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MATERIAL SCHEDULE

SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM	
EXHAUST RISER TO WATER INJECTION MAWP: 10 PSIG MAX TEMP: 795 °F	ALL	STAINLESS STEEL ASTM A312 TYPE 304 SEAMLESS ANSI B36.10 SCH 10 PERMANENT SPRAY-ON INSULATION	FLANGE STAINLESS STEEL ASTM A312 TYPE 316L ANSI B16.5 150# SLIP-ON OR WELD NECK	PROVIDED WITH EQUIPMENT	BOLTS: STAINLESS STEEL ASTM A193 GRADE 8.8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	-	-	STAINLESS STEEL ASTM A312, TYPE 316L ANSI B16.9 SCH 10
WATER INJECTION TO SILENCER MAWP: 10 PSIG MAX TEMP: 250 °F		FIBERGLASS BIAXIAL E-GLASS VINYLESTER RESIN FIRE RETARDANT CL1 ▲ ¹	WET EXHAUST HOSE WITH CRUSH RESISTANT T-BOLT CLAMPS	-	-	-	-	-
OVERBOARD MAWP: 10 PSIG MAX TEMP: 90 °F		ALUMINUM ASTM B221 5086, 5083, 5456 H111 OR H112 SCH 80						ALUMINUM ASTM B221 5086, 5083, 5456 H111 OR H112 SCH 80

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD
A	1-5D	1. REMOVED PRODUCT NAME	JHP	3/24/17	LGB

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- THIS DRAWING SHOWS A NOMINAL DESIGN FOR THE WATER COOLED EXHAUST SYSTEM FOR THE VESSEL. EQUIPMENT LAYOUT IN A GIVEN AREA IS APPROXIMATE. THE CONTRACTOR SHALL CONTACT AN EXPERIENCED WET EXHAUST SYSTEM PROVIDER TO PROCURE A DETAILED PROPULSION EXHAUST 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 MANUFACTURER'S CERTIFIED DRAWINGS AS APPROPRIATE.
- CONTRACTOR SHALL INSTALL GENERATOR WET EXHAUST SYSTEM PER GENERATOR MANUFACTURER'S GUIDANCE. WET EXHAUST ELBOW AND WATER LIFT MUFFLER SHALL BE SUPPLIED WITH THE GENERATOR.
- PIPING SHALL BE RUN AS DIRECTLY AS PRACTICABLE WITH THE EXCEPTION OF THE VERTICAL LOOP REQUIRED TO PRECLUDE ENGINE FLOODING. PROVIDE SUFFICIENT TAKE DOWN JOINTS TO ALLOW FOR REMOVAL, INSPECTION, SERVICING, AND REPLACEMENT OF PIPING, FITTINGS, AND EQUIPMENT.
- ALL BOLTED FLANGES ARE TO BE MATED UP FREE OF STRAIN.
- WEIGHT TRANSMITTED TO THE ENGINE CONNECTION IS NOT TO EXCEED THE ENGINE MANUFACTURER'S RECOMMENDATIONS IN HOT AND COLD CONDITIONS.
- PROPULSION EXHAUST PIPING FROM THE ENGINE TO THE WATER INJECTION RING SHALL BE SUPPORTED FROM THE ENGINE AND GEAR VIA STAINLESS STEEL RIGID ADJUSTABLE SUPPORT RODS.
- EXHAUST SILENCERS SHALL BE SUPPORTED VIA STRAPS AND CLAMPS ATTACHED TO NEARBY MAJOR ENGINE ROOM STRUCTURE. WIRE LOCKED AFTER ADJUSTMENT.
- IN GENERAL, EACH EXHAUST SHALL BE STAINLESS STEEL WITH PERMANENT SPRAY-ON INSULATION FROM THE ENGINE CONNECTION UP TO AND INCLUDING THE WATER INJECTION RING. FROM THE WATER INJECTION RING TO THE OVERBOARD DISCHARGE CONNECTION THE SYSTEM WILL BE FIBERGLASS. CONNECTIONS BETWEEN FIBERGLASS AND ALUMINUM AND BETWEEN FIBERGLASS AND STAINLESS STEEL SHALL BE WET EXHAUST HOSE.
- ALL HOSE TO PIPING CONNECTIONS SHALL HAVE DOUBLE T-CLAMPS.
- WATER SUPPLIED TO WATER INJECTION COUPLING SHALL COME FROM THE SEA WATER COOLING SYSTEM, REF 4
- ALL PIPE DISCHARGING OVERBOARD SHALL BE SLOPED DOWN AT LEAST 5° AND ANGLED AFT 45°

