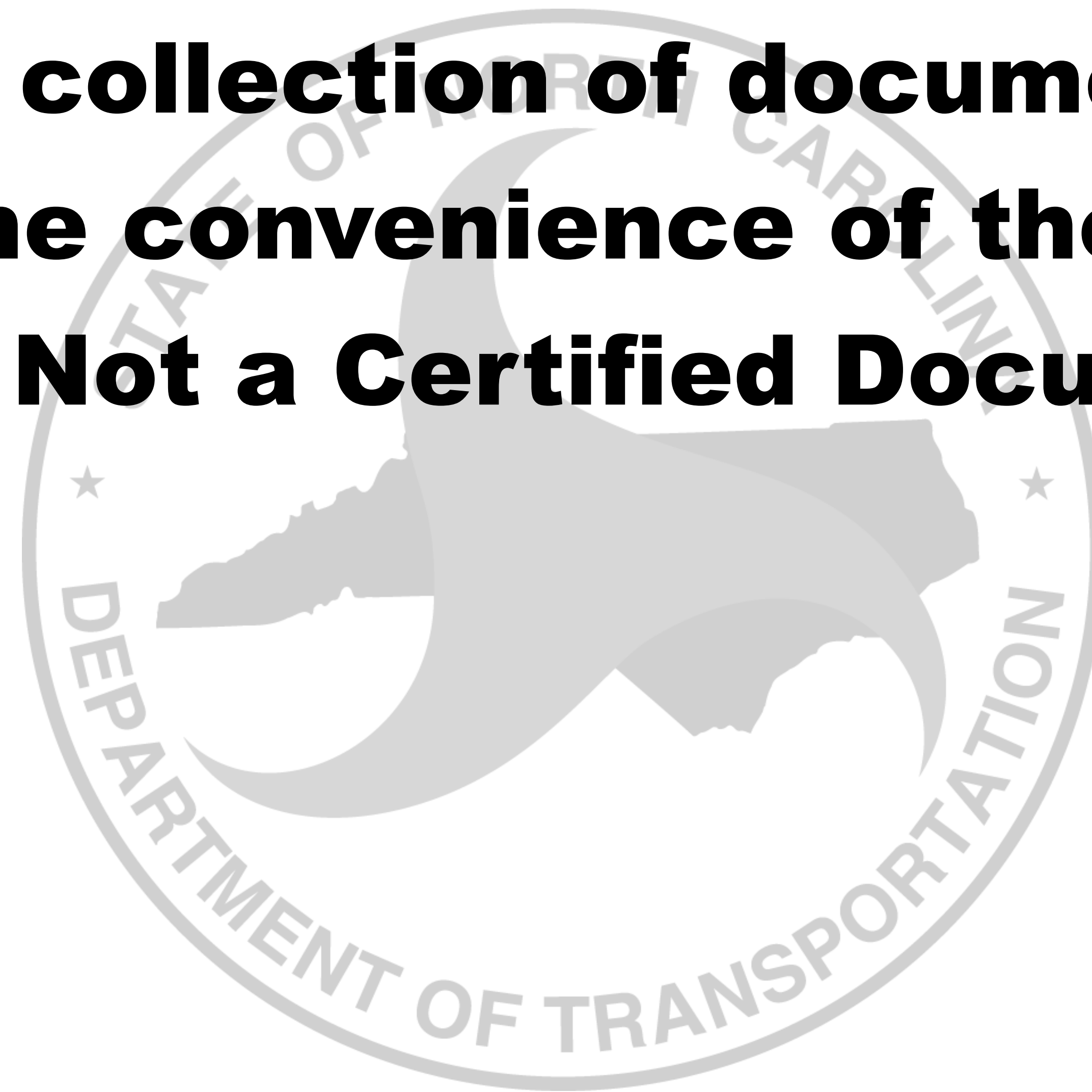


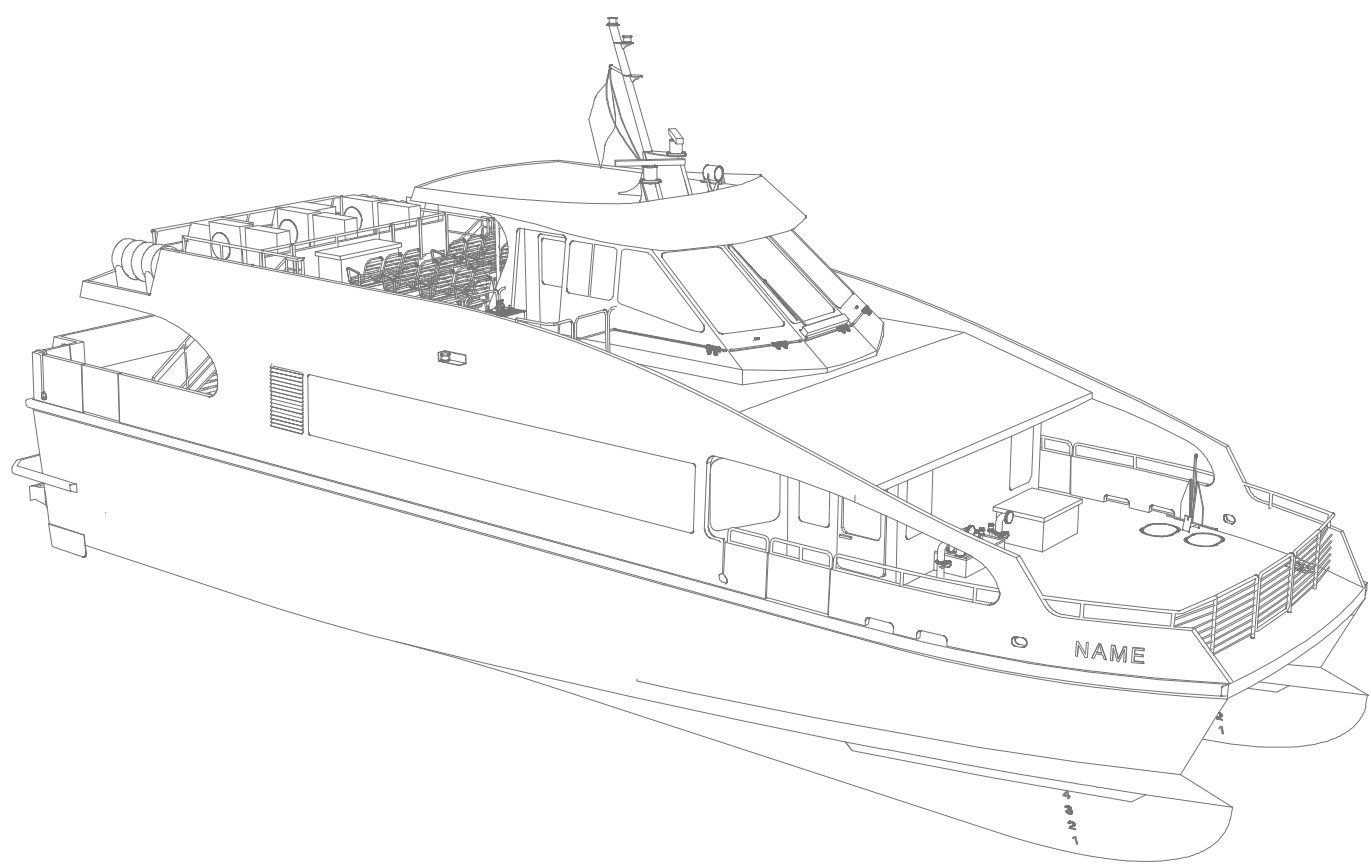
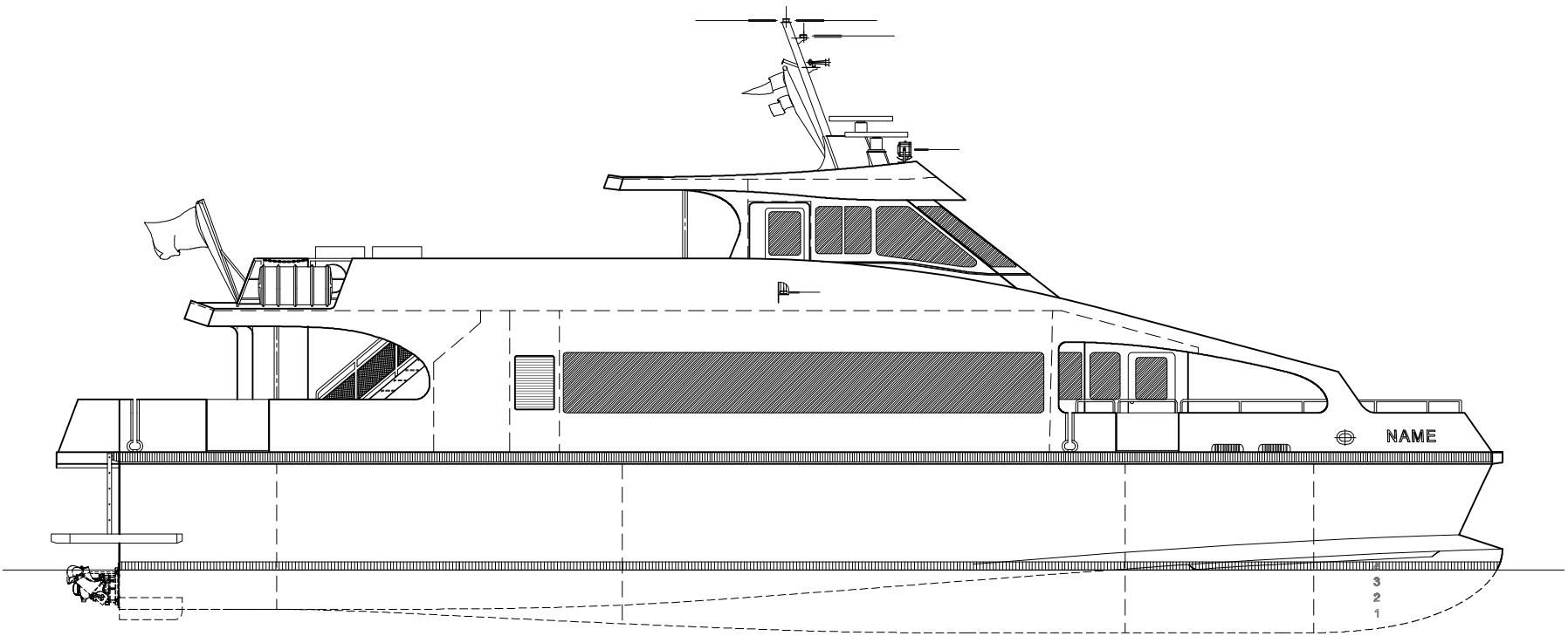
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VESSEL DRAWINGS

DRAWING NO.	DRAWING TITLE
16109-003-100-1	LINES PLAN
16109-003-065-0	HVAC BLOCK DIAGRAM
16109-003-101-1	PROFILES AND ARRANGEMENTS
16109-003-110-0	MIDSHIP SECTION
16109-003-120-0	HULL STRUCTURE
16109-003-130-0	SUPERSTRUCTURE
16109-003-170-1	PROPULSION EQUIPMENT ARRANGEMENT
16109-003-201-1	MACHINERY ARRANGEMENTS
16109-003-259-1	EXHAUST SYSTEM
16109-003-261-0	FUEL, WATER AND SEWAGE TANK CONFIGURATION
16109-003-261-1	FUEL OIL DIAGRAM
16109-003-320-0	ELECTRICAL ONE LINE DIAGRAM
16109-003-401-0	PILOTHOUSE ARRANGEMENT
16109-003-520-0	SEA CHESTS AND SEAWATER PIPING
16109-003-521-0	FIRE MAIN SYSTEM
16109-003-528-0	SANITARY DRAINS AND SEWAGE DISCHARGE SYSTEM
16109-003-529-1	BILGE SYSTEM
16109-003-529-2	DECK DRAINS
16109-003-533-0	POTABLE WATER SYSTEM
16109-003-601-0	PASSENGER SPACE ARRANGEMENT
16109-003-601-2	FOOD SERVICES ARRANGEMENT
16109-003-631-0	PAINT AND VINYL LAYOUT
16109-003-635-0	INSULATION AND LININGS PLAN
16109-003-635-1	CEILING AND LIGHTING PLAN



Elliott Bay Design Group
North Carolina, PLLC

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

PROJECT: PEDESTRIAN FERRY

DRAWING INDEX			
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DWN	MOD	CKD	APVD
MWR			APVD DATE
			3/3/2017

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REVISION HISTORY

11. ENGINE ROOM VENTILATION FANS SHALL SHUT DOWN AND FIRE DAMPERS SHALL CLOSE AUTOMATICALLY UPON RELEASE OF THE FIRE SUPPRESSION SYSTEM.
12. VENTILATION FANS SHALL BE RESILIENTLY MOUNTED AND FLEX CONNECTED TO DUCTS.
13. ENGINE ROOM FANS SHALL BE CONTROLLED WITH VARIABLE SPEED DRIVES TO MAINTAIN A PREDETERMINED POSITIVE PRESSURE. SEE REFERENCE 1 FOR DETAILS.
14. ALL DUCT WORK SHALL BE THIN WALL ALUMINUM TUBE.
15. ENGINE ROOM SUPPLY SHALL BE FITTED WITH A MIST ELIMINATOR TO PREVENT WATER INGRESS INTO THE ENGINE ROOM.
16. PROVIDE DIRECTIONAL VANES AT ENGINE ROOM AIR SUPPLY TO DIRECT AIR FORWARD TOWARDS THE GENERATOR.
17. PROVIDE BAFFLE TO PREVENT EXCESS WATER OR SPRAY ENTERING ENGINE ROOM. EQUIP WITH DRAIN BELOW MOISTURE ELIMINATOR.
18. LOCATE EXHAUST DAMPER AT MAIN DECK. PROVIDE BOLTED ACCESS HATCH IN EXHAUST AIR TRUNK.
19. PASSENGER SPACE HEAT PUMPS AND EXHAUST FAN SHALL BE FITTED WITH EMERGENCY SHUT DOWN LOCATED IN THE PILOTHOUSE.

