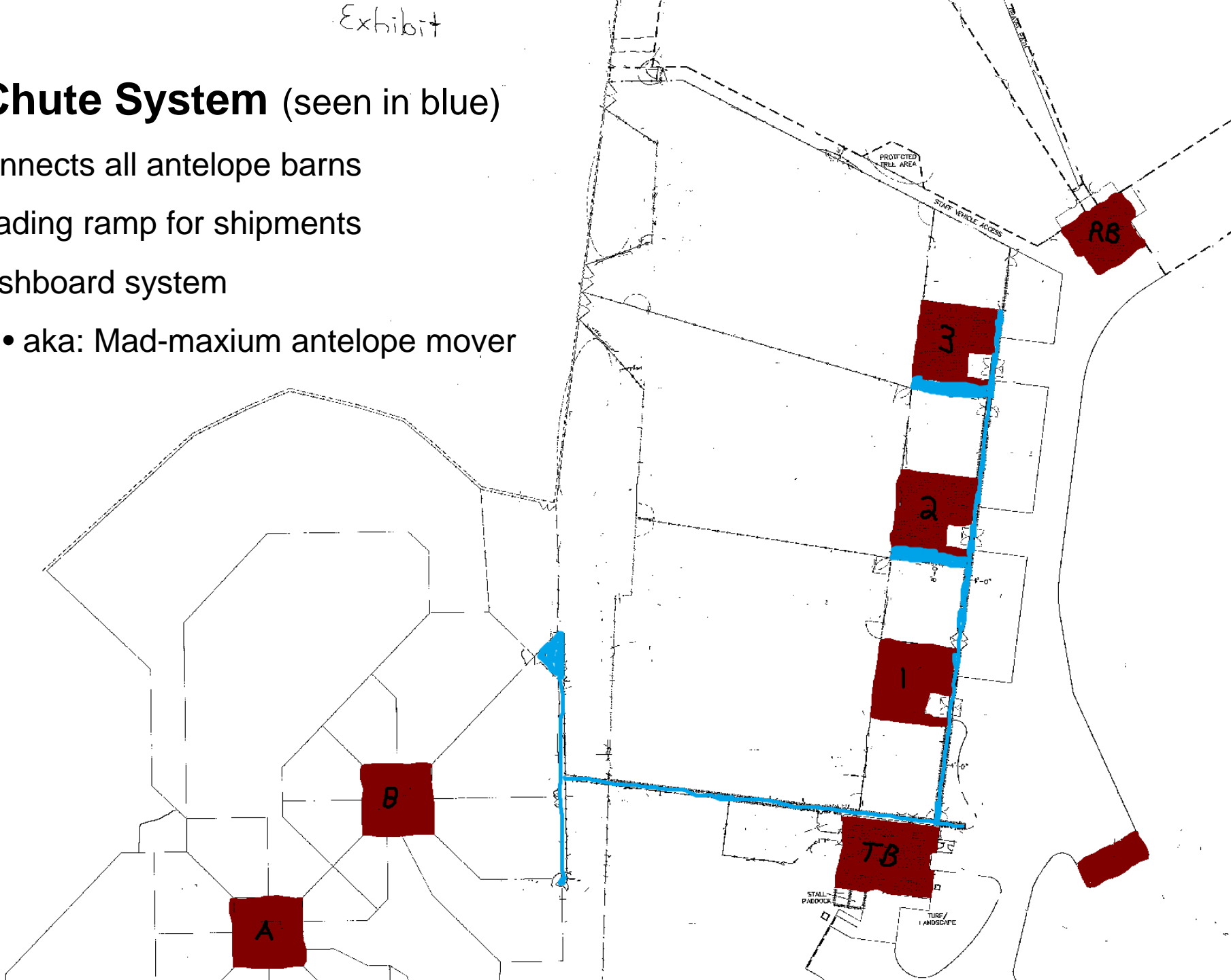


Hand-rearing

Exhibit

Chute System (seen in blue)

- Connects all antelope barns
- Loading ramp for shipments
- Pushboard system
 - aka: Mad-maxium antelope mover





4'-wide main chute connecting new barns to treatment barn



4'-wide chute connecting treatment barn to old barn complex



Adjustable height loading ramp



8'-wide culling chute from large paddocks to 4' chute



Normal gate set up to allow access between large paddocks

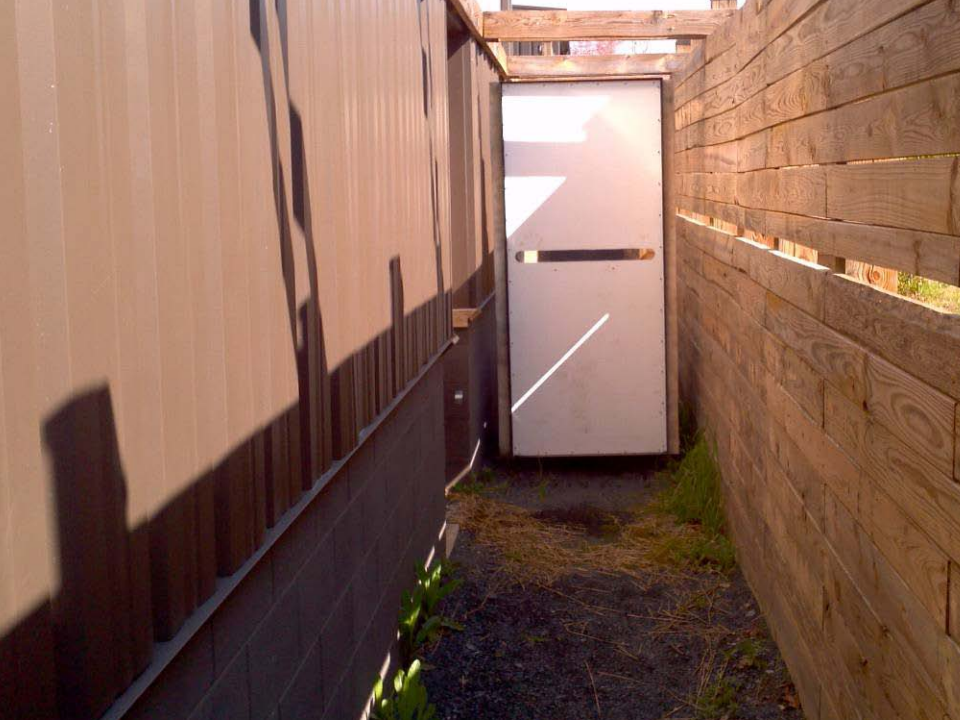


Gate set up to push animals from large paddock into small side paddock



Gate set up to push from large paddock to culling chute

Mad-maxium push board system



How it works

Problems

- Continued difficulty sorting individuals
 - Entrance into chute system
 - Isolation from the herd
- Conflicts with public visibility
- Problems with physical restraints
 - right angles
 - Gap in the follow distance
- Limited use of treatment stall

