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Tritium Laboratory
4 December 2017

SWAB REPORT # 881

SWAB DATE: 26 November 2017

R/V Sally Ride
CalCOFI Van

James Happell

Digitally signed by James Happell
DN: cn=James Happell, o=University of Miami, ou=RSMAS, email=jhappell@rsmas.miami.edu, c=US
Date: 2017.12.04 15:09:22 -05'00'

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Gary Lain

COMMENTS TO SWAB REPORTS 12 May 2014

Typical LSC instrument background values for ^{3}H 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	^{3}H (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 Proceedure

Wearing ordinary household rubber gloves:

^{3}H: 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 $^{14}CO_2$). Follow up with wash as if for ^{3}H.

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 # 881

LOCATION: San Diego, CA
VESSEL: *R/V Sally Ride*

DATE: 26 November 2017
TECHNICIAN: Charlene Grall

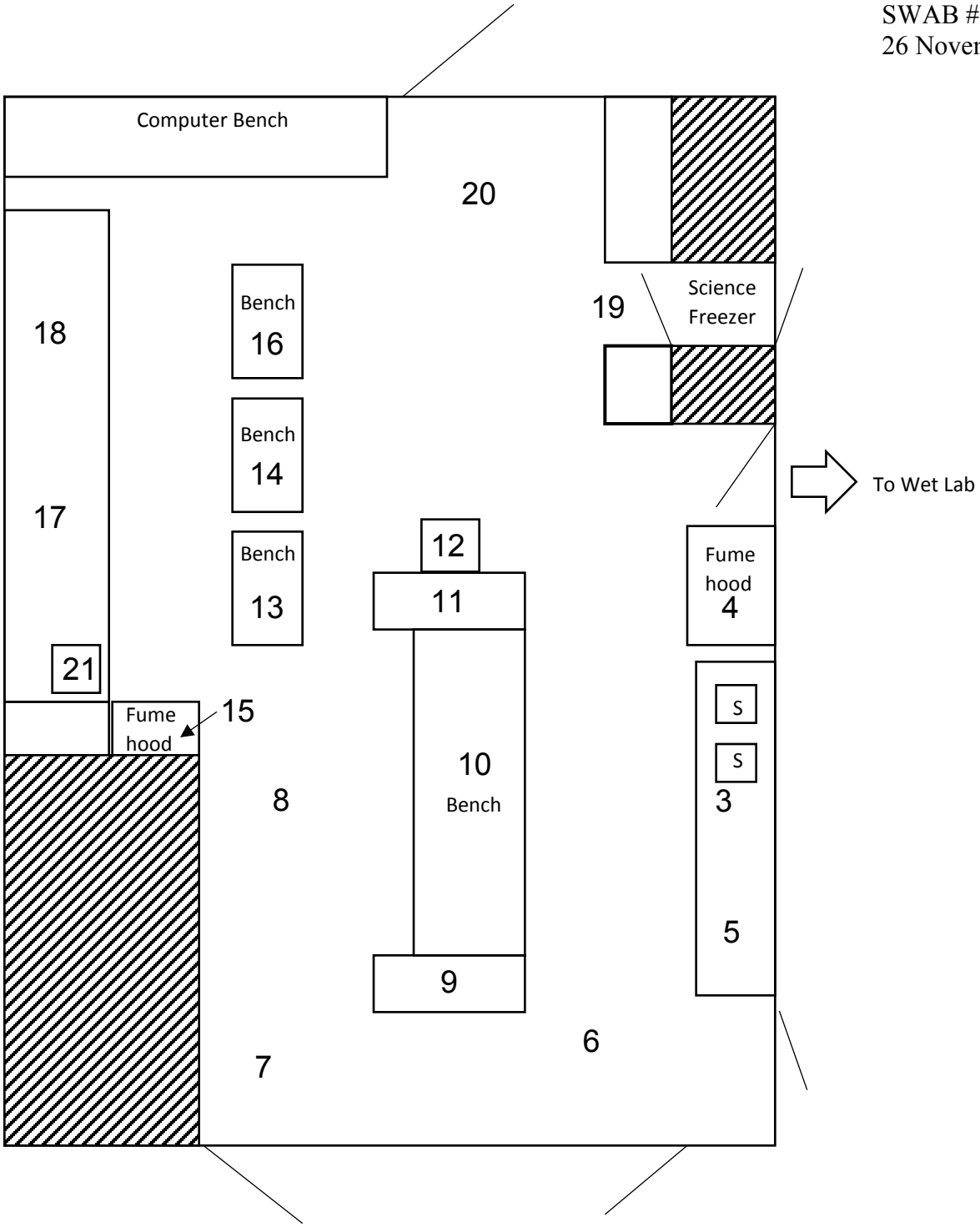
Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank	-9	±	35	-10	±	36
	Main Lab (Figure 1)						
3	Starboard sink area	-16	±	24	23	±	38
4	Inside starboard fume hood	21	±	36	13	±	33
5	Starboard bench aft of sink	-11	±	67	16	±	38
6	Deck between starboard aft entrance and bench	-1	±	19	2	±	37
7	Deck inside port aft entrance	27	±	40	11	±	32
8	Deck between center bench and port fume hood	39	±	59	-17	±	0
9	Aft section of center bench	-5	±	21	4	±	39
10	Mid-section of center bench	39	±	44	7	±	28
11	forward section of center bench	-22	±	53	13	±	40
12	Top of -80 freezer	-15	±	76	28	±	38
13	Aft section of mid-port bench	-18	±	140	45	±	39
14	Mid-section of mid-port bench	-34	±	88	-11	±	22
15	Inside port fume hood	36	±	46	3	±	23
16	Forward section of mid-port bench	-1	±	8	12	±	37
17	Aft section of port bench	20	±	48	0	±	17
18	Forward section of port bench	6	±	24	14	±	36
19	Deck in front of Science Freezer	25	±	42	6	±	29
20	Deck inside forward entrance to lab	-4	±	42	-1	±	11
21	Inside small Haier refrigerator next to port fume hood	-13	±	39	0	±	10
	Wet Lab (Figure 2)						
22	Sink area	-2	±	77	8	±	37
23	Inside fume hood	-18	±	48	6	±	44
24	Starboard bench	15	±	67	-10	±	33
25	Deck inside port entrance	-3	±	25	4	±	38
26	Deck inside aft entrance	-22	±	56	17	±	39
27	Benchtop aft of sink	46	±	55	-15	±	41
28	Deck in front of Science Freezer	4	±	45	0	±	36