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
2. 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.
3. FAN SELECTIONS AND MOTOR RATINGS ARE BASED ON ESTIMATED ROUTING AND CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALCULATING ACTUAL FAN PRESSURE AND POWER REQUIREMENTS BASED UPON THE AS-BUILT SYSTEM.
4. FANS SHALL BE LABELED WITH NAMEPLATES IDENTIFYING THE UNIT, THE FAN VOLUME IN CUBIC FEET PER MINUTE (CFM), STATIC PRESSURE RATING AT SPECIFIED VOLUME, MOTOR FULL LOAD AMPERAGE, FAN SPEED, AND MOTOR HORSEPOWER. AIRFLOW DIRECTION SHALL BE IDENTIFIED ON THE FAN EXTERIOR BODY.
5. VOLUME FLOW RATES SHOWN ON THE DIAGRAM ARE MAXIMUM DESIGN FLOW RATES, EXPRESSED IN CUBIC FEET PER MINUTE.
6. IN GENERAL AIR VELOCITIES SHALL BE LIMITED TO 2,000 FEET PER MINUTE. WHERE SPACE CONDITIONS NECESSITATE, LOCAL VELOCITIES MAY APPROACH 3000 FEET PER MINUTE.
7. WHERE FANS ARE NOT DUCTED AT ONE END, FIT NON-DUCTED END WITH A BELLMOUTH AND GUARD.
8. WEATHER LOUVERS SHALL BE ALUMINUM WITH STAINLESS STEEL SCREENS. LOUVERS SHALL BE REMOVABLE, HELD IN PLACE WITH STAINLESS STEEL FASTENERS. ACCOMMODATION INLET LOUVERS SHALL BE EQUIPPED WITH STAINLESS STEEL BUG SCREENS.
9. REFRIGERANT TUBING SHALL BE INSTALLED IN ACCORDANCE WITH THE HEAT PUMP MANUFACTURER'S REQUIREMENTS OR IN ACCORDANCE WITH THE STANDARD FOR COPPER REFRIGERANT PIPING GIVEN IN ASTM F1155-10 (2015) TABLE 19 AS APPLICABLE.
10. FIRE DAMPERS SHALL BE EQUIPPED 165°F THERMAL TRIP DEVICES FOR AUTO-CLOSE IN CASE OF FIRE. FIRE DAMPERS SHALL BE EASILY ACCESSIBLE FOR SERVICE AND INSPECTION.

REFERENCES

1. 16109-003-802-0 CONTRACT SPECIFICATIONS

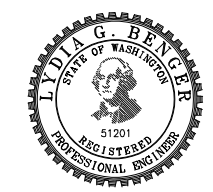


Elliott Bay Design Group
North Carolina, PLLC

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

PROJECT: **PEDESTRIAN FERRY**

TITLE: **HVAC BLOCK DIAGRAM**



SIZE	DWG NO.	REV
D	16109-003-065-0	-
SCALE	FILE NAME	SHEET
NTS	16109-003-065-0	1 OF 4
DWN	MOD	CKD
LGB	JHP	APVD
	LGB	APVD DATE
		3/3/2017

SYMBOLS LIST

	AXIAL FAN
	PLA CEILING-RECESSED AC / HEAT PUMP UNIT
	EXHAUST AIR DUCT
	SUPPLY AIR DUCT
	RETURN/EXHAUST GRILL
	SUPPLY DIFFUSER
	LOUVER OR DEMISTER
	LOUVER WITH WEATHER TIGHT COVER
	CFM TO OR FROM TERMINAL
	FIRE DAMPER
	BALANCING DAMPER (MANUAL)
	CENTRIFUGAL FAN
	GOOSENECK VENT
	BULKHEAD/TANK PENETRATION
	SUPPLY TERMINAL WITH SCREEN
	EXHAUST TERMINAL
	VENT TERMINAL, INVERTED BALL CHECK
	VARIABLE FREQUENCY DRIVE
	PRESSURE TRANSDUCER

EQUIPMENT LIST

QTY.	SERVICE	TYPE	MODEL	CAPACITY	DRIVE	REMARKS
2	PILOTHOUSE HEAT PUMP	OUTDOOR UNIT	-	24,000 BTU/H	208/230VAC/1Ø/60HZ 2.5KW (MAX)	-
2	PILOTHOUSE HEAT PUMP	INDOOR UNIT	-	24,000 BTU/H	PWR FROM OUTDOOR UNIT	-
4	PASSENGER SPACE HEAT PUMP	OUTDOOR UNIT	-	35,000 BTU/H	208/230VAC/1Ø/60HZ 4.5KW (MAX)	-
4	PASSENGER SPACE HEAT PUMP	INDOOR UNIT	-	35,000 BTU/H	PWR FROM OUTDOOR UNIT	-
2	ENGINE ROOM SUPPLY FAN	AXIAL	-	10,400 CFM @ 0.7" H2O SP	208VAC/3Ø/60HZ 5 HP	VARIABLE SPEED DRIVE SEE REF 1 FOR CONTROLS
1	PASSENGER SPACE EXHAUST FAN	CENTRIFUGAL	-	600 CFM @ 1.3" H2O SP	120V/1Ø/60HZ 1.5 HP	-
2	JET ROOM EXHAUST FAN	DC BLOWER	-	200 CFM @ 1.5" H2O SP	24 VDC 8 AMP	-
2	ENGINE ROOM INLET FIRE DAMPER	STAINLESS STEEL	-	27" x 27"	-	ELECTRICALLY ACTUATED CLOSES UPON ACTIVATION OF FIRE SUPPRESSION SYSTEM
2	ENGINE ROOM EXHAUST FIRE DAMPER	STAINLESS STEEL	-	27" x 20"	-	ELECTRICALLY ACTUATED CLOSES UPON ACTIVATION OF FIRE SUPPRESSION SYSTEM
2	MOISTURE ELIMINATOR	ALUMINUM	-	40" x 30"	-	-

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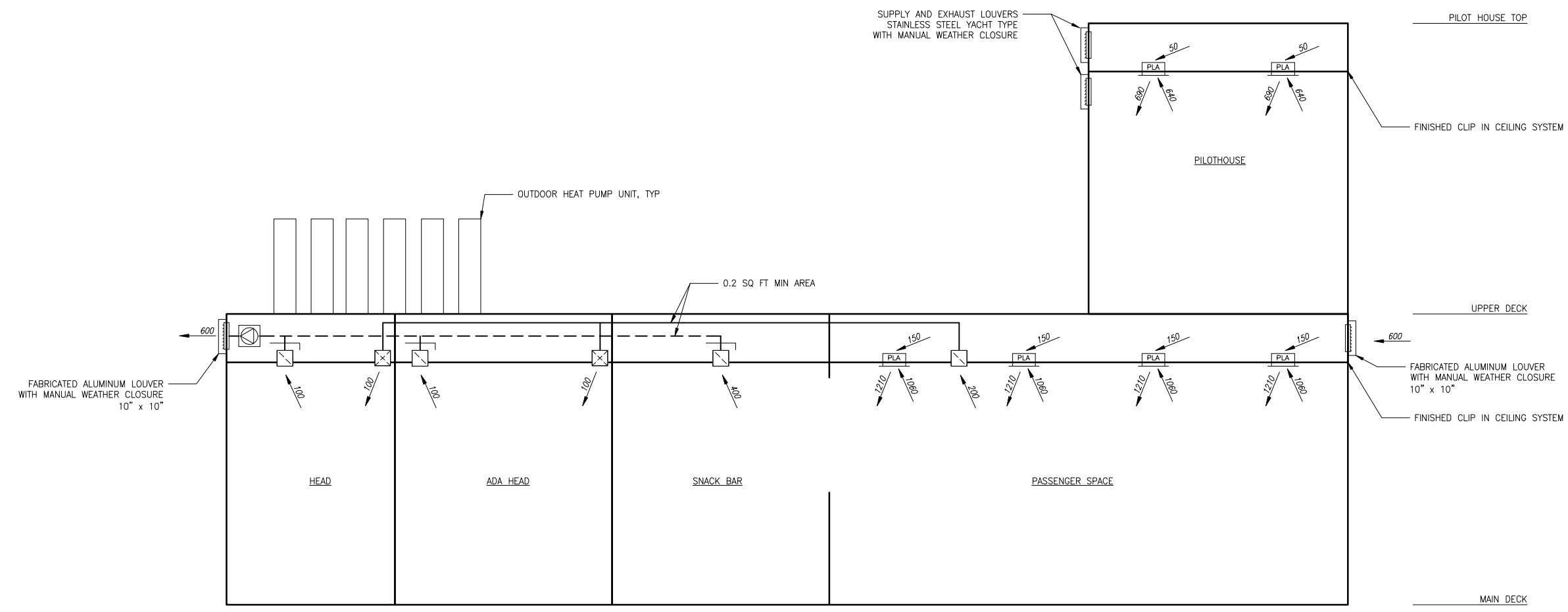


DIAGRAM 2-4B
 PASSENGER SPACE AND PILOTHOUSE HVAC



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SCALE	NTS	FILE NAME	16109-003-065-0-	SHEET	2 OF 4

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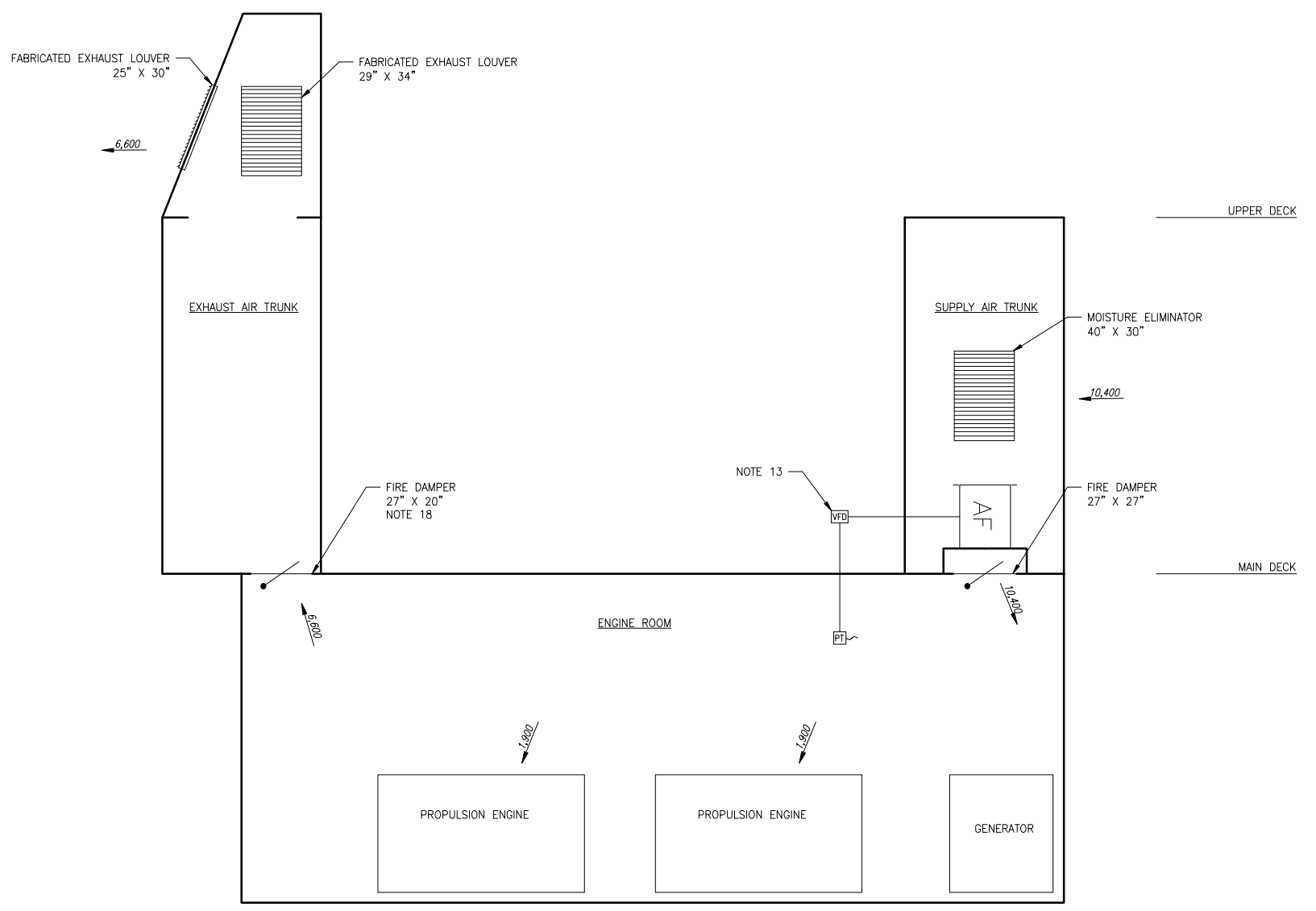
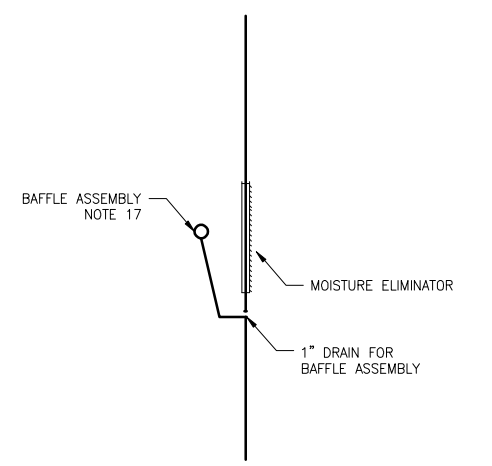


DIAGRAM 3-4B
ENGINE ROOM VENTILATION
 STBD SIDE SHOWN, PORT SIMILAR



DETAIL 3-1B
SUPPLY AIR BAFFLE



SIZE	D	DWG NO.	16109-003-065-0	REV	-
SCALE	NTS	FILE NAME	16109-003-065-0-	SHEET	3 OF 4

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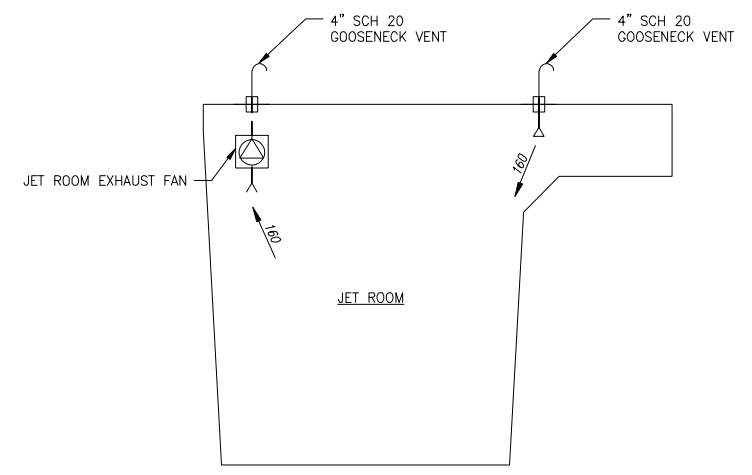


DIAGRAM 4-5C
 JET ROOM VENTILATION

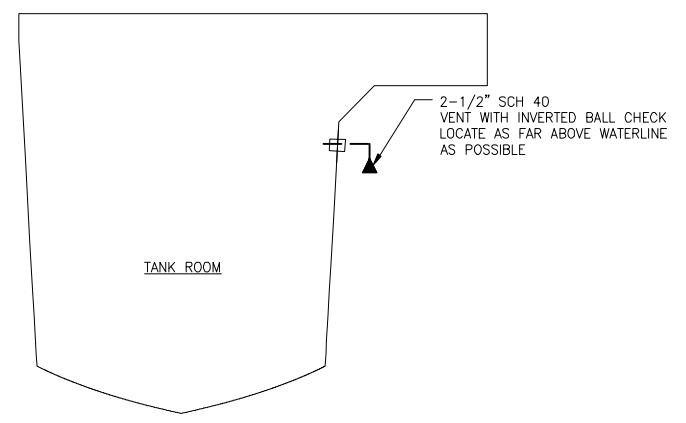


DIAGRAM 4-5A
 TANK ROOM VENT

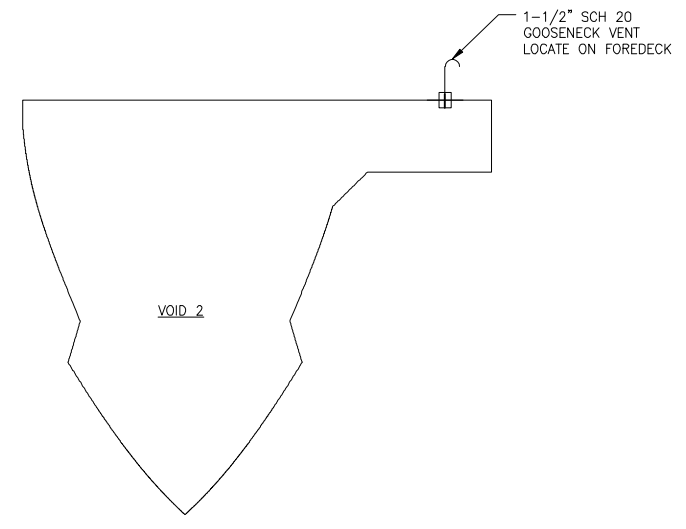


DIAGRAM 4-3A
 VOID 2 VENT



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REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD
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VESSEL PARTICULARS

LENGTH OVERALL: 92'-0"
 LENGTH DESIGN LOAD WATERLINE: 86'-9"
 BEAM (MOLDED): 26'-0"
 BEAM OVER GUARDS: 26'-10"
 FREEBOARD AT SIDE: 7'-6"
 DEPTH AT SIDE: 11'-6"
 DRAFT AT DWL: 4'-0"
 TOTAL PERSONS ON BOARD CAPACITY: 104 MAX.

