



**R/V HUGH R. SHARP**

**R/V HUGH R. SHARP**  
**University of Delaware**  
**2018**

**GENERAL DESCRIPTION:**

The R/V *HUGH R. SHARP* is an acoustically quiet, state of the art, general-purpose, regional class research vessel operated by the University of Delaware as part of the University-National Oceanographic Laboratory System (UNOLS) federal research fleet. The ship's normal operating area is the Delaware and Chesapeake Bays and adjacent coastal waters out to 200 nautical miles. However, work is periodically conducted as far north as the Gulf of Maine, as far south as the Gulf of Mexico and as far offshore as Bermuda. The vessel is outfitted with a full range of oceanographic equipment and instrumentation. The Sharp is designed to meet ICES 209 sound emission standards and has an acoustically quiet mode as well as a Sound Guards self monitoring hydrophone system.

**COMMUNICATIONS:**

Voice, FAX, and Internet/e-mail via: Cellular and Fleet Broadband (Sailor 500)

**MANEUVERING AND POSITIONING**

Kongsberg KPOS-DP11 Dynamic Positioning System, Twin Schottel Z-Drives, Tunnel Bow Thruster

**ELECTRICAL POWER:**

480 Vac (3Φ), 208 Vac (1Φ and 3Φ)

**FIXED SCIENCE HANDLING EQUIPMENT:**

Starboard Trawl Winch: DYNACON, 3000m of ½” and 1500m of 9/16” 3x19 torque balanced wire rope; auto-render, 20,000 LBS Line Pull.

Port Trawl Winch: DYNACON, 2200m .681 fiber optic wire.

CTD Handling System: Caley Ocean Systems 4500m 0.322 cable, SWL 6700 LBS

Main Crane: Palfinger 48000 (SWL 15,400 LBS @ 18 ft; 3090 LBS @ 67 ft)

Stern A-Frame: SWL 20,000 LBS @ center overboarding sheave

Clear Height: 18 ft    Clear Width: 11.8 ft    Reach outboard: 10.5 ft

SWL 12,800 LBS P/S upper “T” extensions

Side Frame (port side preferred): Rapp Hydra Pro HP5/9A (DLT 11,600 lbs)

Clear Height: 14.5 ft                      Clear Width: 4.9 ft

Reach Outboard: 10.6 ft                  Reach Inboard: 9.3 ft

**SEMI-PORTABLE SCIENCE HANDLING EQUIPMENT:**

Hawboldt SPRE-2648/RS Mooring / Multipurpose Deck Winch (SWL 5,200 lbs. bare drum)

DYNACON 10010 Portable Deck Winch, 700m of 0.498”, 10 conductor cable.

DEME Portable Deck Winch, 1000m of ¼”, torque balanced wire.

Knuckle Boom Crane (“AUV Crane”): DMW Marine (SWL 1,000 lbs), 15.5 ft reach.

**LAB AND DECK SPACE:**

Main Deck Aft: 1500 sqft

Clear Rail Length (Starboard): 53 ft

Dry Lab: 340 sqft

Wet Lab: 260 sqft

Vans: Two (2) 20-foot van locations P/S on main deck aft.

Isotope Van with Hewlett-Packard LSC

General-Purpose Van

AUV/ROV Van

Cold and “Clean” vans available upon request

**RETRACTABLE KEEL:**

Three (3) 24" x 24" transducer bays for ship and science use. Changeable alongside.

- Flush with keel: 2.9 m below mean water line
- 1.0 m down: 3.9 m below mean water line
- 2.0 m down: 4.9 m below mean water line

**SHIP'S STANDARD INSTRUMENTATION:**

Sound Guard real time noise monitoring and recording program with hull mounted transducers.

Acoustic Doppler Current Profiler (ADCP): RDI "Workhorse Mariner" 300kHz or Rio Grand BB 600kHz.

Surface Mapping System (SMS): The SMS records navigation, meteorological and sea surface data every 10 seconds.