REFERENCES

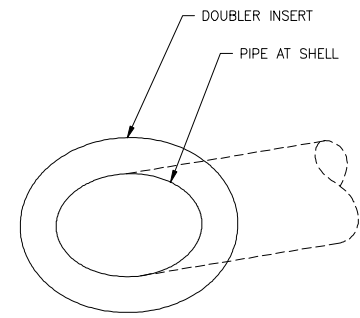
- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-101-1 PROFILES & ARRANGEMENTS
- 16109-003-120-0 HULL STRUCTURE
- 16109-003-520-0 SEA CHESTS & SEAWATER PIPING



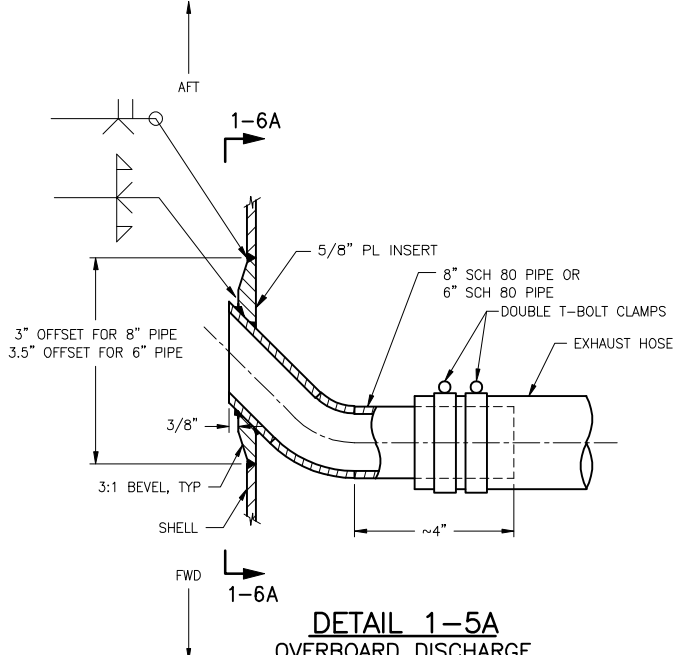
Elliott Bay Design Group North Carolina, PLLC
 CLIENT: NORTH CAROLINA D.O.T., RALEIGH, NORTH CAROLINA
 PROJECT: PEDESTRIAN FERRY

EXHAUST SYSTEM

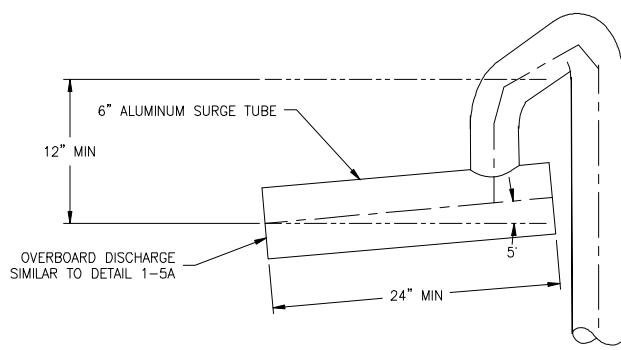
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SCALE	AS NOTED	FILE NAME
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SHEET	1	OF 4
DWN	MWR	MOD
	JHP	APVD
	LGB	APVD DATE
		3/3/2017



DETAIL 1-6A
OVERBOARD DISCHARGE
PLATE DOUBLER
SCALE: NONE



DETAIL 1-5A
OVERBOARD DISCHARGE
NOTE 12
SCALE: NONE



DETAIL 1-3A
GENSET OVERBOARD DISCHARGE
NOTE 12
1-1/2"=1'-0"