REFERENCES

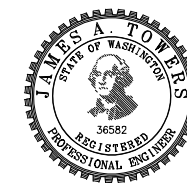
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- 16109-003-101-1 PROFILES AND ARRANGEMENTS



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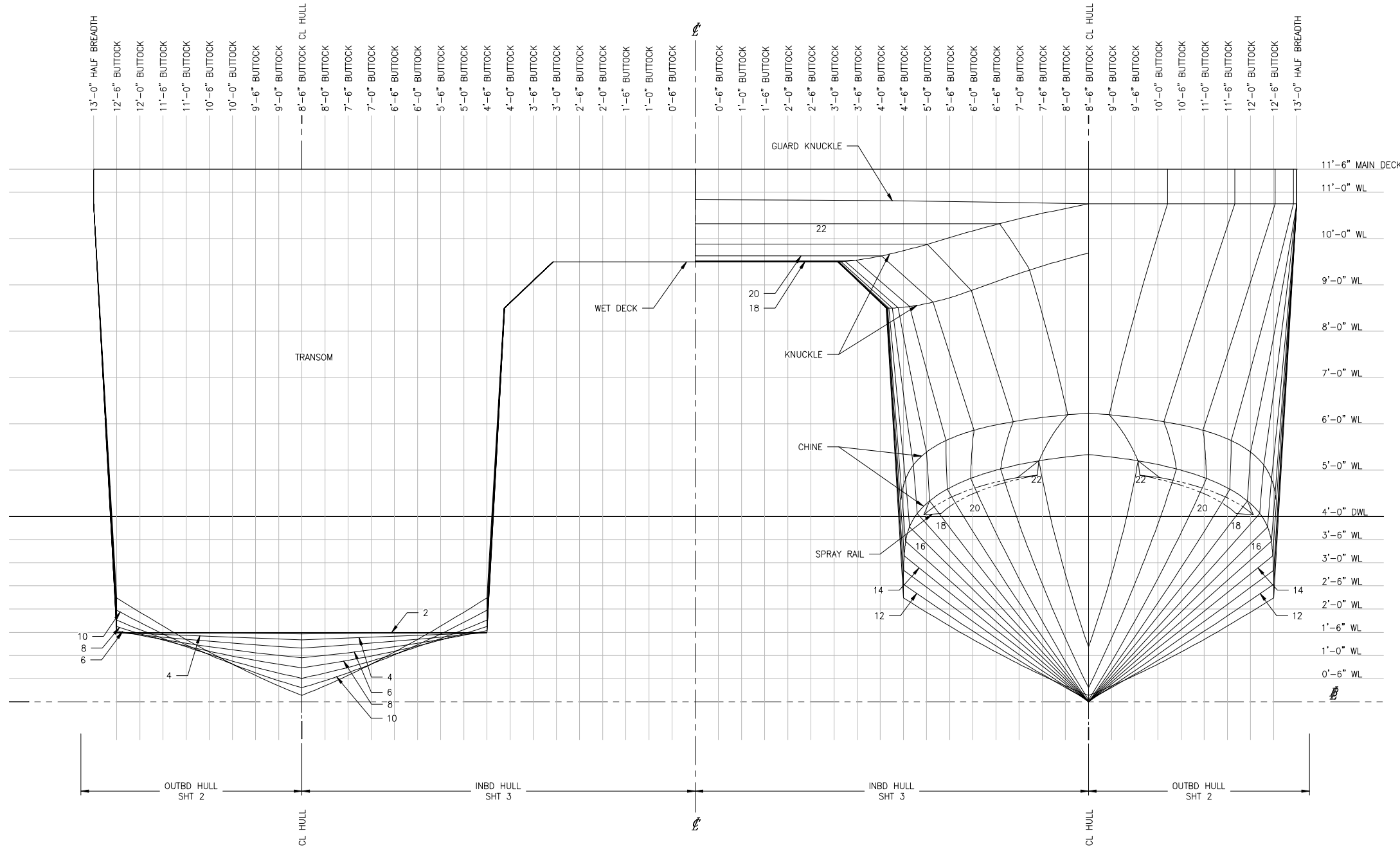
CLIENT: NORTH CAROLINA D.O.T.
 RALEIGH, NORTH CAROLINA

PROJECT: PEDESTRIAN FERRY



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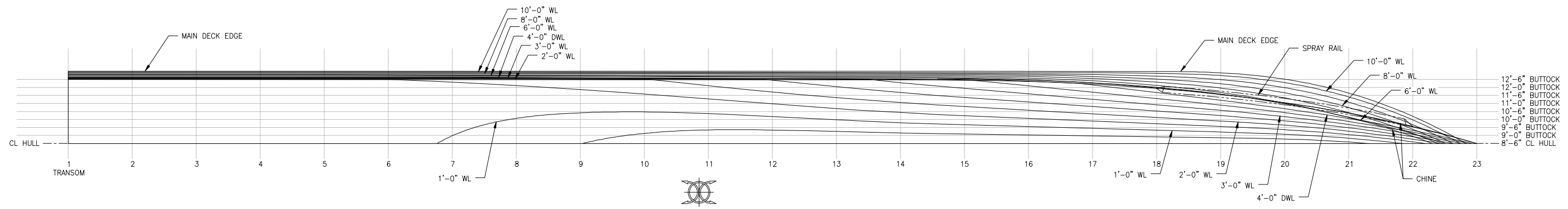
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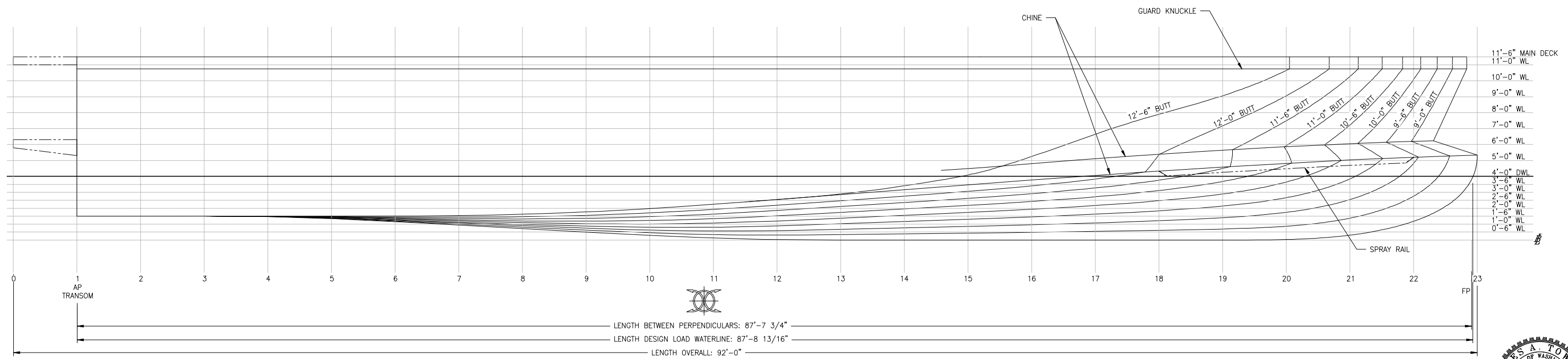
BODY PLAN

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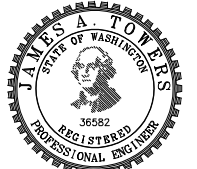


OUTBOARD HALF BREADTH PLAN



LENGTH BETWEEN PERPENDICULARS: 87'-7 3/4"
 LENGTH DESIGN LOAD WATERLINE: 87'-8 13/16"
 LENGTH OVERALL: 92'-0"
 FRAME SPACING 48" THRUOUT

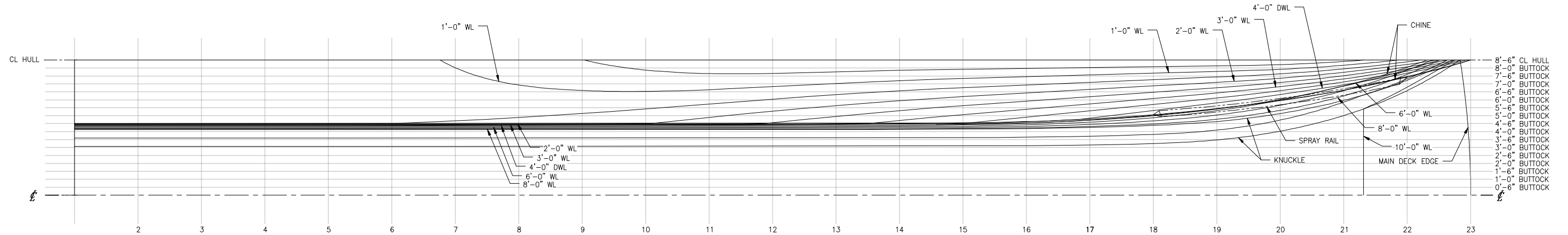
OUTBOARD SHEER PLAN



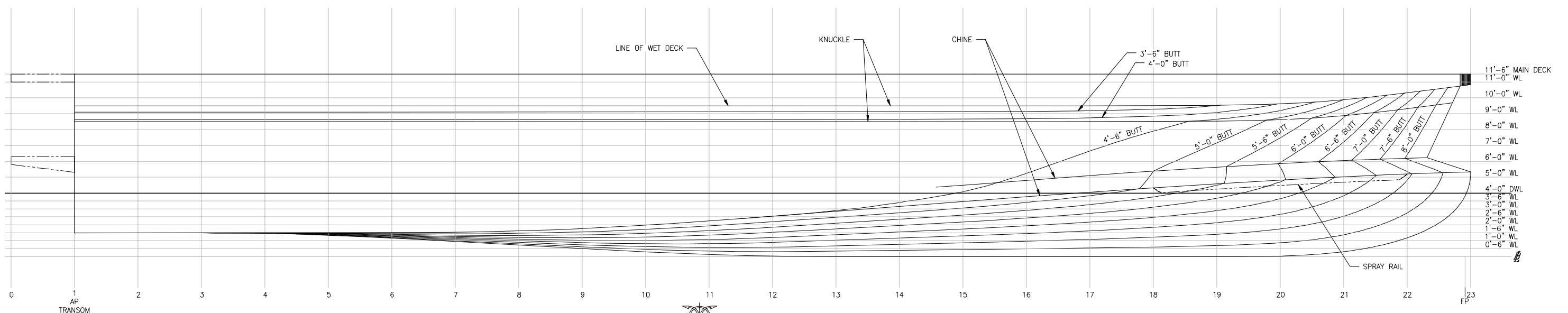
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INBOARD HALF BREADTH PLAN



