

CONFIDENTIAL AND PROPRIETARY PROPERTY OF
Elliott Bay Design Group North Carolina, PLLC
 MAY NOT BE USED FOR CONSTRUCTION OR PROVIDED TO
 ANY THIRD PARTIES WITHOUT PRIOR WRITTEN CONSENT.
 © 2017 ELLIOTT BAY DESIGN GROUP.

MATERIAL SCHEDULE									
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	FLEXIBLE CONNECTIONS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
SEA WATER PIPING & SEA CHEST VENT PIPING MAWP: 45 PSIG	ALL	ALUMINUM ASTM B241 6061 T6 SEAMLESS SCH 40	FLANGE ALUMINUM ASTM B241 6061 T6 ANSI B16.5 150#	APPROPRIATE FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE 8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	BUTTERFLY: DUCTILE IRON WAFER TYPE SEE NOTE 11 WAFER CHECK: STAINLESS STEEL ASTM A351 CF8M 150#, FLANGED BALL: 316 STAINLESS STEEL FLANGED	BUTTERFLY: BRONZE OR MONEL TRIM RENEWABLE DISC WAFER CHECK: 316 SS DISC BALL: 316 SS BALL PTFE SEATS & SEALS	ALUMINUM ASTM B241 6061 T6 SCH 40	U.S.C.G. APPROVED SEA WATER HOSE. DOUBLE CLAMPED WITH STAINLESS STEEL HOSE CLAMPS
SHELL CONNECTIONS	ALL	ALUMINUM ASTM B221 5086, 5083, 5456 H111 OR H112 SCH 80	FLANGE ALUMINUM ASTM B221, 5086, 5083, 5456-H111 OR H112 ANSI B16.5 150#	-	-	-	-	ALUMINUM ASTM B221 5086, 5083, 5456 H111 OR H112 SCH 80	-

EQUIPMENT LIST						
QTY.	SERVICE	TYPE	MODEL	CAPACITY	DRIVE	REMARKS
4	PROPULSION & GENERATOR STRAINER	SIMPLEX	-	200 GPM	-	ALUMINUM BODY SS CONICAL SCREEN
4	MAIN ENGINE HEAT EXCHANGER	-	SUPPLIED WITH ENGINE	-	-	-
4	GEAR OIL COOLER	-	SUPPLIED WITH MAIN ENGINE	-	-	NOTE 6
4	JET OIL COOLER	-	SUPPLIED WITH JET	-	-	NOTE 14
4	MAIN ENGINE SEA WATER PUMP	-	SUPPLIED WITH MAIN ENGINE	-	ENGINE DRIVEN	-
2	GENERATOR SEA WATER PUMP	-	SUPPLIED WITH GENSET	-	ENGINE DRIVEN	-
2	GENSET HEAT EXCHANGER	-	SUPPLIED WITH GENSET	-	-	-

SYMBOLS LIST	
	PIPE
	REDUCER
	BUTTERFLY VALVE
	BALL VALVE
	WAFER CHECK VALVE
	FLEXIBLE CONNECTION
	HEAT EXCHANGER
	SIMPLEX STRAINER
	CENTRIFUGAL PUMP
	SEA CHEST
	FLANGE
	ORIFICE
	PRESSURE TRANSDUCER

- GENERAL NOTES (CONT)**
- JET OIL COOLERS SHALL BE PROVIDED WITH THE JETS AND REMOTE MOUNTED WITH THE OIL RESERVOIR. CONTRACTOR SHALL CONFIRM JET OIL COOLER SIZE AND COOLING REQUIREMENTS
 - SIZE ORIFICE FOR 4 GPM FLOW TO JET OIL COOLER. ALL ENGINE SEA WATER DISCHARGE CONNECTIONS SHALL BE USCG APPROVED SEA WATER HOSE.
 - ALL MATERIAL TRANSITIONS SHALL BE ACCOMPLISHED WITH FLANGED JOINTS. FLANGES AT THESE JUNCTIONS SHALL BE FITTED WITH GALVANIC ISOLATION KITS TO PREVENT METAL TO METAL CONTACT.
 - INSTALL PRESSURE TRANSDUCER AT PUMP DISCHARGE. INTEGRATE WITH SHIP'S ALARM AND MONITORING SYSTEM. CONFIGURE FOR CONTINUOUS INDICATION AND LOW PRESSURE ALARM.

