



5 January 2015

SWAB REPORT # 754

SWAB DATE: 19 December 2014

R/V Atlantis

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Date: 2015.01.05 13:18:56 -05'00'

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Distribution:
SWAB Committee
David Fisichella

COMMENTS TO SWAB REPORTS

12 May 2014

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 $1000 \text{ dpm}/\text{m}^2$ 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 contact your institution's radiation safety office.

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

REPORT FOR SWAB # 754

LOCATION: Puntarenas, Costa Rica
VESSEL/LAB: R/V *Atlantis*

DATE: 19 December 2014
TECHNICIAN: Jim Happell

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
1	1st Vial background	0	± 0	0	± 0
2	Initial bucket blank	1	± 12	6	± 35
<u>Hydrographic Lab (Figure 3)</u>					
3	Inside Cospolich freezer top	11	± 0	0	± 0
4	Inside Cospolich freezer bottom	0	± 0	0	± 0
5	Deck in front of Cospolich	0	± 0	0	± 0
6	Deck inside aft door	0	± 0	0	± 0
7	Port sink area	1	± 0	0	± 0
8	Starboard sink area	0	± 0	0	± 0
9	Deck inside starboard doors	1	± 30	1	± 33
10	Inside fume hood	0	± 0	10	± 39
<u>Wet Lab (Figure 6)</u>					
11	Inside fume hood	6	± 41	1	± 28
12	Forward sink area	11	± 104	0	± 0
13	Deck at port door	23	± 53	0	± 0
14	Starboard benchtop	31	± 57	0	± 0
<u>Main Lab (Figure 4)</u>					
15	Top of Revco freezer 1	3	± 0	0	± 0
16	Top of Revco freezer 2	0	± 0	0	± 0
17	Inside starboard freezer top	0	± 0	0	± 0
18	Inside starboard refrigerator bottom	30	± 47	1	± 14
19	Deck in front of freezers	19	± 72	0	± 0
20	Deck inside forward port entrance	6	± 46	0	± 3
21	Port sink area	0	± 0	0	± 0
22	Starboard sink area	17	± 53	0	± 0
23	Center benchtop	16	± 144	0	± 0
24	Inside fume hood	6	± 0	0	± 0
25	Deck inside aft doors	15	± 0	0	± 0
26	Deck inside mid port door	0	± 0	0	± 0
27	Center benchtop	8	± 49	0	± 0
<u>Computer Lab (Figure 3)</u>					
28	Deck at starboard entrance	0	± 0	0	± 0
29	Deck at forward entrance	9	± 0	0	± 0
30	Deck inside storeroom (see Figure 5)	0	± 0	7	± 38

