

BILL OF MATERIAL				
PART	QTY	DESCRIPTION	TYPE	REMARKS
B-1	2	1/4, 20-UNC S.S. HEX BOLT 1" LG.	ASTM A193 B8, AISI 316	
B-2	4	3/4, 20-UNC S.S. HEX BOLT 4" LG	ASTM A193 B8, AISI 316	
N-1	2	1/4" 20-UNC S.S. HEX NUT	ASTM A194, B8M, AISI 316	
W-1	4	1/4" S.S. WASHER		
TD-1	8	1" S.S. TIE DOWN FITTINGS		
HINGE	6	6" S.S. HINGE, BOLTS AND NUTS		
ISO VAN CONNECTOR AND BASES	8	ISO VAN CONNECTOR BASES, DECK SOCKET, PECK AND HALE PART NO. F700-1-0C, PECK AND HALE PART NO. 5656-R-C SOCKET COVER WHEN IN USE, PECK AND HALE PART NO. F700-10-1 WRENCH FOR COVER, PECK AND HALE PART NO. 569-B.		
SEAL RETAINER	AS REQ'D	SEAL RETAINER, PAWLING ENGINEERED PRODUCTS PART NO. PR6491.		
SEAL	AS REQ'D	PNEUMA-SEAL, PRS548		
SEAL EXTRUSION	AS REQ'D	PR8122		
MANUAL PNEUMATIC CONTROLLER	2	PNEUMA-SEAL	PR31501-1	
1/2"DIA NYLON ROPE	AS REQ'D	McMASTER CARR	3836T35 OR EQ.	
CONNECTING LINK	AS REQ'D	McMASTER CARR	8947T33 OR EQ.	
DECK SEAL	AS REQ'D	ULTRA-STRENGTH MULTIPURPOSE NEOPRENE RUBBER STRIPS, McMASTER-CARR	1310N63 OR EQ.	
T-HANDLE QUICK RELEASE PIN	4	McMASTER-CARR	93750A715	

**GENERAL NOTES**

- ALL MATERIALS, SCANTLINGS, WELDING AND WELD PROCEDURES SHALL COMPLY WITH ABS RULES FOR BUILDING AND CLASSING STEEL VESSELS UNDER 90 METERS IN LENGTH, 2017.
- FRAME SPACING 24" THROUGHOUT, UNLESS NOTED OTHERWISE.
- VAN IN DRAWING USED AS REFERENCE
- SPACE ON MAIN DECK TO BE PROVIDED FOR (2) UNOLS/ISO STANDARD 8'x20' PORTABLE DECK VANS.
- THE VESTIBULE DECK SHALL BE COATED IN ACCORDANCE WITH THE PAINT SCHEDULE.
- VAN LOCATIONS, MATING COLLARS, AND SERVICES SHALL BE ARRANGED TO ALLOW READY ACCESS TO PECK AND HALE FITTINGS.
- FIBERGLASS GRATING WITH SLIP RESISTANT COATING OR SAFETY TREAD SHALL BE INSTALLED IN VESTIBULE AND ON VAN STEP-UP
- FIBERGLASS GRATINGS ARE TO CONFORM WITH ASTM E-84 AND HAVE A FLAME SPREAD RATING NOT TO EXCEED 25. GRATING AND SUPPORT STRUCTURE TO BE DESIGNED TO CARRY A LOAD OF 200 LB/FT<sup>2</sup>. SEE REFERENCE 4 FOR INSTALLATION DETAILS.
- VAN OPENING PANELS SHALL BE CONSTRUCTED OF ALUMINUM TYPE 6061-T6 OR 5083-H116. INFLATABLE SEALS SHALL BE PRESRAY CO., PRS590, FABRIC REINFORCED EPDM RUBBER, STANDARD BOOT ENDS, TYPE IIIB AIR CONNECTION. VAN LID SEAL SHALL BE PRESRAY CO., PR1667 D-SEAL, EPDM RUBBER. BOTTOM VAN SEAL SHALL BE NEOPRENE/EPDM/SBR FOAM RUBBER, ASTM D1056-98, FIRMNESS. ISO FITTINGS SHALL BE PECK AND HALE #700-10C OR EQUAL. ALL 8 ISO FITTINGS EXACT LOCATION TO SUIT STANDARD 20-FOOT ISO CONTAINER. DIMENSIONS SHOWN IN PLAN VIEW ARE STANDARD ISO VAN DIMENSIONS. RUBBER UNDER VAN LIDS SHALL BE COMMERCIAL GRADE NEOPRENE RUBBER, ASTM D2000-86E, 1/4" THICK, DUROMETER 80A. VAN LIDS SHALL BE SECURED USING A STAINLESS STEEL BOLT/NUT/LOCKWASHER. VAN LID HINGES SHALL BE STAINLESS STEEL. HINGES SHALL BE BOLTED TO DECK AND LID. INFLATABLE VAN SEALS SHALL BE INSTALLED BY SLIDING INTO CLIPS FROM THE TOP. AIR CONNECTIONS SHALL BE LED THROUGH SEAL CHANNEL ACCESS AND CONNECTED TO AIR SUPPLY IN VAN VESTIBULE. VAN VESTIBULE SHALL HAVE A PNEUMA-SEAL CONTROLLER FOR FILLING VAN SEALS. CENTER STANCHION OF VAN VESTIBULE SHALL HAVE A WARNING IN LARGE RED LETTERS. "DO NOT INFLATE VAN SEALS PAST 50 PSI". VAN INSTALLATION GUIDES SHALL BE OF ALL ALUMINUM CONSTRUCTION (SEE DETAIL C), AND SHALL ONLY BE INSTALLED WHEN LOADING AND UNLOADING VANS. ALUMINUM SHALL BE TYPE 6061-T6 OR 5083-H116.

