



## **Animal Estates 1.0: New York plans for wood constructed estates for the Whitney Museum**

**These are plans and specs for the 12 “Animal Estates” to be located in the Whitney sculpture court for the 2008 Biennial exhibition. The bold text refers to elements to be built by those at the Whitney. The plain text describes elements that will be provided or fabricated by the artist. Many of the animal homes are located up on posts, *the text in italics* refers to specifications of those posts.**

### **General Notes:**

- All nest boxes to be constructed of the same weather-resistant wood, and stained black.
- The holes of all nestboxes should be covered from the inside with black mesh to prevent pigeons and others from roosting.
- These nest boxes are meant to approximate what anyone could build at home by themselves, so they need not be complicated or perfectly finished.

### **Schedule:**

[Feb 3 / Fritz arrives in NYC]

Feb 4-8 / install wood structure for beaver pond, dam and lodge (Whitney team)

Feb 5 / deliver pond liner (arranged by Noel Rose, received by Whitney team)

Feb 8 / lay pond liner (Noel Rose, Whitney team)

[Feb 9-10 / Fritz in Austin, TX]

Feb 8-13 / install and test pond equipment and fill (Noel Rose)

Feb 8-13 / install nestbox posts & lumber support for nest @ canopy (Whitney team)

**Feb 13 / deadline: install all built-in elements in courtyard (Whitney team)**

[Feb 14-16 / Fritz trip out of town to collect wood and branches]

Feb 17-20 / fabricate eagles nest & beaver lodge interior @ Firehouse (Fritz, Erica & Firehouse team)

Feb 21-24 / arrange beaver cut wood on site, final details (Fritz, Erica & team)

**Feb 25 / deadline: delivery & install of plaques, eagle nest & lodge int. (Fritz, Erica & team)**

### **Contacts:**

Artist - Fritz Haeg / 323.829.5998 c / [fritz@fritzhaeg.com](mailto:fritz@fritzhaeg.com)

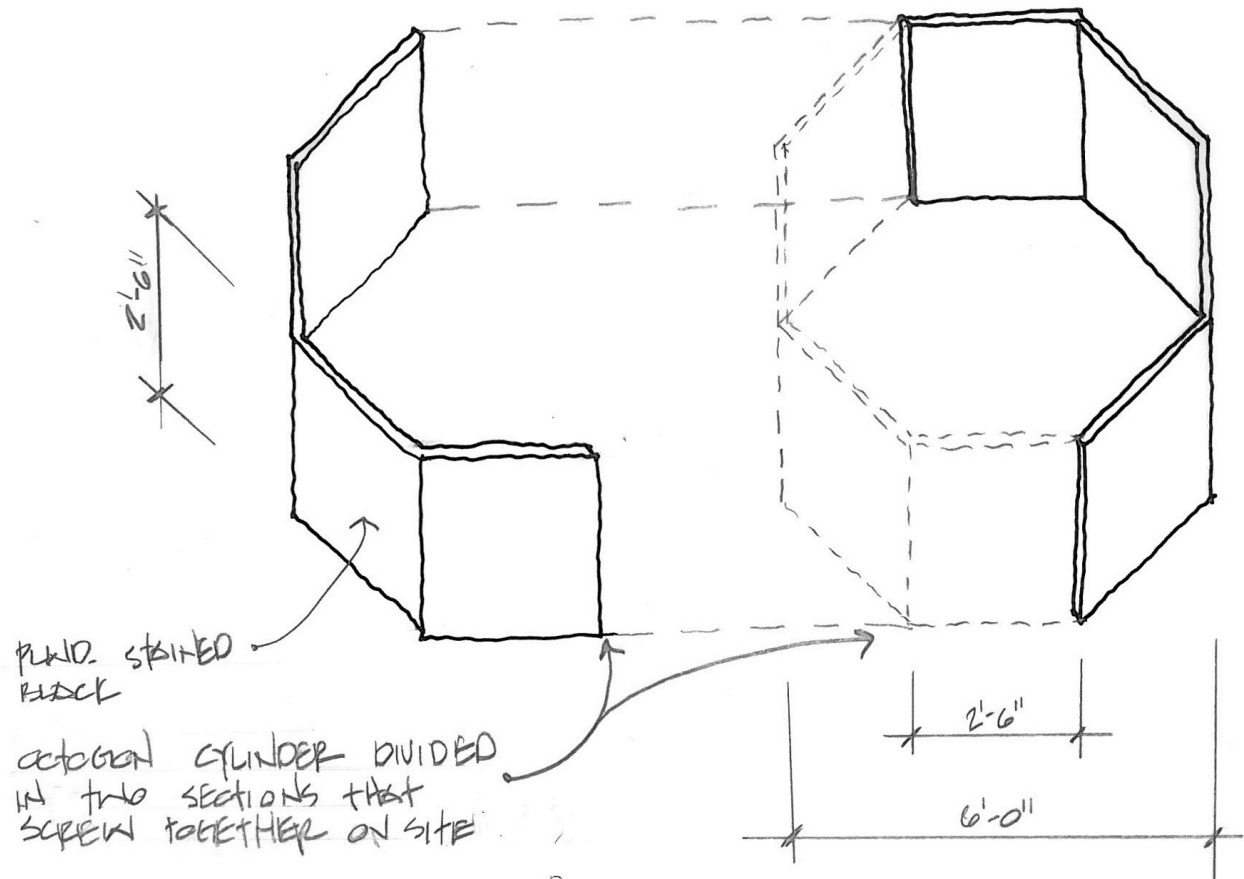
Assistant - Erica Browne / [email@ericabrowne.com](mailto:email@ericabrowne.com) / 718-928-417

Pond consultant - Noel Rose / [noelrose1@gmail.com](mailto:noelrose1@gmail.com) / 718-781-2830

