

Reproduce and use one page for each pool or enclosure
 (This includes all night holding, temporary holding, training, and/o other off exhibit areas; do not include medical pools if not used as a primary enclosure.)

Facility/Licensee: Miami Seaquarium 58-C-147

Pool or Enclosure Name/Number: Whale Stadium 1
 (all information on this sheet for this pool/enclosure only!)

Marine Mammals in enclosure:

Species or common name	Sex	Number
1. 1 <u>Lags</u>	<u>to</u>	<u>1</u>
2. 2 <u>"</u>	<u>to</u>	<u>3</u>
3. <u>Orca</u>	<u>to</u>	<u>1</u>
4.		
5.		

Pool Dimensions: (provide all that apply)
(specify units where needed)

General shape: see diagram (mostly oval)

Depth: 12-20' deep

MHD: ~~60'~~ 60' deep regarding platform

Volume: 49,308 ft³

Surface Area: 7326 ft²

Length: 80'

Width: 60'

Describe bottom contour (slopes, grade, rocks, shallows, etc): at edge is 12'; by 10' away from wall toward center, has sloped to 20' depth - flat bottom after slope is flat.

63/80
 3/8
 2/8

Dry Resting Area: (specify units where needed)

General Shape:

Length:

Width:

Total Area:

Describe area (materials, visual barriers, shade, accessibility):

Is there available space to increase the size of this enclosure (dry resting area and/or pool) if needed? At this location or within the facility?

No

Den: (specify units where needed)

Length:

Width:

Height:

Pool in den?

****On reverse side, please draw (2-D) pool(s)/enclosure, indicating length, width, depth, depth variability, and location of any islands, rocks, etc. Indicate as accurately as possible the shape of the pool.****