REVISIONS						
REV	SH	ZONE	ITEM	DESCRIPTION	DATE	APPL. SIG & ORG
P1	ALL	-	-	P1 INITIAL ISSUE	03/08/18	MEH/
-	1	8C	1	ADDED MANUAL PNEUMATIC CONTROLLER TO BOM AND ADDED CHAIN AND SNAP HOOKS TO BOM FOR VAN OPENING LID WHEN IN UP POSITION.	04/06/18	JP/MEH
	2	5C	2	ADDED CORRECT INDICATION OF AIR CONTROL FOR INFLATABLE SEALS.		
	3	7A,6B &2C	3	DET. 3-7A UPDATED NOTE FOR RUBBER STRIP. SECT 3-6B ADDED CORRECT VAN PROFILE FROM CUT SHEETS SUPPLIED BY OSU. SECT 3-2C ADDED RESTRAINING CHAIN FOR WHEN LID IS IN UP POSITION.		
	4	4A,1B	4	DET 5-6A SHOWED CLOSURE PLATE TO BE MADE UP OF 2 PIECES. DET 5-1B ADDED TO SUIT.		
A	1	8C,4C		IN BILL OF MATERIAL: MADE BOLTS AISI 316 SS AND ADDED NOTES FOR ISO CONNECTOR. IN GENERAL NOTES REMOVED REFERENCE TO TIRE INFLATOR.	04/23/18	MEH/CF
	2	VAR.		ADDED PLAN VIEW CALL-OUT PLAN 2-2C. IN PLAN 2-2C INDICATED THAT CONNECTIONS ARE INSIDE VESTIBULE, REVISED SYSTEMS NOTES AND REVISED VAN STEP CONNECTIONS. ELEVATION 2-8A, PLAN 2-6A AND DETAIL 2-5A REVISED TO SUIT. DETAIL 2-4A DELETED.		
	3	6B		MIRRORED INDICATION OF VAN DOORS TO MAKE DOORS INBD AND ADDED 6" STD PIPE FOR PASS THROUGH OF CONNECTION LINES AND HOSES.		
	4	VAR		DETAIL 5-6A: REVISED BOLT PATTERN TO BE WEATHERTIGHT IN LIEU OF WATERTIGHT AND ADDED HANDGRABS. DETAIL 4-8A ADDED. SECTION 4-6A AND 6C: REVISED SEAL GAP PER PAWLING LITERATURE. DETAIL 4-8C AND 8D ADDED NOTES TO VAN CONNECTOR PARTS. THE ABOVE CHANGES PER OSU COMMENTS DATED APRIL 16TH, 2018.		
B	1	8C		REVISED BILL OF MATERIAL, TO INCLUDE SQUARE CORNER SEAL AS A SEPARATE LINE ITEM, ADDED DECK SEAL TO BOM	05/08/18	GPM/CF
	2	1D,1C		REVISED POSITION OF STEPS TO VAN DOOR LOCATIONS		

5	SCHEDULE OF WINDOWS, DOORS AND HATCHES	6096-167-001
4	RAISED FLOORS & GRATINGS ARRANGEMENTS	6096-622-001
3	STEEL HULL STRUCTURAL ARRANGEMENT	6096-100-001
2	GENERAL ARRANGEMENT	6096-070-002
1	SHIP SPECIFICATION (GLOSTEN)	12100-000
NO.	TITLE	DRAWING NUMBER

REFERENCE PLANS

**DRAWING CONFIDENTIALITY STATEMENT**  
 THIS DRAWING IS TO BE USED FOR CONSTRUCTION OF THE REGIONAL CLASS RESEARCH VESSELS. USE AND/OR REPRODUCTION OF THIS DRAWING AND FURTHER DISSEMINATION IS AUTHORIZED ONLY AS DIRECTED BY GULF ISLAND SHIPYARDS OR OREGON STATE UNIVERSITY.

**GULF ISLAND SHIPYARDS**  
 301 GULF ISLAND ROAD  
 HOUMA, LA 70363  
 PHONE: (985) 872-2305  
 CONTRACT/PO NO. 184182

**OREGON STATE UNIVERSITY**  
 CORVALLIS, OR 97331  
 199'-6" REGIONAL CLASS RESEARCH VESSEL  
 VAN VESTIBULE CONNECTION  
 DETAILS AND ARRANGEMENTS