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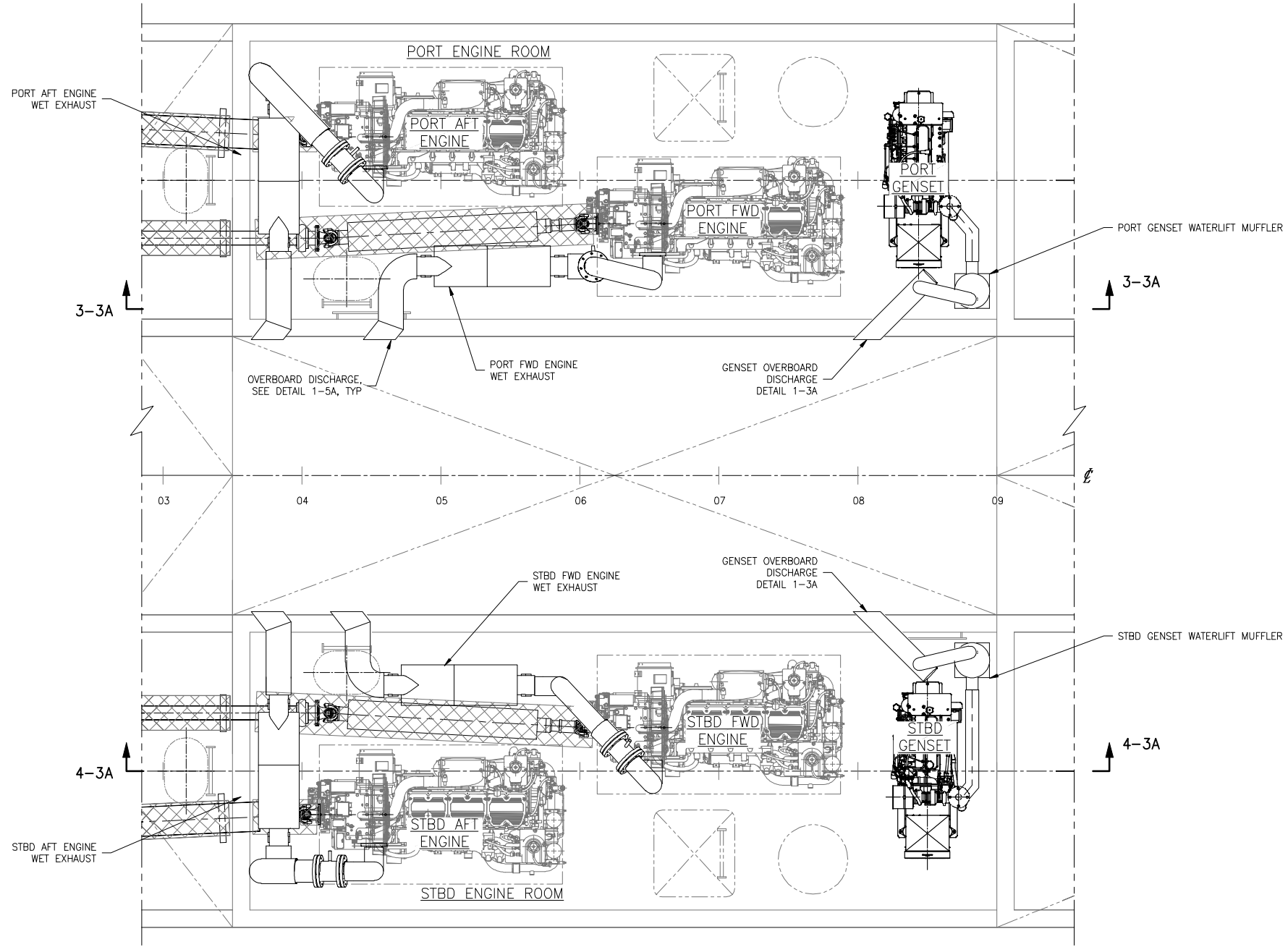
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KEY PLAN 2-3A
HOLD