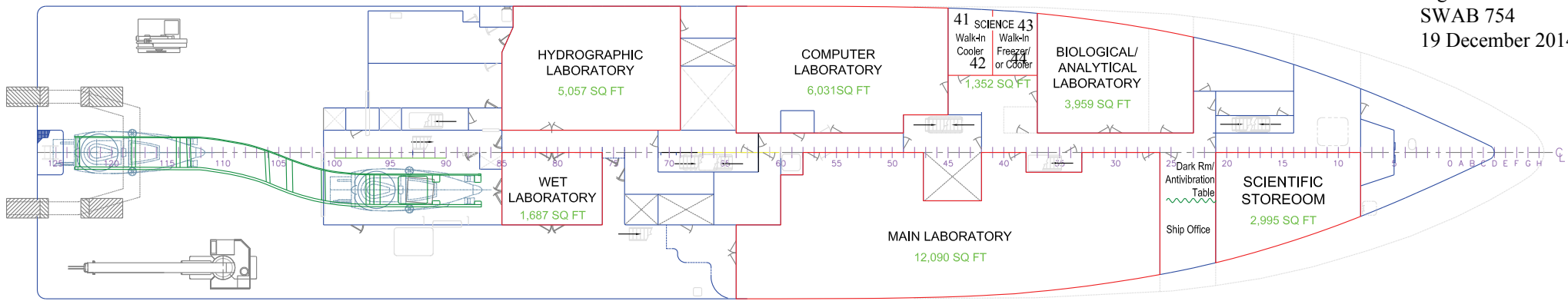
Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
<u>Bioanalytical/Clean Lab (Figure 2)</u>					
31	Forward center benchtop	10	± 0	0	± 0
32	Aft center benchtop	2	± 0	0	± 0
33	Inside Cospolich refrigerator top	0	± 0	17	± 39
34	Inside Cospolich refrigerator bottom	28	± 40	6	± 28
35	Deck in front of Cospolich	11	± 0	0	± 0
36	Inside fume hood	0	± 0	0	± 0
37	Deck in front of fume hood	0	± 0	0	± 0
38	Aft sink area	28	± 66	0	± 0
39	Forward sink area	19	± 110	0	± 0
40	Deck inside starboard door	8	± 79	0	± 0
<u>Walk-in Coolers (Figure 1)</u>					
41	Benchtop in aft walk-in cooler	26	± 67	0	± 0
42	Deck in aft walk-in cooler	5	± 0	0	± 0
43	Benchtop in forward walk-in cooler	0	± 0	7	± 38
44	Deck in forward walk-in cooler	0	± 0	0	± 0
45	Intermediate bucket blank	0	± 0	0	± 0
<u>WHOI Rad Van #2001400 (Figure 7)</u>					
46	Benchtop across from fume hood	42	± 3	*2659	± 94
47	Inside fume hood	0	± 0	11	± 36
48	Benchtop under fume hood	0	± 0	*82	± 38
49	Sink area	16	± 35	10	± 33
50	Inside refrigerator	31	± 17	*137	± 40
51	Inside freezer	13	± 3	*633	± 55
52	Benchtop across from sink	24	± 36	16	± 33
53	Benchtop across from refrigerator	27	± 28	39	± 35
54	Inside small Haier refrigerator	52	± 48	1	± 9
55	Deck between freezer and fume hood	0	± -4	*305	± 46
56	Benchtop over refrigerator	34	± 24	*81	± 37
57	Deck between sink and entrance	16	± 15	*75	± 37
58	Deck outside van entrance	11	± 60	0	± 0
59	Final bucket blank	16	± 49	0	± 0

Comments

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

All areas on the ship tested were free from radioisotope activity that requires cleaning. Moderate ^{14}C contamination was found in the Rad Van. It is recommended that the deck areas be cleaned.

Figure 1
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Laboratories & Scientific Storeroom General Locations
Atlantis Main Deck