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	Aft Deck (Figure 3)						
29	Deck between starboard door and Science Van	-19	±	89	26	±	39
30	Deck at base of stair to Focsle Deck	58	±	49	-8	±	56
31	Deck below entrance to Calcofi Van	2	±	40	1	±	32
32	Deck in center of Staging Bay	20	±	25	34	±	36
	Miscellaneous Areas of Main Deck (Figure 3)						
33	Deck in center of ET Shop	12	±	44	1	±	19
34	Deck inside entrance to Computer Lab	10	±	36	6	±	33
35	Companionway outside of Mess	28	±	44	4	±	27
36	Final bucket sample (CO #1)	0	±	9	6	±	36
	CalCOFI Rad Van (Figure 4)						
37	Initial bucket sample (CO #2)	29	±	74	-25	±	74
38	Inside refrigerator bottom	-8	±	22	17	±	38
39	Sink area	7	±	34	5	±	34
40	Benchtop adjacent to sink	37	±	54	-10	±	36
41	Benchtop adjacent to refrigerator	19	±	42	4	±	29
42	Desk across from sink	31	±	62	-19	±	91
43	Deck in center of van	23	±	67	-17	±	44
44	Final bucket blank (CO #2)	-1	±	16	13	±	37

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error.
The reports may now contain values less than zero. When 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. All areas tested on the ship and in the van were free from any isotope contamination that requires cleaning.