PROFESSIONAL ENGINEER STAMP

DRAWN: M.E. HALL 03/07/18  
 CHECKED: J. PIZZITOLA 03/08/18  
 APPROVED: C. FLY 03/08/18

SIZE	FSCM CAGE NO.	DRAWING NO.	REV
D	7UTH5	6096-737-001	D
SCALE:	3/8"=1'-0"	HULL #: 6096,6097,6098	SHEET 1 OF 5

REVISIONS

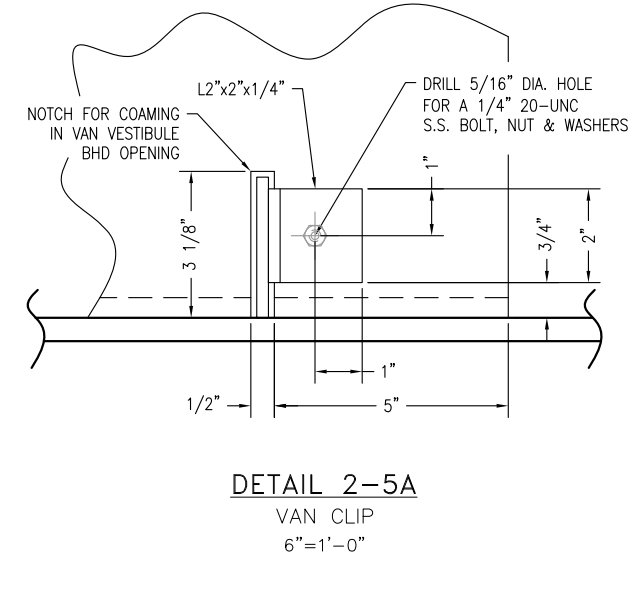
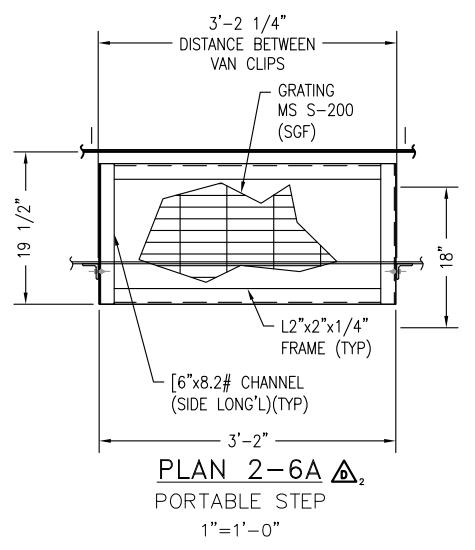
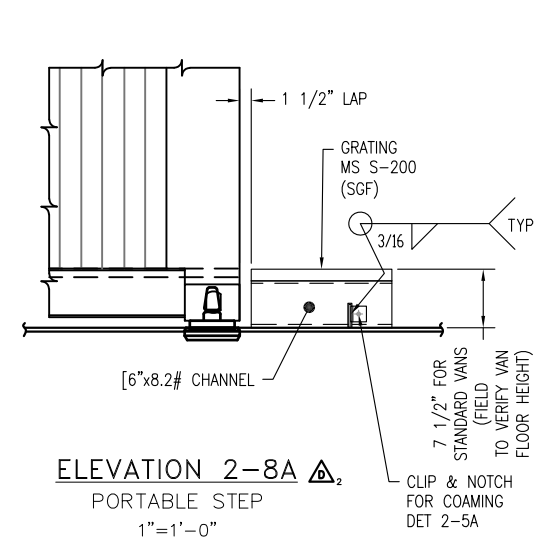
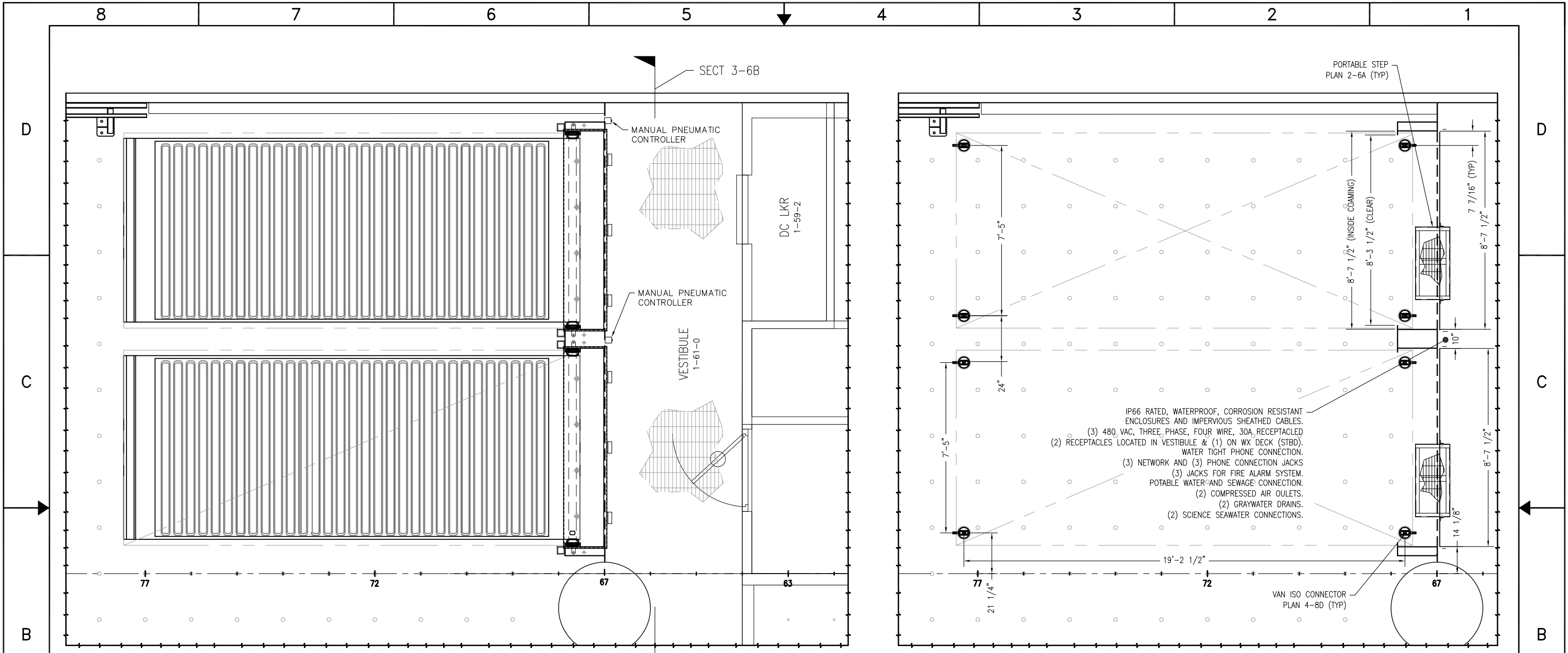
REV	SH	ZONE	ITEM	DESCRIPTION	DATE	APPVL SIG & ORG
C	1	-	1	REVISED BILL OF MATERIALS, ADDING T-HANDLE HITCH PINS, FOR SECURING VESTIBULE COVERS IN UP POSITION. REMOVED CHAIN AND SNAP-HOOK CALL-OUTS, CHANGED TO QUICK CONNECTOR LINK, AND 1/2"DIA ROPE	09/18/18	GPM/CFF
	4	VAR	2	RELOCATE VARIOUS SECTIONS, & DETAILS TO SHEET 5.		
	2C		3	REVISED SECTION, REMOVING CHAIN AND SNAP-RING CALL-OUTS.		
	5	VAR	4	UPDATED VARIOUS SECTIONS, AND DETAIL CALL-OUTS FROM SHEET #4.		
			5	ADDED NEW DETAIL 5-7A, FOR INBOARD BOLTED-PLATE, WITH ADDITIONAL WEATHER TIGHT DOOR.		
D	1	2B	1	ADDED REFERENCE 5	10/15/18	BLS/CFF
	2	6A, 8A	2	ADDED STRUCTURAL CALL-OUTS, TO PORTABLE VAN STEPS		
	5	7A	3	ADDED NOTE TO SEE REF 5		