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

- GENERAL NOTES**
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
 - THIS DRAWING IS DIAGRAMMATIC AND DOES NOT REPRESENT A COMPLETE DETAILED DESIGN. EQUIPMENT LAYOUT IN A GIVEN AREA IS APPROXIMATE. THE CONTRACTOR SHALL DEVELOP A DETAILED DESIGN THAT PROVIDES A FULLY FUNCTIONAL ARRANGEMENT SUITABLE FOR INSTALLATION, TAKING INTO ACCOUNT ALL NECESSARY SYSTEM INTERFACES AND INTERFERENCES. DIMENSIONS SHALL BE VERIFIED FROM THE SHIP AND MANUFACTURERS' CERTIFIED DRAWINGS AS APPROPRIATE.
 - PIPING SHALL BE RUN AS DIRECTLY AS PRACTICABLE WITH A MINIMUM NUMBER OF BENDS AND FITTINGS AND WITH SUFFICIENT TAKE DOWN JOINTS TO PROVIDE FOR REMOVAL, INSPECTION, SERVICING, AND REPLACEMENT OF PIPING, VALVES, FITTINGS, AND EQUIPMENT.
 - PIPING SHALL BE PRESSURE TESTED AND CLEANED PRIOR TO BEING PLACED IN SERVICE. SEE REFERENCE 1.
 - PIPING SHALL BE ADEQUATELY SUPPORTED BY HANGERS IN ACCORDANCE WITH ASTM F708. HANGERS SHALL BE ATTACHED TO THE PIPE WITH BOLTED CLAMPS AND WELDED TO BASIC SHIP STRUCTURE. HANGERS SHALL NOT BE ATTACHED BY WELDING DIRECTLY TO PIPES.
 - REDUCTION GEAR OIL COOLING SHALL BE PROVIDED BY AN ENGINE MOUNTED FULL FLOW TRANSMISSION OIL COOLER SUPPLIED BY THE ENGINE VENDOR.
 - WET EXHAUST SYSTEM IS SIZED FOR THE FULL FLOW OF THE SEA WATER COOLING SYSTEM. CONTRACTOR SHALL COORDINATE ROUTING OF THE SEA WATER DISCHARGE FROM THE ENGINE WITH THE SEA WATER SUPPLY OF THE WET EXHAUST SYSTEM.
 - INSTALL CHECK VALVE AND PRIMING LOOP TO MAINTAIN A PRIME AT THE ENGINE SEA WATER PUMP SUCTION. SIZE LOOP TO KEEP PUMP CHAMBER FULL OF WATER. CONSULT WITH ENGINE VENDOR AS REQUIRED.
 - INTERCEPTORS SHALL BE MADE AS 5/8" INSERT PLATES WITH 3:1 BEVEL AT SEAM WITH BOTTOM SHELL ONLY.
 - SEA WATER HOSES SHALL BE USCG APPROVED. ALL HOSES SHALL BE DOUBLE CLAMPED AT PIPE ATTACHMENTS.
 - BUTTERFLY VALVES AT THE SEA CHESTS SHALL BE LUGGED TYPE.
 - THE STRAINER PLATE IS TO BE CONSTRUCTED OF ELECTRICAL GRADE FIBERGLASS GPO-3.
 - ROUTE SEA CHEST VENTS TO ATMOSPHERE OUTSIDE OF THE MACHINERY SPACES.

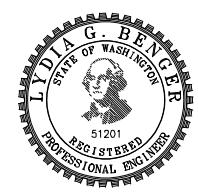
- REFERENCES**
- 16109-003-802-0 CONTRACT SPECIFICATIONS
 - 16109-003-259-1 EXHAUST SYSTEM
 - 16109-003-521-0 FIRE MAIN SYSTEM
 - 16109-003-120-0 HULL STRUCTURE



Elliott Bay Design Group North Carolina, PLLC

CLIENT: NORTH CAROLINA D.O.T.
 RALEIGH, NORTH CAROLINA

PROJECT: PEDESTRIAN FERRY



TITLE	SEA CHESTS AND SEAWATER PIPING		
SIZE	D	DWG NO.	16109-003-520-0
SCALE	AS NOTED	FILE NAME	16109-003-520-0-
SHEET	1	OF	4
DWN	MWR	MOD	
CKD	JHP	APVD	LGB
APVD DATE	3/3/2017		