CTD System: SeaBird Electronics 911 plus CTD, Rosette is a 12-bottle Sea Bird 32 Carousel, outfitted with an array of 10 liter bottles.

Knudsen Chirp 3260 Deep Water Echo Sounder (3.5 and 200 kHz).

Applanix POS-MV v5 Positioning and Orientation sensor

RESON 7125plus Multibeam System (200 and 400 kHz) mounted in retractable keel (additional day rate).

"Scanfish" GMI MKII Undulating Towed CTD with SeaBird Electronics 911 plus CTD (additional day rate).

- |   |                          |
|---|--------------------------|
| Profiling Light Meter (Biospherical)  | Lab-Grade Water Purifier |
| Ocean Instruments Box Corer (16" x 16")   | Gravity Corer (10 Foot)  |
| Smith MacIntyre Bottom Grab   | Deck Incubation Tables   |
| Liquid Scintillation Counter (in 20-foot van)   |                          |
| Multicorer  |                          |
| "Clean" Sea Water Supply Available in Labs and Vans from dedicated science sea chest. |                          |

- 17-Foot Semi-Rigid Work Boat (SafeBoats) with 90hp engine
- Modular Scientific Refrigerators and Freezers
- Scientific Bow Tower and Scientific Antenna Mounts on Main Mast

**SCHEDULING:**

The R/V *HUGH R. SHARP* is scheduled through the UNOLS process. Preliminary schedules for the next calendar year are drafted the prior Spring - Summer. As the funding decisions for the various proposed projects become known the schedule is finalized. All investigators, regardless of which agency or institution is providing the funding, should submit a Ship Time Request through UNOLS as early as possible ([www.unols.org](http://www.unols.org)). We are happy to accommodate additional cruises in the current year as the ship's schedule permits. We encourage all investigators to contact Marine Operations early in the planning stages of the project.

**CONTACT:** Jon Swallow, Director of Marine Operations  
Phone: (302) 645-4341 / (302) 396-8565  
e-mail: [jswallow@udel.edu](mailto:jswallow@udel.edu)

**Principle Characteristics**  
**R/V HUGH R. SHARP**

|   |   |
|---|---|
| Operating Area  | Mid-Atlantic/Coastal<br>Maine to Florida and the Gulf of Mexico |
| Length Overall  | 146' (44.5 m)   |
| Length at Waterline                                   | 135'  |
| Beam  | 32'   |
| Draft   | 9.5'  |
| Freeboard (aft deck)                                  | 5'  |
| Maximum Antenna Height (SSB)                          | 75'   |
| International Tonnage (With two 20-foot vans on deck) | 495   |
| Domestic Tonnage                                      | 256   |
| Displacement Tonnage (Fully Loaded)                   | 598   |
| Cruising Speed  | 9-10 knots  |
| Range (Average speed 7 knots, 10% reserve)            | 3500 nm   |
| Endurance (Limiting Factor: Fuel)                     | ~14 days  |
| Propulsion Plant                                      | Diesel-Electric   |
| Main Propulsors:                                      | Schottel Twin Z-drives (5-bladed, fixed pitch)                  |
| Bow Thruster:   | Schottel Tunnel Thruster  |
| Dynamic Positioning:                                  | Simrad "Green" DP (rated "DPS-0")                               |
| US Coast Guard Inspection Status:                     | Uninspected   |
| ABS Classed   | *A1, Maltese Cross, AMS, Circle E                               |
| Load Line   | Yes   |
| Total Permanent Berths (2-person staterooms)          | 22  |
| Routine Crew (Including technician)                   | 6-8   |
| Routine Scientific                                    | 14  |
| Acoustic Capabilities                                 | Below ICES 209 limits at 8.0 knots                              |
| Stack Emissions                                       | "Low" per EPA requirements                                      |
| Bollard Pull  | 33,000 lbs  |
| Routine Lifting/Towing                                | 20,000 lbs  |
| Science Payload                                       | 30 tons (26.78 long tons)                                       |