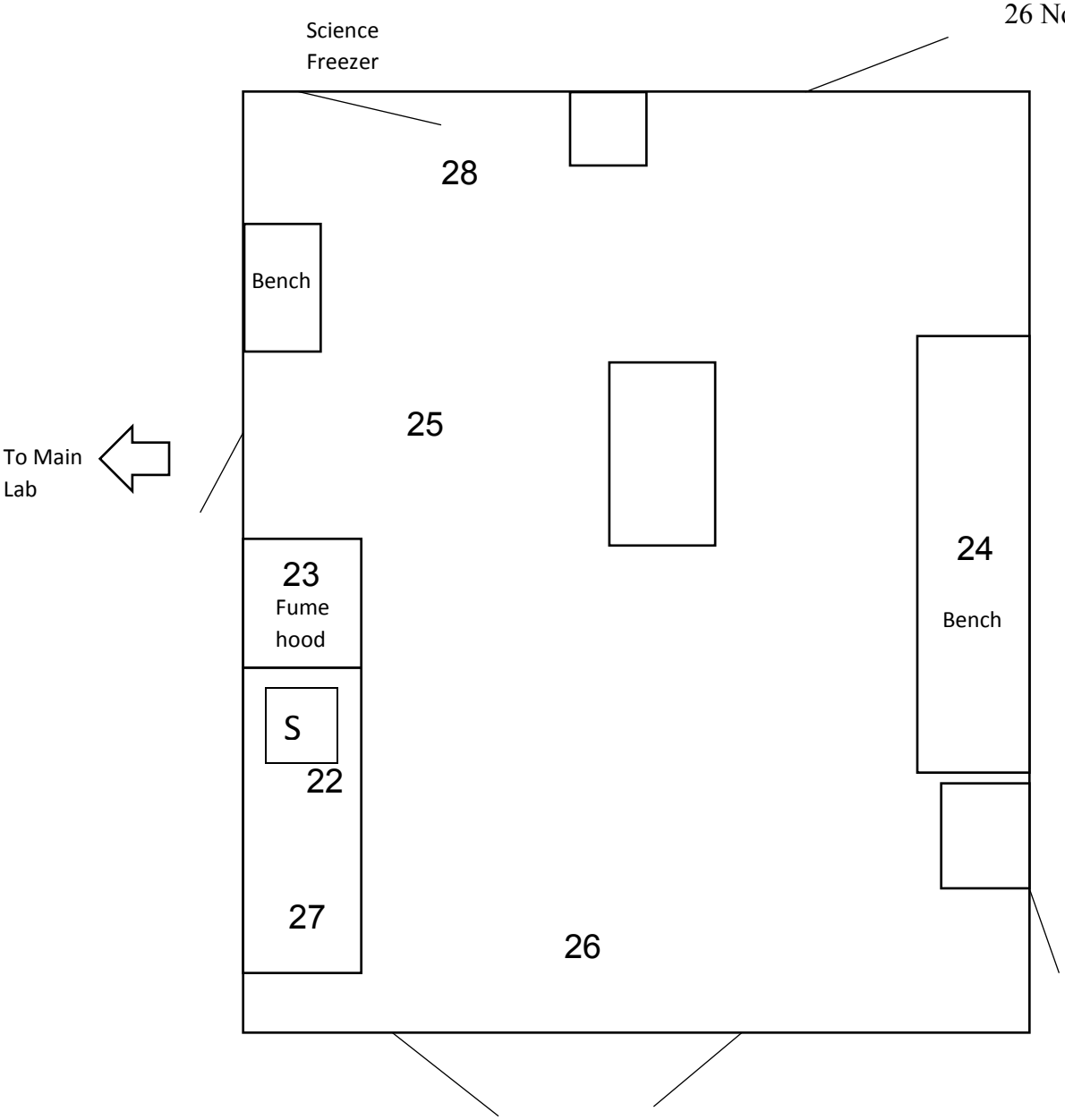
Figure 1
SWAB #881
26 November 2017



R/V Sally Ride

MAIN LAB

Figure 2
SWAB # 881
26 November 2017



R/V Sally Ride

WET LAB

Figure 3
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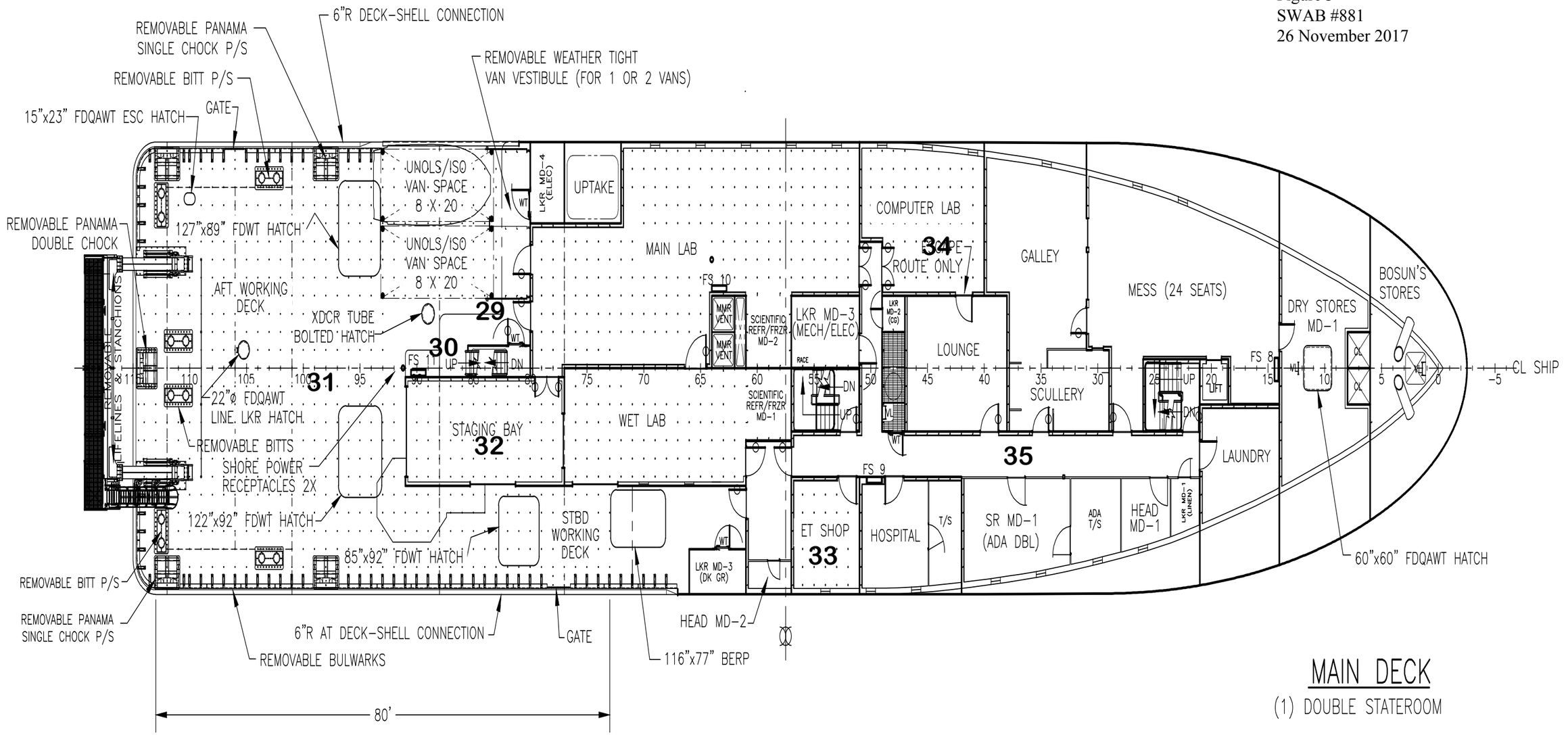
26 November 2017



MAIN DECK

(1) DOUBLE STATEROOM

PLOT DATE: Thursday November 14 2013
PLOT TIME: 1:29:35 pm
PLOT ID:
FILE DIR: 65311_C:\USERS\DC\APPDATA\LOCAL\TEMP\ACPUBLISH_5116\
FILE NAME: DCI 027-04 R8010 REV-D.DWG

HALF SIZE PRINT	DESIGNER: GUIDO PERLA & ASSOCIATES, Inc.	TITLE: GENERAL ARRANGEMENT DRAWINGS	
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	NAVSEA DWG No. 8565942	SCALE 3/32" = 1'-0"	SHEET: 4 OF 7

Figure 4
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26 November 2017

CalCOFI Van