



1 December 2025

SWAB REPORT #1135

SWAB DATE: 18 November 2025

R/V Atlantis & Rad Van #625.1.05-1 (R5)

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Distribution:
SWAB Committee
Sarah Fuller
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COMMENTS TO SWAB REPORTS

15 December 2021

The LSC is now a Quantulus GCT 6220, with the SWAB counting assay having background cpm of 0.3 & 1.2 for ^3H & ^{14}C . This replaces an LSC with background cpm of 1.6 & 5.5 for ^3H & ^{14}C .

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. All activities significantly above background will be in **bold**.

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 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 #1135

LOCATION: San Diego, CA

DATE: 18 November 2025

VESSEL/LAB: *R/V Atlantis*

TECHNICIAN: Jim Happell

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	-39	± 122	18	± 14
	<u>Rad Van 625.1.05-1 (Figure 1)</u>				
3	Sink area	-20	± 10	*197	± 22
4	Benchtop adjacent to sink	117	± 25	*257	± 24
5	Benchtop adjacent to fume hood	148	± 25	*371	± 27
6	Fume hood	48	± 22	*69	± 16
7	Benchtop with LSC	*3054	± 149	*302	± 20
8	Benchtop across from sink	27	± 22	22	± 12
9	Inside refrigerator	*1032	± 82	*509	± 30
10	Inside freezer	*1100	± 73	*1350	± 48
11	Deck near fume hood	*852	± 59	*1804	± 56
12	Deck in center of van	*1200	± 61	*4078	± 84
13	Deck near van entrance	324	± 39	*631	± 34
	<u>Bio-Analytical Lab (Figure 2+A1)</u>				
14	Deck in front of fume hood	-15	± 48	0	± 2
15	Benchtop across from aft sink	-44	± 137	6	± 19
16	Benchtop adjacent to forward sink	-23	± 71	5	± 15
17	Benchtop across from forward sink	-54	± 168	8	± 18
18	Deck inside aft entrance	-48	± 148	11	± 16
19	Forward sink area	-17	± 53	17	± 14
20	Inside Cospolich refrigerator	-7	± 23	8	± 13
21	Inside Cospolich freezer	-6	± 19	-5	± 19
22	Inside Frigidaire refrigerator	18	± 26	2	± 9
23	Inside Frigidaire freezer	-37	± 113	-7	± 26
24	Aft sink area	-45	± 140	6	± 18
25	Deck in front of refrigerators	-27	± 84	9	± 14
26	Deck inside starboard entrance	-17	± 52	-3	± 9
27	Port benchtop	-30	± 93	2	± 35
28	Inside fume hood	-89	± 275	3	± 10
29	Aft benchtop	-37	± 113	24	± 15
30	Starboard benchtop	-22	± 69	-3	± 12
	<u>Miscellaneous Areas (Figure 3)</u>				
31	Deck between walk in coolers	-26	± 81	6	± 15
32	Deck outside entrance of Science Storeroom	-43	± 134	11	± 15
33	Deck inside starboard entrance of Comp. Lab	-27	± 85	4	± 17