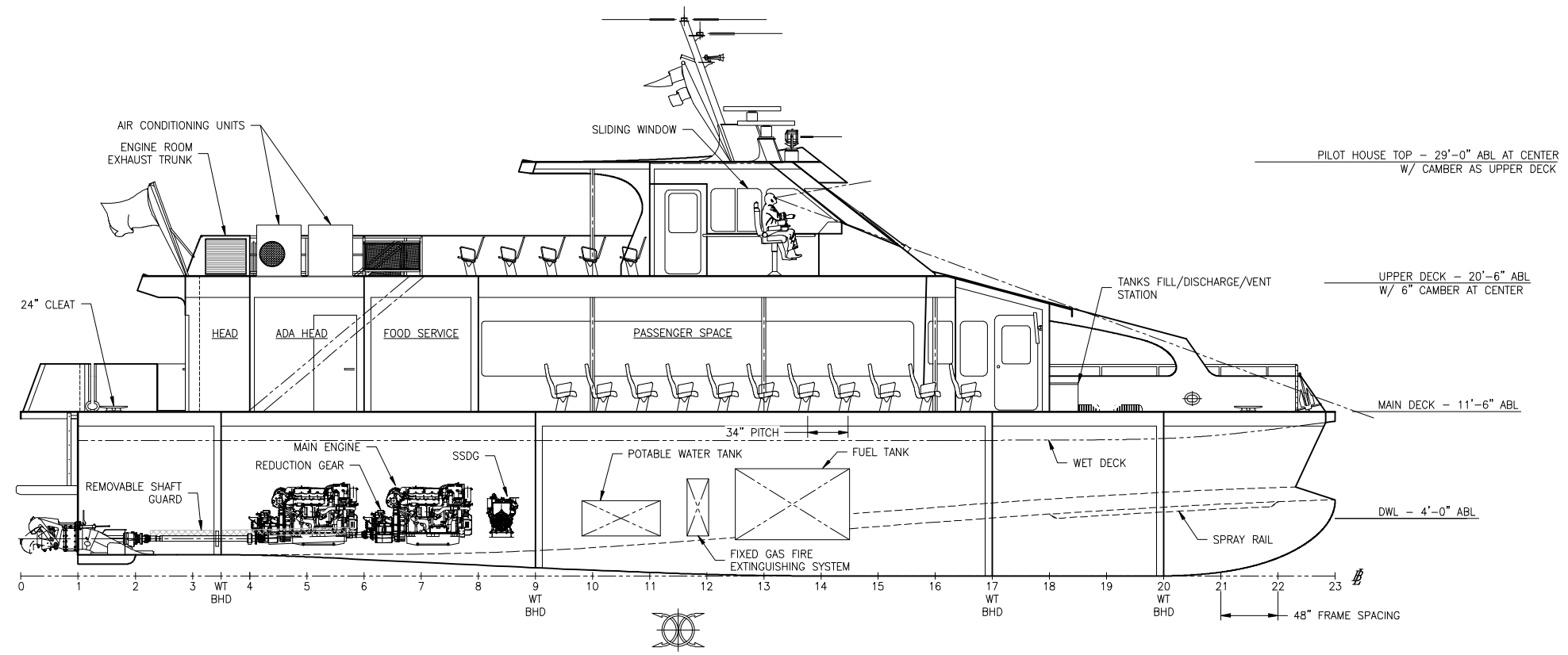

INBOARD SHEER PLAN



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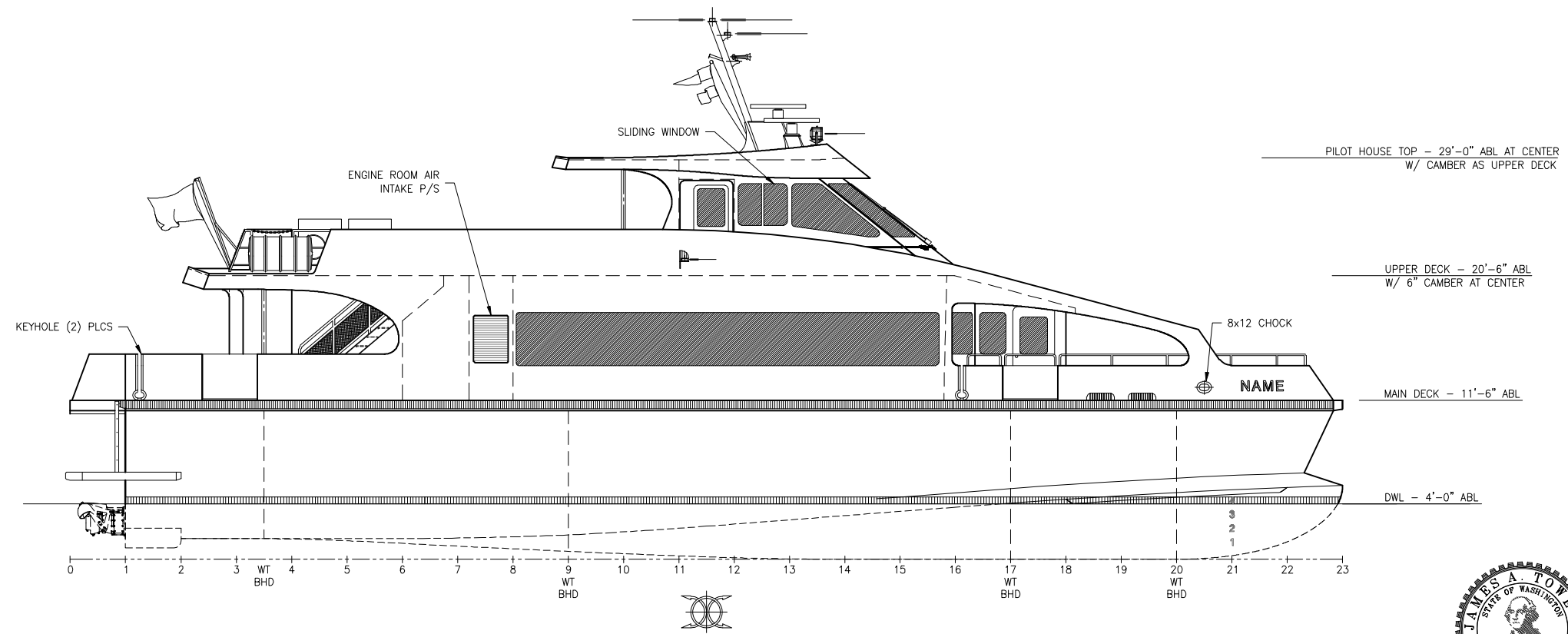
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INBOARD PROFILE

BELOW MAIN DECK SHOWN AT CL OF DEMI-HULL
 ABOVE MAIN DECK SHOWN AT VESSEL CENTERLINE



OUTBOARD PROFILE

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.

VESSEL PARTICULARS

LENGTH OVERALL:	92'-0"
LENGTH DESIGN LOAD WATERLINE:	87'-7"
BEAM (MOLDED):	26'-0"
BEAM OVER GUARDS:	26'-10"
FREEBOARD AT SIDE:	7'-6"
DEPTH AT SIDE:	11'-6"
DRAFT AT DWL:	4'-0"
TOTAL PERSONS ON BOARD CAPACITY:	131 MAX.

REFERENCES

- 16109-003-802-0 CONTRACT SPECIFICATIONS



Elliott Bay Design Group North Carolina, PLLC

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

PROJECT: **PEDESTRIAN FERRY**



PROFILES AND ARRANGEMENTS

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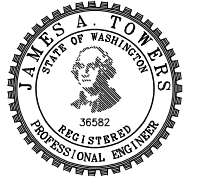
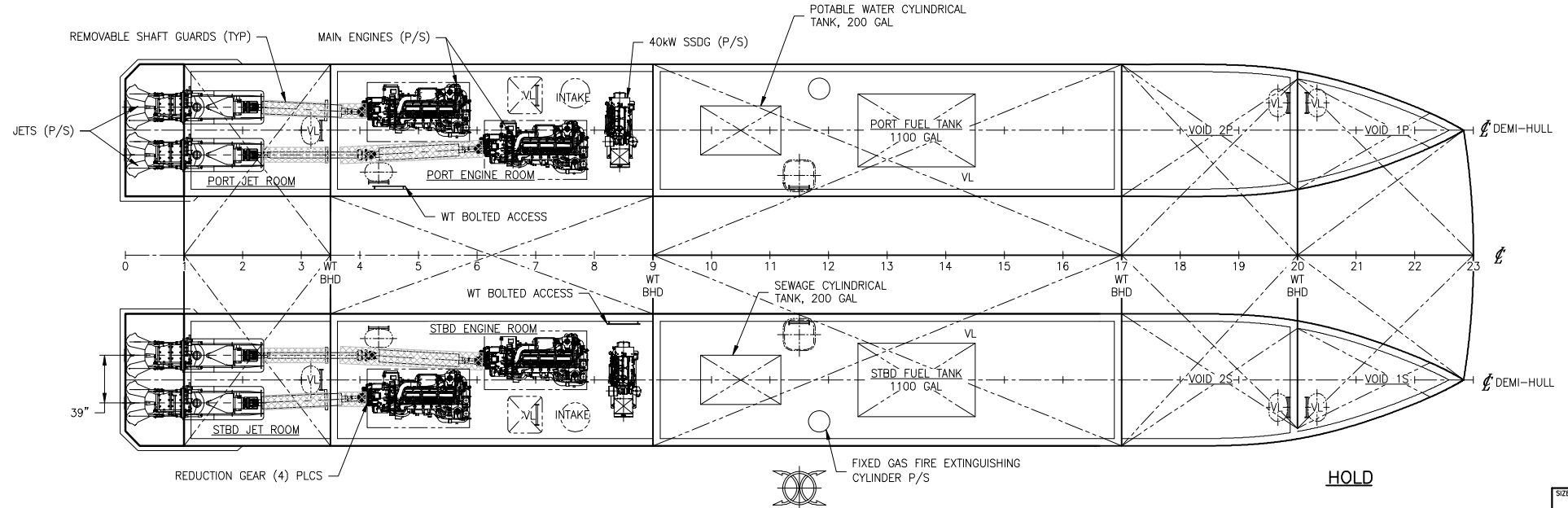
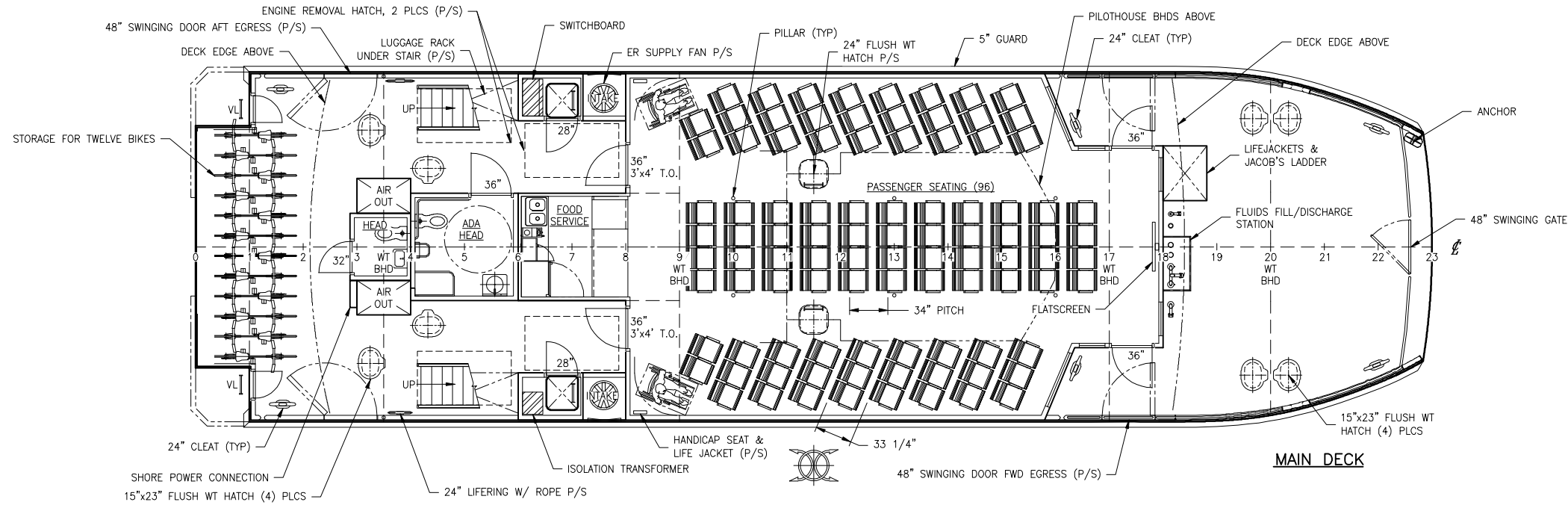
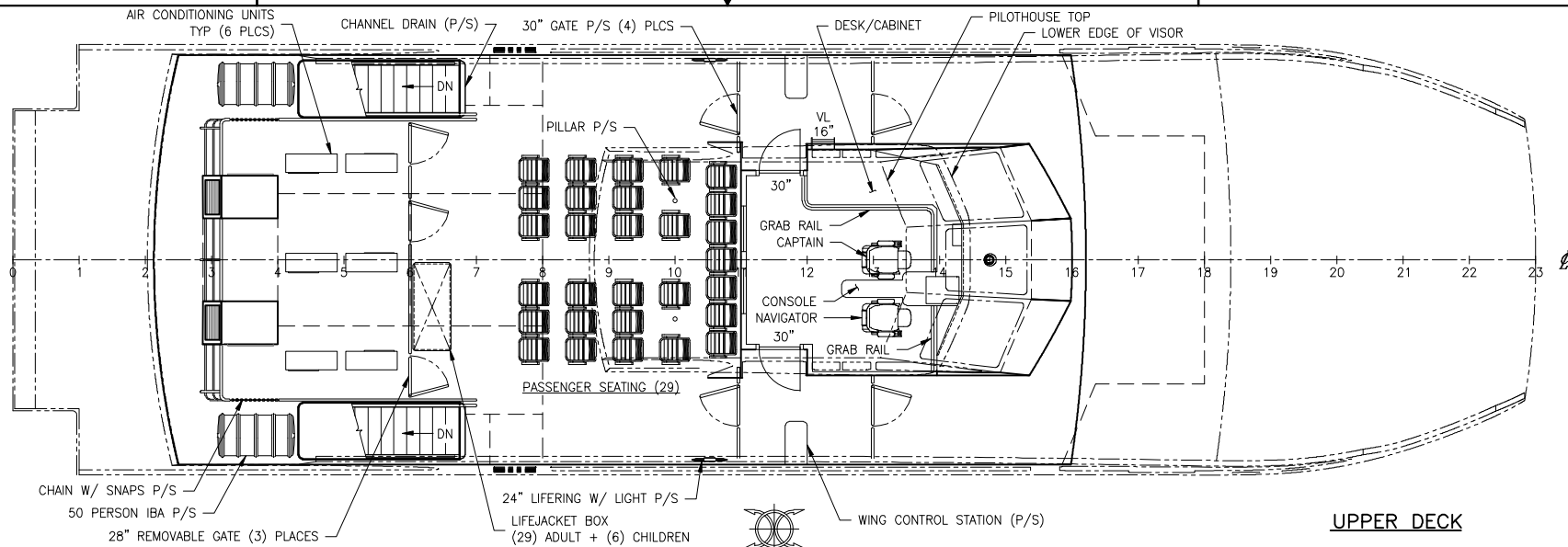
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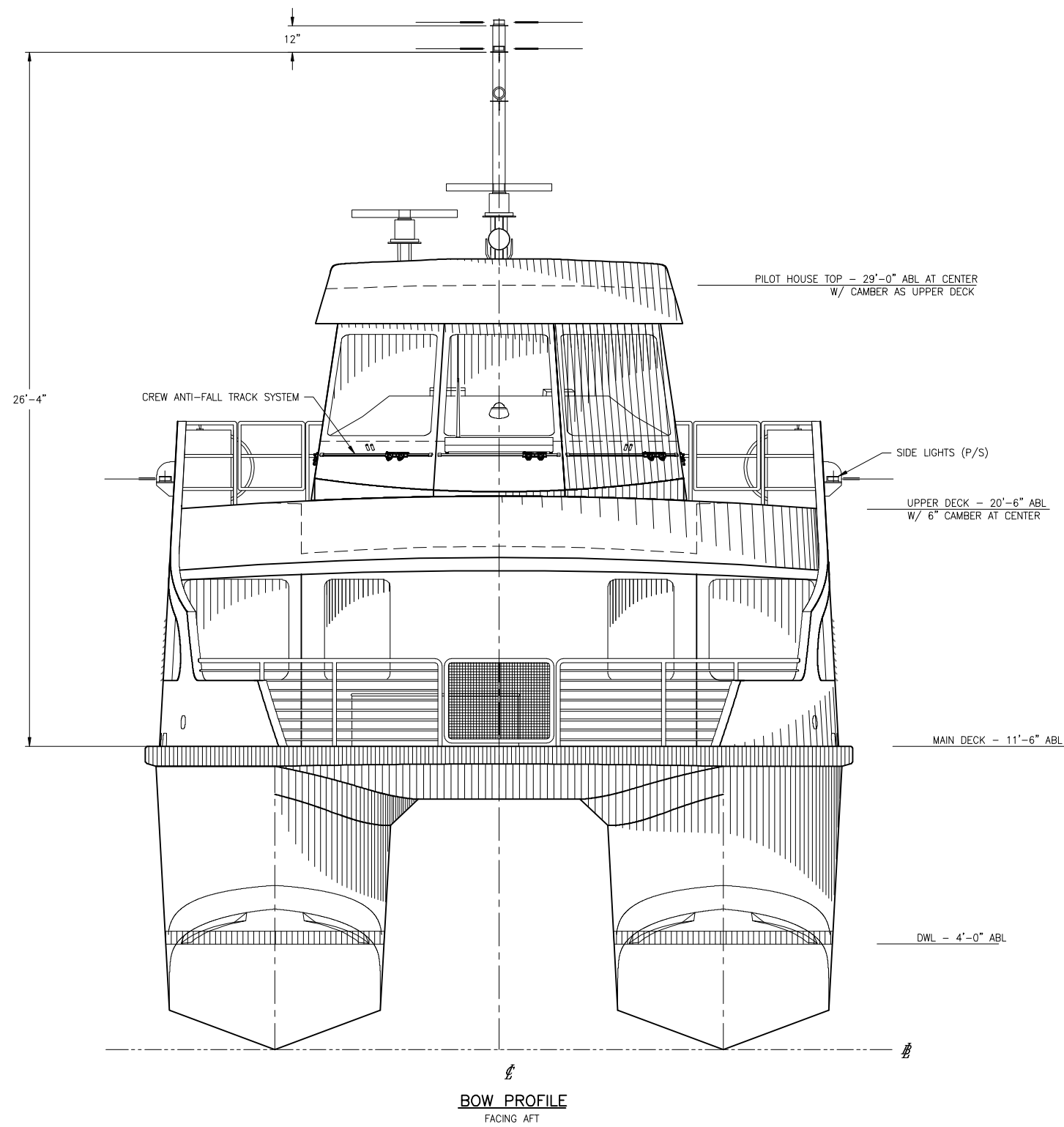
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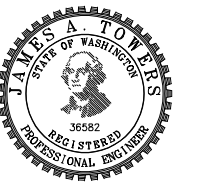
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BOW PROFILE
 FACING AFT