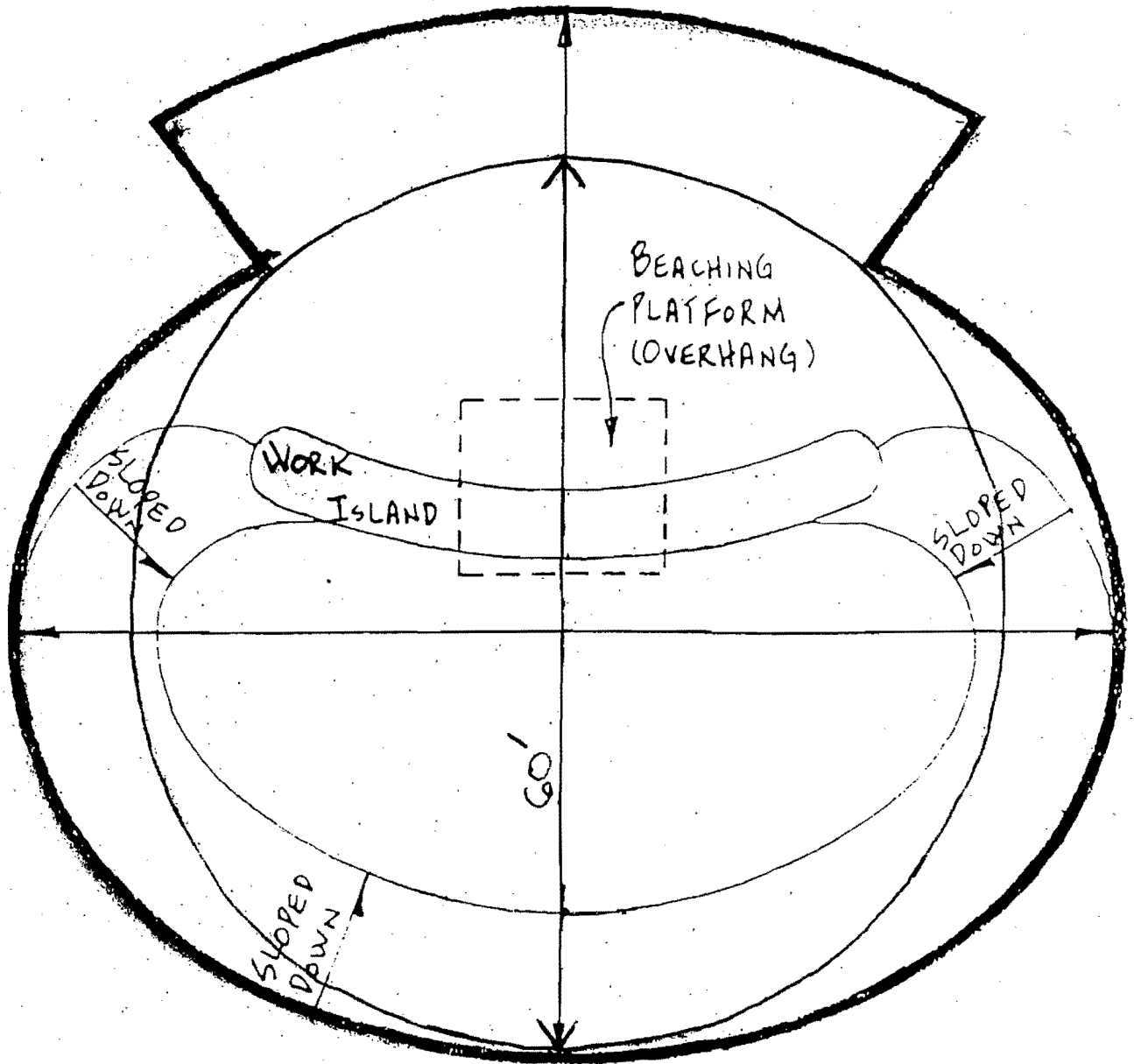
Parameter	Formula	Values used	Calculation
Area - Main Pool (A1)	oval πab	a = 40' b = 30'	3768 ft ²
Area - Island (A2)	≈ rectangle l X w	l = 46.66' w = 5.2'	242.6 ft ²
Area - remaining beaching platform (A3)	≈ rectangle l X w	l = 15' w = 6'	90 ft ²
Area under bridge (A4)	rectangle l X w	l = 10.5' w = 2.83'	30 ft ²
Area - annex (A5)	≈ rectangle l X w	l = 43' w = 10'	430 ft ²
TOTAL AREA	A1+A5-A2-A3 -A4	see above	3835.4 ft ²
Volume - Main Pool (V1)	oval $\pi abXd$	a&b as above d = 12'	45,216 ft ³
Volume - Island (V2)	≈ rectangle l X w X d	l&w as above d = 12'	2911.6 ft ³
Volume - remaining beaching platform (V3)	≈ rectangle l X w X d	l&w as above d = 1.25'	112.5 ft ³
Volume under bridge (V4)	rectangle l X w X d	l&w as above d = 7'	210 ft ³
Volume - annex (V5)	≈ rectangle l X w X d	l&w as above d = 12'	5160 ft ³
Volume added due to 20' depth* (V6)	oval $\pi ab X d$	a = 23.3' b = 12.5' d = 8'	7326 ft ³
TOTAL VOLUME	V1+V5+V6-V2 -V3-V4	as above	49,308 ft ³

* still does not account for volume of water where bottom slopes

Parameter	Required Space	Actual Space
MHD	48 ft	OK'd by APHIS (60' X 80' with platform)
depth	12 ft	12 - 20 ft
Volume	25,943 ft ³	49,308 ft ³
Surface area	1808.64 ft ²	7326 ft ²