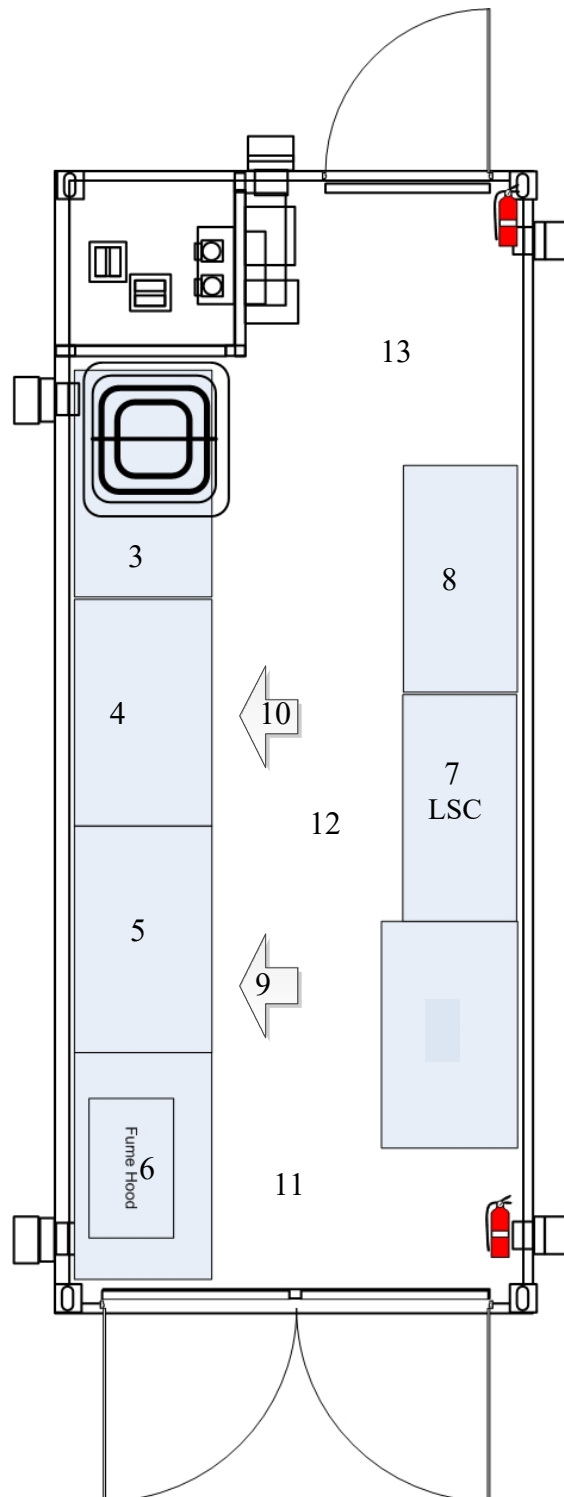
Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
	<u>Main Lab (Figure 4)</u>				
34	Inside fume hood	-43 ±	132	9 ±	16
35	Deck inside forward port entrance	-46 ±	141	11 ±	15
36	Benchtop adjacent to port sink	-41 ±	126	6 ±	18
37	Port sink area	-48 ±	150	-5 ±	19
38	Deck inside port entrance located aft of sink	-12 ±	38	-4 ±	15
39	Starboard benchtop forward of ice machine	-30 ±	93	2 ±	37
40	Starboard benchtop forward of fume hood	-17 ±	54	8 ±	14
41	Deck inside aft port entrance	-41 ±	126	10 ±	15
42	Deck inside aft entrance	-19 ±	59	-12 ±	45
43	Starboard sink area	-28 ±	87	0 ±	2
44	Benchtop aft of starboard sink	4 ±	13	2 ±	11
45	Deck in front of starboard sink	-19 ±	59	9 ±	14
	<u>Hydro Lab (Figure 5)</u>				
46	Deck in front of port sink	21 ±	19	2 ±	8
47	Deck inside starboard entrance	2 ±	7	7 ±	12
48	Deck around the sink in ROV bay	-17 ±	53	-5 ±	18
49	Inside fume hood	-7 ±	21	-6 ±	21
	<u>Wet Lab (Figure 6)</u>				
50	Starboard benchtop	3 ±	67	-5 ±	18
51	Inside fume hood	-21 ±	66	2 ±	26
52	Port benchtop	-19 ±	60	9 ±	14
53	Forward sink area with wood benchtops	9 ±	11	13 ±	12
54	Deck inside starboard entrance	-13 ±	41	7 ±	13
55	Deck inside aft entrance	-13 ±	39	16 ±	13
56	Deck inside port entrance	9 ±	15	3 ±	10

COMMENTS

Please note that the error reported for each isotope is the two-standard deviation counting error. Reports may now contain values less than zero. Decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded the negative values to zero. Values are only significantly above background when they are positive and larger than the error. Please note that we are now using a Quantulus 6220 LSC which counts very near natural background. While the cleanup standards have not changed all values above background will now be in bold. All areas tested inside the ship were free from isotope contamination that requires cleaning. Minor ^3H and ^{14}C contamination was found in the Rad Van. No action is necessary but we do recommend cleaning of deck areas above 1000 dpm/m².

