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Tritium Laboratory
24 July 2023

SWAB REPORT # 1066

SWAB DATE: 19 July 2023

R/V Sally Ride & Radioisotope Van 625.1.05-1

James Happell Digitally signed by James Happell Date: 2023.07.25 07:53:49 -04'00'

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 # 1066

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

DATE: 19 July 2023
TECHNICIAN: Charlene Grall

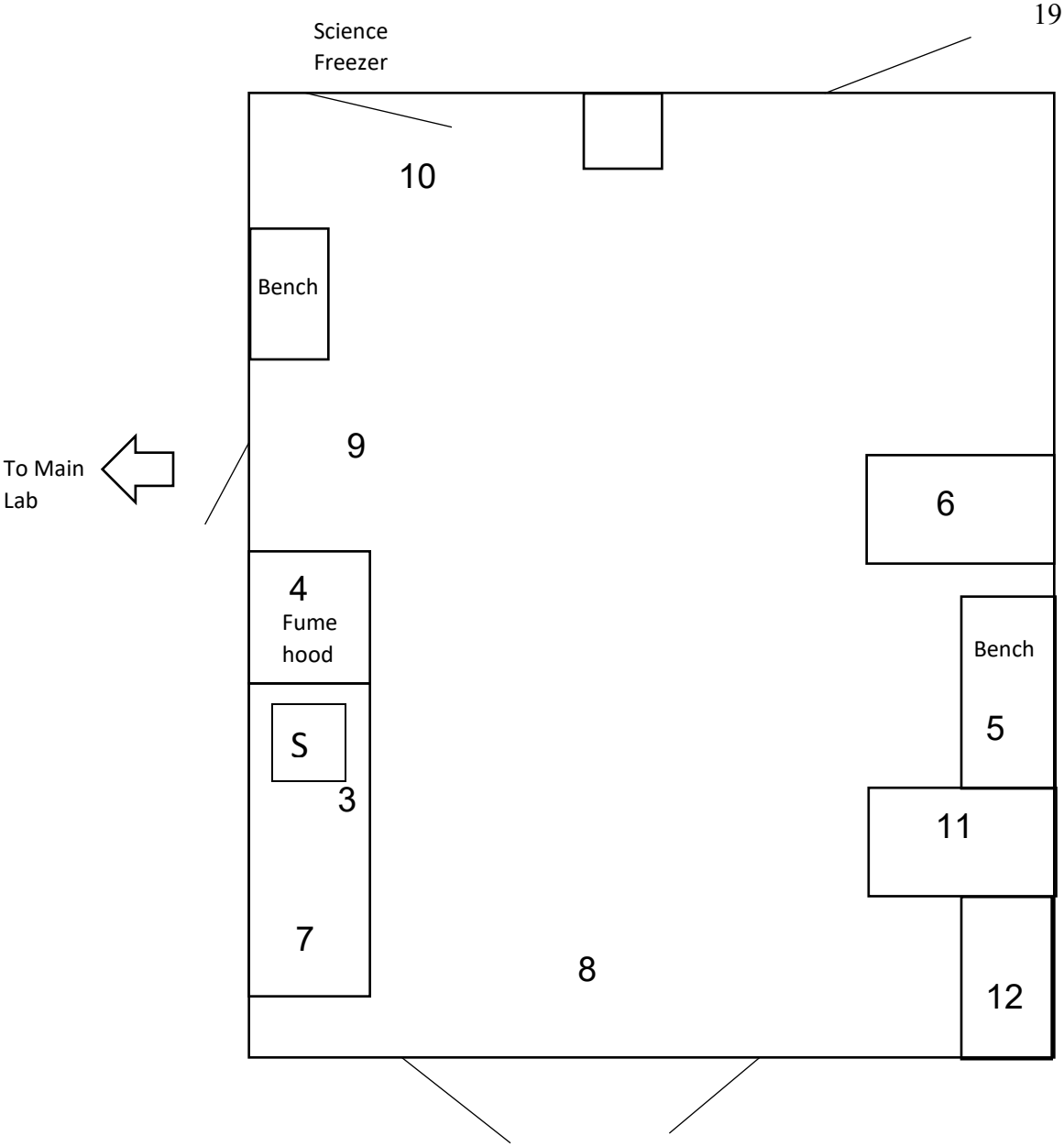
Sample #	Sample Identification	^{3}H dpm/m^{2} activity	±	error	^{14}C dpm/m^{2} activity	±	error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank C.O. # 1	-26	±	23	-5	±	33
	Wet Lab (Figure 1)						
3	Sink area	-15	±	27	-24	±	5
4	Inside fume hood	-33	±	60	-4	±	5
5	Starboard benchtop	-3	±	25	-3	±	4
6	Wood benchtop opposite of sink	-32	±	58	0	±	1
7	Port benchtop aft of sink	-31	±	56	-2	±	3
8	Deck inside aft entrance	-7	±	68	-12	±	15
9	Deck inside port entrance	8	±	79	-11	±	14
10	Deck in front of science freezer	-25	±	46	11	±	13
11	Benchtop oppositeof port sink	-21	±	39	-20	±	24
12	Benchtop opposite of fume hood	-11	±	20	2	±	159
	Main Lab (Figure 2)						
13	Inside starboard fume hood	-32	±	57	-12	±	51
14	Inside port fume hood	-89	±	160	4	±	15
15	Deck in front of port fume hood	-6	±	61	-15	±	63
16	Deck in front of starboard sink area	-3	±	34	-4	±	19
17	Aft section of port benchtop	-1	±	13	-7	±	30
18	Forward section of port benchtop	-11	±	20	-9	±	39
19	Center section of center benchtop	-28	±	51	2	±	81
20	Forward section of center benchtop	-37	±	66	-14	±	140
21	Deck in front of science freezer	-27	±	48	-6	±	60
22	Deck inside forward entrance	-21	±	38	2	±	22
23	Benchtop across from starboard fume hood	-19	±	34	-16	±	66
24	Deck at aft entrance	27	±	49	-22	±	245
25	Benchtop opposite starboard aft entrance	-11	±	21	-7	±	8
26	Starboard sink area	-36	±	64	-13	±	15
27	Inside refrigerator near starboard aft door	-9	±	15	-23	±	261