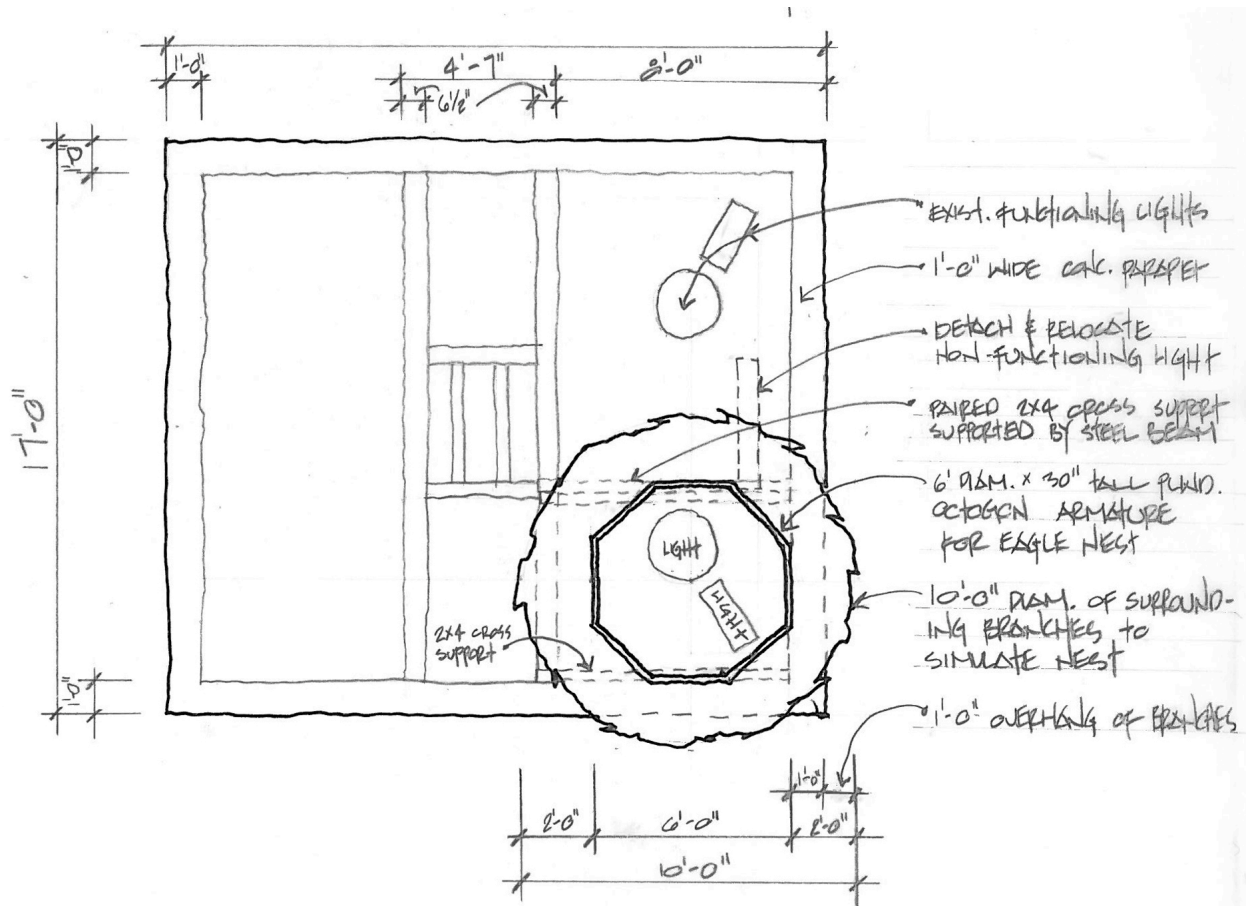
Graphics (plaques & flags) - Penny Hardy / [penny@psnewyork.com](mailto:penny@psnewyork.com) / 917-482-7642

**1.01: Bald Eagle {Haliaeetus leucocephalus}**

- This is a drawing of the central drum base for the nest, the rest will be fabricated off-site.
- This shape will be tested in place, around the lighting on top of the canopy before taking it off-site to finish with twigs and branches.
- Dimensional lumber may need to be used as nailers at the joints to reinforce the structure.



- The two halves of the 6' h x 30" tall octagon drum will screw together on-site after the exterior of each has been covered with branches and twigs approx. 2' deep.
- The drum will rest in part on the concrete parapet and in part on two 4x4's laid on top of the steel cross bracing on the canopy.



**New York City Animal Estate 1.02 Barn Owl {Tyto alba}**

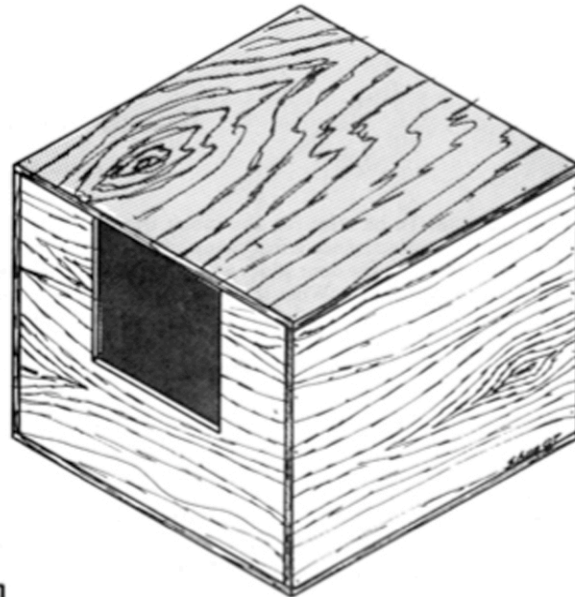
- Note revised location & dimension of opening: 5" x 5", about 2" from top.
- Install a small branch protruding below the entry hole as a roost.
- Locate at northwest corner of court (base in planter) atop a large ROUND post (6" diam?) that is 12' above sidewalk level, approx. 24' above court level.

**HOW TO BUILD A BARN OWL NEST BOX**

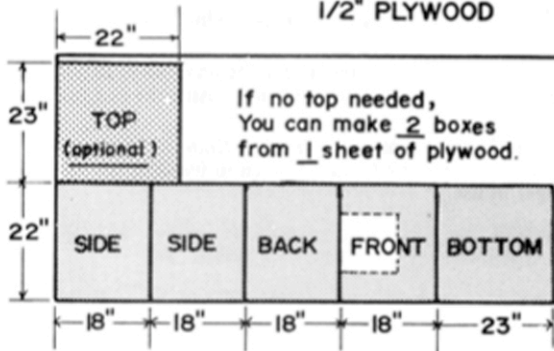


Drawings by Steve Gum

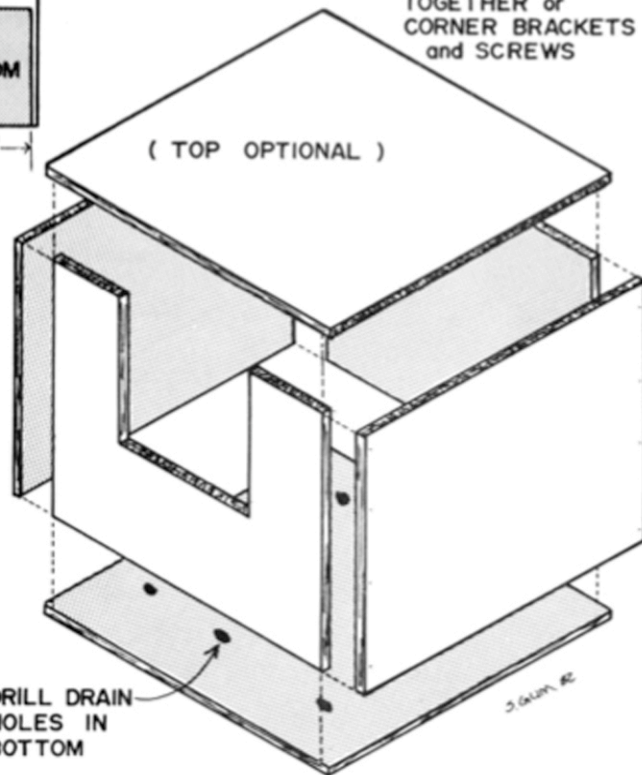
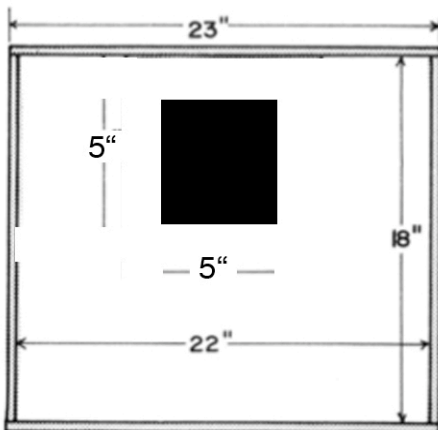
Missouri Department of Conservation