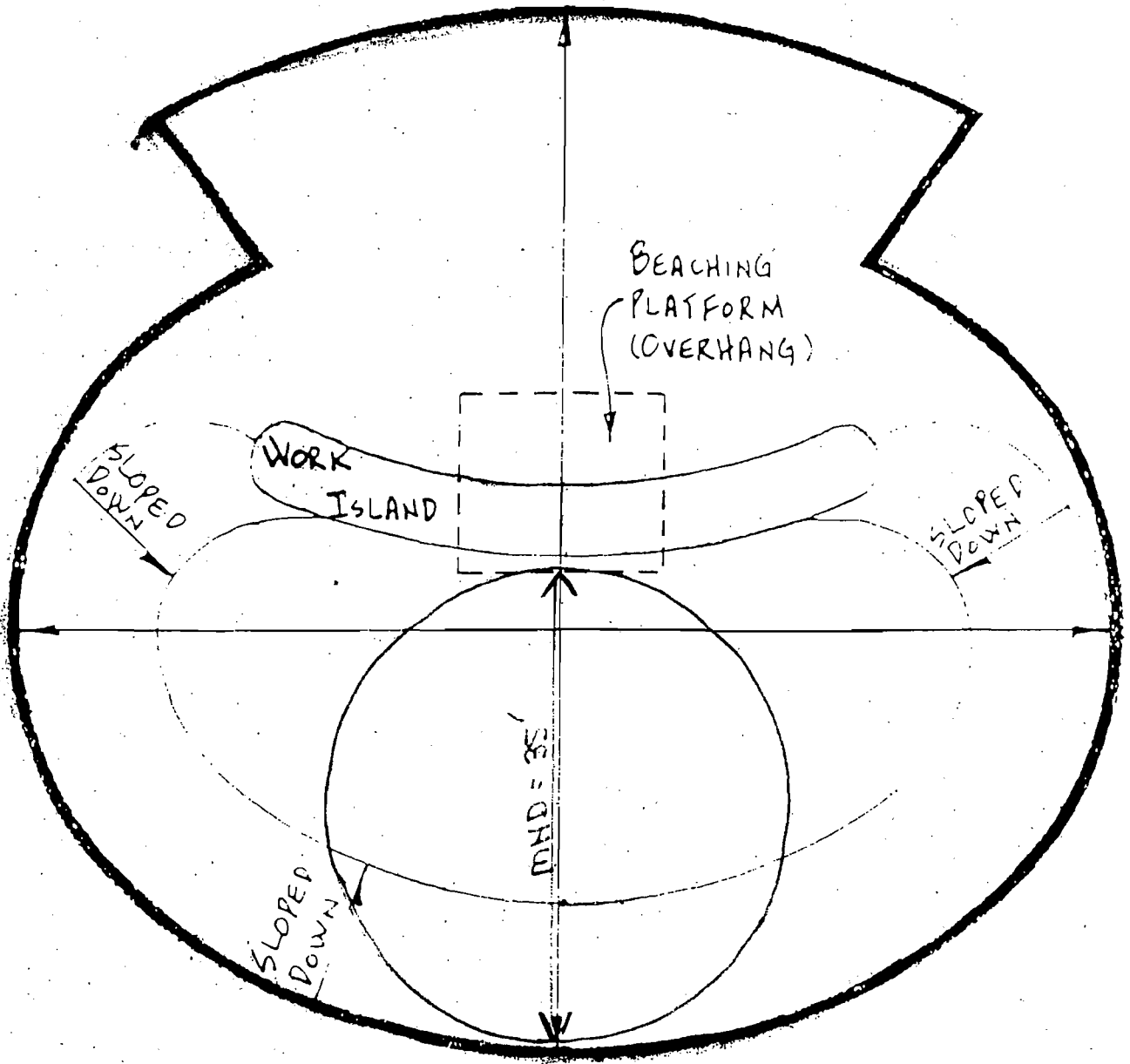
~~revised~~ corrected and
 refined
 calculations
 done by Dr. Kohn +
 Cook, from my measure-
 ments
 + initial
 calculations +
 estimates.

FRAME STADIUM POOL DIMENSIONS



MHD = 60' disregarding
work station
(i.e., work station
waived as an
MHD obstruction)