# Science Transducer Locations



RESON 7125 Mount



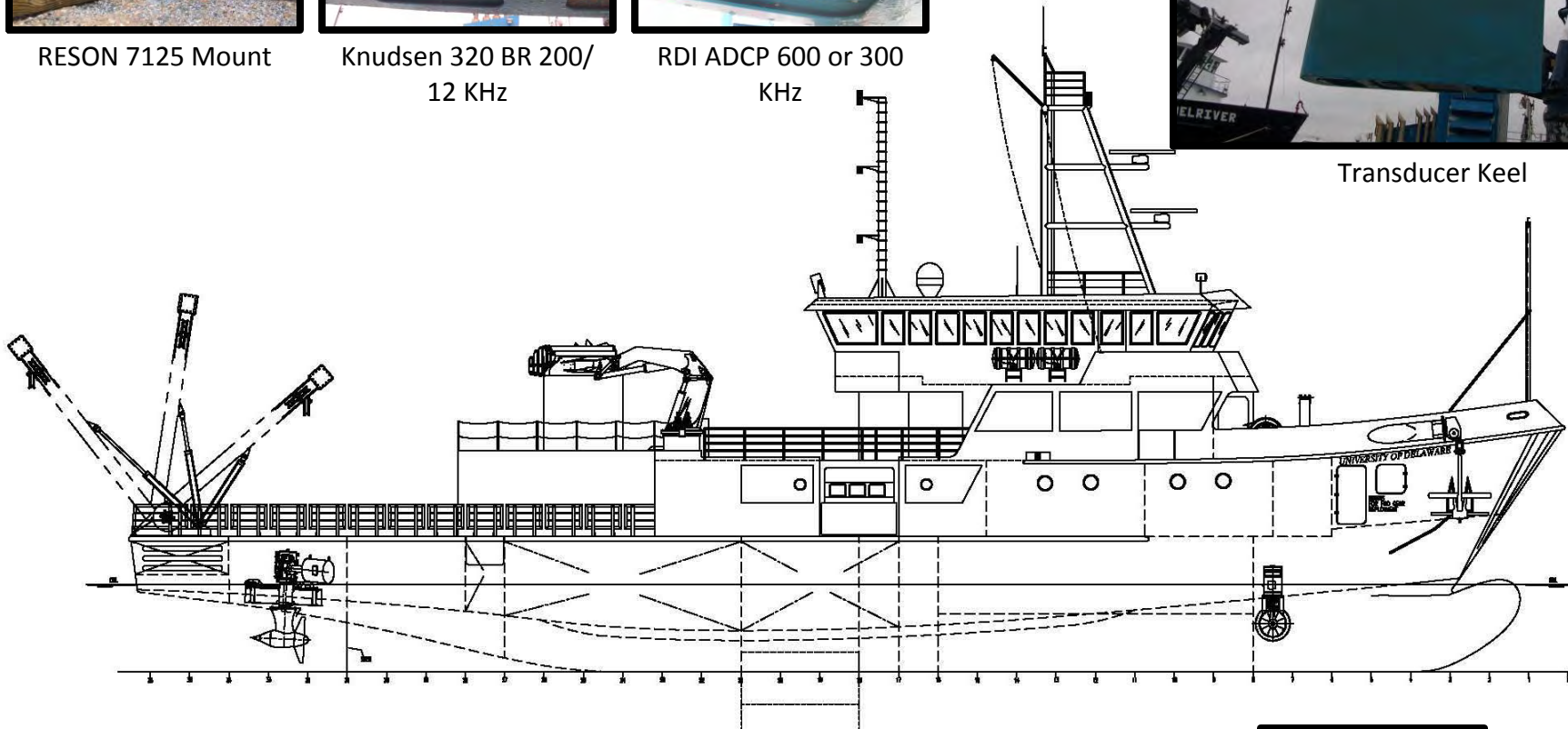
Knudsen 320 BR 200/  
12 KHz



RDI ADCP 600 or 300  
KHz



Transducer Keel



Transducer keel: this is adjustable to recessed, flush to the hull, 1m below the hull and 2m below the hull