ALL PARTS FROM A 4' x 8' SHEET 1/2" PLYWOOD

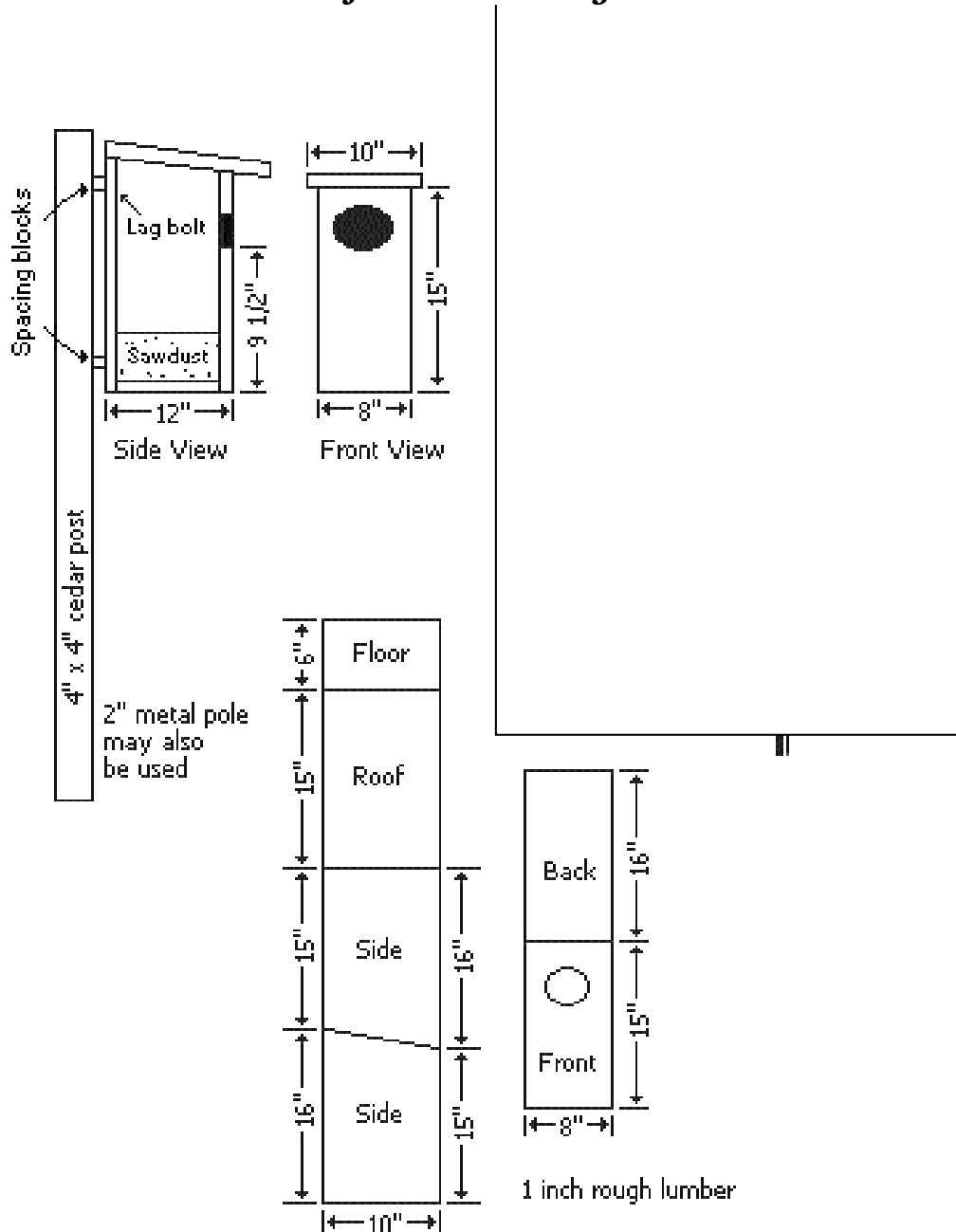


GLUE and NAIL TOGETHER or CORNER BRACKETS and SCREWS



### 1.03 Wood Duck {*Aix sponsa*}

- The entrance hole should be an oval that is 3 inches high and 4 inches wide.
- A 3-inch wide strip of 1/4-inch mesh hardware cloth should be securely fastened to the inside of the box under the entrance to function as a ladder for the hen and newly hatched ducklings. The cut edges of this cloth should be folded back before insertion to avoid injury to the ducklings.
- *Locate on the wood duck house atop an eight foot 4x4 SQUARE post, located in the center of the beaver lodge mound.*



#### **1.04 Purple Martin {Progne subis}**

- The artist will provide the actual bird houses which consist of a series (5-10?) of hollowed out gourds (10" tall) on brackets that will attach to the wood post at varying heights

***- Provide a 4" diameter, 12' tall ROUND wood post on a sturdy base that will sit at the lowest level of the beaver pond, a level area 36"x36" in 8" of water. (This needs to be self-supporting since we are not able to penetrate the pond liner). The base could be sand bagged, and should be cushioned to prevent any damage to the pond liner.***

**1.05 Big Brown Bat {*Eptesicus fuscus*}**

**- make TWO of these bat houses (specs and drawings follow) and mount to opposite sides of a 18' ROUND post, with tri-pod wood base (tension wires for lateral support). consult with artist for exact composition.**

## ASSEMBLY DIRECTIONS

Page 1

This bat box plan has been successful in attracting nursery colonies of little brown and big brown bats.  
**Bat roosting requirements are strict, necessitating adherence to construction details.**

1. Tools and supplies needed for assembly include the following:

**Lumber:** 4' x 4' x ½" cdx, exterior plywood  
4' x 8' x ¼" plywood, A-C or B-C. (For roost baffles) Luan is not recommended due to delamination problems. 3/8" thick cdx may also be used but increases weight. Whatever thickness is used, maintain as many ¾" roosting crevices as possible. These plans will assume ¼" plywood. If other thickness is used, make appropriate modifications.  
1" x 8" x 8' board  
1" x 8" x 4' board