3/3/2017 10:42:07 AM

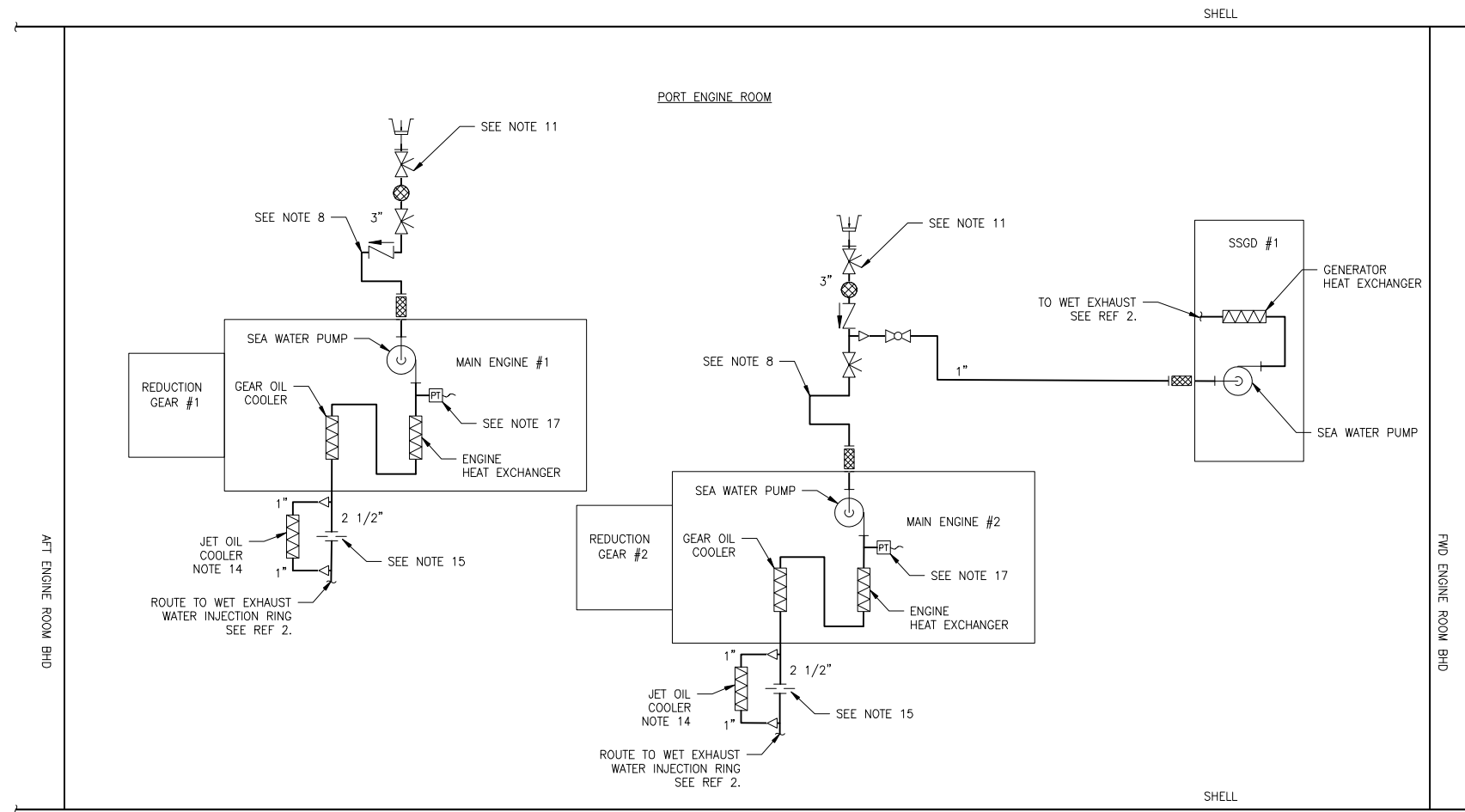
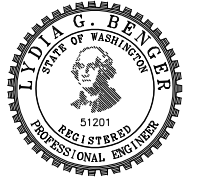