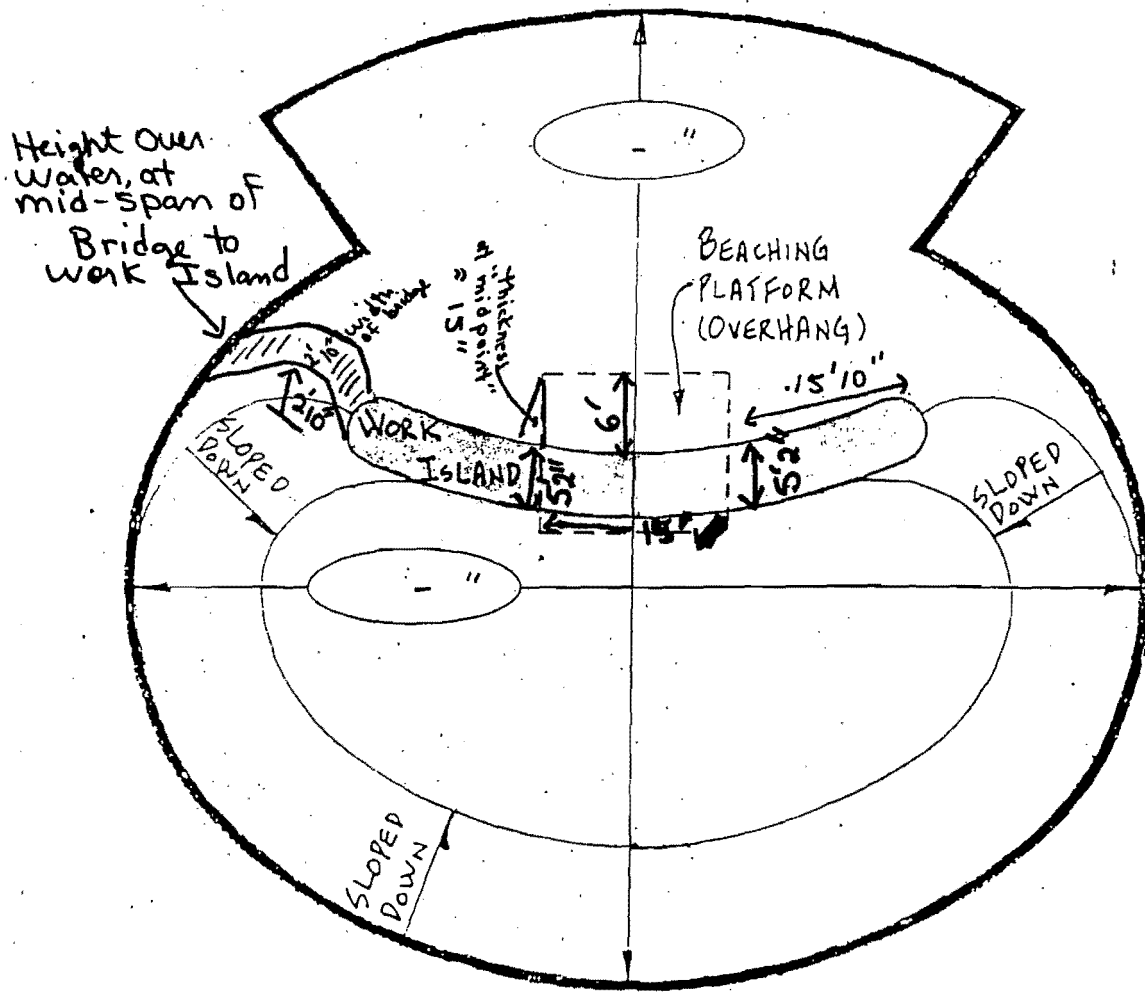
STADIUM POOL DIMENSIONS



MHD = 35' if work station is not waived.