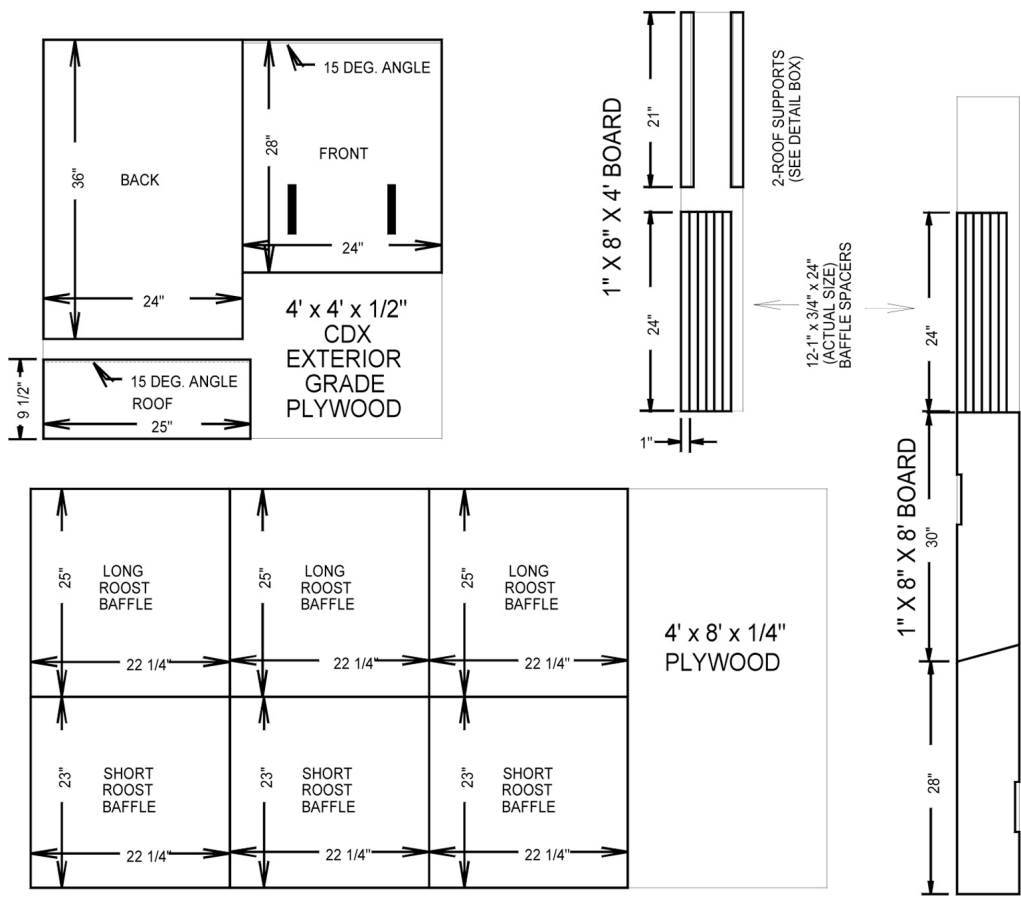
**Other Needs:** Electric screwdriver  
1 ¼" long wood or galvanized drywall screws.  
Caulking – tube of black roof cement  
Caulking gun for above  
Black, matt finish, dark base, solid color, acrylic exterior stain (1 qt.)  
Black Rolled Roofing – 25 ½" x 9 ¾"  
Staple Gun with 3/8" staples  
Utility Knife with snap off blades  
Fiberglass window screening – 22" x 6"

2. Cut out parts according to part details on page 4.
3. Apply a bead of caulk to front edges of box SIDES and attach to box FRONT with 8 screws per side. Clean excess caulk. Refer to page 3 for graphic illustration of assembly.
4. Score inside of front and sides with utility knife to roughen. Also score bottom 4.5" on outside of box FRONT below vents. Make horizontal scratches ¼ inch apart. While the knife is out, score both sides of all ROOSTING BAFFLES and the interior side of box BACK. These are landing / roosting footholds and are very important. Do not use saw to roughen, this will cause plywood to delaminate.
5. Attach 2 BAFFLE SPACERS to inside front corners with two screws each, and screwed in from front of box. Space about 1.5 inch from top of box FRONT with ¾" dimension to sides. Lay assembled parts FRONT down on table or floor.
6. Attach SHORT ROOST BAFFLE to spacers about 1" down from top of sides. Use 2 screws on each side.
7. Attach 2 BAFFLE SPACERS to new corners made by short roost baffle. Use 2 screws on each side and into baffle.
8. Attach LONG ROOST BAFFLE to spacers about 1" down from top of sides. Use 2 screws on each side.
9. Repeat installation of BAFFLE SPACERS and ROOST BAFFLES alternation short & long roost baffles until six ROOST BAFFLES are in. The last 2 baffle spacers should be attached to previously affixed baffle and box SIDES for stability.
10. Caulk back edges of box SIDES and attach box BACK with scored side in. Do not caulk inside vent areas. Back should extend 2" above top of SIDES. Use 8 screws on each side. Clean excess caulk.



11. Center ROOF SUPPORT strip on inside top of box FRONT. Align angled edge with top edge of FRONT and SIDES. Attach with 3 screws through box FRONT.
12. Center ROOF SUPPORT strip on inside and 2" below top of box BACK. Align angled edge with top edges of SIDES. Attach with 3 screws through box BACK.
13. Apply bead of caulk to top of SIDES, FRONT, two ROOF SUPPORTS and angled back edge of roof.
14. Lay ROOF in position and attach with at least three screws on each SIDE, FRONT and BACK. Clean excess caulk.
15. Caulk back of rooftop where it butts against the back. Smooth with damp towel. Inspect all other caulked seams and caulk exterior as necessary. Top of box must be air tight to hold heat.
16. Apply two to three coats of stain to exterior, including landing plate.
17. Cut section of rolled roofing to fit on rooftop. Apply thin bead of caulk around top of roof edges. Set rolled roofing into position and staple down. Caulk back edge of rolled roofing where it butts against box BACK. Caulk exposed stapled on rolled roofing.
18. Cut out piece of fiberglass window screening to fit on landing plate to provide a good landing platform. Staple to bottom front of box BACK. Coat exposed staples with black stain. Landing plate should be roughened under screening since screening may eventually fall off.

Attach box at least 10 feet high to a building or pole. See pole mounting direction (page 4). Orient box to southeast to catch the morning sun if possible. If not possible, orient between the Southeast and Southwest to get at least seven hours of direct sun. Many successful boxes get 12 hours of sun. When evicting bats from a building, place box near existing entrances preferably a year prior to eviction. Do not evict bats between the middle of May and end of July when flightless young may be trapped inside. Capacity of this box is about 250 bats. Overcrowding can cause heat stress on hot days. If more capacity is needed, additional boxes can be placed side by side.



**POLE MOUNTING DETAILS**

(ONE PRESSURE TREATED 4" X 4" X 16' POST AND THREE 2' PRESSURE TREATED 2" X 4" s)

ATTACH 2X4 MOUNTS TO POLE BEFORE ERECTING POLE.