OREGON STATE UNIVERSITY  
CORVALLIS, OR 97331

199'-6" REGIONAL CLASS RESEARCH VESSEL  
VAN VESTIBULE CONNECTION  
DETAILS AND ARRANGEMENTS

PROFESSIONAL ENGINEER STAMP

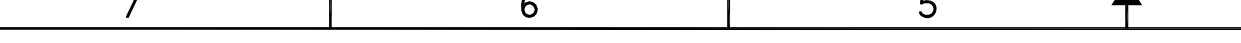
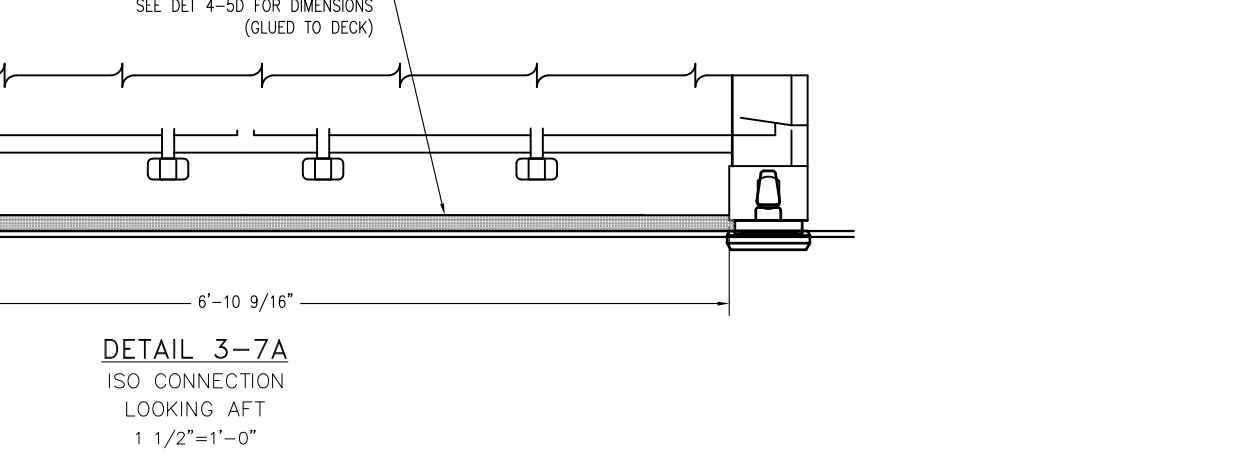
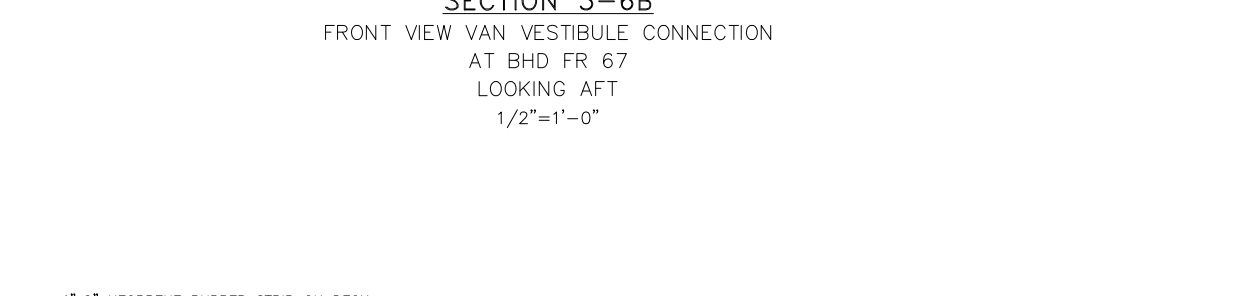
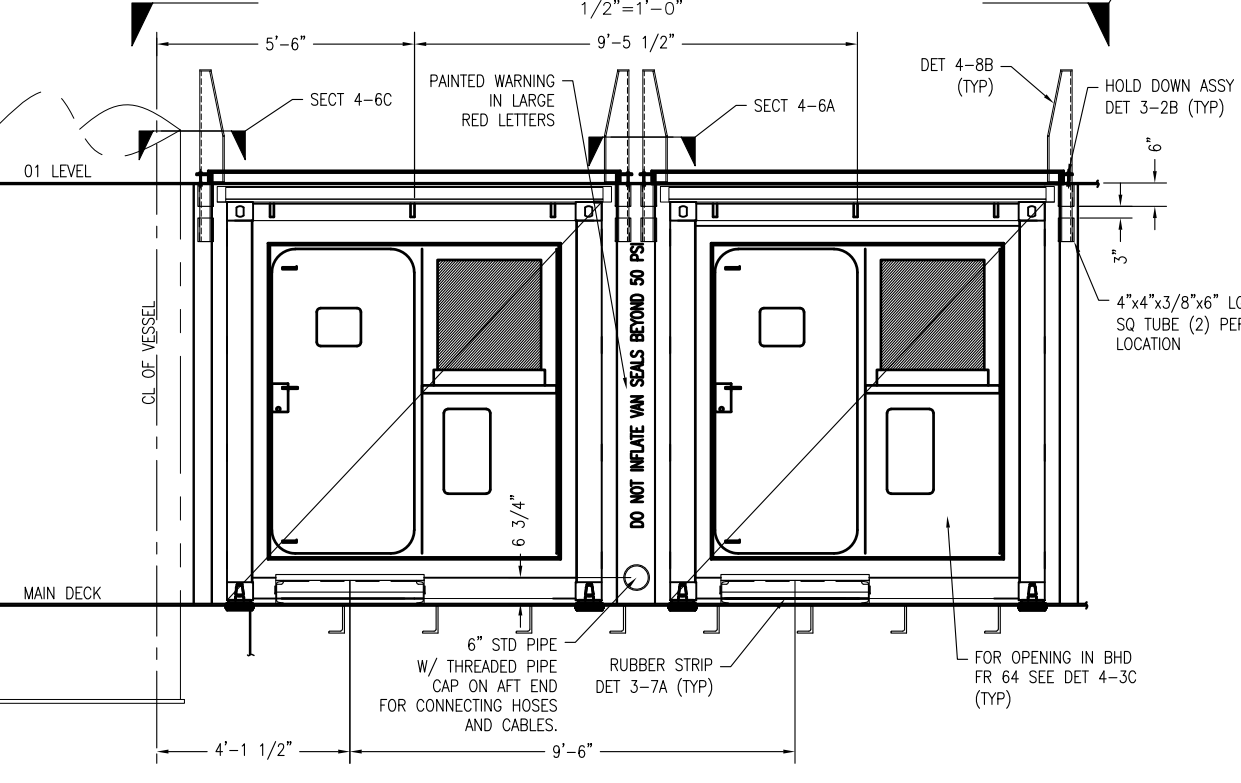
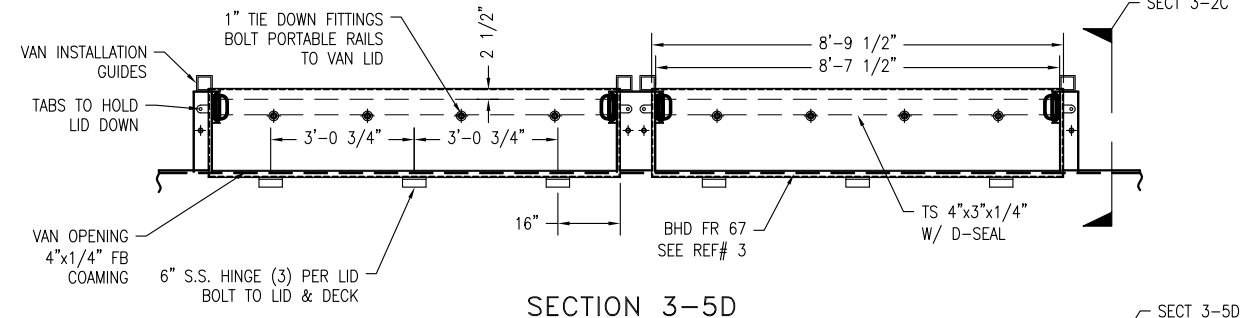
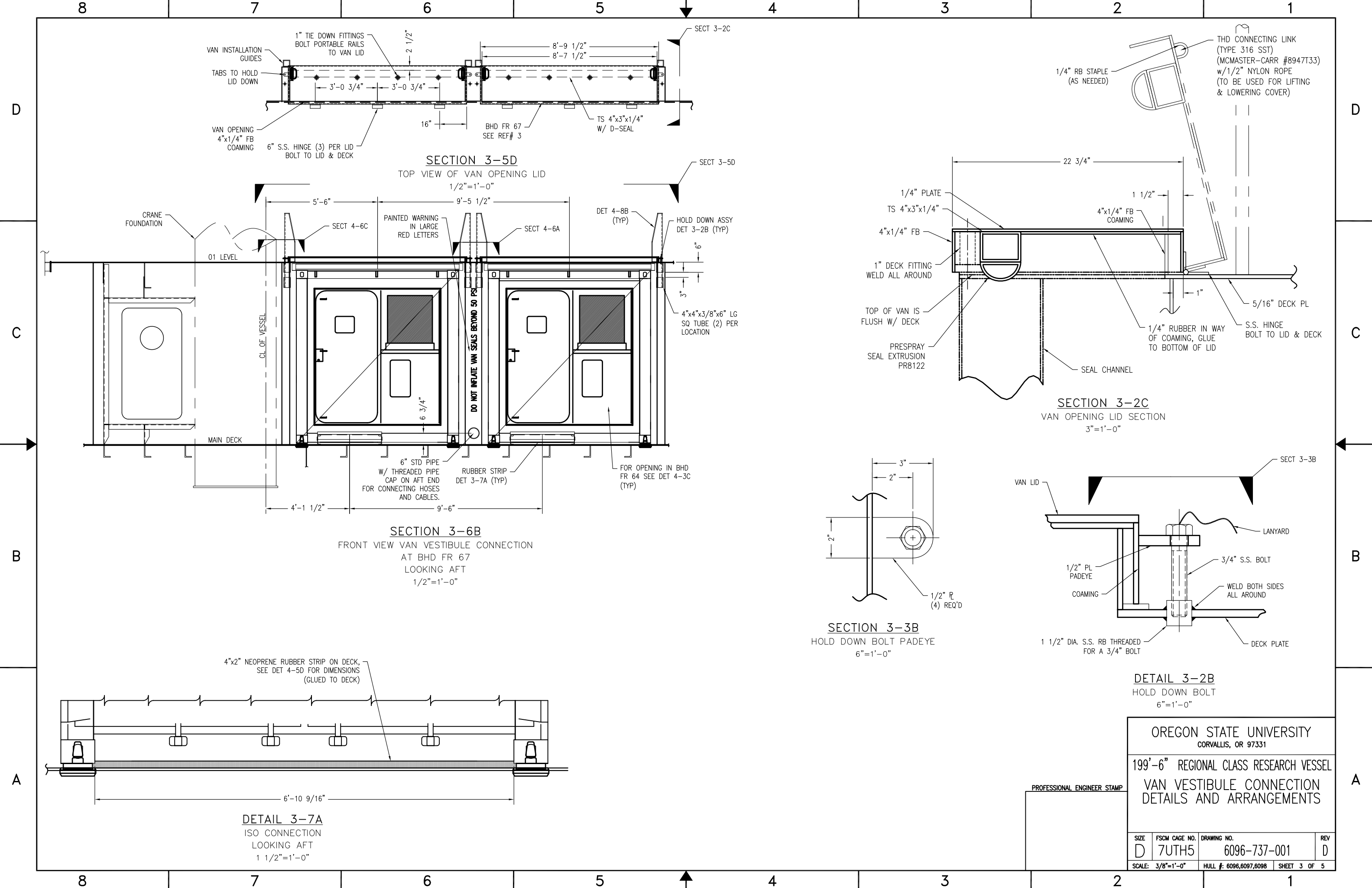
SIZE	FSCM CAGE NO.	DRAWING NO.	REV
D	7UTH5	6096-737-001	D
SCALE: 3/8"=1'-0"		HULL #: 6096,6097,6098	SHEET 1A OF 5