SIZE	D	DWG NO.	16109-003-101-1	REV	-
SCALE	3/8"=1'-0"	FILE NAME	16109-003-101-1-	SHEET	3 OF 3

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REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- STRUCTURES SHALL BE ASSEMBLED USING ALL WELDED CONSTRUCTION UNLESS OTHERWISE NOTED. WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE LLOYD'S RULES. ALL WELDING SHALL DEVELOP THE FULL STRENGTH OF THE STRUCTURAL MATERIAL. PLATES SHALL BE 5083 H116/H321 ALUMINUM, SHAPES SHALL BE 6061-T6 UNLESS NOTED OTHERWISE.
- PROJECTING ENDS OF METAL SHALL BE GROUND SMOOTH TO PROVIDE SUITABLE OPERATING CONDITIONS AND TO ENSURE SAFETY OF PERSONNEL.
- STRUCTURE DESIGNED IN ACCORDANCE WITH LLOYD'S RULES AND REGULATIONS FOR CLASSIFICATION OF SPECIAL SERVICE CRAFT, JULY 2016.
- LIGHTENING HOLES IN TONNAGE FRAMES 16 & 18 MAY NOT BE LARGER THAN 18" DIAMETER OR THE EQUIVALENT AREA, AND MUST BE AT LEAST 18" FROM EVERY OTHER HOLE.
- LONGITUDINAL FRAMES 17 TO STEM SHALL BE WELDED ALL AROUND WHERE THEY MEET THE TRANSVERSE FRAMES.
- ALL OUTBOARD SIDE SHELL LONGITUDINALS FORWARD OF FRAME 10 SHALL BE WELDED ALL AROUND TO TRANSVERSE STRUCTURE (NO RAT HOLES)
- ALL BOTTOM LONGITUDINALS FORWARD OF FRAME 10 SHALL BE WELDED ALL AROUND TO TRANSVERSE FRAMES (NO RAT HOLES).
- ALL INBOARD SIDE SHELL LONGITUDINALS FORWARD OF FRAME 17 SHALL BE WELDED ALL AROUND TO TRANSVERSE STRUCTURE (NO RAT HOLES).
- WHERE STIFFENERS MAY TRAP WATER ON THEIR UPPER FACE, DRILL 1/2" HOLE NEAR THE TRANSVERSE TO ALLOW DRAINAGE.
- LONG'L INBOARD SHELL AND BOTTOM FRAMES SHALL BE WELDED ALL...FRAMES 10-17

REFERENCES

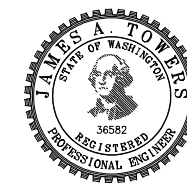
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- 16109-003-130-0 SUPERSTRUCTURE



Elliott Bay Design Group North Carolina, PLLC

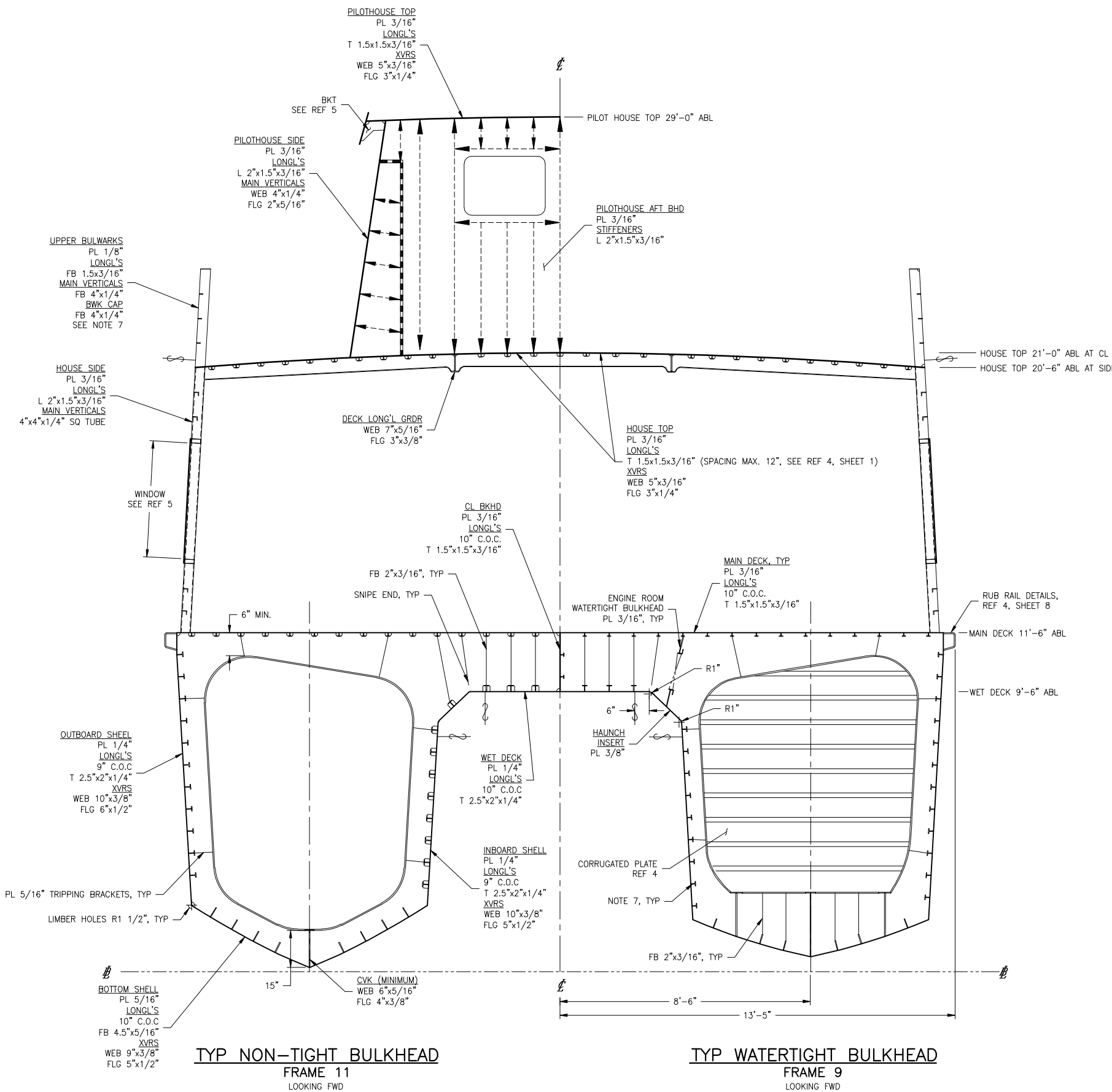
CLIENT: NORTH CAROLINA D.O.T.
 RALEIGH, NORTH CAROLINA

PROJECT: PEDESTRIAN FERRY

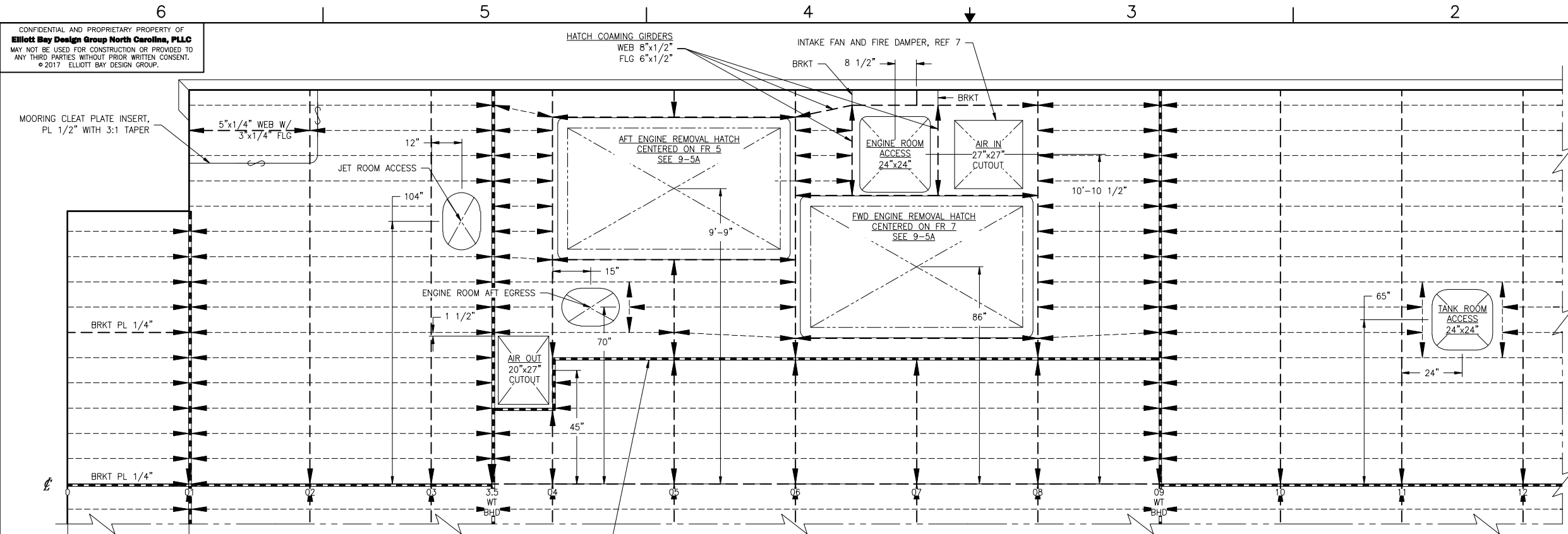


MIDSHIP SECTION

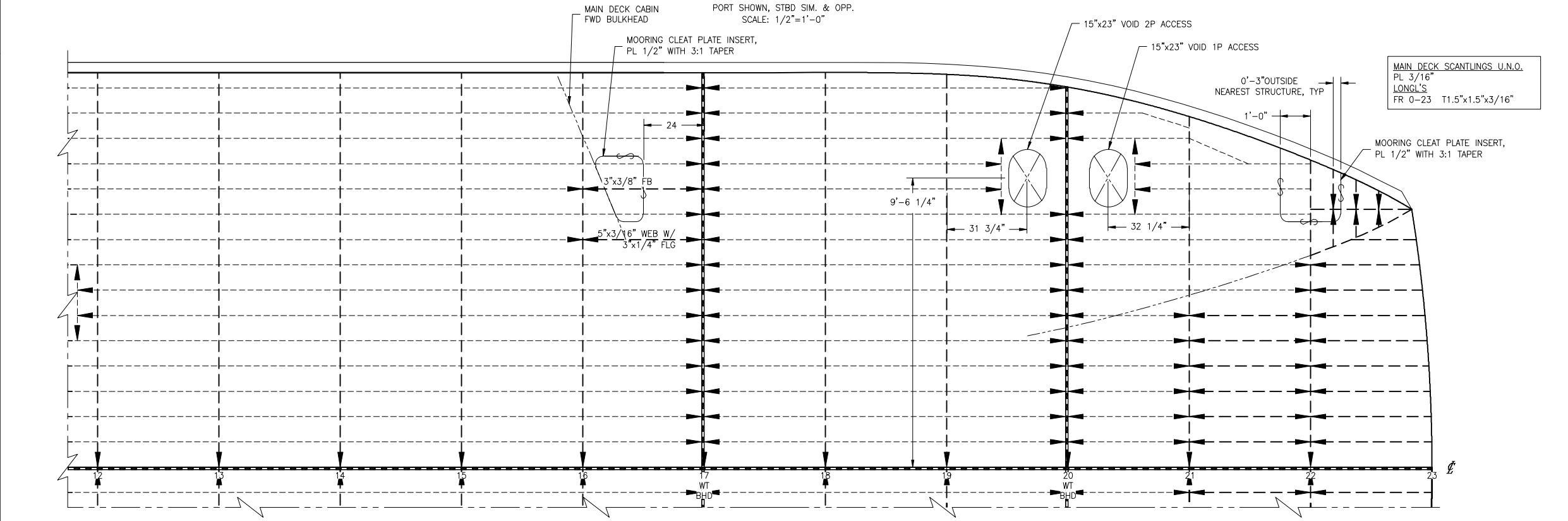
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DWN	JXB/MWR	MOD		APVD DATE	3/3/2017



3/2/2017 2:00:35 PM



PLAN 1-4C
MAIN DECK (AFT)
 LOOKING DOWN FROM ABOVE
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



PLAN 1-4A
MAIN DECK (FWD)
 LOOKING DOWN FROM ABOVE
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES				
1.	MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.			
2.	STRUCTURES SHALL BE ASSEMBLED USING ALL WELDED CONSTRUCTION UNLESS OTHERWISE NOTED. WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE LLOYD'S RULES. ALL WELDING SHALL DEVELOP THE FULL STRENGTH OF THE STRUCTURAL MATERIAL. PLATES SHALL BE 5083 H116/H321 ALUMINUM, SHAPES SHALL BE 6061-T6 UNLESS NOTED OTHERWISE.			
3.	PROJECTING ENDS OF METAL SHALL BE GROUND SMOOTH TO PROVIDE SUITABLE OPERATING CONDITIONS AND TO ENSURE SAFETY OF PERSONNEL.			
4.	STRUCTURE DESIGNED IN ACCORDANCE WITH LLOYD'S RULES AND REGULATIONS FOR CLASSIFICATION OF SPECIAL SERVICE CRAFT, JULY 2016.			
5.	LIGHTENING HOLES IN TONNAGE FRAMES 16 & 18 MAY NOT BE LARGER THAN 18" DIAMETER OR THE EQUIVALENT AREA, AND MUST BE AT LEAST 18" FROM EVERY OTHER HOLE.			
6.	LONGITUDINAL INBOARD SHELL SIDE AND BOTTOM STIFFENERS SHALL BE WELDED ALL AROUND WHERE THEY MEET TRANSVERSE FRAMES 10-17.			
7.	LONGITUDINAL INBOARD/OUTBOARD SIDES, BOTTOM AND DECK STIFFENERS SHALL BE WELDED ALL AROUND WHERE THEY MEET TRANSVERSE FRAMES 17-22.			
8.	HULL FRAMING IN WAY OF JET SHALL BE SUITED TO CERTIFIED VENDOR DRAWINGS.			
9.	FOR TANK FRAMING, SEE REF 5			
10.	THE FOLLOWING FRAME SETS HAVE SIMILAR SCANTLINGS WITH THE SECOND SET FULLY SHOWN IN REF 6:			
10.1.	TRANSOM - FR 9			
10.2.	FR 09 - FR 15			
10.3.	FR 15 - FR 23			