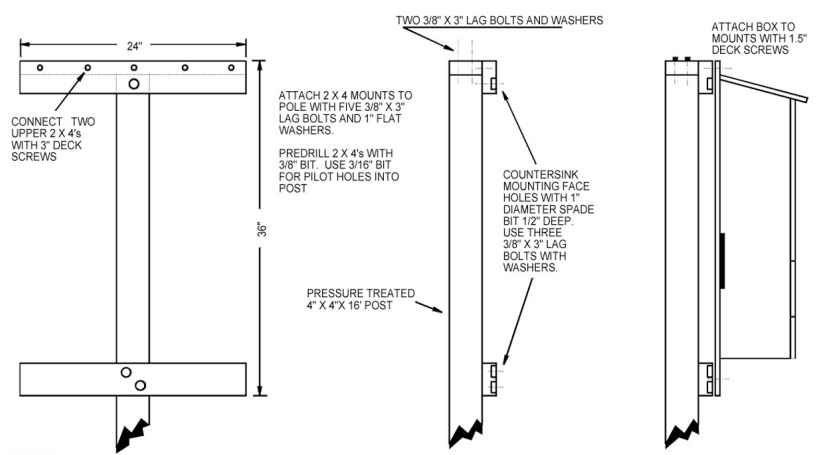
PLANT POLE IN HOLE 2.5 TO 3 FEET DEEP AND 8 - 12 INCHES IN DIAMETER.

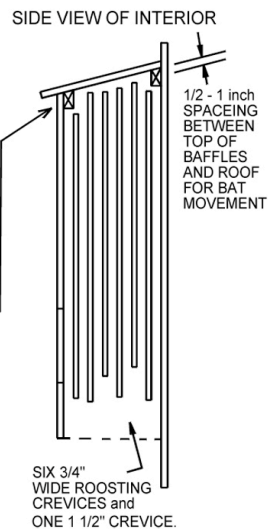
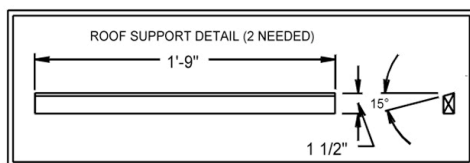
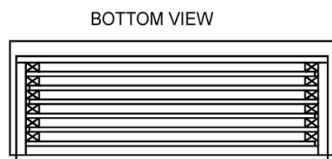
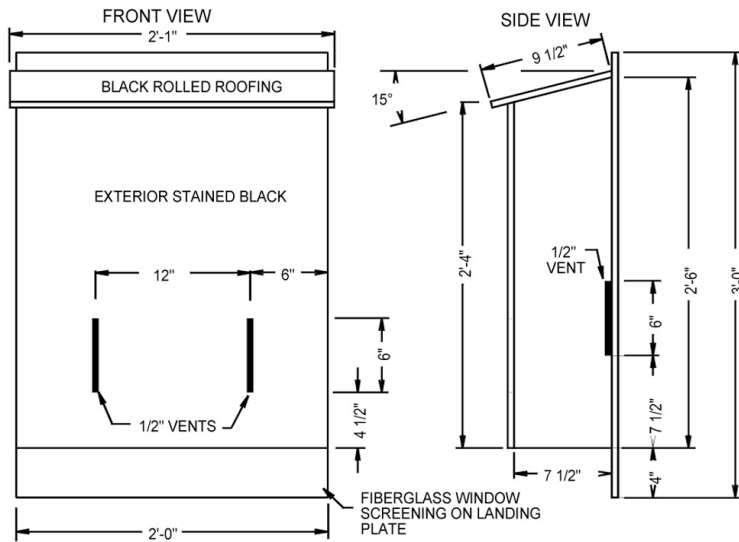
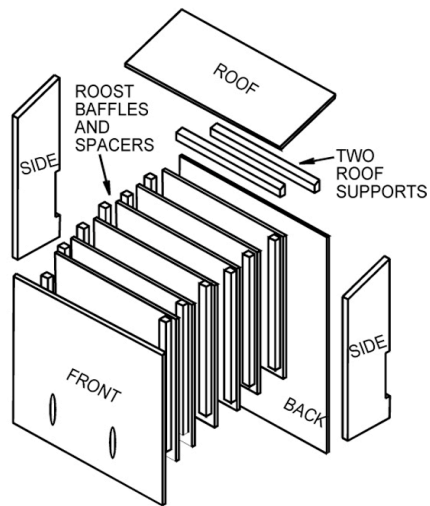
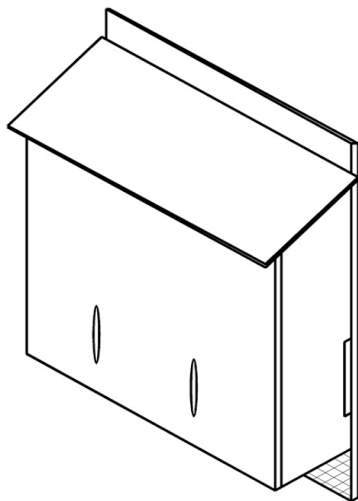
USE 2 - 3 80 LB. BAGS OF PREMIXED CONCRETE IN HOLE AROUND BASE OF POLE. PROVIDE SUPPORTS AS NECESSARY WHILE CONCRETE CURES.

USE LADDER WITH ROPE & PULLEY TO ATTACH BOX TO POLE.

BOX CAN BE ATTACHED TO POLE BEFORE IT IS SET IN GROUND IF A ROPE & 2-3 PEOPLE ARE AVAILABLE TO HELP.

ONCE ERECTED, INSPECT ALL CAULKED SEAMS, RESEAL IF NECESSARY.





### **1.06 Mason Bee {*Osmia lignaria*}**

- wood with grid of holes as trap nests
- to fill out most of available wall space on southern wall of sculpture court, approx 10' high x 15' wide
- may be hung from the top of the wall to avoid drilling into the wall
- directions can be found here:  
<http://snohomish.wsu.edu/mg/ombblock/ombblock.htm>
- consult with artist for composition, exact dimensions to come...

### 1.07 Northern Flying Squirrel {*Glaucomys sabrinus*}

- Install nestbox at the top of a SQUARE post (4" or 6"?) located in the southwest corner of the sculpture court, that is 8' above the level of the sidewalk and approx. 20' above the level of the courtyard.