DIAGRAM 2-4A
 SEA WATER COOLING SYSTEM
 PORT DEMIHULL SHOWN - STBD TO BE SIMILAR
 SCALE: NONE

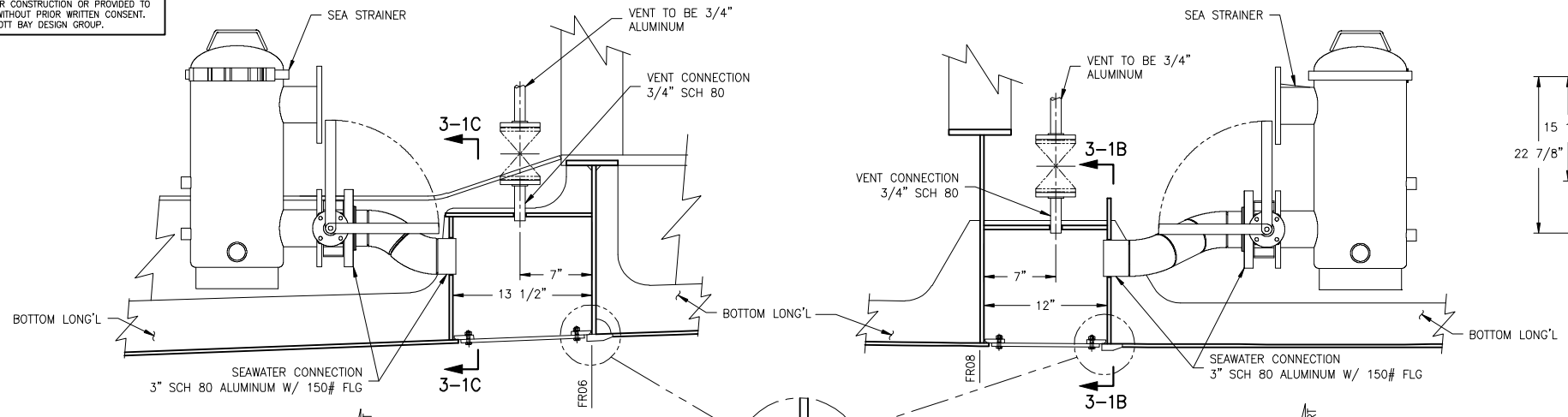


SIZE	D	DWG NO.	16109-003-520-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-520-0-	SHEET	2 OF 4

3/3/2017 10:42:12 AM

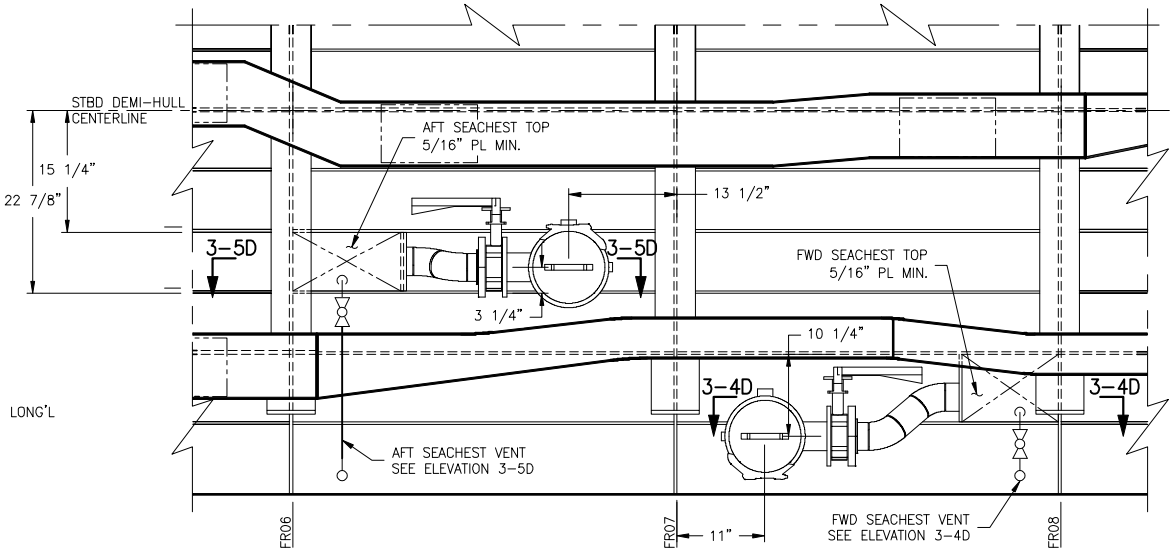
CONFIDENTIAL AND PROPRIETARY PROPERTY OF
Elliott Bay Design Group North Carolina, PLLC
 MAY NOT BE USED FOR CONSTRUCTION OR PROVIDED TO
 ANY THIRD PARTIES WITHOUT PRIOR WRITTEN CONSENT.
 © 2017 ELLIOTT BAY DESIGN GROUP.