KEY








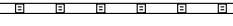
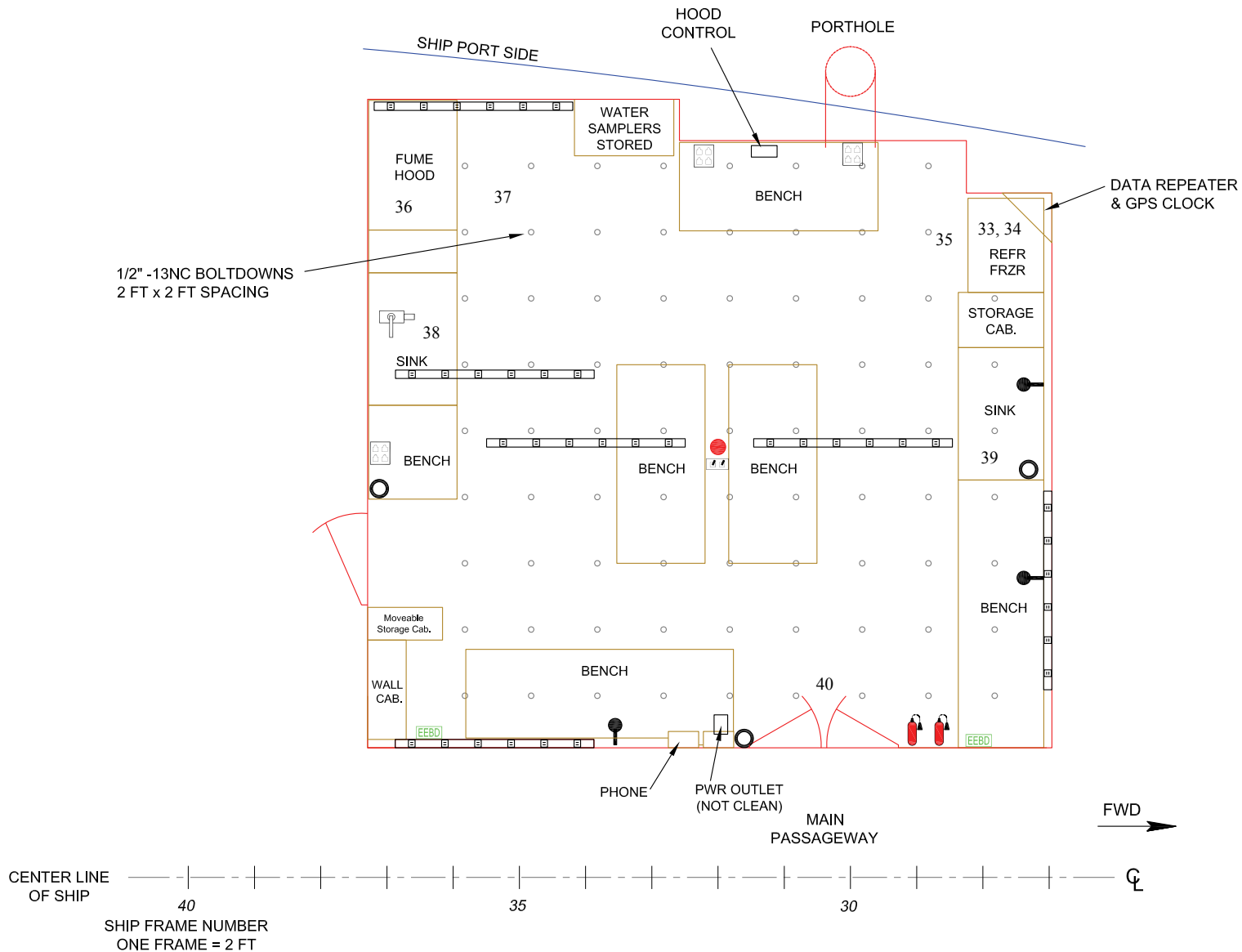
-  FIRE EXTINGUISHER
-  SCIENCE SEA WATER
-  COMPUTER HUB
-  CABLE PASS THRU
-  SHIP EQUIP -KEEP CLEAR
-  COMPRESSED AIR
-  EMERGENCY ESCAPE BREATHING DEVICE
-  72" POWER STRIP, 6 PLUGS

