

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
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Tritium Laboratory
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SWAB REPORT # 656

SWAB DATE: 30 October 2012

R/V N. B. Palmer

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Ethan Norris
Phil Spindler

COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for ^3H and ^{14}C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (dpm m^2)	Recommendations
A	<500	<50	No action
B*	500-10,000	50-10,000	Needs cleaning before any natural tracer work. Decks in radiation vans with activities above 1000 dpm/m^2 should be cleaned.
C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: ^{14}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

^{14}C : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}\text{CO}_2$). Follow up with wash as if for ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

REPORT FOR SWAB # 656

LOCATION: Punta Arenas, Chile
VESSEL: R/V N.B. Palmer

DATE: 30 October 2012
TECHNICIAN: Cecilia Roig

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank #1	0	± 0	17	± 37
	<u>Aft Dry Lab (Figure 1)</u>				
3	Top of Revco chest freezer	0	± 0	9	± 42
4	Inside Fisher 00010623	0	± 0	0	± 0
5	Inside Thermo Scientific freezer	0	± 0	0	± 0
6	Inside Revco freezer 12063	0	± 0	23	± 35
7	Inside Percival incubator 00011176	0	± 0	0	± 0
8	Inside Fisher incubator 00113062	0	± 0	6	± 54
9	Deck between tables	0	± 0	9	± 36
10	Inside Revco chest freezer	0	± 0	4	± 64
11	Deck in front of freezers	0	± 0	15	± 36
12	Port sink area	0	± 0	10	± 35
13	Deck at forward door to passageway	0	± 0	1	± 0
14	Deck at aft door to passageway	0	± 0	0	± 0
15	Deck at aft door to Baltic Room	0	± 0	7	± 37
16	Aft sink area	0	± 0	6	± 41
17	Inside Percival incubator 00011176	0	± 0	0	± 0
	<u>Forward Dry Lab (Figure 2)</u>				
18	Deck inside Forward Dry Lab	8	± 53	0	± 0
19	Deck inside door to passageway	0	± 0	4	± 43
	<u>Bio Lab (Figure 3)</u>				
20	Sink area inside fwd. cooler	0	± 4	9	± 33
21	Benchtop right of sink inside aft cooler	2	± 18	6	± 32
22	Inside aft fume hood	0	± 0	19	± 37
23	Inside fwd. fume hood	0	± 0	11	± 42
24	Port sink area	0	± 0	13	± 39
25	Deck in front of aft fume hood	0	± 0	0	± 0
26	Deck in front of fwd. fume hood	6	± 52	0	± 0
27	Deck inside fwd. entrance	0	± 0	6	± 46
28	Deck in front of port sink	0	± 0	0	± 0
29	Aft sink area	0	± 0	5	± 38

Sample #	Sample Identification	3H dpm/m2		14C dpm/m2	
		activity	error	activity	error
30	Inside Fisher 00011985	0	± 0	16	± 35
31	Inside Fisher 00011986	0	± 0	9	± 38
32	Deck in front of refrigerators	0	± 0	10	± 37
33	Deck inside door to passageway	0	± 0	26	± 37
34	Benchtop forward of port sink	0	± 0	17	± 36
35	Benchtop aft of port sink	0	± 0	29	± 35
36	Benchtop port of aft sink	0	± 0	25	± 38
37	Benchtop next to forward entrance	0	± 0	27	± 38
38	Final bucket blank C.O. #1	0	± 0	14	± 41
39	Initial bucket blank C.O. #2	0	± 0	29	± 35
<u>Hydro Lab (Figure 4)</u>					
40	Inside Summit refrigerator	0	± 0	20	± 37
41	Inside Fisher refrigerator	0	± 0	27	± 35
42	Aft sink area	0	± 0	1	± 0
43	Stbd. sink area	0	± 0	0	± 0
44	Aft benchtop	0	± 0	0	± 0
45	Deck in front of aft sink	0	± 0	14	± 36
46	Deck in front of stbd. sink	0	± 0	0	± 0
47	Deck in front of refrigerators	0	± 0	4	± 43
<u>Wet Lab (Figure 5)</u>					
48	Forward benchtop	0	± 0	25	± 34
49	Deck inside fwd. door	0	± 0	18	± 44
50	Aft sink area	0	± 0	15	± 35
51	Stbd. benchtop	0	± 0	10	± 37
52	Deck inside port door	18	± 39	13	± 31
53	Deck center of lab	0	± 0	19	± 38
54	Deck inside stbd. doors	0	± 0	44	± 36
55	Aft benchtop	0	± 0	23	± 37
<u>Aquarium (Figure 6)</u>					
56	Deck outside aft entrance to Aquarium	0	± 0	21	± 37
57	Deck outside fwd. entrance to Aquarium	0	± 0	5	± 34
<u>02 Deck, Helo Pad (Figure 7)</u>					
58	Inside Baxter 00011923 top	27	± 49	0	± 0
59	Inside Baxter 00011923 bottom	0	± 0	29	± 35
60	Benchtop stbd. of sink	0	± 0	15	± 35
61	Benchtop port of sink	0	± 0	18	± 39