6 5 4 3 2 1

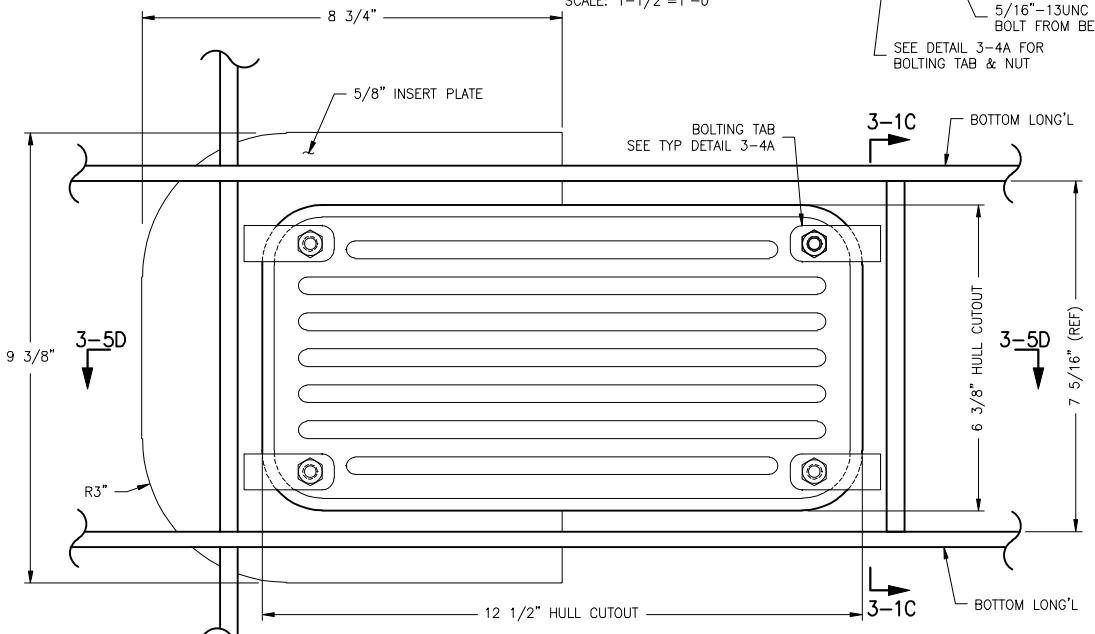


ELEVATION 3-5D
AFT SEACHEST
 LKG TO STBD FROM DEMI-HULL CL
 PORT HULL SIM. & OPP.
 SCALE: 1'-1/2"=1'-0"

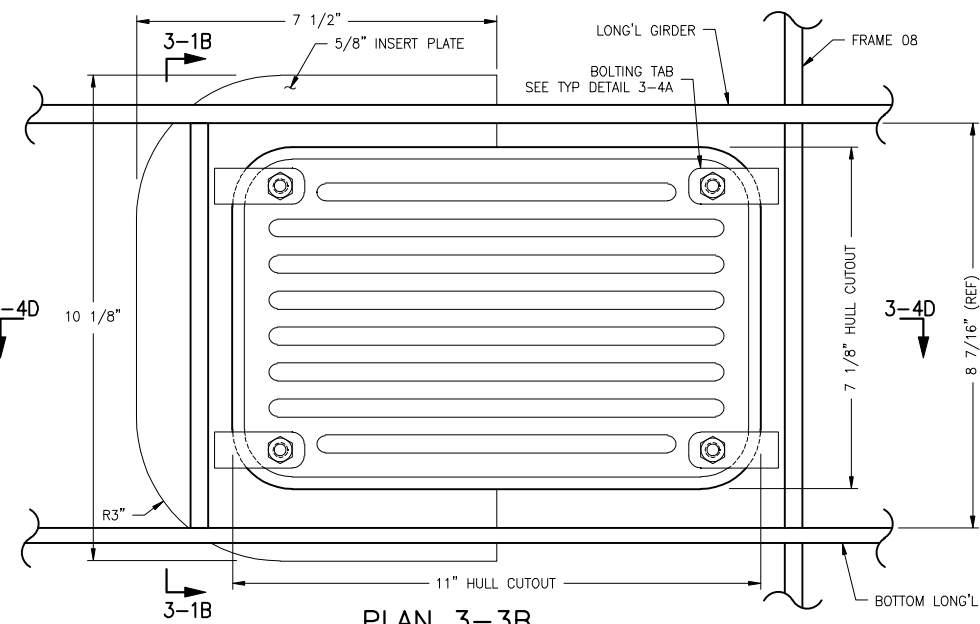
ELEVATION 3-4D
FWD SEACHEST
 LKG TO STBD FROM DEMI-HULL CL
 PORT HULL SIM. & OPP.
 SCALE: 1'-1/2"=1'-0"



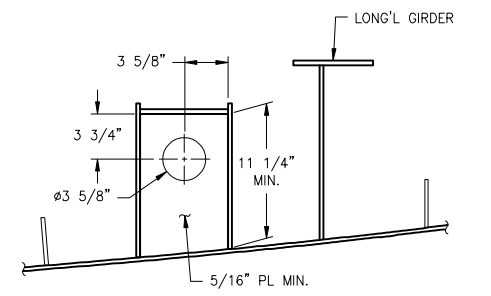
PLAN DETAIL 3-1D
SEACHEST LOCATIONS (STBD)
 STBD DEMI-HULL LOOKING DOWN, PORT SIM. & OPP.
 SEE REF 4 FOR BOTTOM STRUCTURE, FRAMES & GIRDERS
 SCALE: 1"=1'-0"