#### Simple Nesting Box Plan for the Northern Flying Squirrel

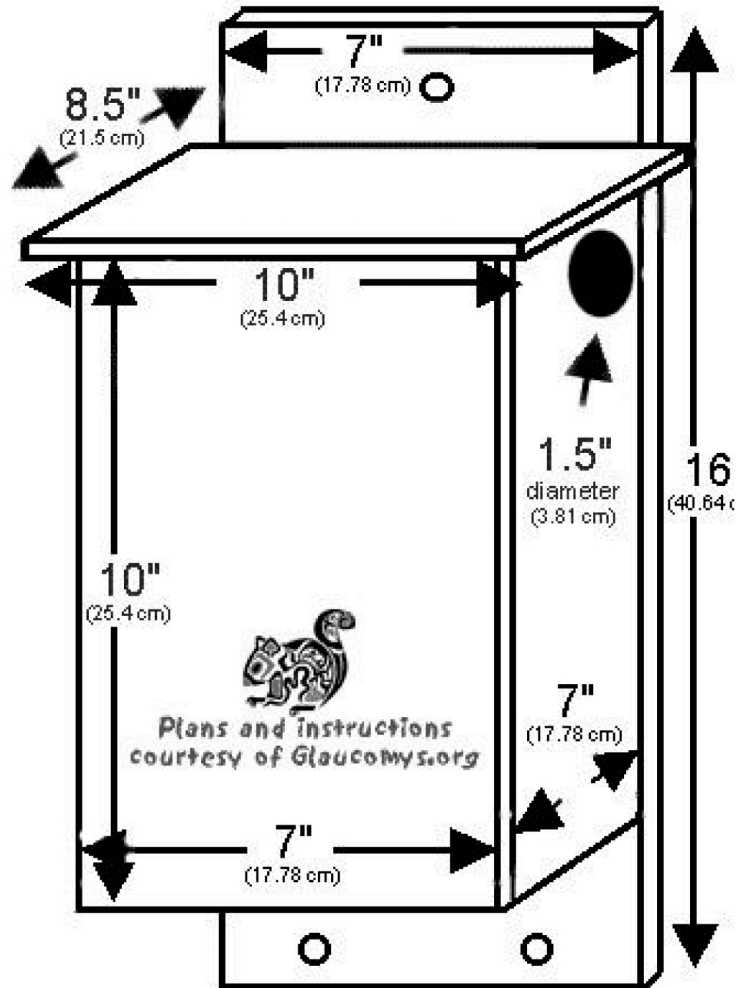
(*Glaucomys sabrinus*)

1. Ensure access hole size is no larger than specified.

2. Run a bead of water-based siliconized caulking along length of top where it meets backing board to prevent water infiltration and seal all cracks and gaps accordingly. Drill (4) 1/2" (12.7mm) holes near corners of bottom and (2) 1/2" (12.7mm) holes on each side near bottom for ventilation purposes.

3. Use natural (untreated) softwood ONLY. Thickness - 3/4" (19mm) to 1" (25mm).

4. If the wood you use is smooth-planed, roughen exterior and interior panels with rasp or coarse sandpaper for better "gripability".



### **1.08 Bobcat {*Lynx rufus*}**

- A Sonotube (heavy duty paper tube for concrete form making) will simulate a fallen tree with an opening for a bobcat den).
- Provide an 18" diameter, 12' long Sonotube. Cut an opening approx. 12" in diameter that is 30" from the end (this will be the bobcat den).
- The opposite end of the tube will be cut at a very steep angle, since it will be leaning up against the beaver lodge at an angle, partly in the water. This will completely conceal this end in the water & maintain the illusion of depth in the pond.

### **1.09 Opossum {*Didelphus virginiana*}**

- This will consist of a pile of rocks to be provided by the artist. These will be arranged on top of the gravel at the drainage ditch adjacent to the canopy.

### **1.10 Eastern Tiger Salamander {*Ambystoma tigrinum*}**

- This will consist of a pile of 24" long logs provided by the artist located in the northwest corner of the courtyard, near the planter.

### **1.11 Eastern Mud Turtle {*Kinosternon subrubrum*}**

- Provide a disk of plywood cut into a rough ovoid or egg shape that is approximately 30" x 18". This will serve as a sunning platform that will float in the pond and be tethered to a rock in the water.
- Stain back and seal with a water proof marine urethane.

## **1.12 Beaver {Castor Canadensis}**

**- The artist will be on site to oversee installation of the pond structure from February 4th - 8th.**

**- Noel Rose of Anchor Aquarium will be responsible for installing all associated pumps and equipment after February 8th.**

**\* Important note: It will be absolutely vital to create a perfectly level perimeter of the pond since it has a fraction of an inch of water on all sides.**

*Drawings from Fritz Haeg Studio at 1/8" = 1'-0"*

*- Floor Plan*

*- Longitudinal Section*

*- Lateral Section*

*Details at 3" = 1'-0"*

*- Eastern pond edge at path*

*- Western pond edge at planter*

*Specifications for pond liner and equipment from Anchor Aquarium Service*

A hollow wood-framed structure will be constructed on site, which will then be covered with exterior grade plywood, covered by a primary tarp substrate and finally a 45 mil Firestone 'PondGard' liner. The pond is designed as an inverted pyramid, with a fraction of an inch of water around the perimeter and about 8 inches at the center 36" square depression.

The shallow pond will have a pump that continuously circulates the water, and a separate sump pump with a float switch, that will sense a drop in water level and trigger the pump to immediately empty all of the water into the adjacent drainage ditch for the entry canopy. The pond consultants from Anchor Aquariums will make regular maintenance visits and will also be on call for 24 hour service.

The pond will need to be topped off with water every week, to compensate for water loss from evaporation, which will be particularly evident with only 3/4" of water at the perimeter. The circulation of the water with a pump and the addition of a saline solution will inhibit freezing in the early weeks of the three month installation.

### **SPECIFICATIONS**

Overall dimensions: 21'-10" x 40'-0"

Depth of water at perimeter: 3/4"

Depth of water at center: 8"

Dimensions of central platform: 36" x 36"

Volume of water: 256, 315 cubic inches  
(divided by 243) = 1050 gallons of water