Rad Van #625.1.05 "R5"

Figure 1
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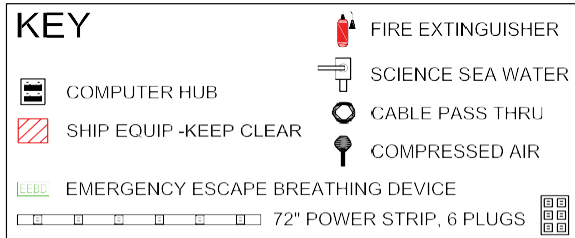
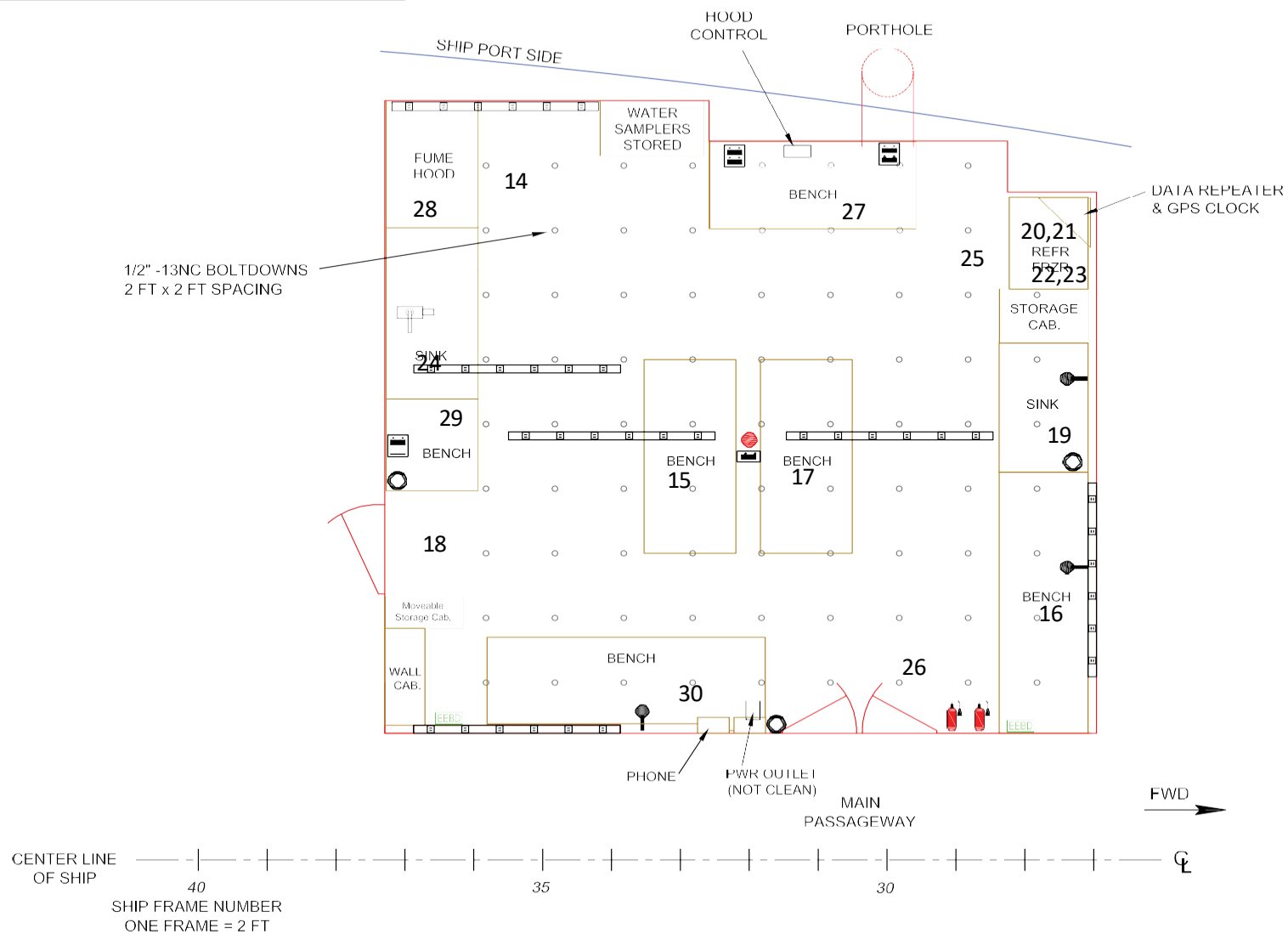