RDI ADCP Transducer either 600 or 300 KHz

Multibeam Transducer RESON 7125-SP2

Knudsen 320BR 200/12 KHz Transducer

Open Science Transducer Bay w/ 19 3/4" x 19 3/4" opening



Spare Science Transducer Pod

## R/V HUGH R. SHARP Transducer Locations

DRAWN Bay Marine Inc; Dave Bonney

SIZE

N/A

FSCM NO

DWG NO  
120321DRW-B

REV

001

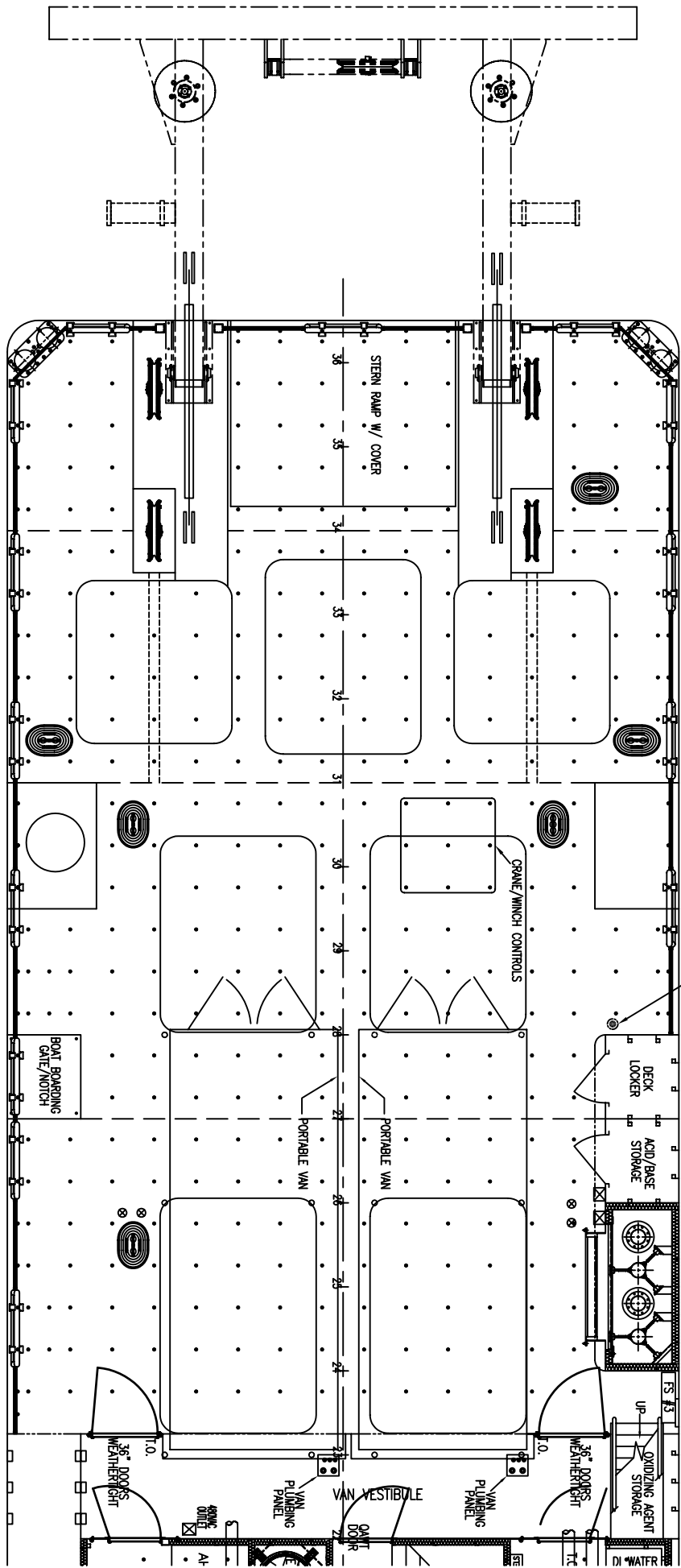
ISSUED Timothy W. Deering

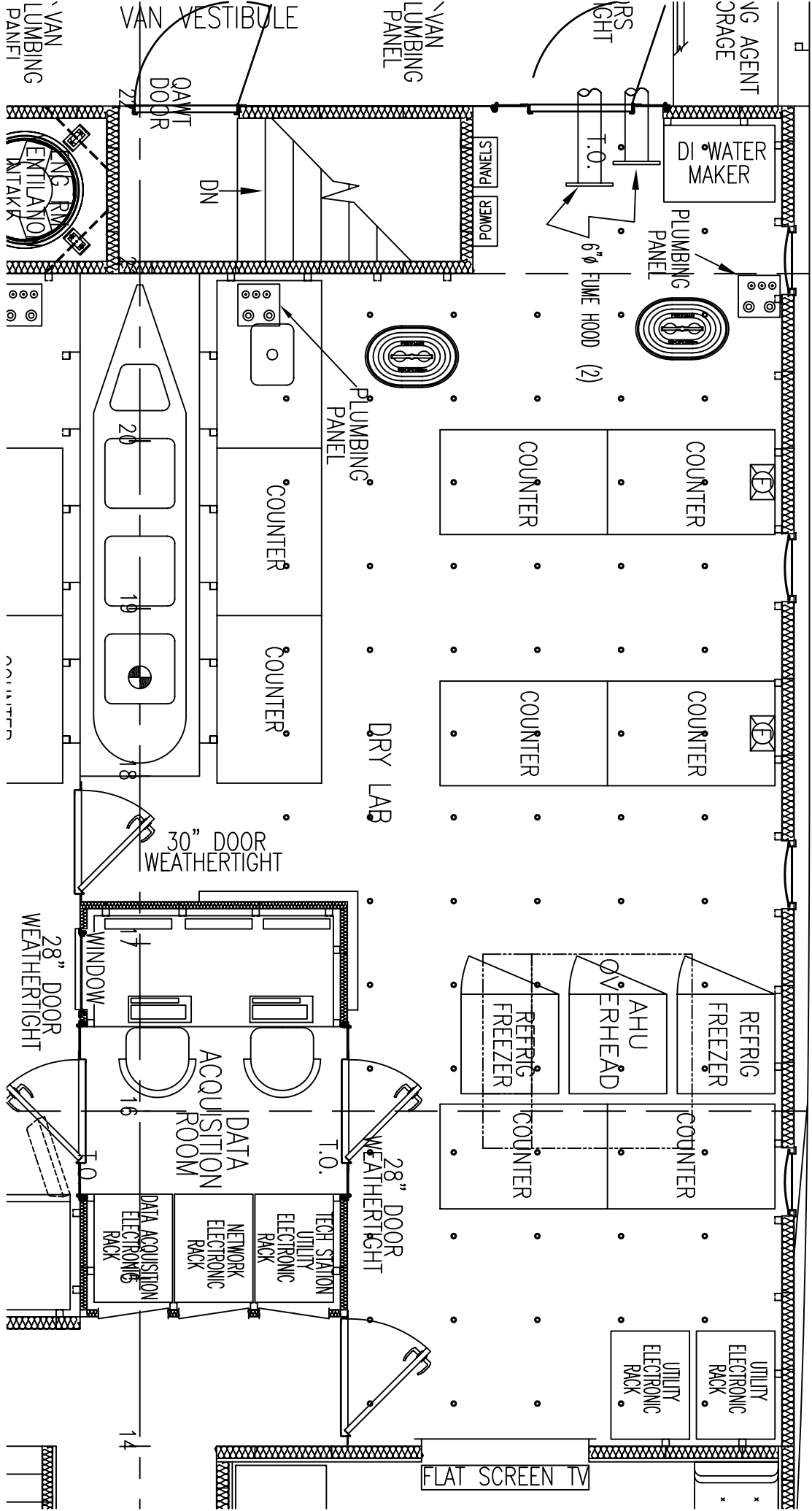
SCALE

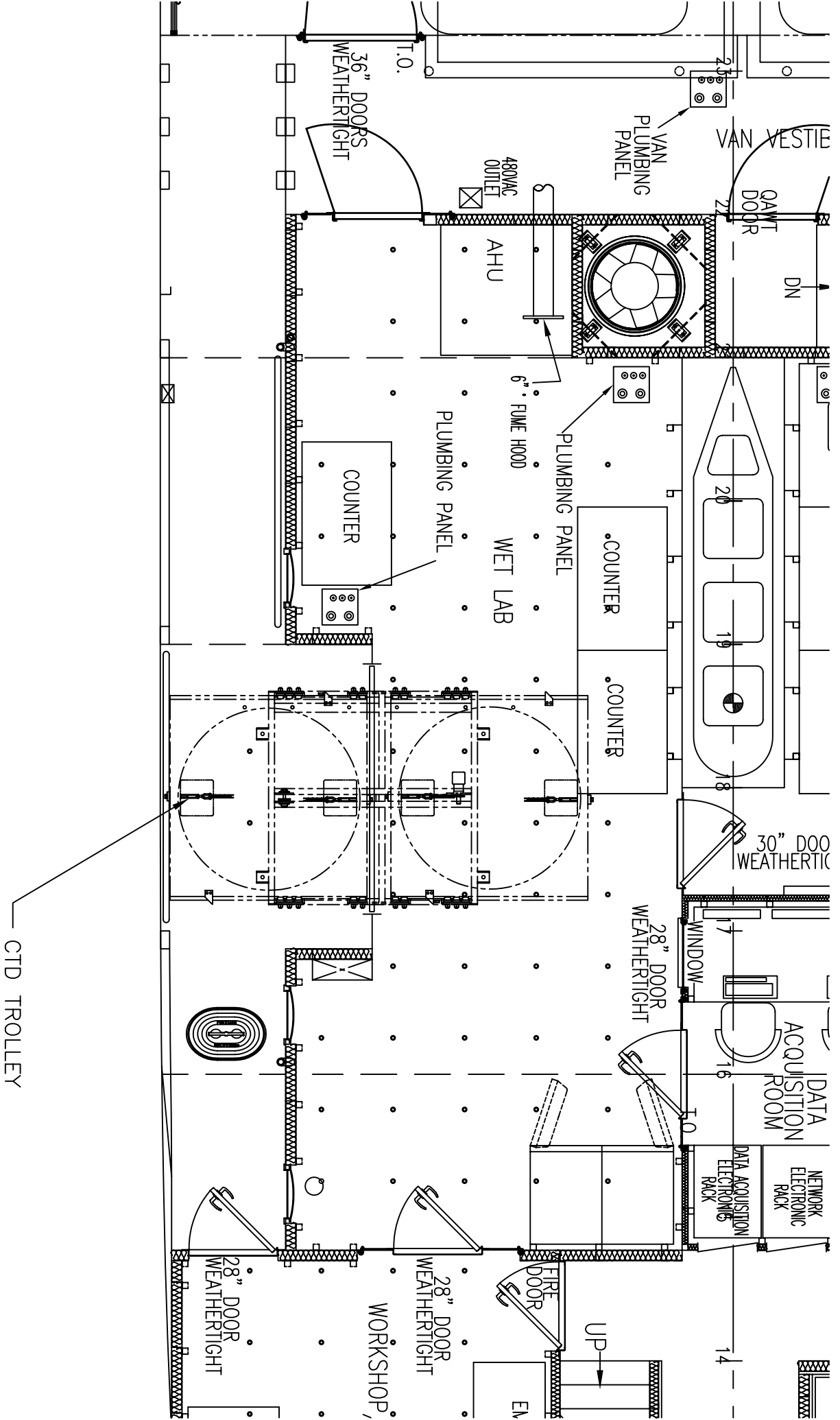
SHEET

1 OF 1

MAIN DECK







CTD TROLLEY

VAN VESTIE

9AWT DOOR

DN

VAN PLUMBING PANEL

480VAC OUTLET

AHU

36" DOORS WEATHERTIGHT