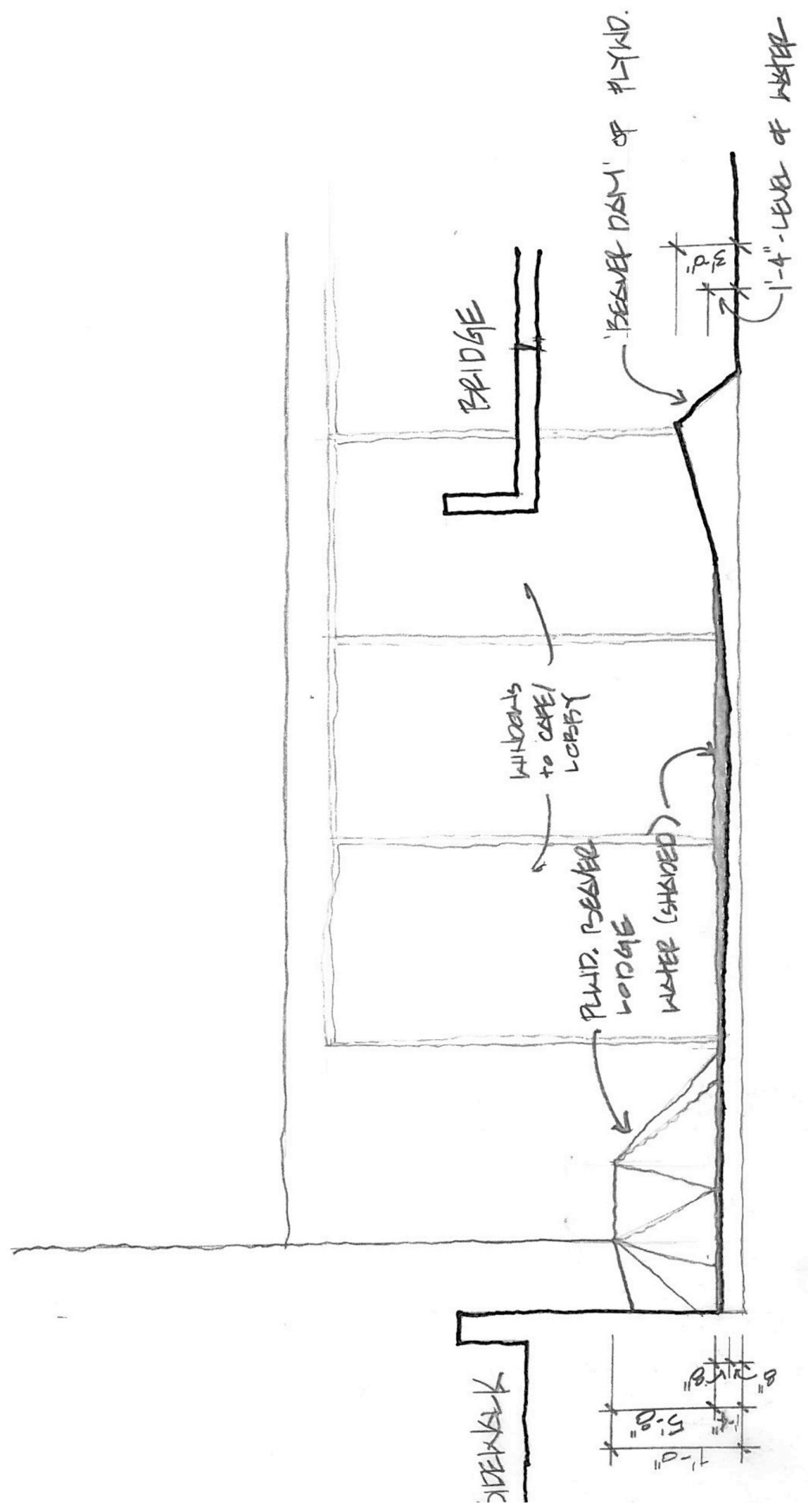
(x 8.3) = 8,750 pounds

Weight: .07 pounds per square inch or 10 pounds per square foot



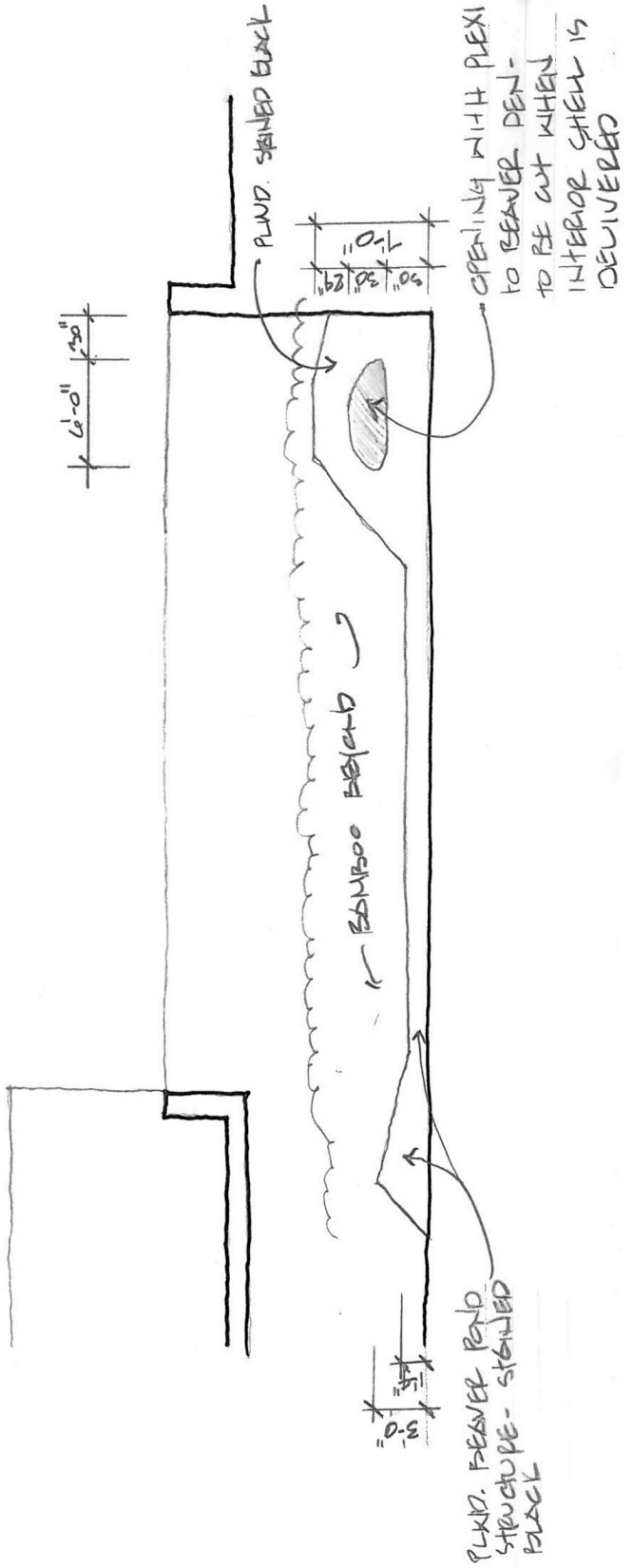


ANIMAL ESTATES | O:NYC • FRITZ HAEG FOR 2008 KILIKLEY PLEHN&L • 01.08.08  
 LONGITUDINAL SECTION OF BEAVER POND



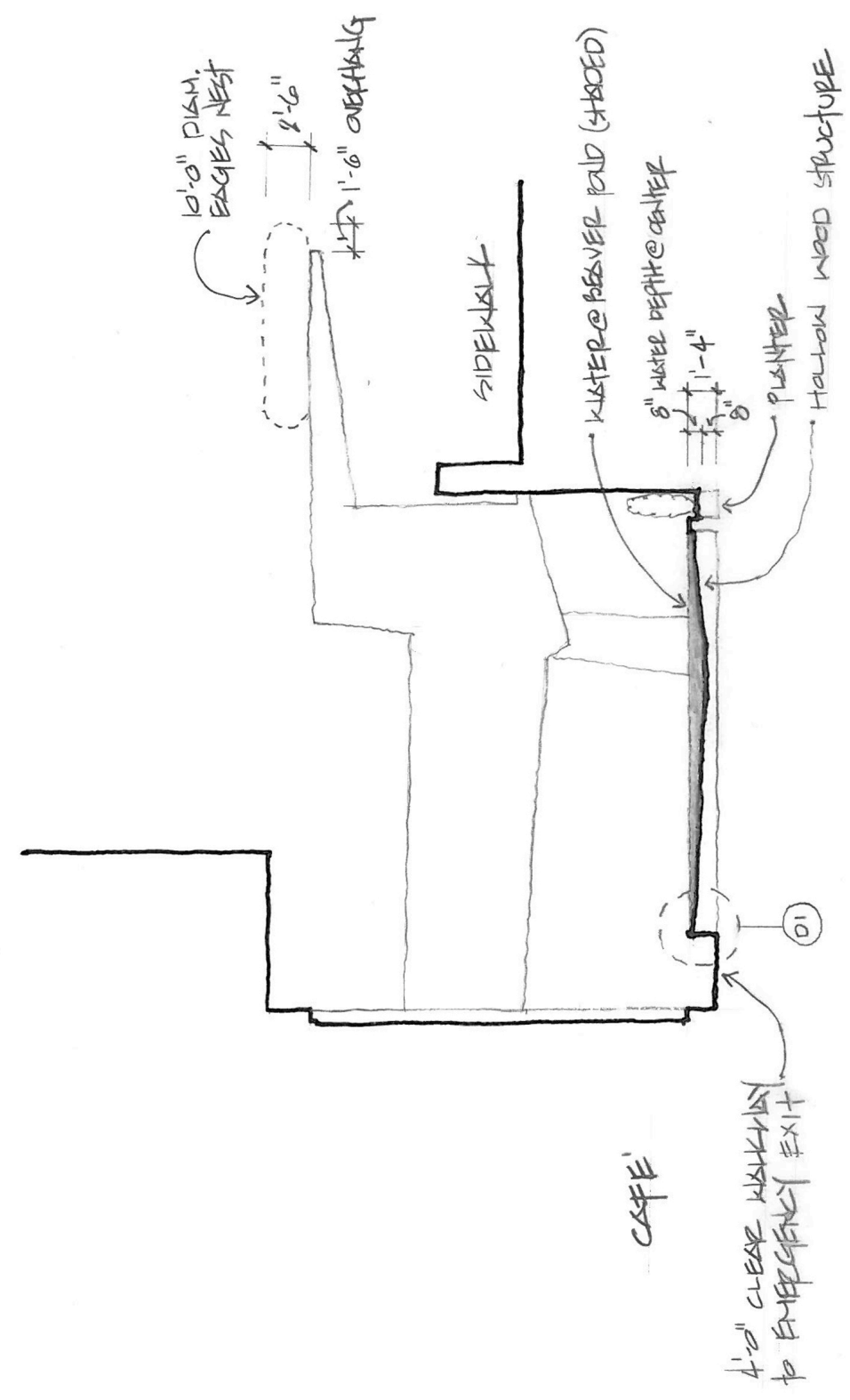
ANIMAL ESTIMES 1.0: NYC • PRIZE TAG FOR 2008 KITTEN PLEASURAL • 0' 2.00' 1/8" = 1' 0"

LONGITUDINAL SECTION BEARING KEEST



FINAL EXISTES 1.0: NYC • FITZ HALL FOR 2008 KATHLEEN BIENTZLIK • 01.18.0