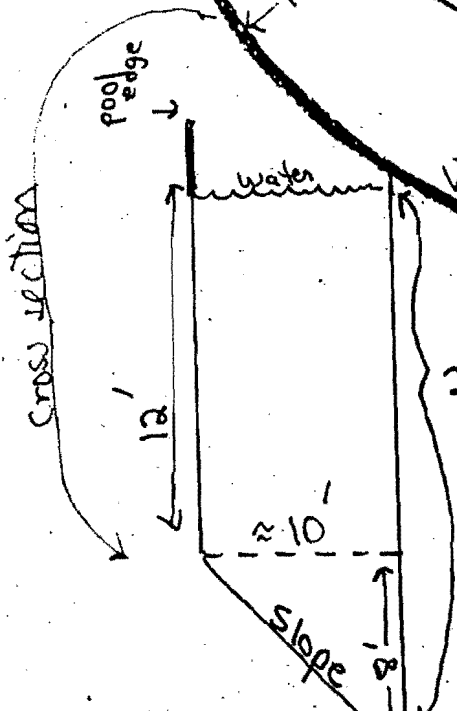
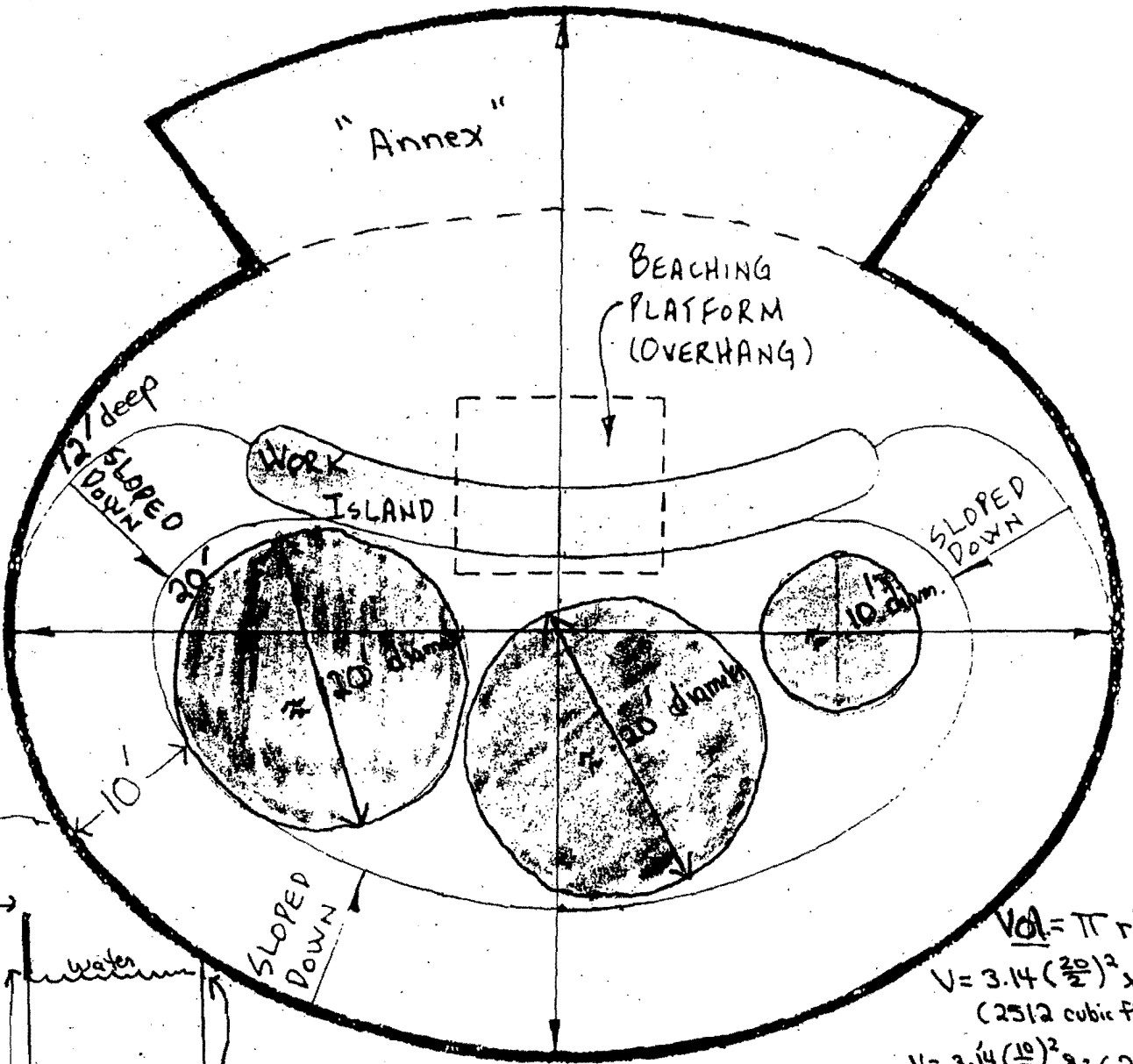
WHALE STADIUM POOL DIMENSIONS

Work Island, Beaching Lip, and Bridge



DN: 12-7-95
BY: Dr. Kristina Cox; VMO
Mr. S. Santiago; RE

WHALE STADIUM POOL DIMENSIONS



(Not to scale)

$$Vol = \pi r^2 d$$

$$V = 3.14 \left(\frac{20}{2}\right)^2 \times 8' = 2512 \text{ cubic ft} \times 2 = 5024$$