Sample #	Sample Identification	3H dpm/m2		14C dpm/m2	
		activity	error	activity	error
62	Deck in front of Baxter	0	± 0	0	± 0
63	Deck in front of sink	0	± 0	3	± 45
64	Deck in passageway	0	± 0	0	± 0
65	Deck outside passageway door	1	± 0	0	± 0
66	Deck outside stbd. door	52	± 34	48	± 33
67	Final bucket blank C.O. #2	0	± 0	26	± 38

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error.

All areas tested in the ship were free from ³H or ¹⁴C contamination.

SWAB #656
Figure 1
10/30/12

Aft Dry Lab 1036 sq. ft.

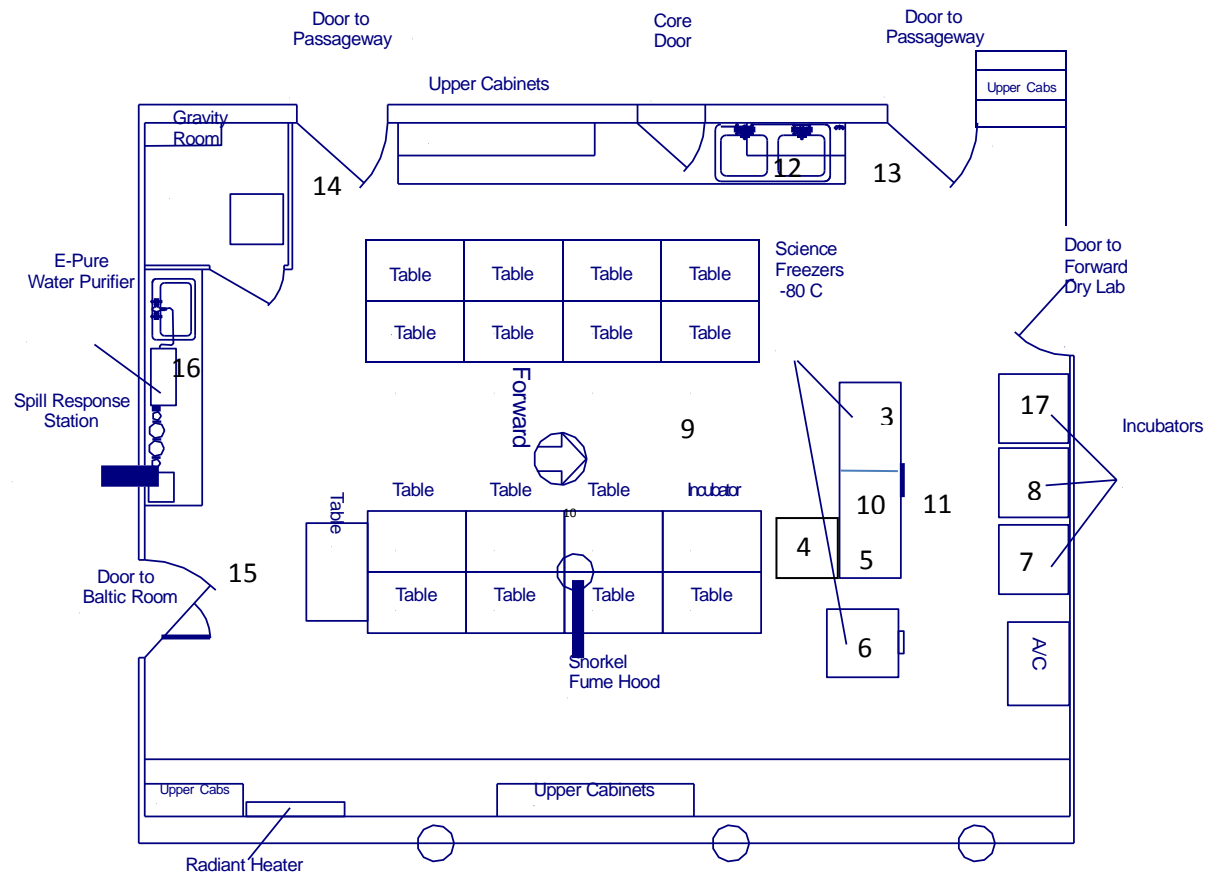
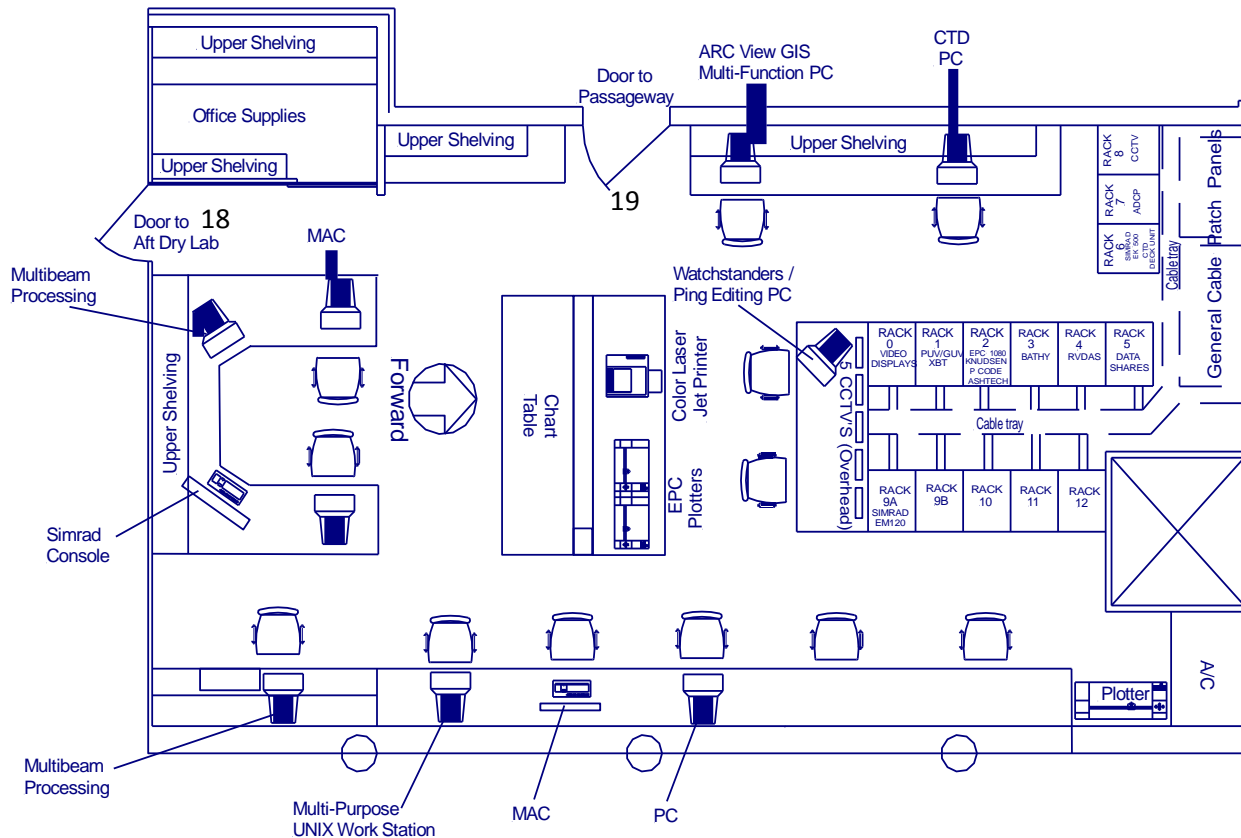


Figure 2
SWAB #656
10/30/2012

Forward Dry Lab

1150 sq. ft.



SWAB #656
Figure 3

Bio Lab

460 sq. ft.