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	Main Deck (Figure 3)						
28	Deck forward of radioisotope Van	-29	±	53	-5	±	5
29	Deck aft of radioisotope Van	-63	±	114	-5	±	5
30	Center of Staging Bay	-38	±	68	-2	±	3
31	Aft deck where incubator was set up	-8	±	14	-15	±	17
32	Deck aft of CTD station	-38	±	68	10	±	14
	Radioisotope Van 625.1.05-1 (Figure 4)						
33	Intermediate bucket blank	-13	±	23	-13	±	15
34	Benchtop adjacent to sink	-53	±	96	**21**	**±**	**14**
35	Benchtop adjacent to fume hood	-16	±	369	**32**	**±**	**13**
36	Inside fume hood	-12	±	58	**35**	**±**	**13**
37	Deck in front of fume hood	57	±	50	**11**	**±**	**10**
38	Benchtop under LSC	-4	±	13	**28**	**±**	**13**
39	Inside Marvel incubator adjacent to sink	-18	±	33	3	±	14
40	Inside Marvel incubator across from LSC	-30	±	54	**39**	**±**	**14**
41	Deck in center of van below LSC	-12	±	1237	**22**	**±**	**13**
42	Sink area	-34	±	55	***94**	**±**	**17**
43	Benchtop across from sink	-45	±	73	***54**	**±**	**15**
44	Inside single door entrance	-11	±	17	10	±	12
45	Final bucket bank	1	±	14	-6	±	27

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 on the ship were free from isotope contamination requiring cleaning. Minor ^{14}C contamination was found in the Rad Van. No action is necessary.