SIZE	D	DWG NO.	16109-003-259-1	REV	A
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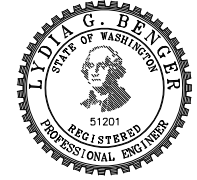
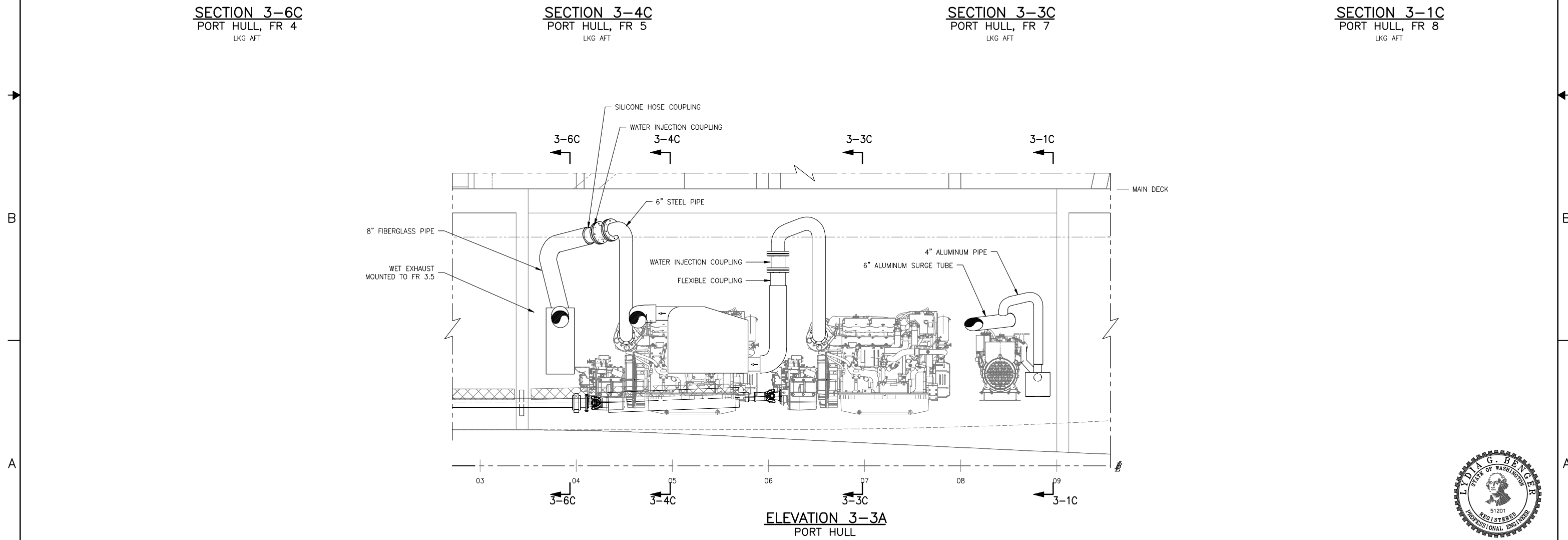
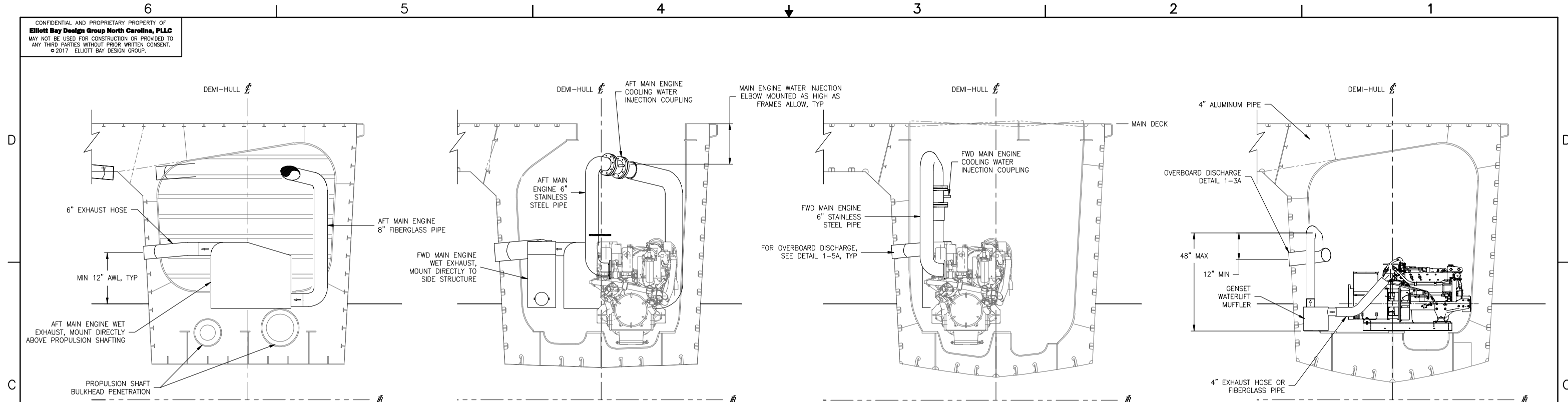
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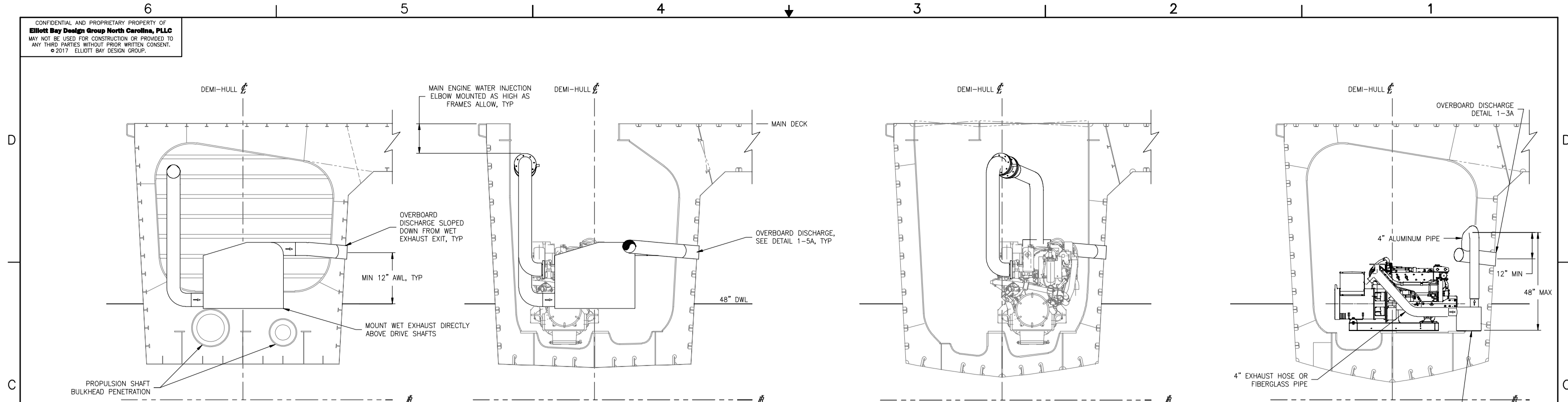
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SIZE	DWG NO.	REV
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SCALE	FILE NAME	SHEET