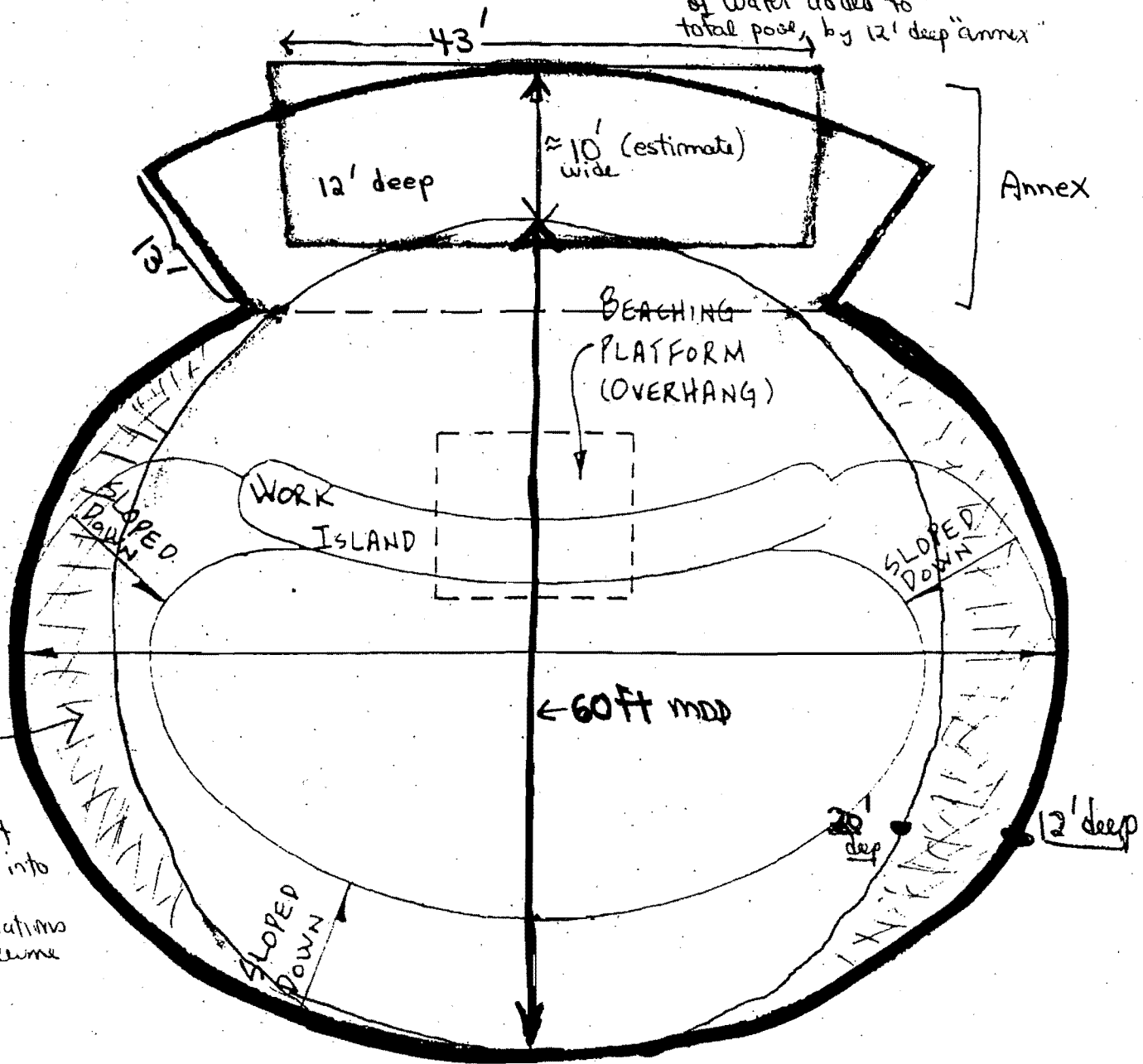
$$V = 3.14 \left(\frac{10}{2}\right)^2 \times 8 = 628 \text{ ft}^3$$

Estimation of areas in the 20' deep portion of the pool, which exceeds the minimum required depth by 8' (12' + 8') = 20'; This is the additional

5024 + 628 = 5652

MAIN STADIUM POOL DIMENSIONS

Vol # already covered in main tank calculation, based on 12' depth
 Vol # approx volume of water added to total pool, by 12' deep "annex"



estimated volume added by "annex":

$$43' \text{ long} \times 10' \text{ wide} \times 12' \text{ depth} = 5160 \text{ ft}^3$$

Site Visit to the Miami Seaquarium on August 4, 2010

Report by Laurie J. Gage, DVM, Dipl. ACZM

USDA APHIS Animal Care Big Cat Specialist and Field Advisor for Marine Mammals

I accompanied Dr. Mary Moore, VMO, USDA inspector for the Miami Seaquarium to the Seaquarium on a site visit on August 4, 2010. This was in response to a complaint regarding the housing and social interactions of Lolita the Killer Whale, and concerns about the health of a California sea lion with skin lesions on its face.