REFERENCES	
1.	16109-003-802-0 CONTRACT SPECIFICATIONS
2.	16109-003-061-0 SCANTLING CALCULATIONS
3.	16109-003-101-1 PROFILES & ARRANGEMENTS
4.	16109-003-170-1 PROPULSION EQUIPMENT ARRANGEMENT
5.	16109-003-261-1 FUEL/WATER/SEWAGE TANK CONFIG & STRUCTURE
6.	16109-003-110-0 MIDSHIP SECTION
7.	16109-003-065-0 HVAC CALCULATIONS AND BLOCK DIAGRAM

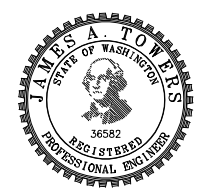
REFERENCES	
1.	16109-003-802-0 CONTRACT SPECIFICATIONS
2.	16109-003-061-0 SCANTLING CALCULATIONS
3.	16109-003-101-1 PROFILES & ARRANGEMENTS
4.	16109-003-170-1 PROPULSION EQUIPMENT ARRANGEMENT
5.	16109-003-261-1 FUEL/WATER/SEWAGE TANK CONFIG & STRUCTURE
6.	16109-003-110-0 MIDSHIP SECTION
7.	16109-003-065-0 HVAC CALCULATIONS AND BLOCK DIAGRAM



Elliott Bay Design Group
 North Carolina, PLLC

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

PROJECT: PEDESTRIAN FERRY



INDEX	
SHEET NO.	SHEET CONTENT
1	MAIN DECK
2	WET DECK

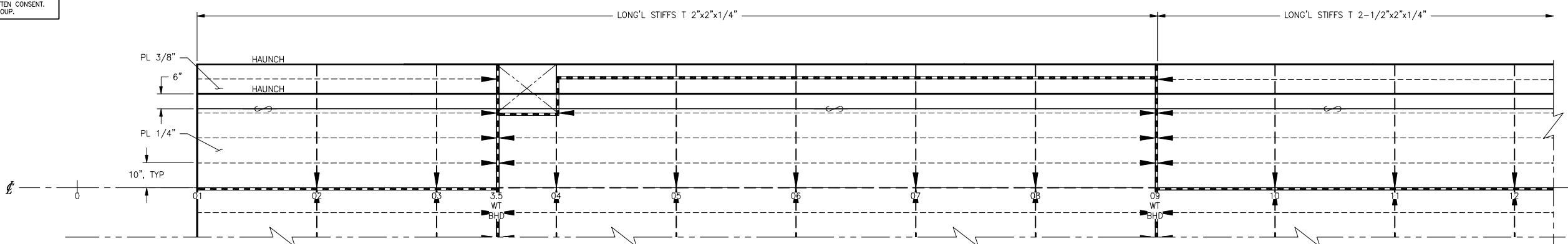
3	BOTTOM SHELL
4	HULL SIDE (OUTBOARD)
5	HULL SIDE (INBOARD)
6	DEMI-HULL CL/ENGINE GIRDER & LONG'L

7	INBOARD/OUTBOARD ENGINE GIRDERS, SWIM STEP
8	SECTIONS (FR 01, 3.5, 07, 08, 09, 20)
9	MISCELLANEOUS DETAILS

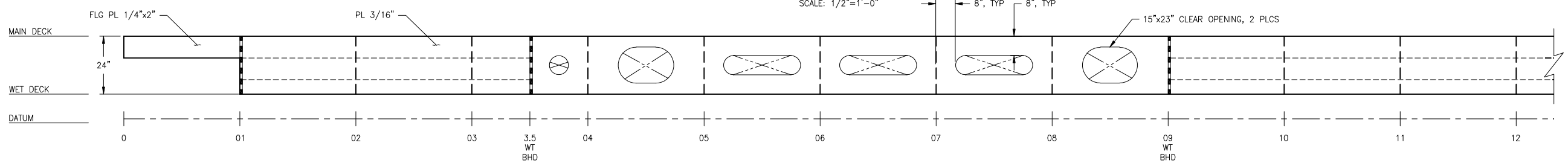
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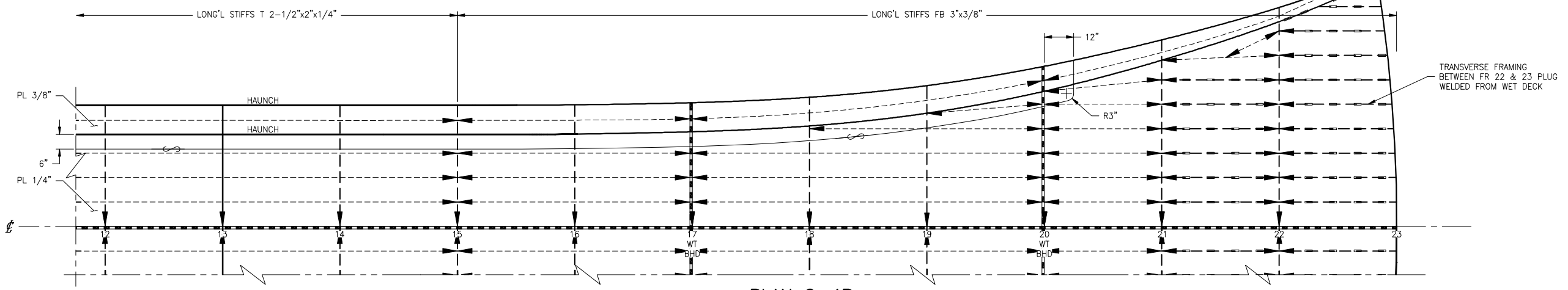
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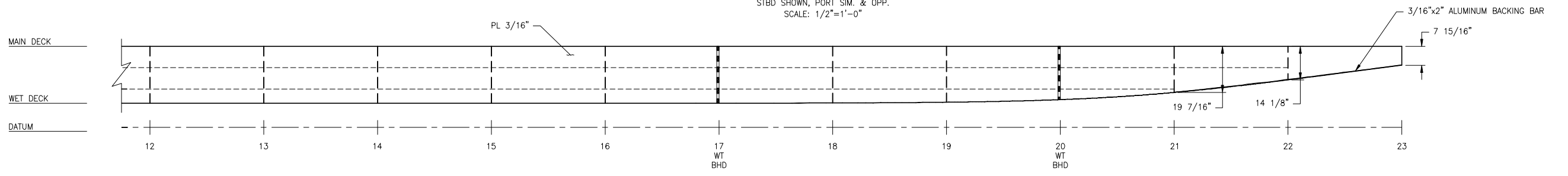
PLAN 2-4D
WET DECK (AFT)
 LOOKING UP FROM BASELINE
 STBD SHOWN, PORT SIM. & OPP.
 SCALE: 1/2"=1'-0"



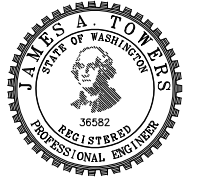
ELEVATION 2-4C
CL LONG'L AT WET DECK (AFT)
 LOOKING TO PORT AT CL
 SCALE: 1/2"=1'-0"



PLAN 2-4B
WET DECK (FWD)
 LOOKING UP FROM BASELINE
 STBD SHOWN, PORT SIM. & OPP.
 SCALE: 1/2"=1'-0"



ELEVATION 2-4A
CL LONG'L AT WET DECK (FWD)
 LOOKING TO PORT AT CL
 SCALE: 1/2"=1'-0"



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SCALE	AS NOTED	FILE NAME	16109-003-120-0-	SHEET	2 OF 9

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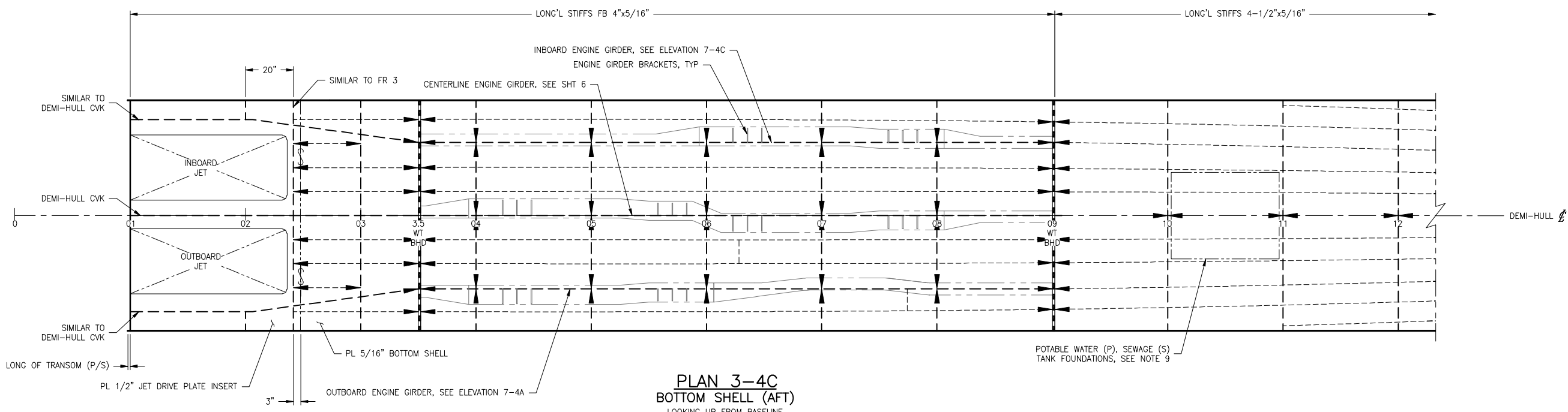
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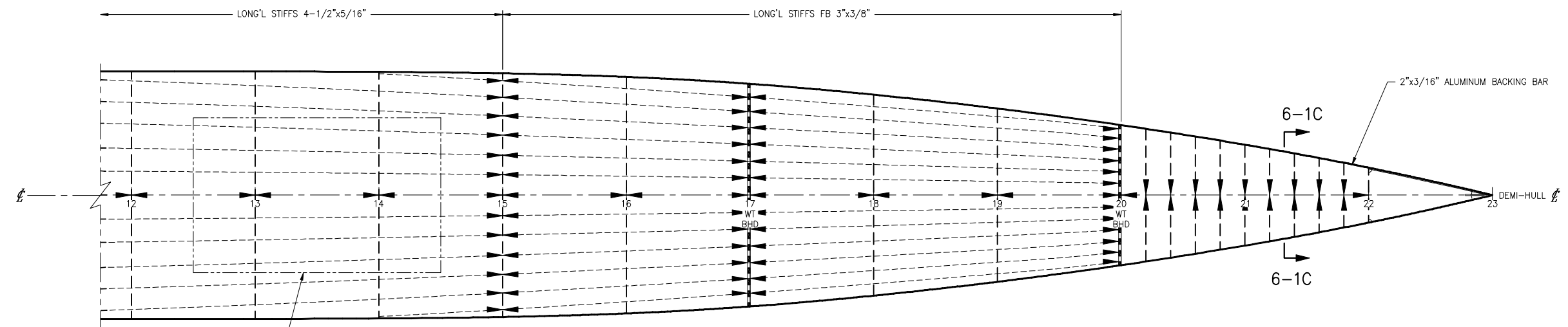
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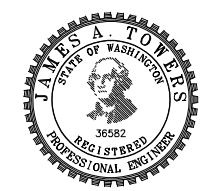
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PLAN 3-4C
BOTTOM SHELL (AFT)
 LOOKING UP FROM BASELINE
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



PLAN 3-4A
BOTTOM SHELL (FWD)
 LOOKING UP FROM BASELINE
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



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1

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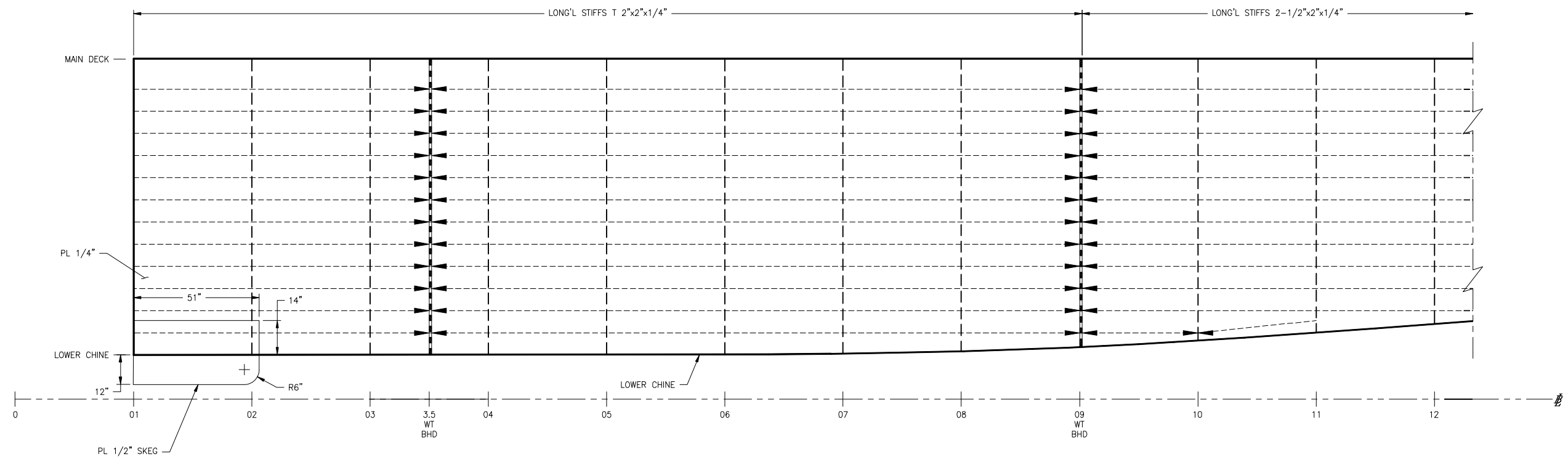
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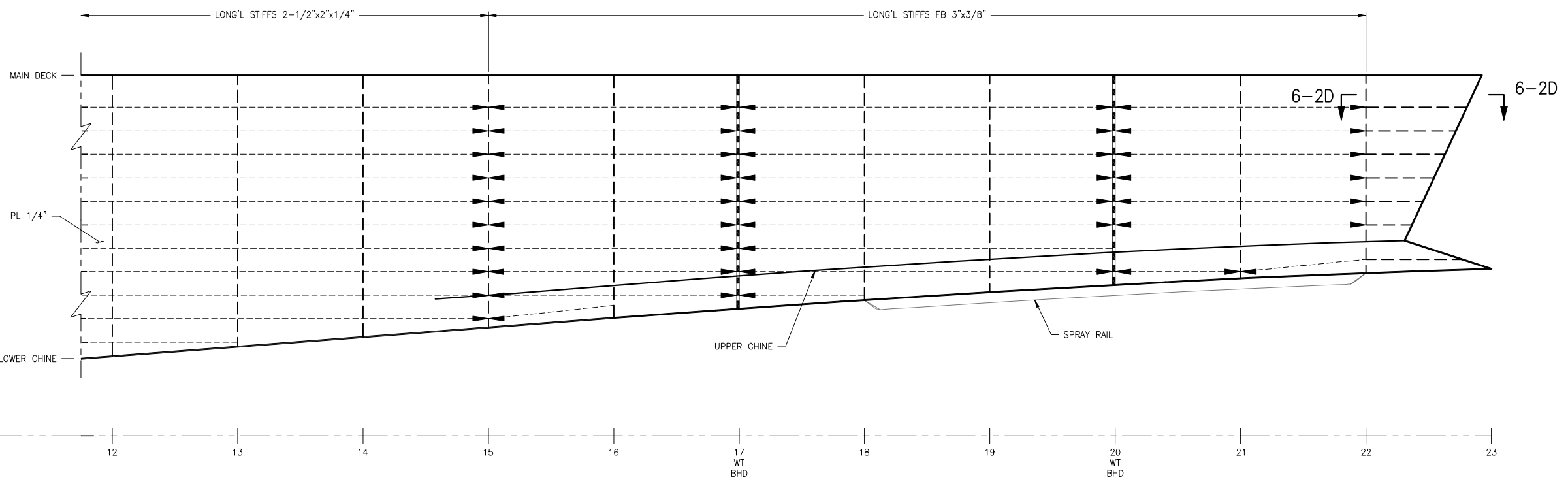
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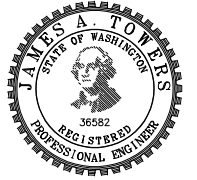
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ELEVATION 4-4C
 DEMI-HULL OUBOARD SIDE SHELL (AFT)
 LKG INBOARD TO PORT
 STBD SHOWN, PORT SIM. & OPP.
 SCALE: 1/2"=1'-0"