Figure 2
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UNISTRUT:
BULKHEADS
2 FT SPACING
OVERHEAD FORE/AFT,
FULL LENGTH OF LAB

ALL POWER CLEAN UNLESS NOTED



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

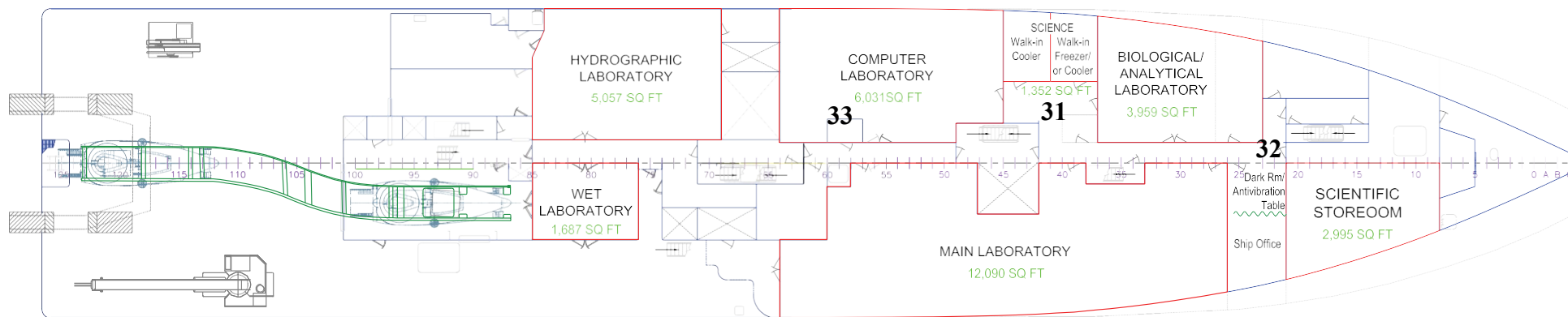


Figure 3
SWAB 1135
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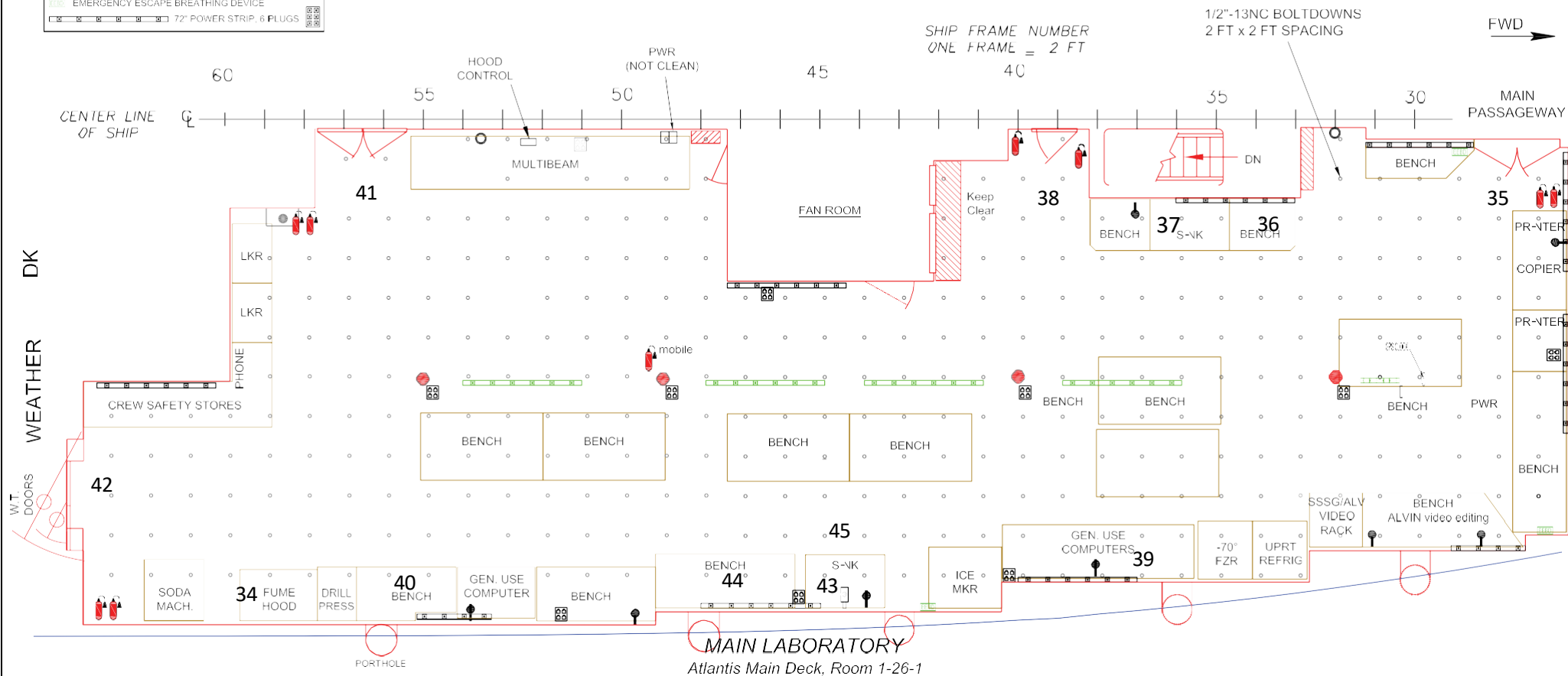
Atlantis Laboratories and Scientific Storeroom General Locations