Figure 2
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19 December 2014




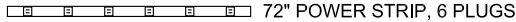




UNISTRUT:
BULKHEADS
2 FT SPACING
OVERHEAD FORE/AFT,
FULL LENGTH OF LAB

ALL POWER CLEAN UNLESS NOTED



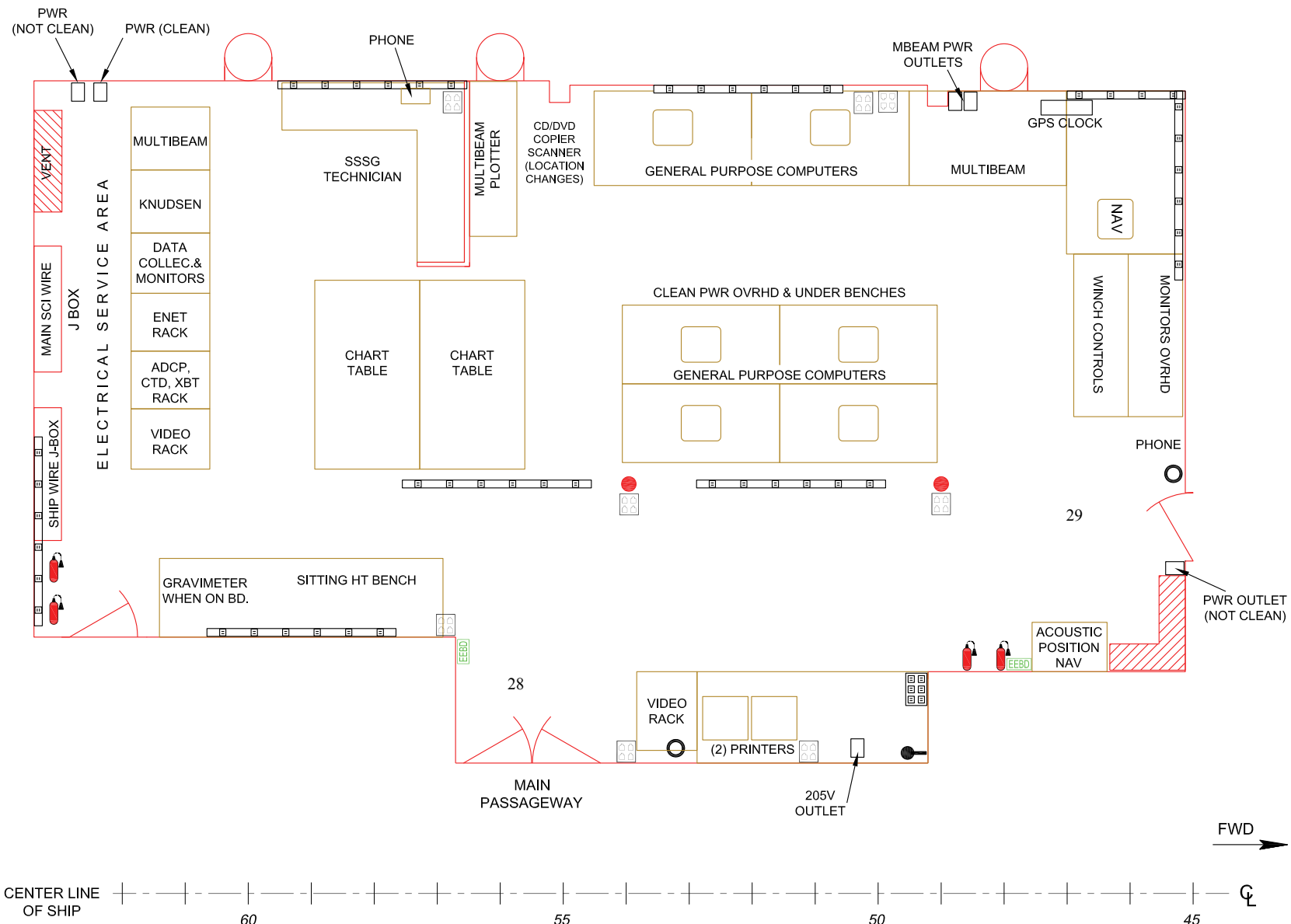
BIOLOGICAL/ANALYTICAL CLEAN LABORATORY
Atlantis Main Deck, Room 1-27-2