ELEVATION 4-4A
 DEMI-HULL OUBOARD SIDE SHELL (FWD)
 LKG INBOARD TO PORT
 STBD SHOWN, PORT SIM. & OPP.
 SCALE: 1/2"=1'-0"



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SCALE	AS NOTED	FILE NAME	16109-003-120-0-	SHEET	4 OF 9

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4

3

2

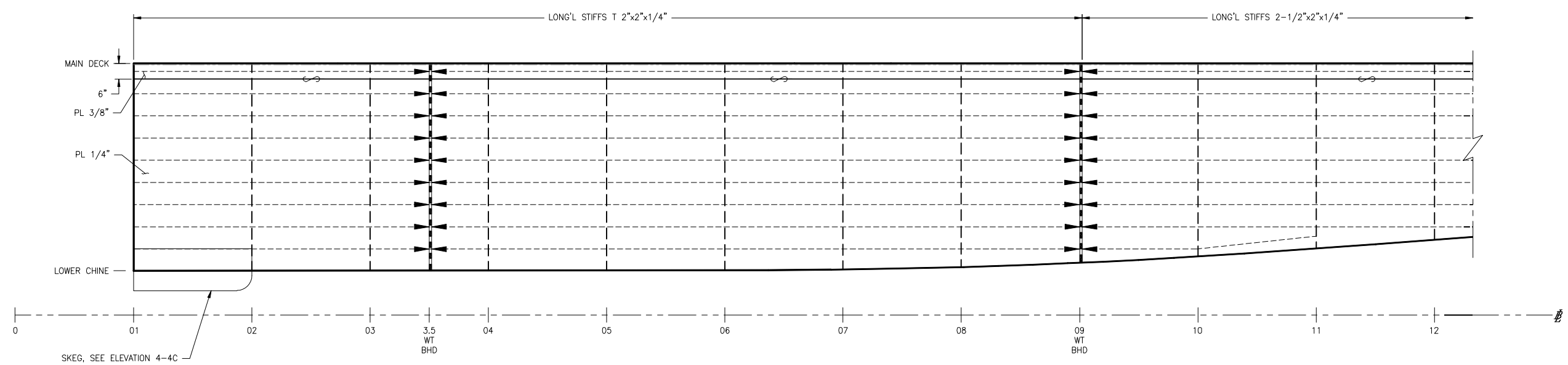
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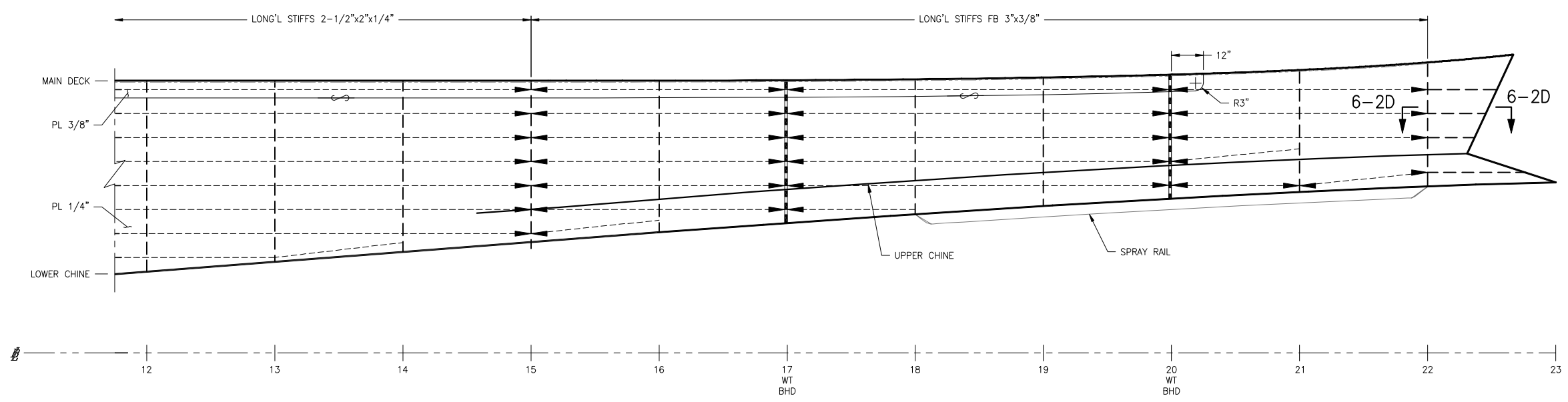
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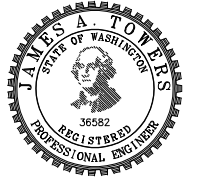
D
C
B
A



ELEVATION 5-4C
 DEMI-HULL INBOARD SIDE SHELL (AFT)
 LOOKING TO PORT FROM VESSEL CL
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



ELEVATION 5-4A
 DEMI-HULL INBOARD SIDE SHELL (FWD)
 LOOKING TO PORT FROM VESSEL CL
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



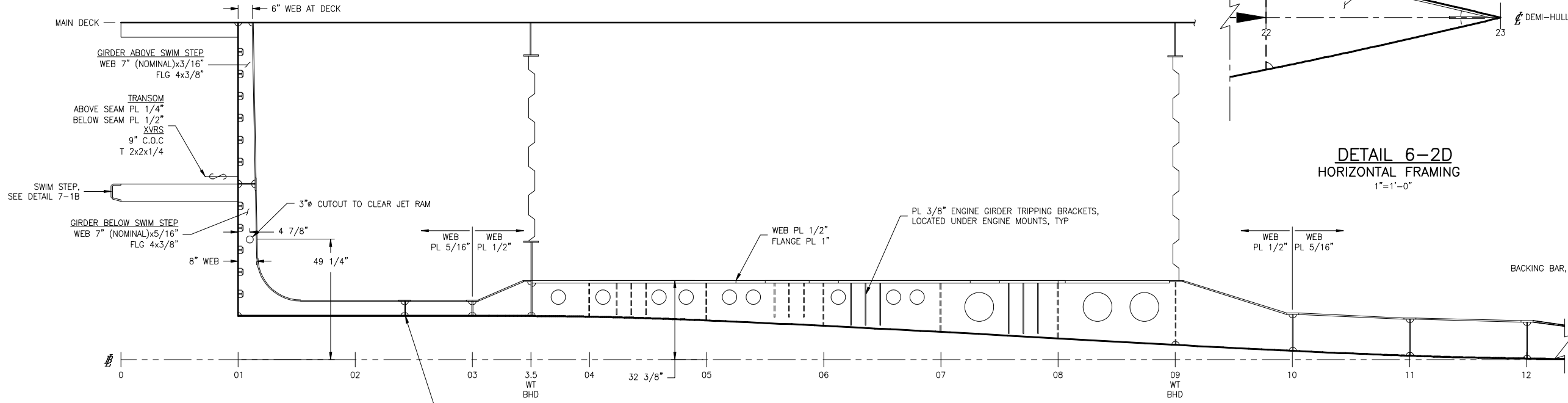
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SCALE	AS NOTED	FILE NAME	16109-003-120-0-	SHEET	5 OF 9

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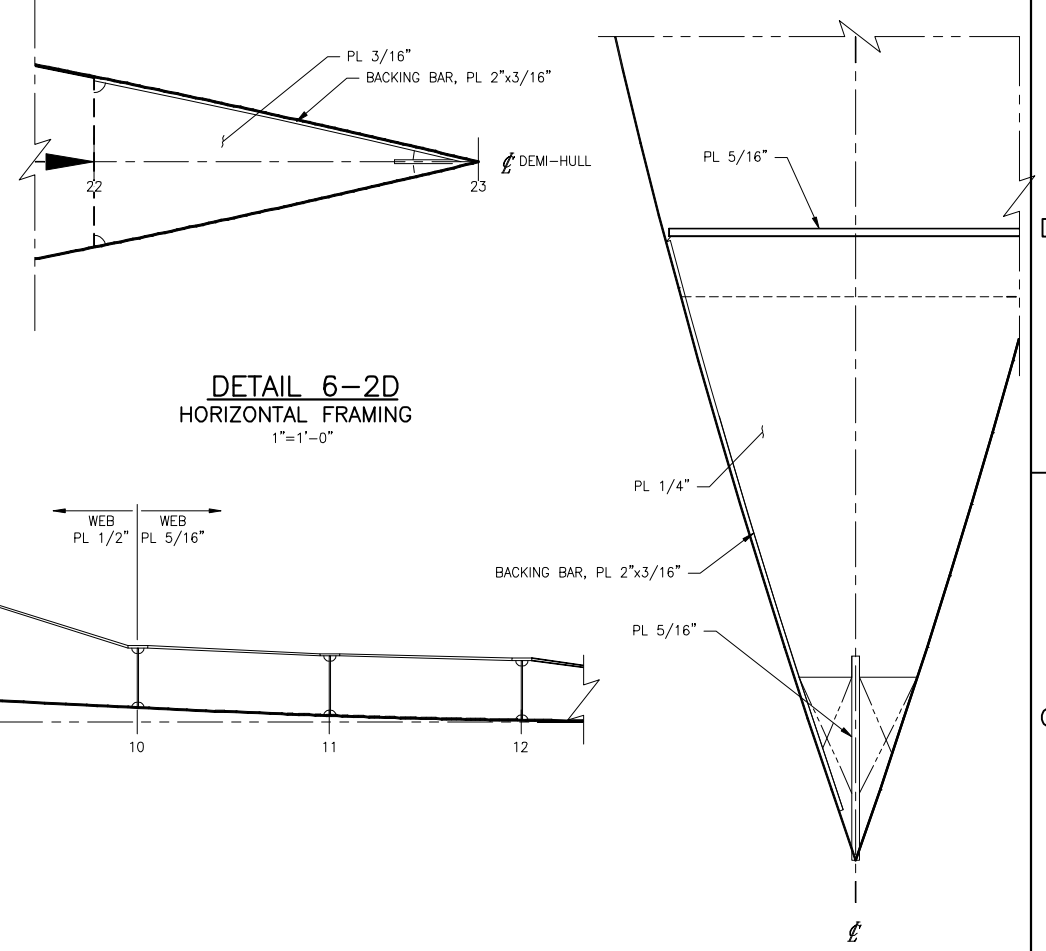
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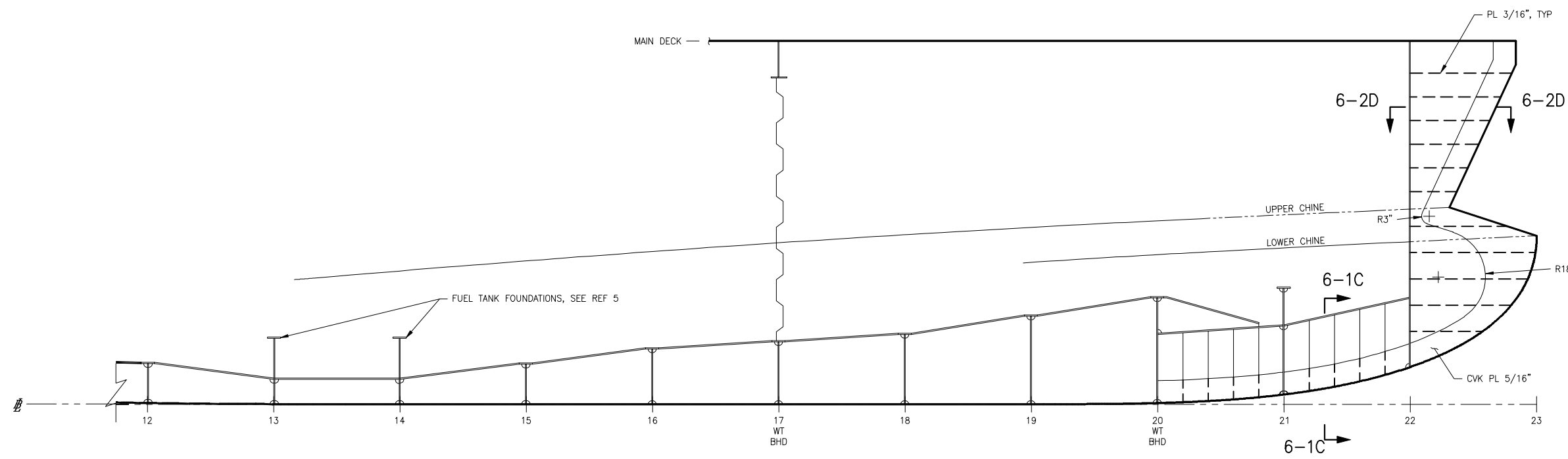
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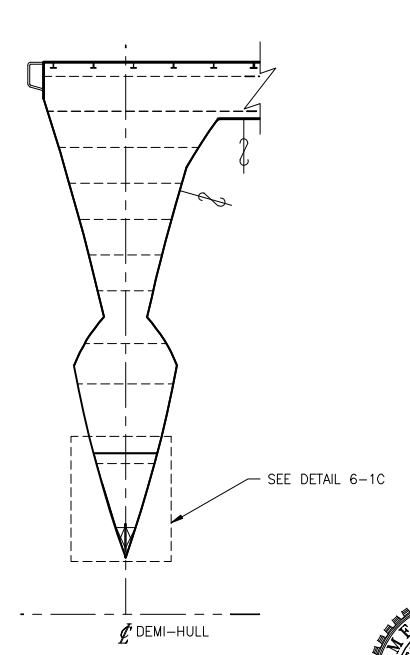
ELEVATION 6-4C
 DEMI-HULL CVK & ENGINE GRDR (AFT)
 LKG TO PORT AT CL OF PORT DEMI-HULL
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