We visited the killer whale pool area. When we arrived the killer whale was swimming freely with five Pacific white-sided dolphins, one adult male, three adult females and a one-year-old juvenile male. We could see there were gates between the back pool and the front show pool which were in the open position. The trainers stationed three dolphins to one side of the central "stage" area, and two dolphins over to one side of the pool, with Lolita stationed on the other side of the central stage area. The animals all appeared bright and alert and eager to station for their respective trainers. I examined Lolita's mouth and body condition. Her skin was smooth and shiny and her eyes were bright. Her teeth were in remarkable condition, especially for an animal her age. She had a normal amount of thick tear secretion. She responded to her trainers cues willingly and showed no signs of stress or aggression either towards the trainer or towards the other animals. I asked if they ever closed the gates to the back section of the pool. They told us they had originally closed the gates during every show when the Pacific white-sided dolphin calf was younger, so that he was not in the main show pool during the show. They did this as a safety measure until he became familiar with the activity of the show. The juvenile dolphin is still learning about the show activity and the gates are now closed for 60% of the shows, and then reopened after the show. They are closed for about one hour twice a week for pool cleaning. This works out to having the gates closed approximately 1 hour per day during the course of a week.

While we were there the gates were in the open position with all of animals together and there did not appear to be any aggression between the killer whale and any of the dolphins. The fact the juvenile dolphin is thriving in that environment indicates to me that Lolita has a gentle nature and is not inclined to harm such a small pool companion. The staff has not seen any aggressive behavior between Lolita and the dolphins.



Fig 1 Lolita in pool with dolphin juvenile (all gates were open)

We went to the pinniped area and saw the old female California sea lion "Asia" with the lesions on her face. I spoke with the veterinarian, (b)(6) about this animal and the lesions we saw. "Asia" is 27 years old and has had a history of papillomas on her face for 15 years now. Over the years, the veterinarian has biopsied the lesions and has removed a few of them. The lesions have been diagnosed as papillomas and the veterinarian felt it was more stressful and invasive to the animal to remove the lesions and to continually biopsy them than to just leave them alone.

I observed this animal during a public feeding session. She was bright and alert and had a good appetite. She ate quite a number of fish while I observed her, and she seemed to have a normal attitude, appetite and behavior. She is a geriatric animal and I agree with the veterinarian that restraining her in order to remove lesions that are only a cosmetic problem is not in the best interest of this animal. This animal is also being treated for a mammary tumor, and so far, the treatment has been successful. I feel this animal is getting appropriate veterinary care and the lesions on her face are merely cosmetic and are not causing her any undue physical pain or distress. It is interesting to note the lesions are considerably more noticeable on the right side of her face than the left. The veterinarian stated the papilloma lesions flared up and increased in number at about the time the mammary tumor was diagnosed, about 1 ½ years ago, but have improved with the treatment of the mammary tumor.

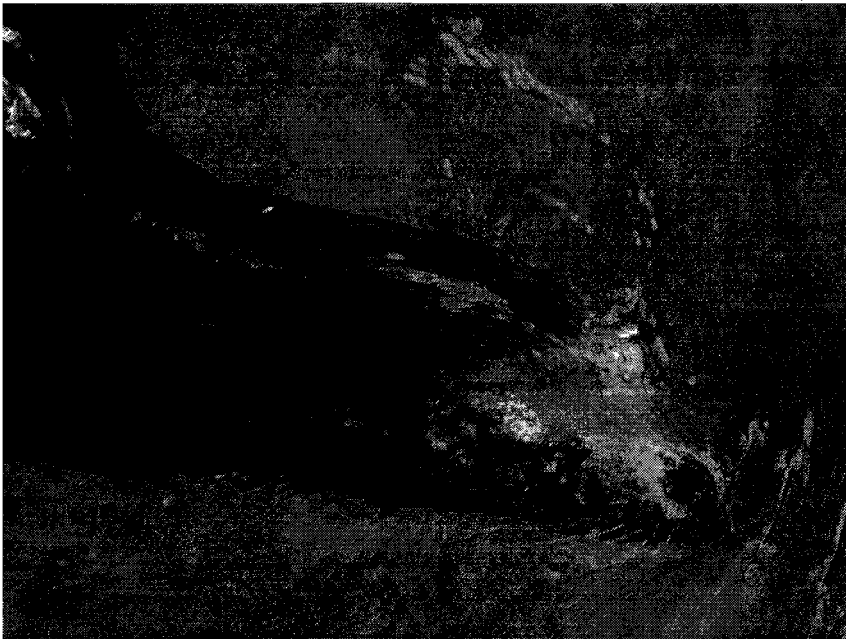


Fig. 2 27-yr-old female California sea lion with papillomas on her face

(b)(5)

(b)(5)