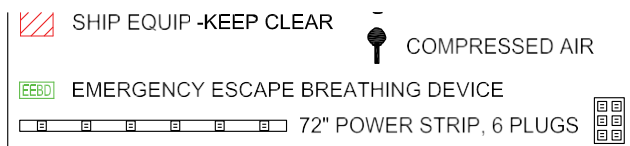
KEY



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

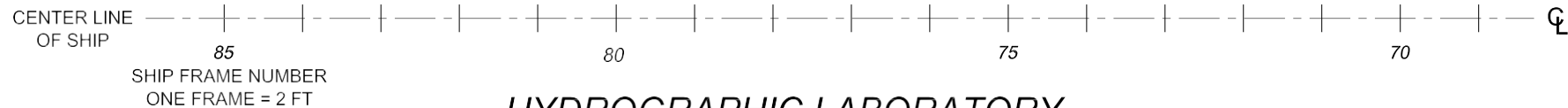
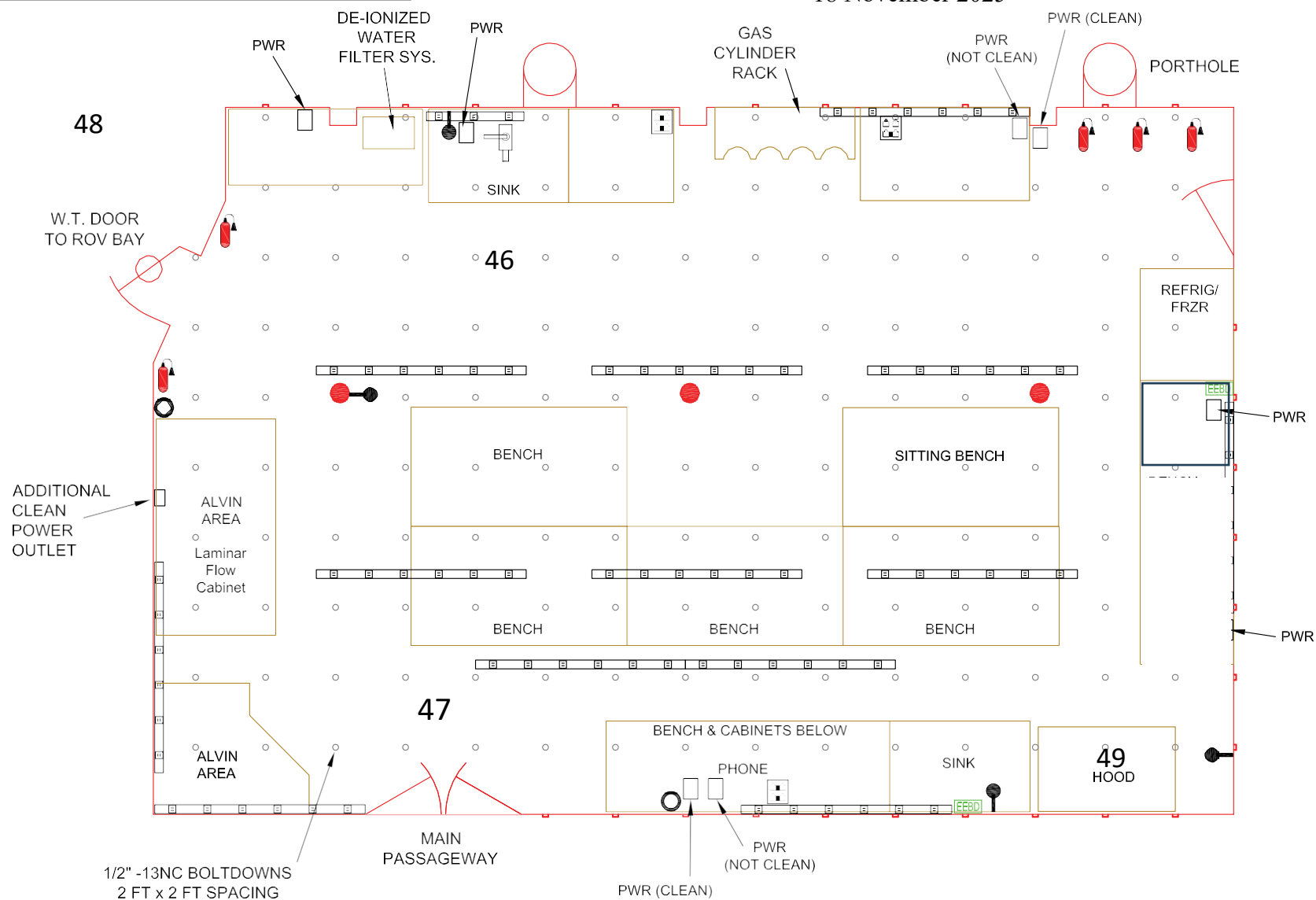
Figure 4
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FULL LENGTH OF LAB
ALL POWER CLEAN UNLESS NOTED