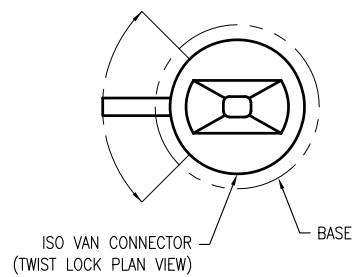
OREGON STATE UNIVERSITY  
 CORVALLIS, OR 97331

199'-6" REGIONAL CLASS RESEARCH VESSEL  
 VAN VESTIBULE CONNECTION  
 DETAILS AND ARRANGEMENTS

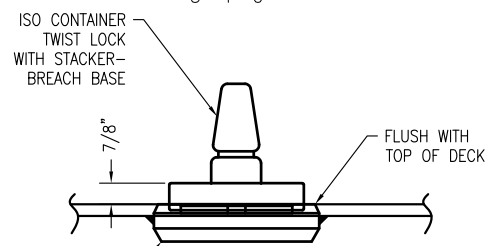
SIZE	FSCM CAGE NO.	DRAWING NO.	REV
D	7UTH5	6096-737-001	D
SCALE: 3/8"=1'-0"		HULL #: 6096,6097,6098	SHEET 2 OF 5



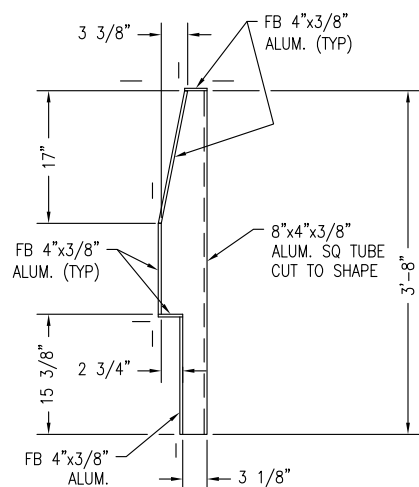
OREGON STATE UNIVERSITY CORVALLIS, OR 97331			
199'-6" REGIONAL CLASS RESEARCH VESSEL VAN VESTIBULE CONNECTION DETAILS AND ARRANGEMENTS			
SIZE	FSCM CAGE NO.	DRAWING NO.	REV
D	7UTH5	6096-737-001	D
SCALE: 3/8"=1'-0"		HULL #: 6096,6097,6098	SHEET 3 OF 5



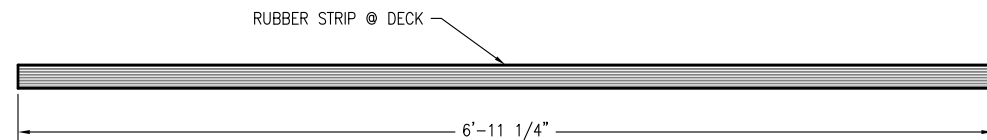
**PLAN 4-8D**  
VAN CONNECTOR  
3"=1'-0"