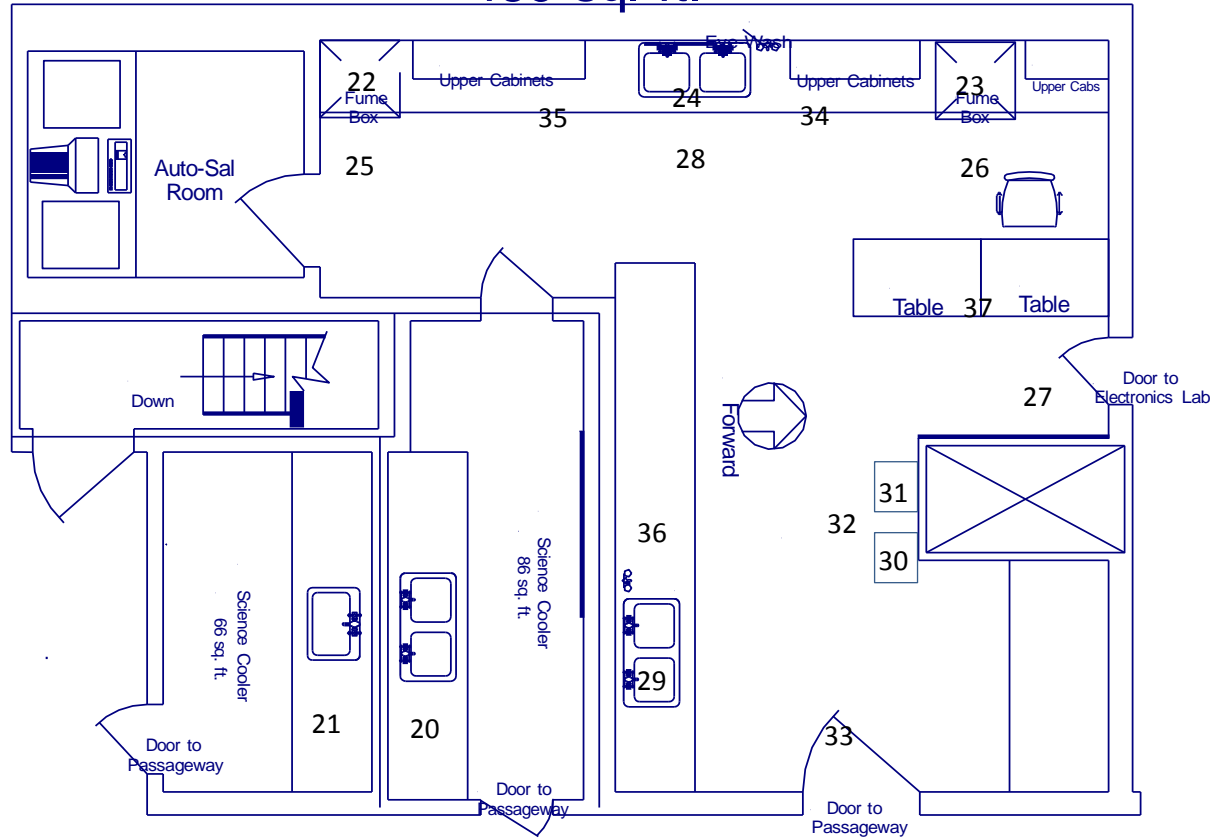


Figure 4
SWAB #656

Hydro Lab

445 sq. ft.