Figure 5
SWAB 1135
18 November 2025



HYDROGRAPHIC LABORATORY Atlantis Main Deck, Room 1-64-2

KEY

COMPUTER HUB

SHIP EQUIP -KEEP CLEAR

EMERGENCY ESCAPE BREATHING DEVICE

72" POWER STRIP, 6 PLUGS



FIRE EXTINGUISHER



SCIENCE SEA WATER



CABLE PASS THRU



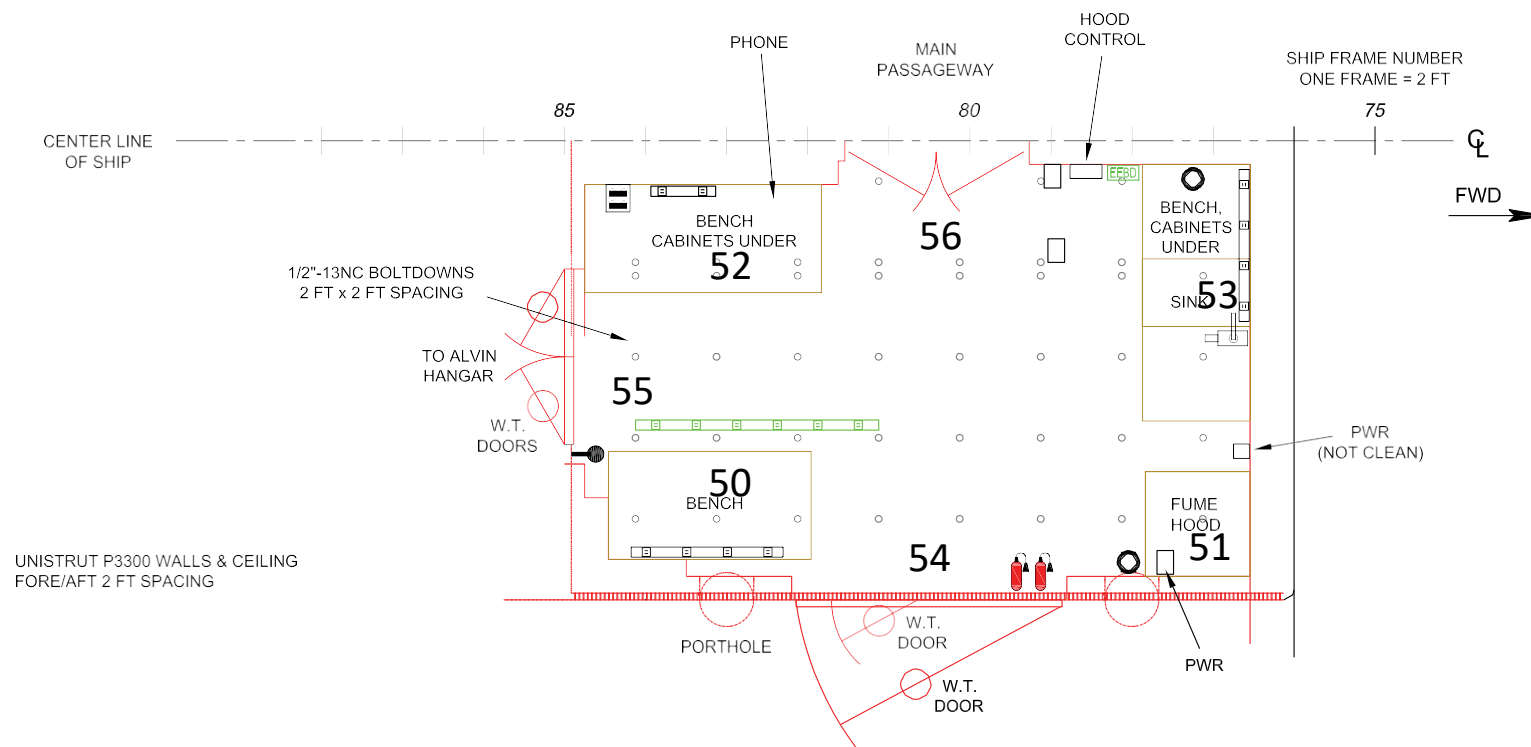
COMPRESSED AIR



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

ALL POWER CLEAN UNLESS NOTED

Figure 6
SWAB 1135
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WET LABORATORY Atlantis Main Deck, Rm 1-76-1