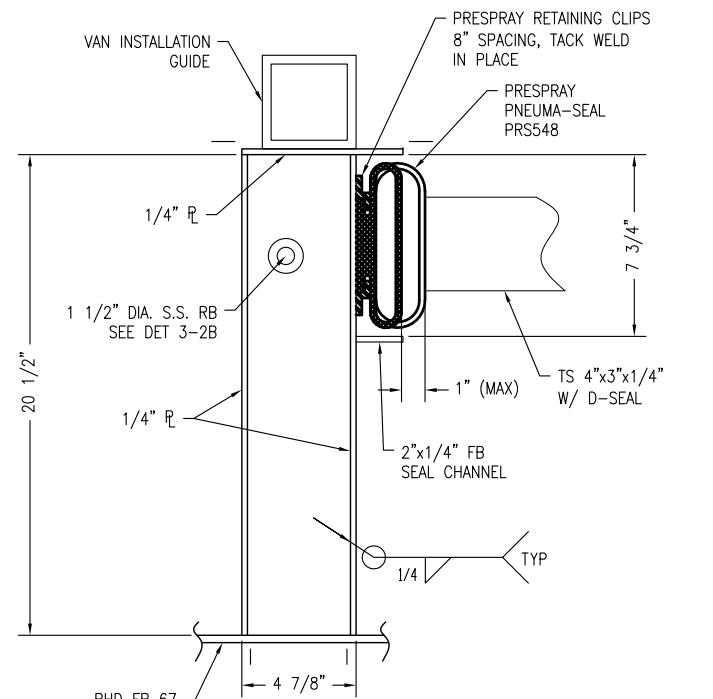
**DETAIL 4-8C**  
VAN CONNECTOR  
3"=1'-0"



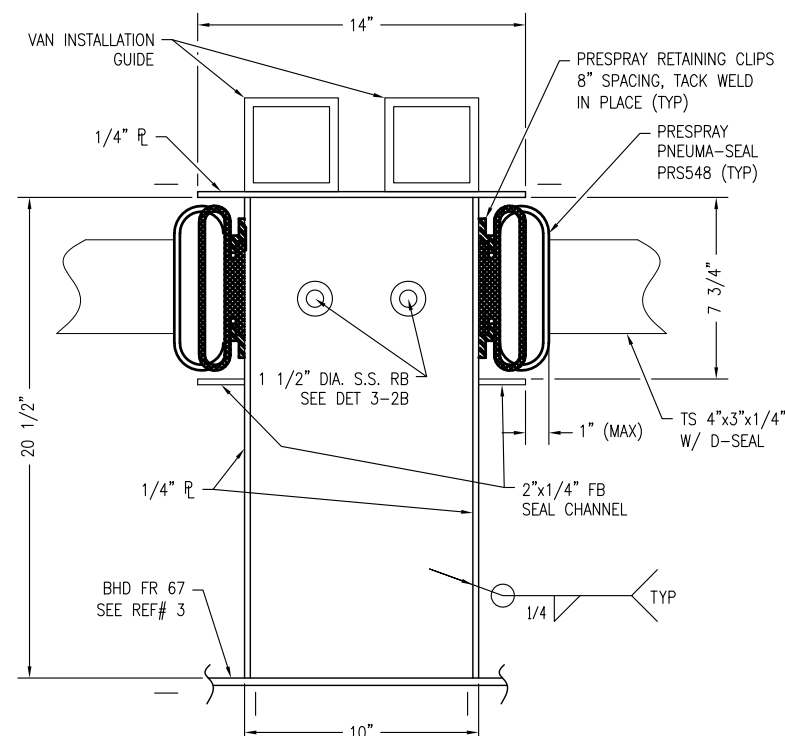
**DETAIL 4-8B**  
VAN INSTALLATION GUIDES (2 REQ'D)  
1"=1'-0"



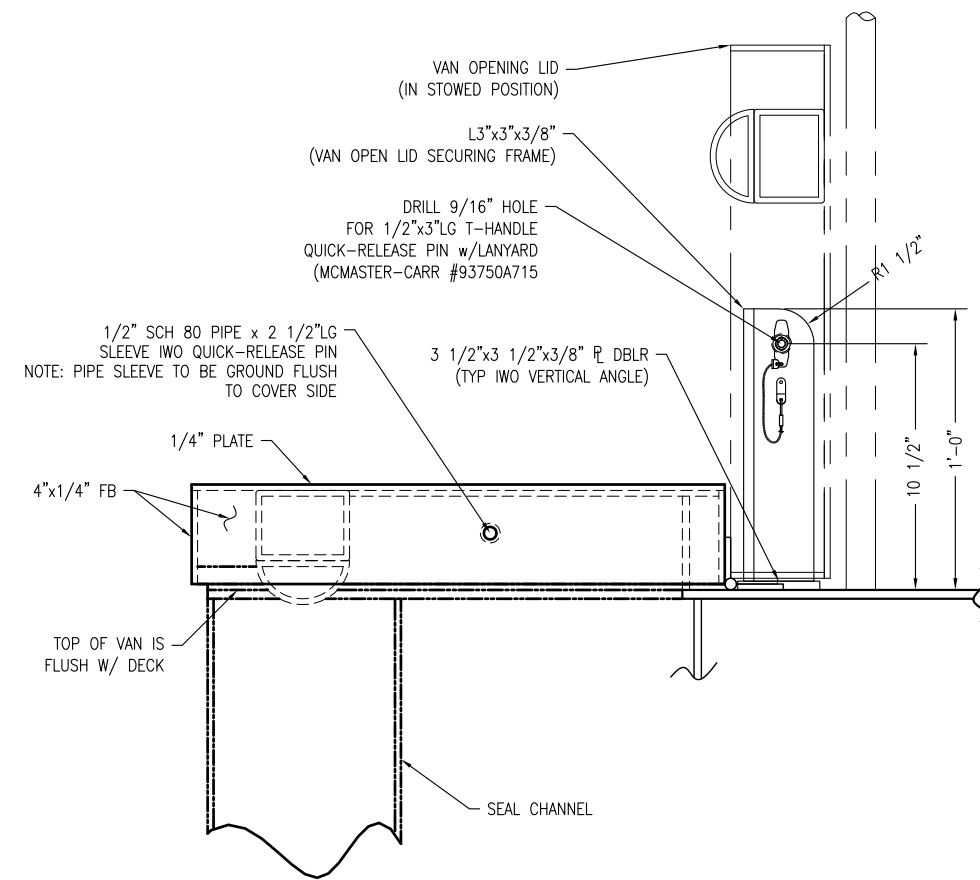
**DETAIL 4-5D**  
RUBBER STRIP DIMENSIONS  
1 1/2"=1'-0"