KEY

-  COMPUTER HUB
-  SHIP EQUIP -KEEP CLEAR
-  EMERGENCY ESCAPE BREATHING DEVICE
-  72" POWER STRIP, 6 PLUGS
-  FIRE EXTINGUISHER
-  SCIENCE SEA WATER
-  CABLE PASS THRU
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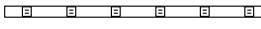
UNISTRUT:
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Figure 3
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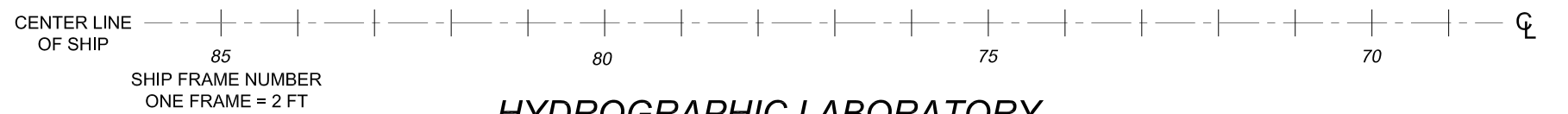
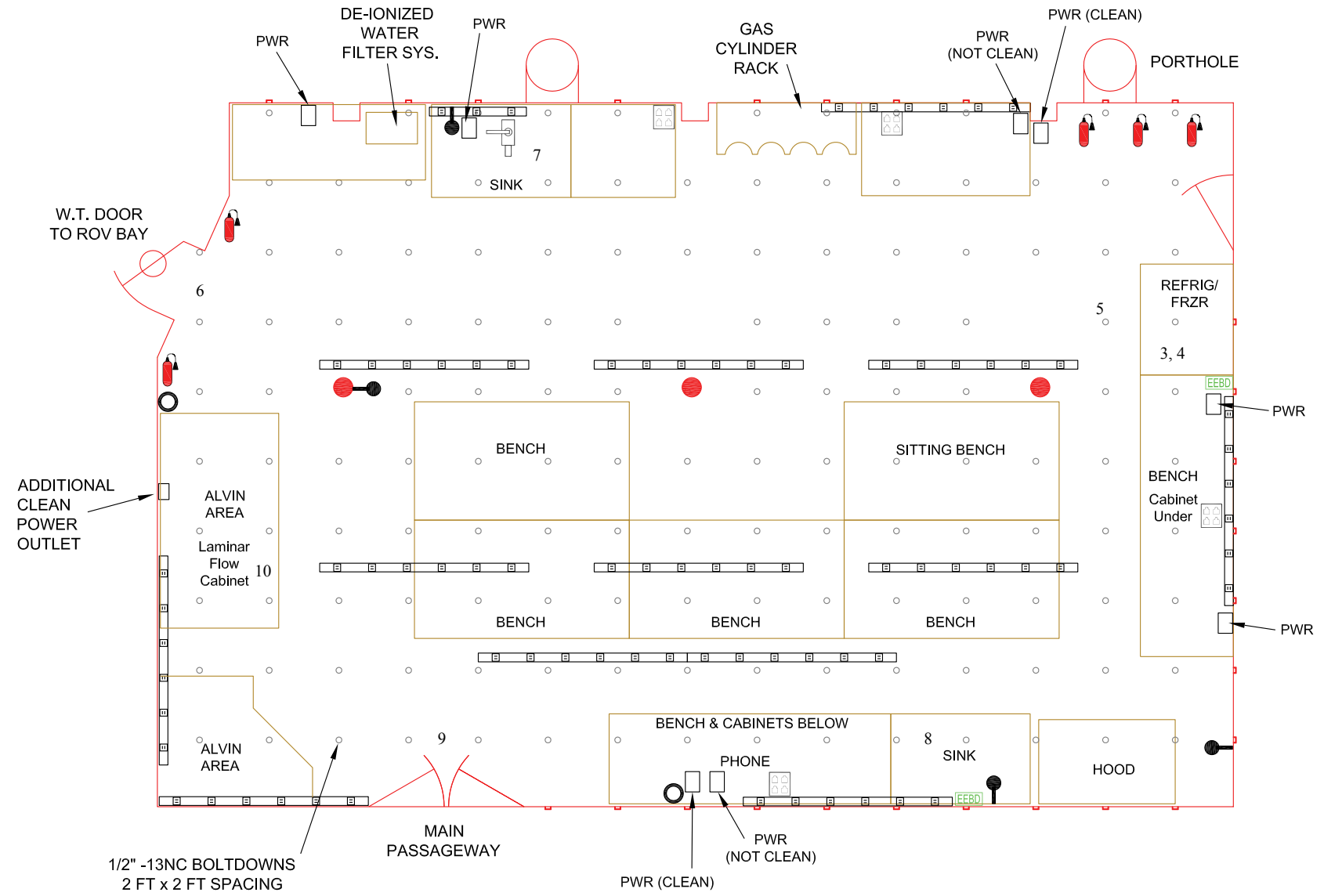


COMPUTER LABORATORY
Atlantis Main Deck, Room 1-45-2

SHIP FRAME NUMBER
 ONE FRAME = 2 FT

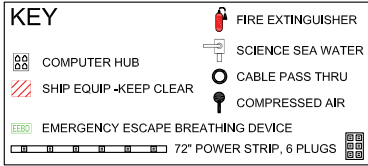
 SHIP EQUIP -KEEP CLEAR
 COMPRESSED AIR
 EMERGENCY ESCAPE BREATHING DEVICE
 72" POWER STRIP, 6 PLUGS