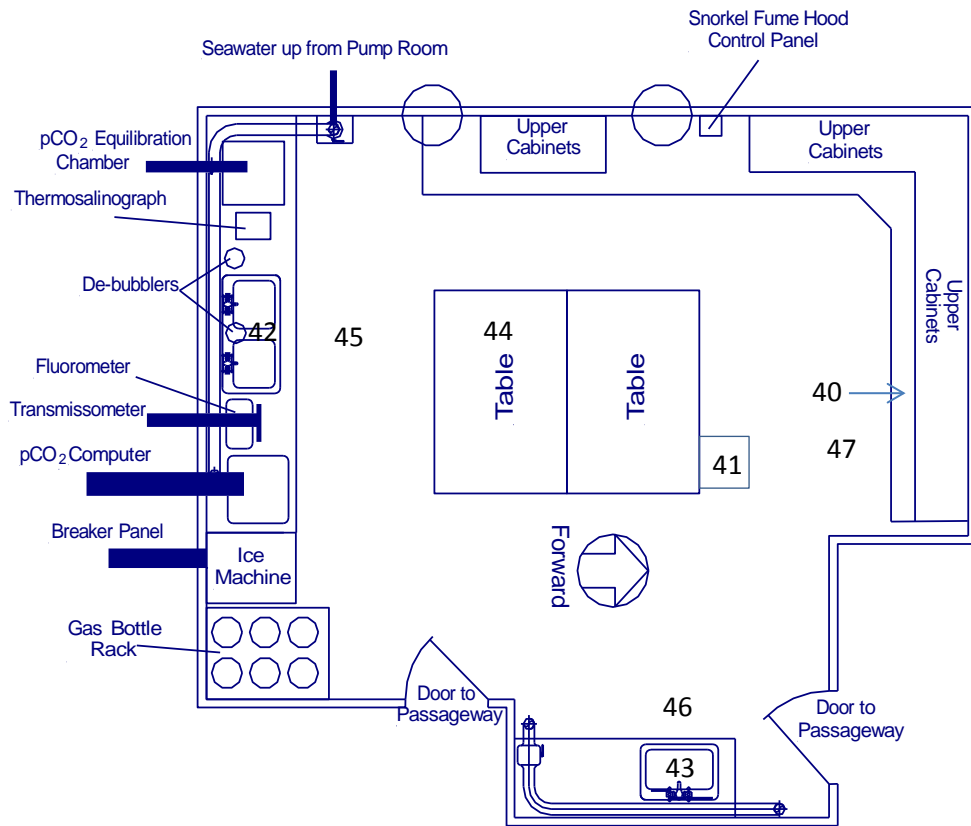


Figure 5 SWAB #656

Wet Lab 416 sq. ft.

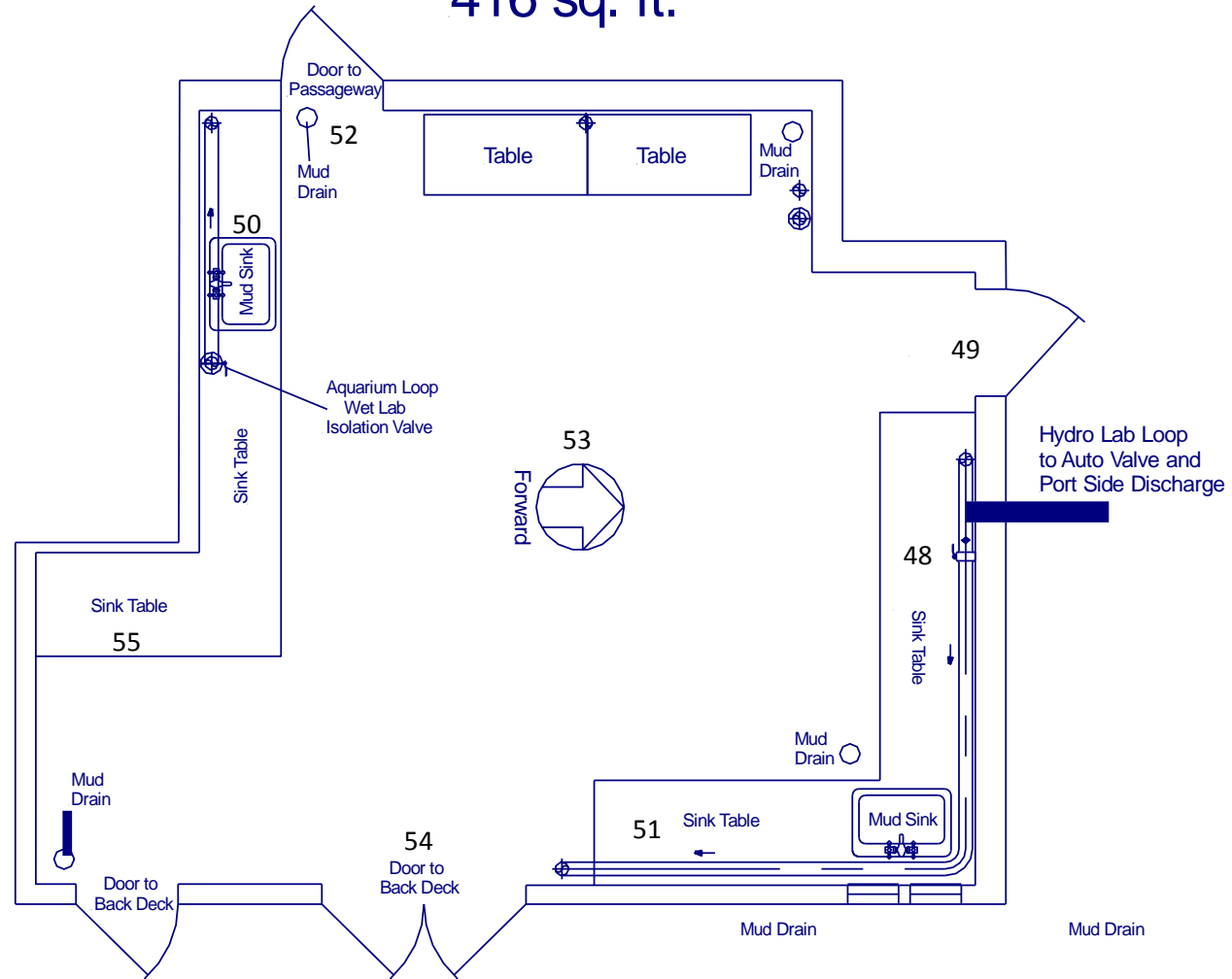


Figure 6
SWAB #656
10/30/12

Aquarium Room

298 sq. ft.