**SECTION 4-6C**  
SECTION THROUGH OUTSIDE SEAL  
3"=1'-0"



**SECTION 4-6A**  
SECTION THROUGH CENTER SEAL  
3"=1'-0"

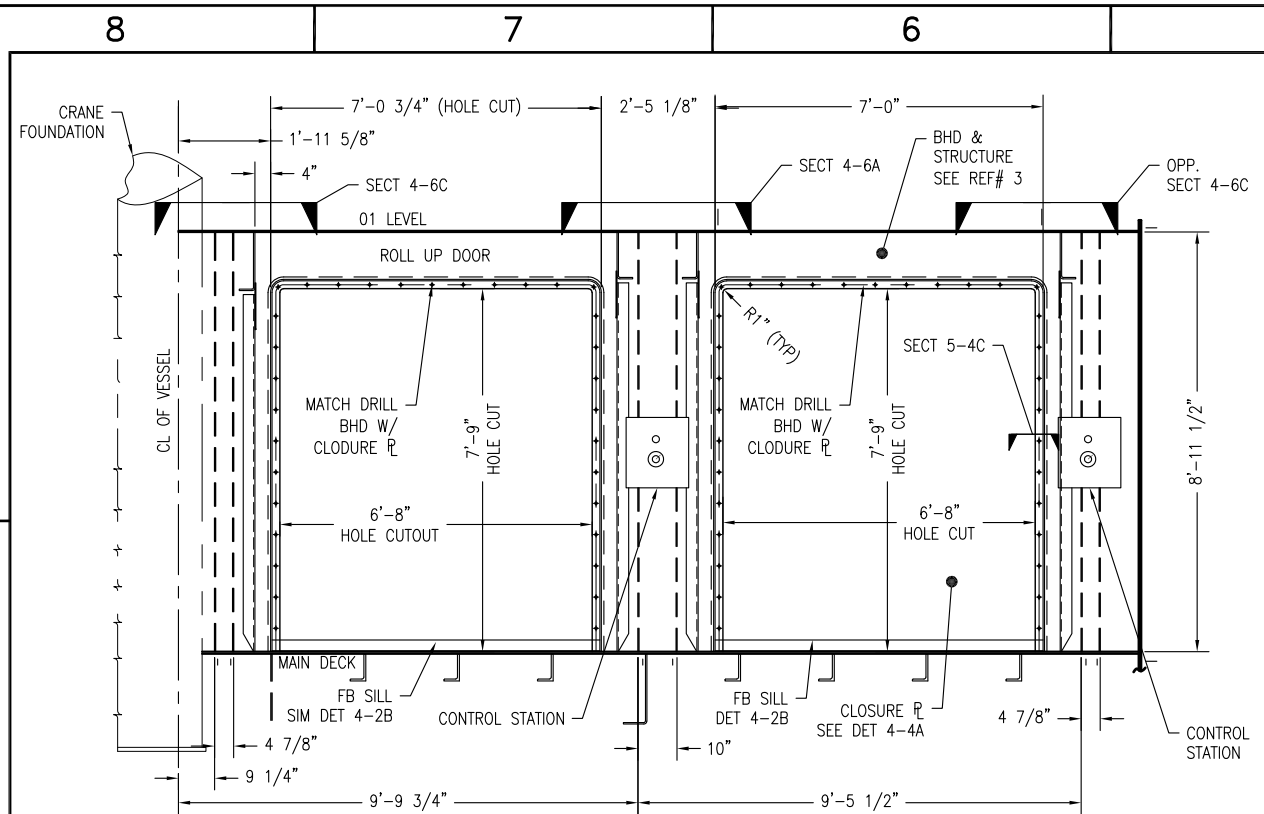


**DETAIL 4-2C**  
VAN OPENING LID SECTION  
LID RETENTION DETAIL  
3"=1'-0"

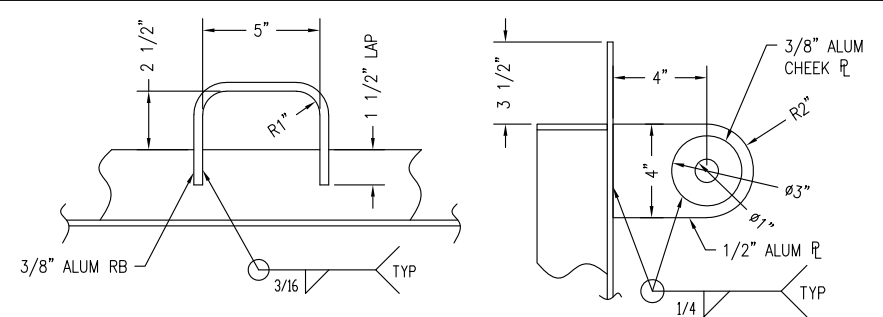
PROFESSIONAL ENGINEER STAMP

OREGON STATE UNIVERSITY  
CORVALLIS, OR 97331  
199'-6" REGIONAL CLASS RESEARCH VESSEL  
VAN VESTIBULE CONNECTION  
DETAILS AND ARRANGEMENTS

SIZE	FSCM CAGE NO.	DRAWING NO.	REV
D	7UTH5	6096-737-001	D
SCALE: 3/8"=1'-0"		HULL #: 6096,6097,6098	SHEET 4 OF 5

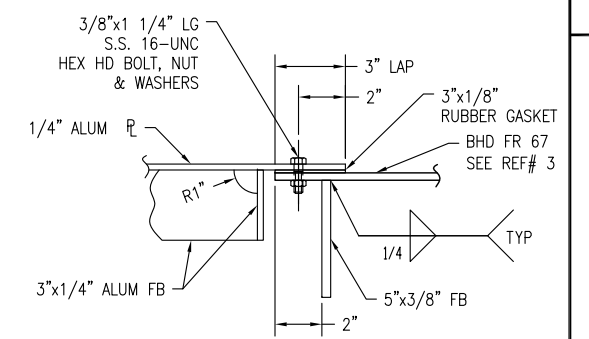


**DETAIL 5-7D**  
 OPENINGS IN BHD FR 67 FOR VANS  
 SHOWN LOOKING AFT  
 1/2"=1'-0"

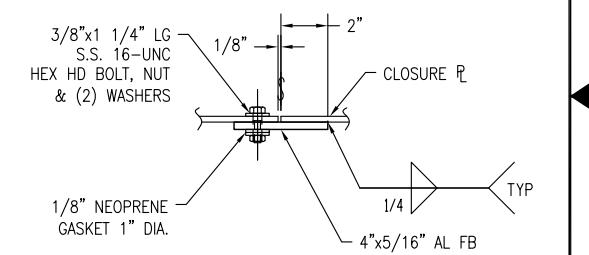


**DETAIL 5-2D**  
 HANDGRAB  
 3"=1'-0"

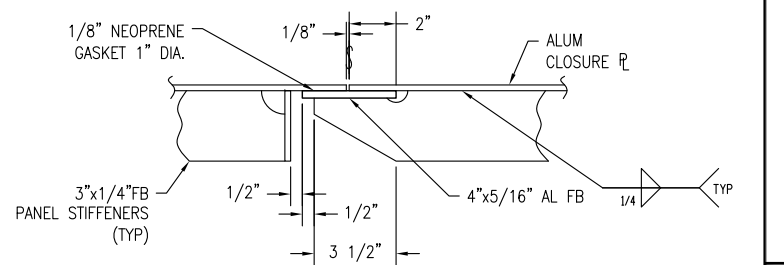
**DETAIL 5-1D**  
 LIFTING LUG  
 3"=1'-0"