FULL LENGTH OF LAB
ALL POWER CLEAN UNLESS NOTED



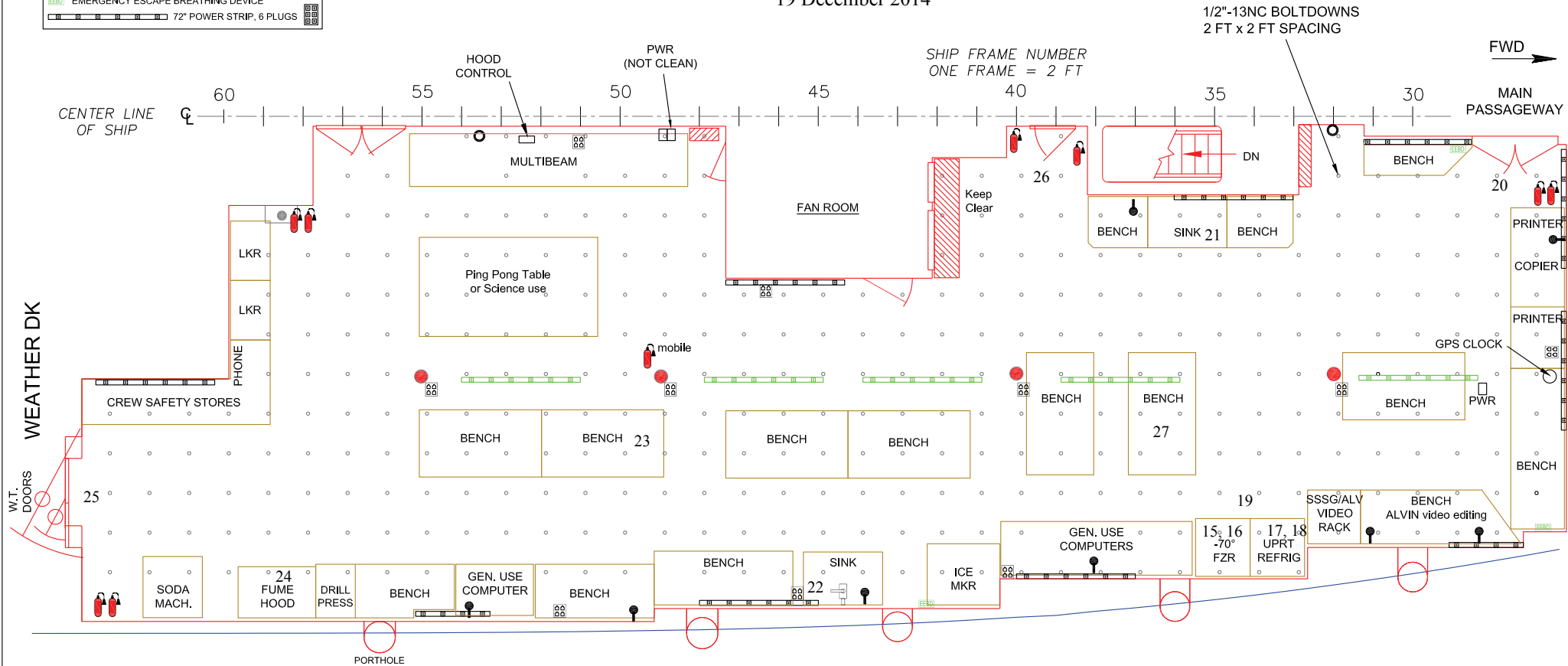
HYDROGRAPHIC LABORATORY

Atlantis Main Deck, Room 1-64-2



UNISTRUT:
 BULKHEADS
 2 FT SPACING
 OVERHEAD FORE/AFT,
 FULL LENGTH OF LAB
 ALL POWER CLEAN UNLESS NOTED

Figure 4
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MAIN LABORATORY
 Atlantis Main Deck, Room 1-26-1