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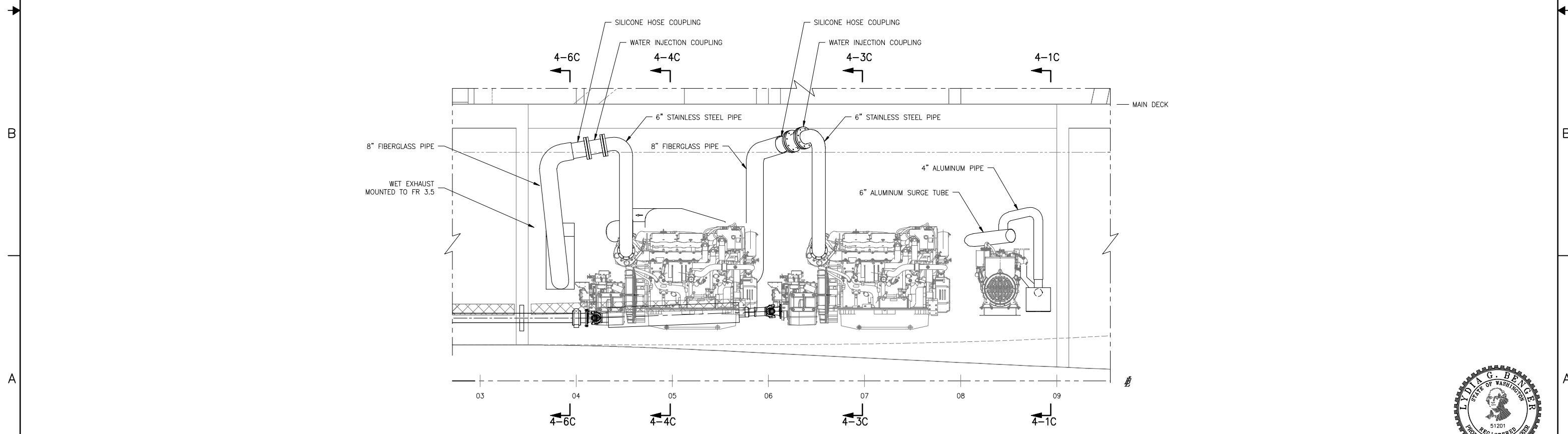


SECTION 4-6C
 STBD HULL, FR 4
 LKG AFT

SECTION 4-4C
 STBD HULL, FR 5
 LKG AFT

SECTION 4-3C
 STBD HULL, FR 7
 LKG AFT

SECTION 4-1C
 STBD HULL, FR 8
 LKG AFT



ELEVATION 4-3A
 STBD HULL
 LKG PORT TOWARDS CL



SIZE	D	DWG NO.	16109-003-259-1	REV	A
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