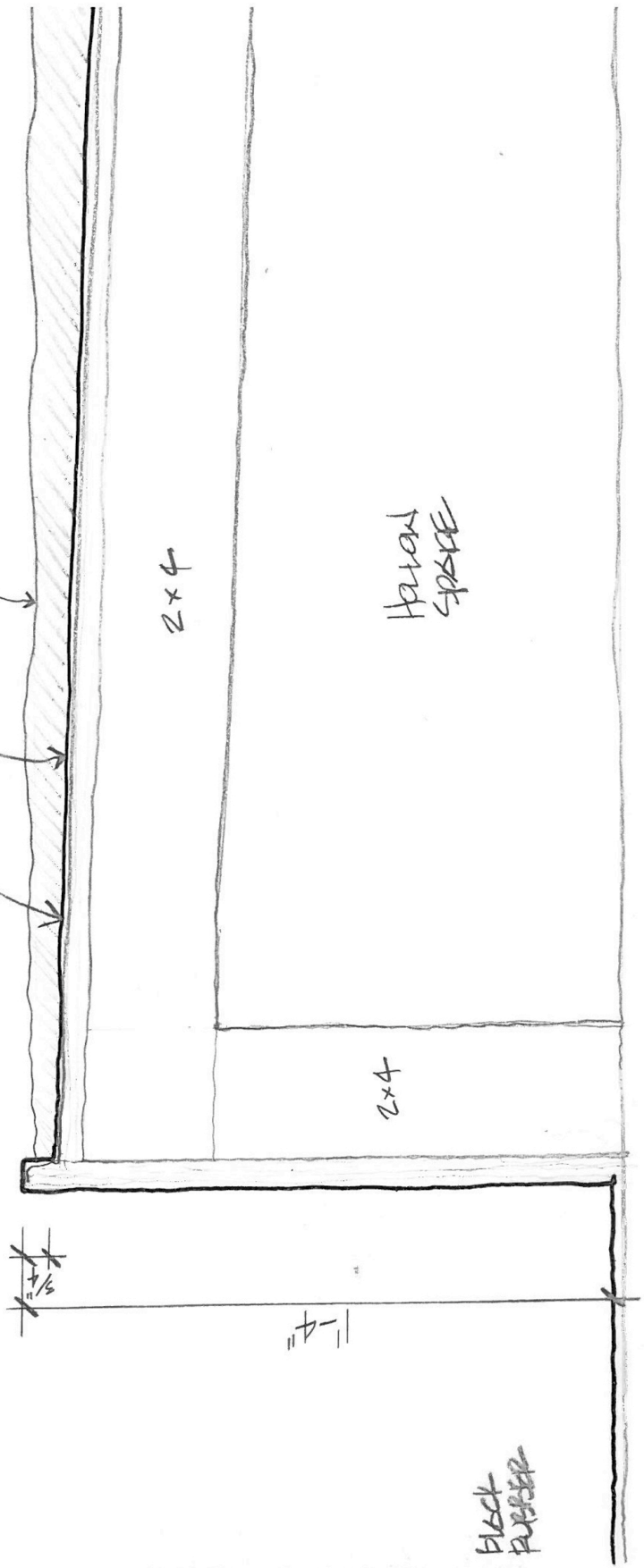
### LATERAL SECTION @ SCULPTURE CART



ANIMAL EXITS I.O.: H/C • PATZ HSE#9 FOR 6008 KHITNEY BIENNIAL • 01.12.06

PAVING DETAIL #1 @ EASTERN EDGE

45 MIL FIRESTONE 'PATMGARD' LINER  
3/4" EXT. GRADE FLUID.  
KISTER LEVEL



ANIMAL ESTATES I.O: NYC • PRITZ HALL FOR LOOS KATHLEEN BLENKOL • 01.12.02

POND DETAIL #2 @ WESTERN EDGE

45 MIL FIRESTONE PONDGRAD UNDER

3/4" EXT. GROPE PLUMB.

WATER LEVEL

EXIST. CARK. PLASTER