KEY









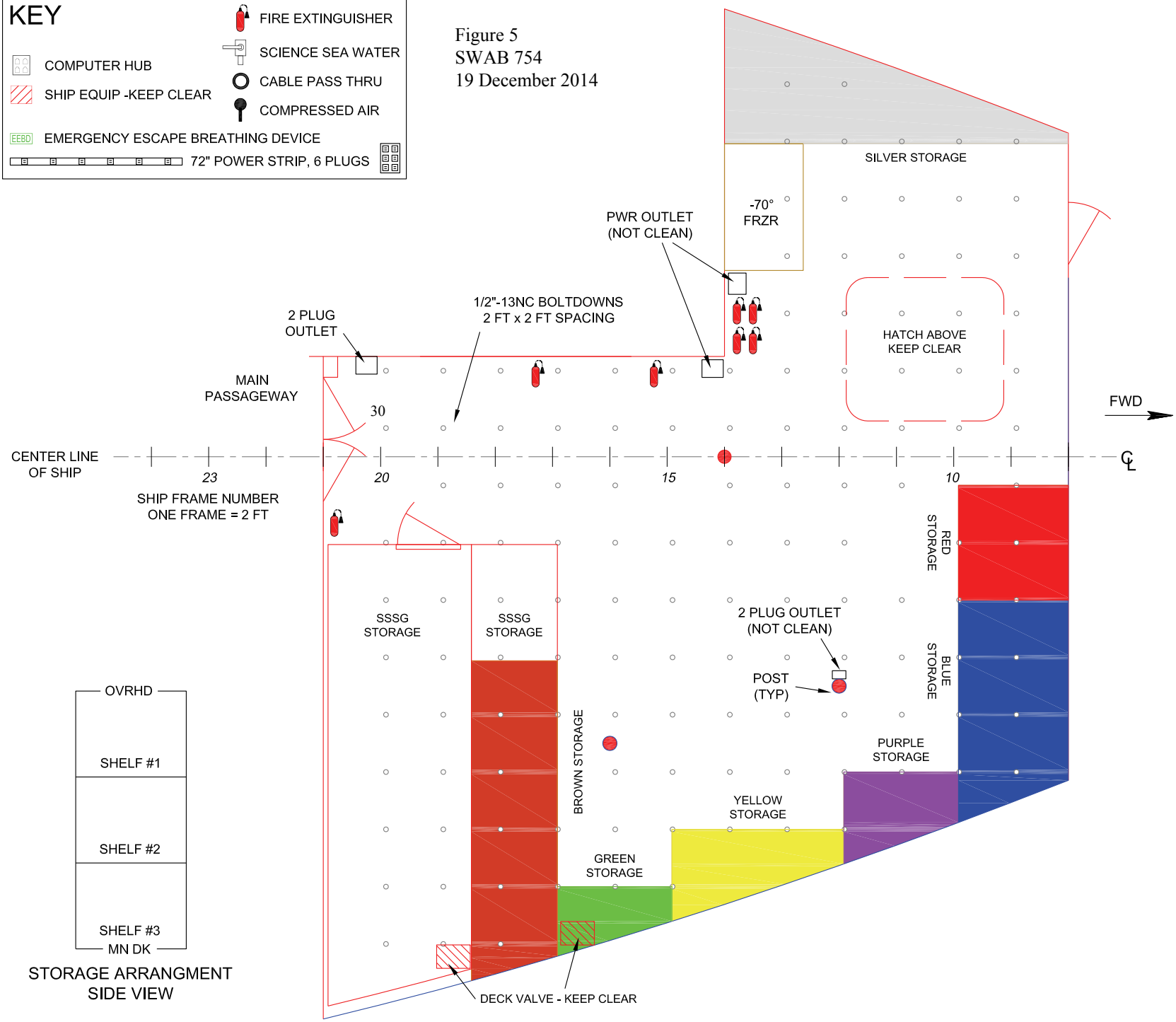
-  COMPUTER HUB
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-  SCIENCE SEA WATER
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Figure 5
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SCIENTIFIC STOREROOM ARRANGEMENT
Atlantis Main Deck, Room 1-8-0