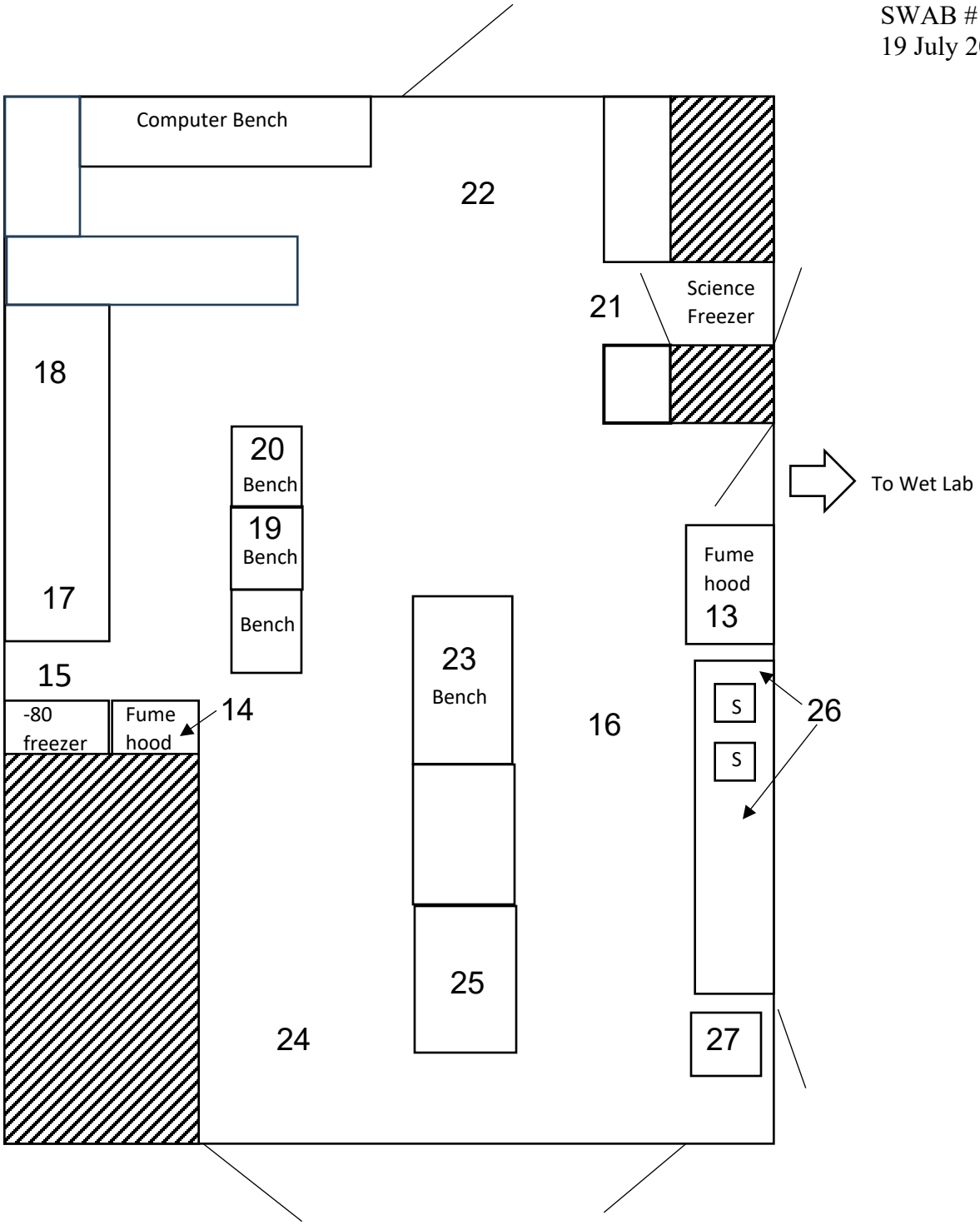
Figure 1
SWAB # 1066
19 July 2023



R/V Sally Ride

WET LAB

Figure 2
SWAB # 1066
19 July 2023



R/V Sally Ride

MAIN LAB

Figure 3
SWAB #1066
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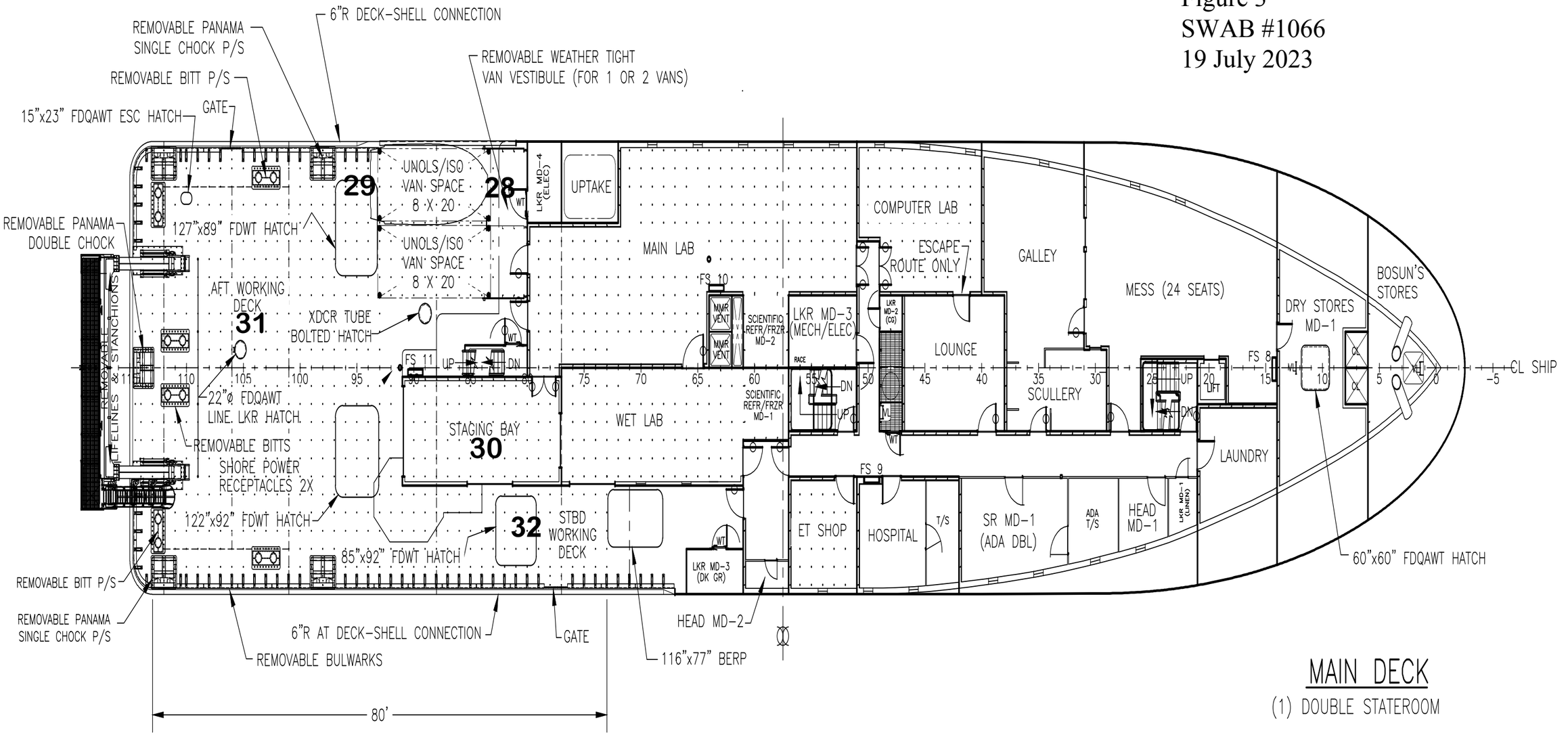

MAIN DECK

(1) DOUBLE STATEROOM

PLOT DATE: Thursday November 14 2013
PLOT TIME: 12:29:33 am
PLOT ID:
FILE DIR: 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	
	SHIPBUILDER: DAKOTA CREEK INDUSTRIES, Inc.	D	DWG No. 65411-801-01 REV. D
	NAVSEA DWG No. 8565942	SCALE 3/32" = 1'-0"	SHEET: 4 OF 7

Figure 4
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UNOLS Rad Van 625.1.05-1
(aka R3)