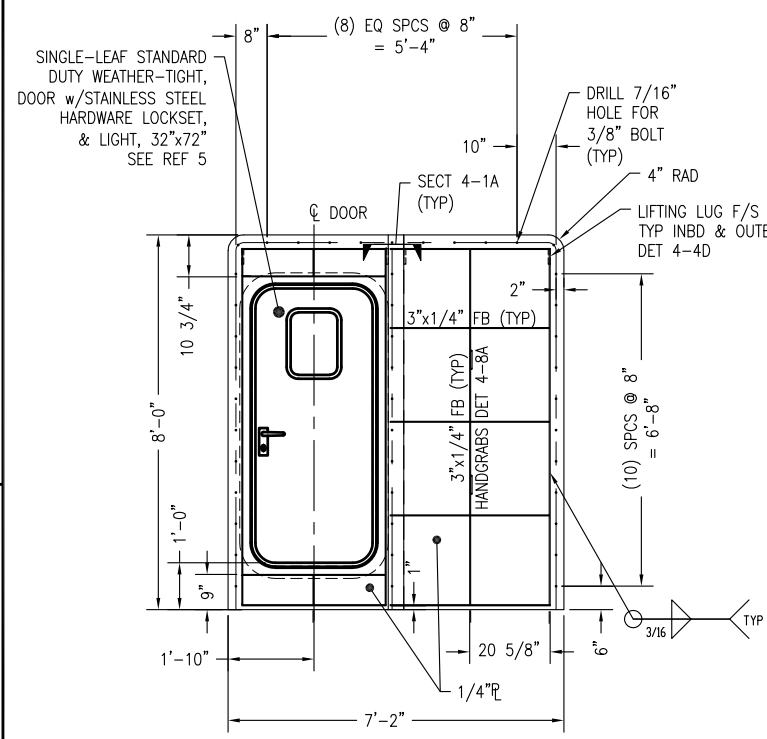
**SECTION 5-4C**  
 SECTION THROUGH BOLTED PL  
 3"=1'-0"



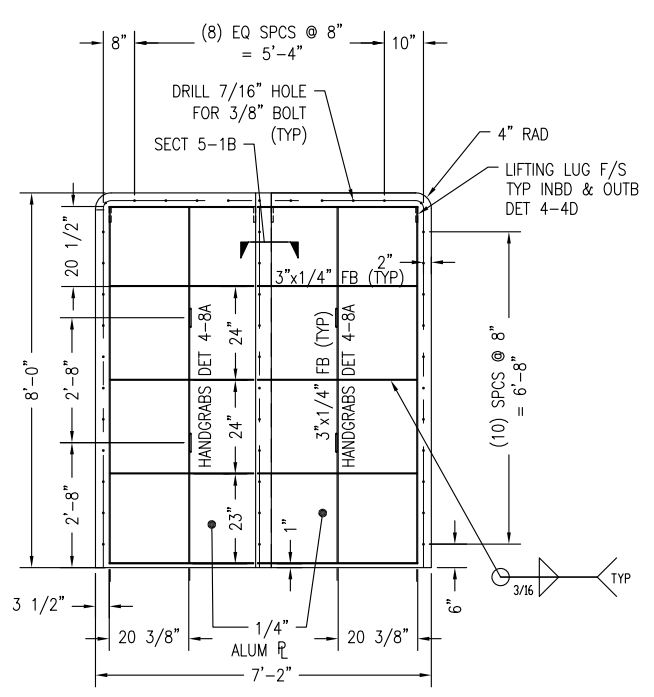
**SECTION 5-1B**  
 SECTION THROUGH BOLTED PL SEAM  
 3"=1'-0"



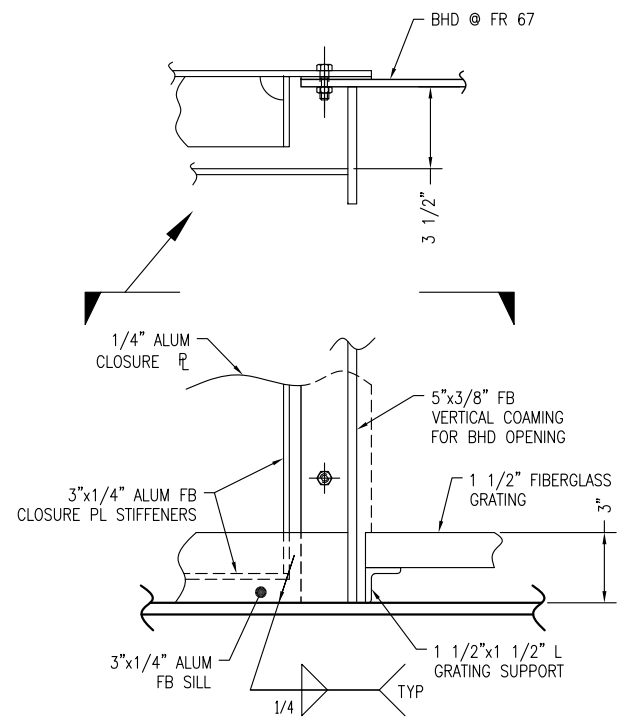
**SECTION 5-1A**  
 SECTION THROUGH STIFFENED PANEL  
 3"=1'-0"



**DETAIL 5-7A**  
 BOLTED PLATE IWO VAN OPENING  
 (INBOARD VAN LOCATION)  
 1/2"=1'-0"



**DETAIL 5-6A**  
 BOLTED PLATE IWO VAN OPENING  
 (OUTBOARD VAN LOCATION)  
 1/2"=1'-0"



**DETAIL 5-4A**  
 FB SILL CONNECTION  
 3"=1'-0"

PROFESSIONAL ENGINEER STAMP

OREGON STATE UNIVERSITY CORVALLIS, OR 97331			
199'-6" REGIONAL CLASS RESEARCH VESSEL VAN VESTIBULE CONNECTION DETAILS AND ARRANGEMENTS			
SIZE	FSCM CAGE NO.	DRAWING NO.	REV
D	7UTH5	6096-737-001	D
SCALE: 3/8"=1'-0"		HULL #: 6096,6097,6098	SHEET 5 OF 5