KEY



COMPUTER HUB



SHIP EQUIP -KEEP CLEAR



EMERGENCY ESCAPE BREATHING DEVICE



72" POWER STRIP, 6 PLUGS



FIRE EXTINGUISHER



SCIENCE SEA WATER



CABLE PASS THRU

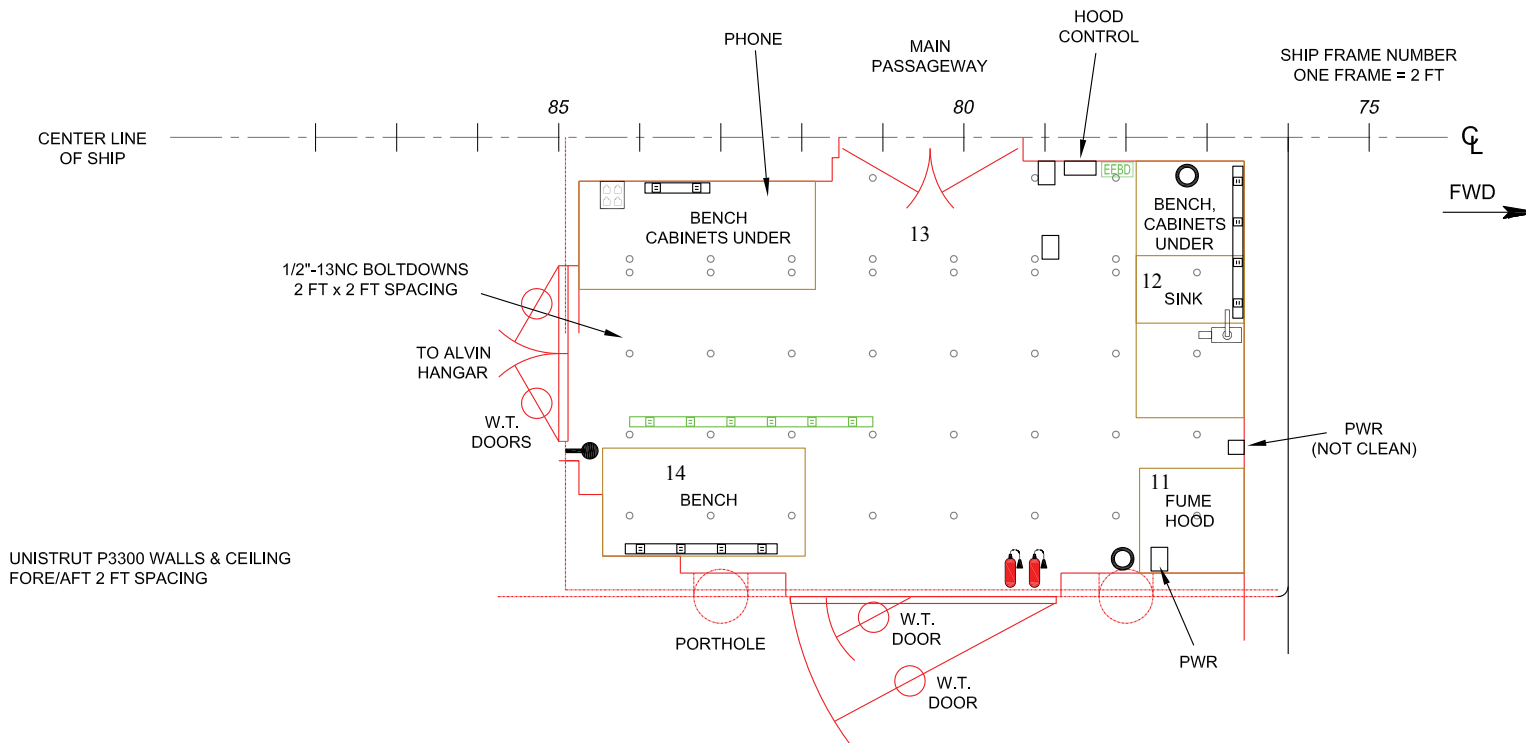


COMPRESSED AIR

UNISTRUT:
BULKHEADS
2 FT SPACING
OVERHEAD FORE/AFT,
FULL LENGTH OF LAB

ALL POWER CLEAN UNLESS NOTED

Figure 6
SWAB 754
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WET LABORATORY
Atlantis Main Deck, Rm 1-76-1

WHOI RADIOISOTOPE VAN

#200140

Figure 7
SWAB # 754
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