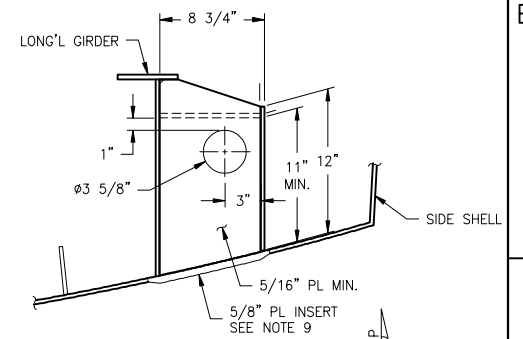
PLAN 3-5B
AFT SEACHEST ASSEMBLY
 LKG DOWN INSIDE SEACHEST
 BOTTOM SHELL HIDDEN FOR CLAIRTY
 SCALE: 6"=1'-0"



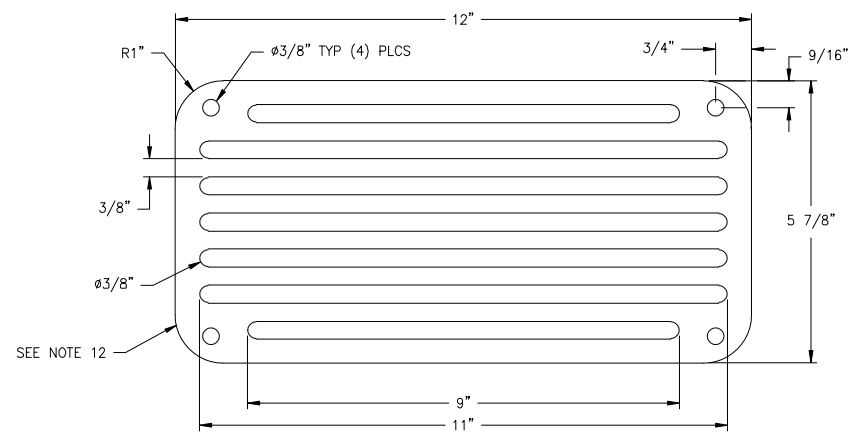
PLAN 3-3B
FWD SEACHEST ASSEMBLY
 LKG DOWN INSIDE SEACHEST
 BOTTOM SHELL HIDDEN FOR CLAIRTY
 SCALE: 6"=1'-0"



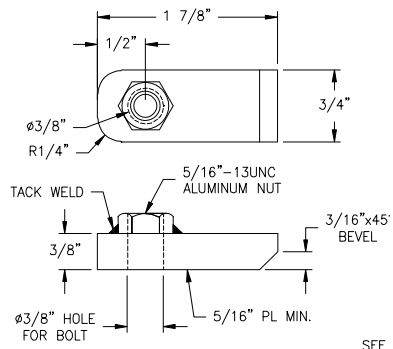
SECTION 3-1C
AFT SEACHEST
 LKG FWD INSIDE SEACHEST
 SCALE: 1"=1'-0"



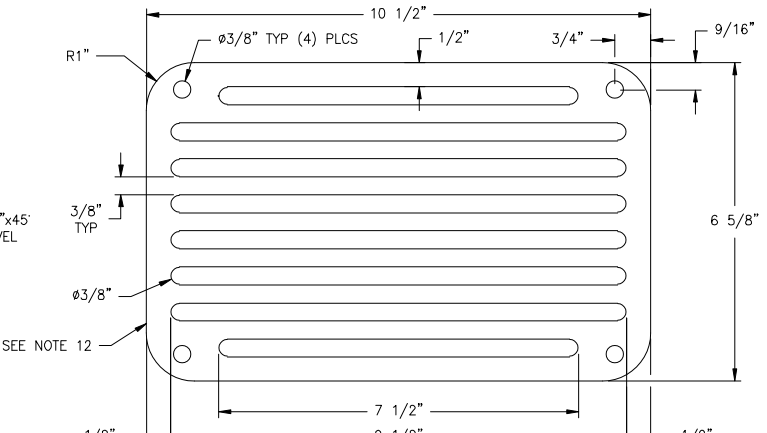
SECTION 3-1B
FWD SEACHEST
 LKG FWD TO SEACHEST
 SCALE: 1"=1'-0"