T.O.

6" FLUE HOOD

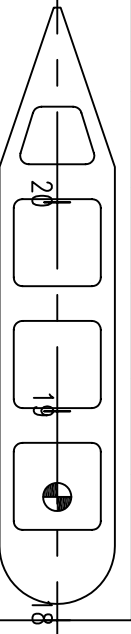
PLUMBING PANEL

COUNTER

WET LAB

COUNTER

COUNTER



30" DOOR WEATHERTIGHT

28" DOOR WEATHERTIGHT

WINDOW

DATA ACQUISITION ROOM

DATA ACQUISITION ELECTRONICS RACK

NETWORK ELECTRONICS RACK

FIRE DOOR

UP

28" DOOR WEATHERTIGHT

WORKSHOP

28" DOOR WEATHERTIGHT

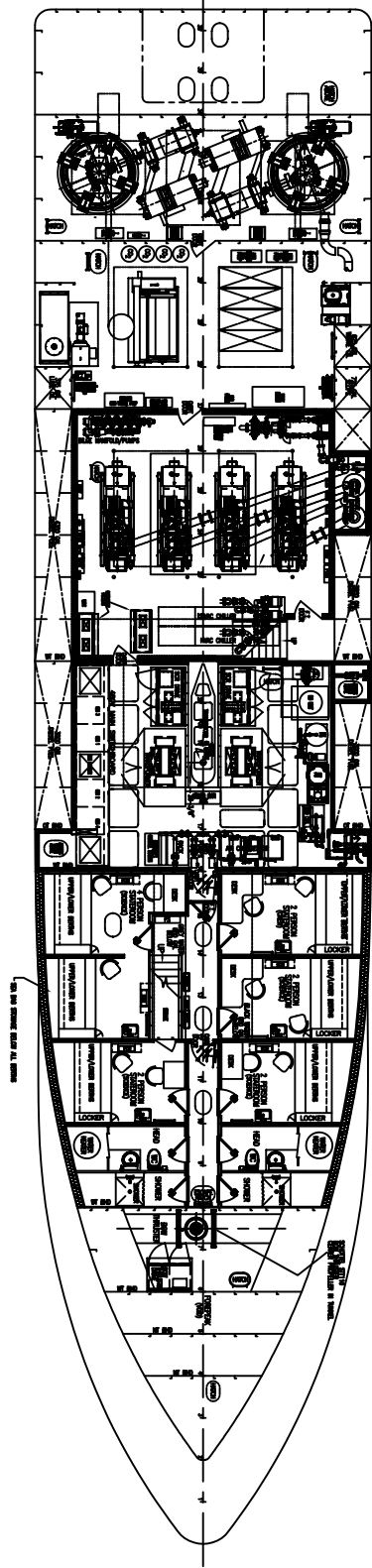
14

EN



**CENTER OF MOTION**  
 CENTER OF MOTION IS 30" W/ CENTER LINE  
 48" W/ CENTER LINE  
 60" W/ CENTER LINE  
 72" W/ CENTER LINE  
 84" W/ CENTER LINE  
 96" W/ CENTER LINE  
 108" W/ CENTER LINE  
 120" W/ CENTER LINE

BELOW DECKS



MAIN DECK