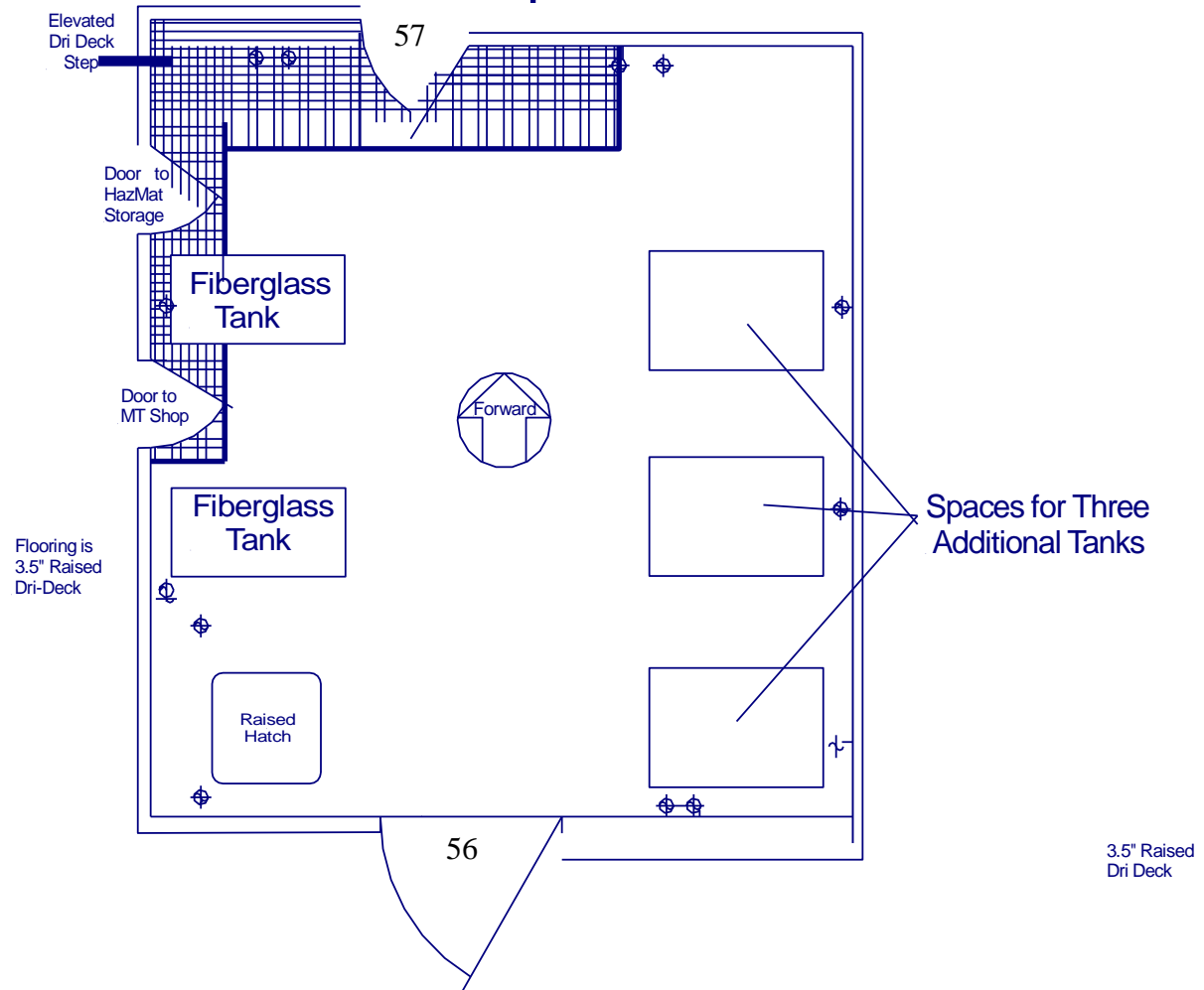


Figure 7 SWAB #656