DETAIL 3-5A
AFT SEACHEST STRAINER PLATE
 SCALE: 6"=1'-0"



DETAIL 3-4A
TYP BOLTING TAB
 LABELS DIMENSIONS AND NOTES
 SCALE: 1'-0"=1'-0"



DETAIL 3-3A
FWD SEACHEST STRAINER PLATE
 SCALE: 6"=1'-0"

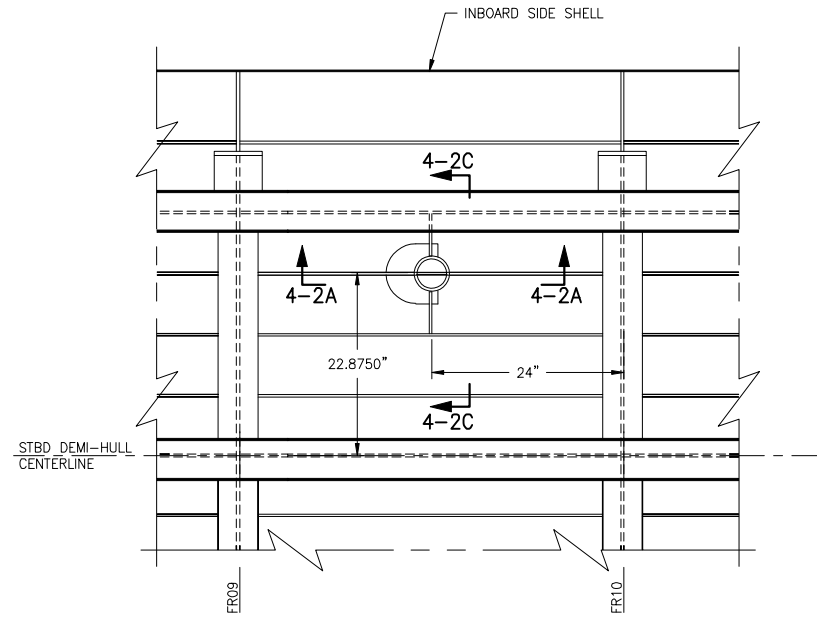


SIZE	D	DWG NO.	16109-003-520-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-520-0-	SHEET	3 OF 4

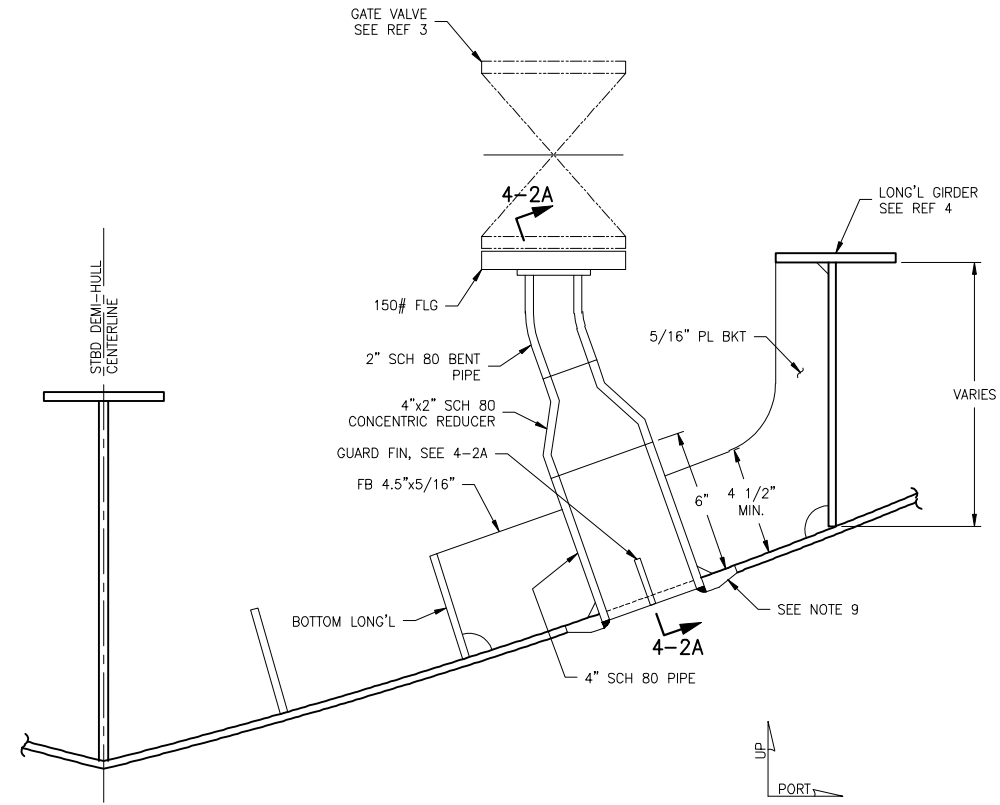
6 5 4 3 2 1

3/5/2017 10:42:17 AM

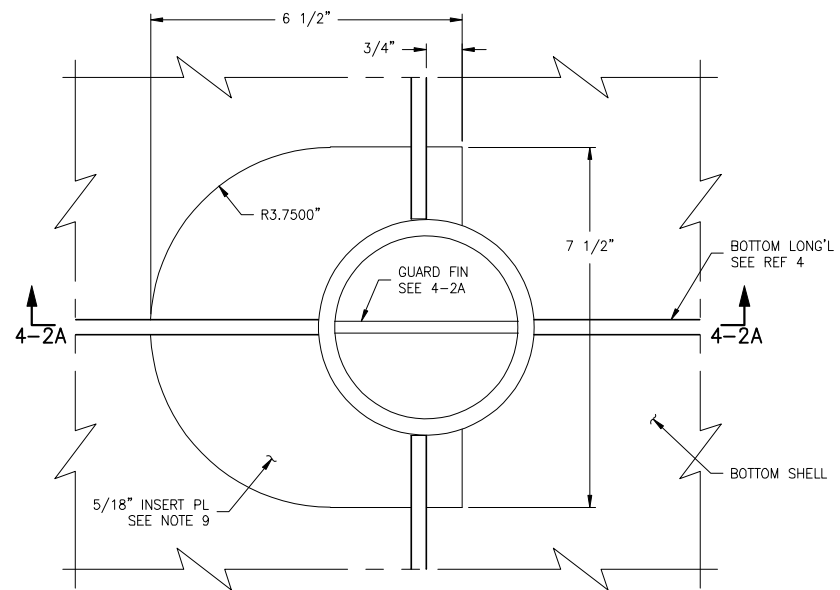
CONFIDENTIAL AND PROPRIETARY PROPERTY OF
Elliott Bay Design Group North Carolina, PLLC
 MAY NOT BE USED FOR CONSTRUCTION OR PROVIDED TO
 ANY THIRD PARTIES WITHOUT PRIOR WRITTEN CONSENT.
 © 2017 ELLIOTT BAY DESIGN GROUP.



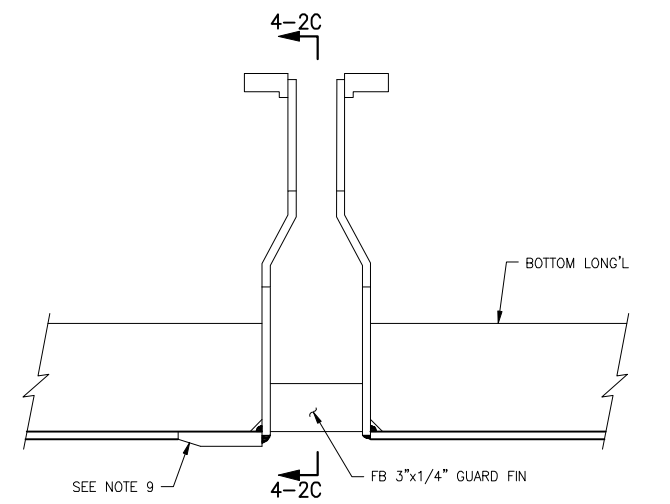
PLAN DETAIL 4-5C
FIRE MAIN SEACHEST
 STBD DEMI-HULL LOOKING DOWN
 SEE REF 4 FOR BOTTOM
 STRUCTURE, FRAMES & GIRDERS
 SCALE: 1"=1'-0"



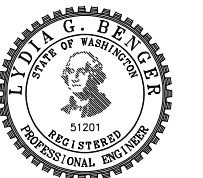
SECTION 4-2C
FIREMAIN SEACHEST
 LOOKING AFT THROUGH SEACHEST
 3"=1'-0"



PLAN DETAIL 4-5A
FIRE MAIN SEACHEST INSERT
 LOOKING DOWN THROUGH SEACHEST
 SCALE: 6"=1'-0"



DETAIL 4-2A
FIREMAIN SEACHEST
 VIEW SHOWN IN PLANE WITH BOTTOM LONG'L & SEACHEST
 3"=1'-0"



SIZE	D	DWG NO.	16109-003-520-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-520-0-	SHEET	4 OF 4

3/3/2017 10:42:22 AM