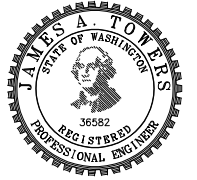
DETAIL 6-1C
 TYP WATERTIGHT CVK BOX
 3\"/>



ELEVATION 6-4C
 DEMI-HULL CVK (FWD)
 LKG TO PORT AT CL OF PORT DEMI-HULL
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



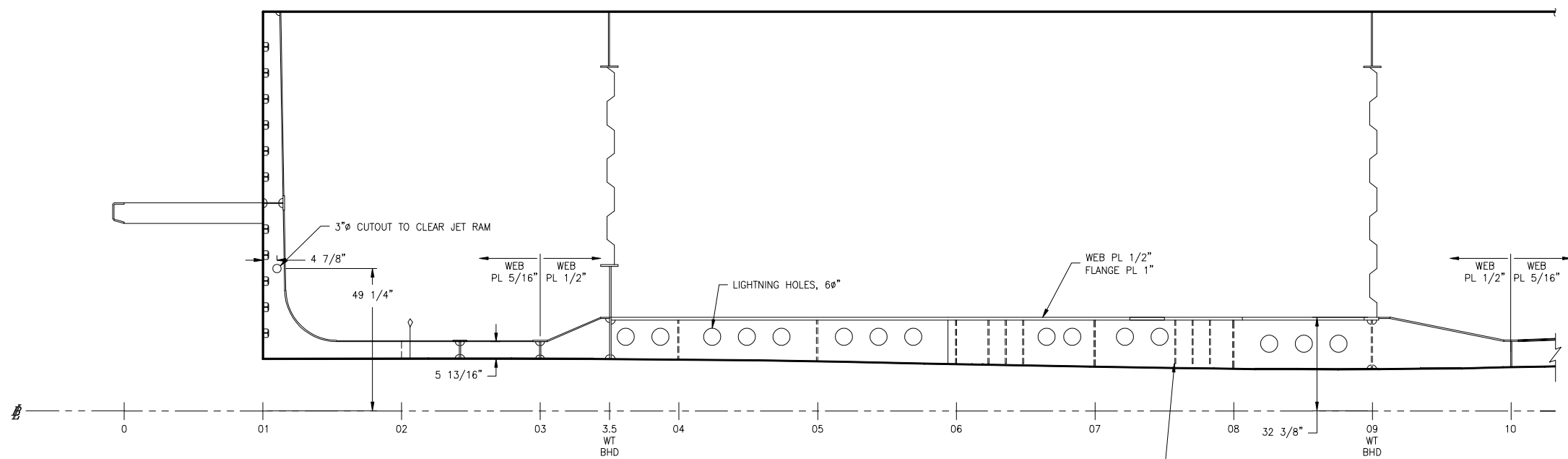
SECTION 6-1A
 FR 22 W.T. BKHD, LKG FWD
 SCALE: 1/2"=1'-0"



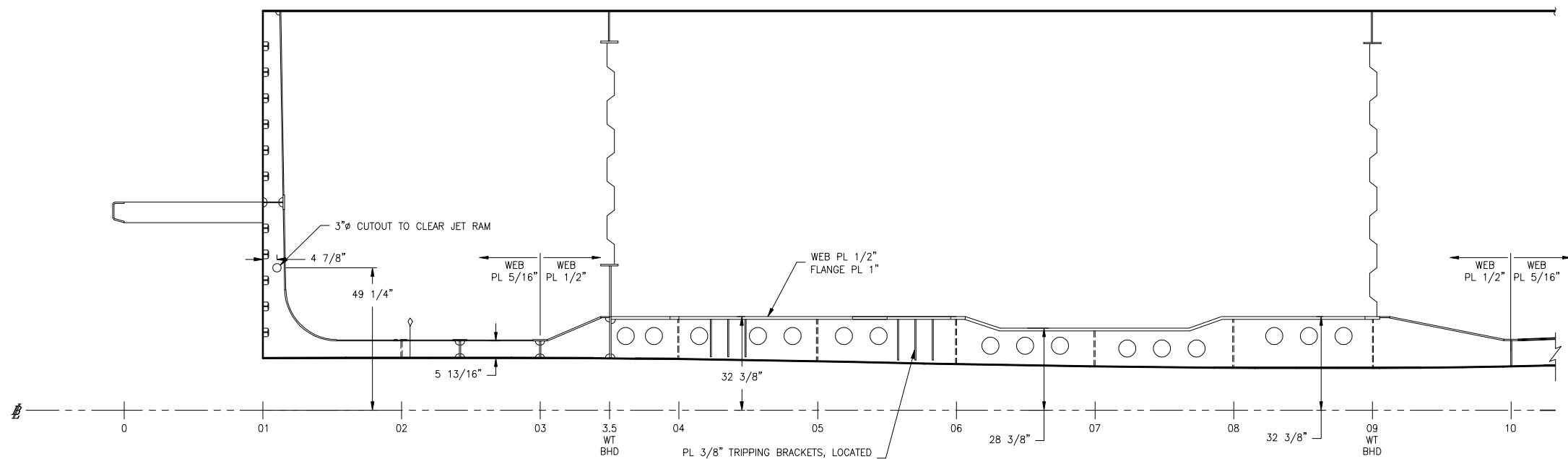
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6 5 4 3 2 1

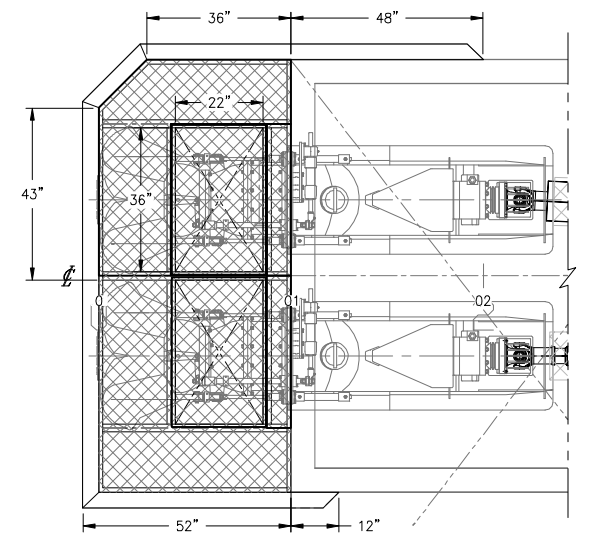
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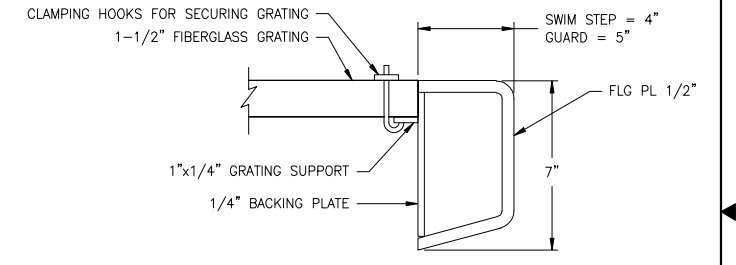
ELEVATION 7-4C
INBOARD MAIN ENGINE GIRDER
 LOOKING TO PORT AT PORT DEMI-HULL GIRDER
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



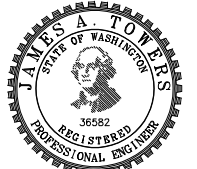
ELEVATION 7-4A
OUTBOARD MAIN ENGINE GIRDER
 LOOKING TO PORT AT PORT DEMI-HULL
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



PLAN 7-1C
SWIM STEP DETAIL
 PORT HULL SHOWN; STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



DETAIL 7-1B
SWIM STEP & GUARD DETAIL
 SWIM STEP = 4"
 GAURD = 5"
 SCALE: 1/2"=1'-0"

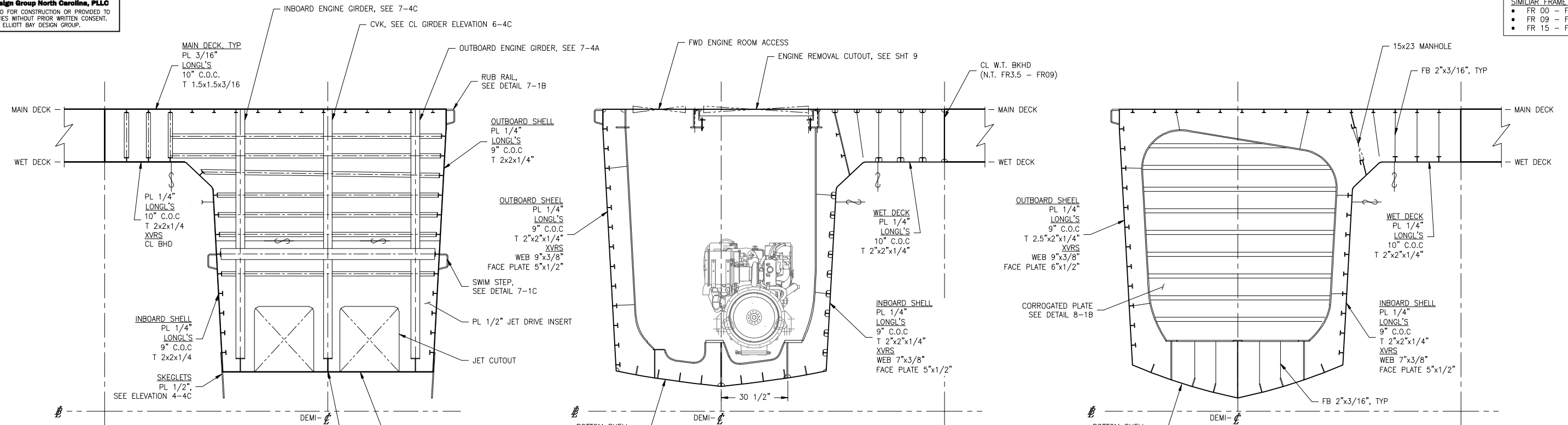


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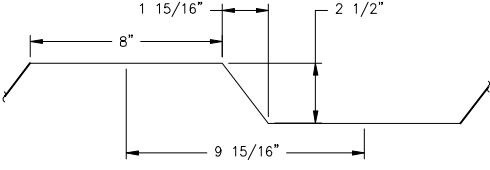
SIMILAR FRAME SCANTLINGS
 • FR 00 - FR 8
 • FR 09 - FR 14
 • FR 15 - FR 23



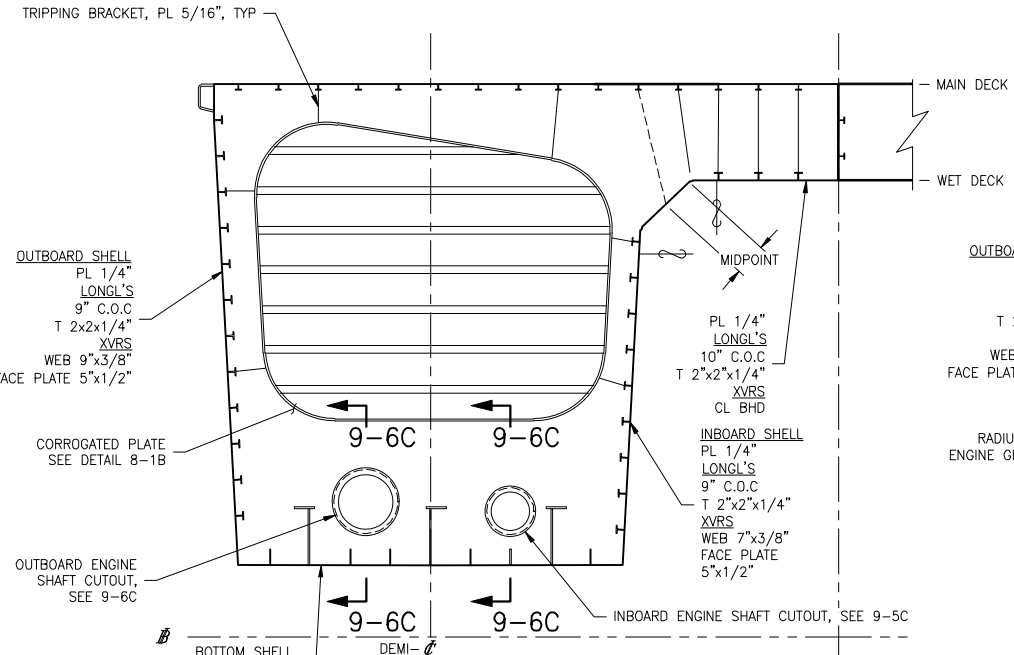
SECTION 8-5C
FRAME 01 - TRANSOM
 PORT LOOKING AFT
 PORT SHOWN, STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"

SECTION 8-4C
FRAME 07 - WEB FRAME
 PORT LOOKING FWD, STBD SIM. & OPP
 SCALE: 1/2"=1'-0"

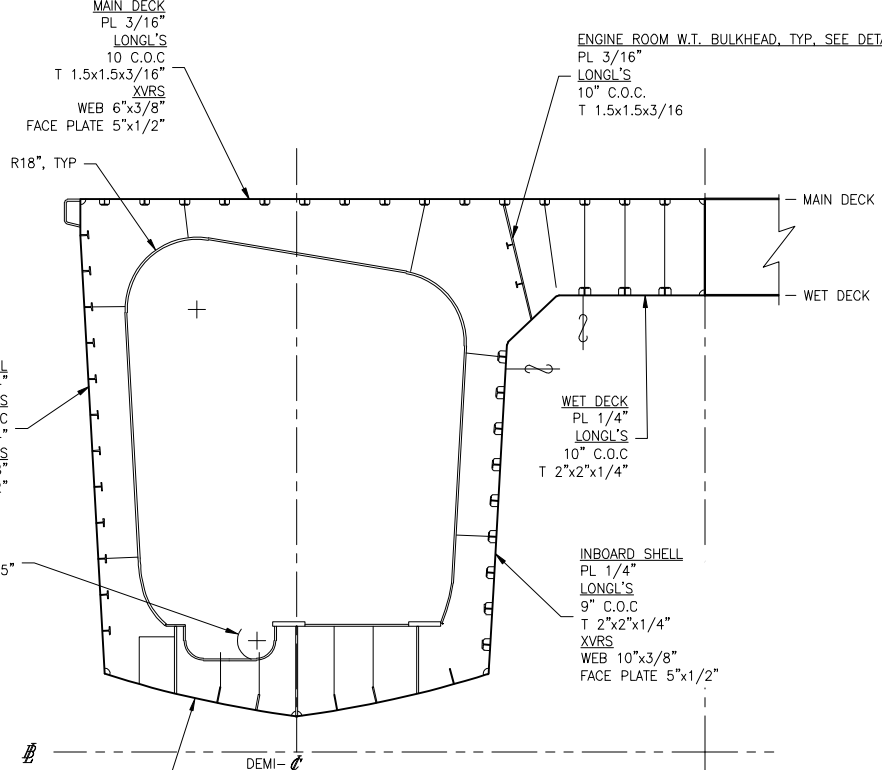
SECTION 8-2C
FRAME 09 - WT BHD
 PORT LOOKING FWD, STBD SIM. & OPP
 SCALE: 1/2"=1'-0"



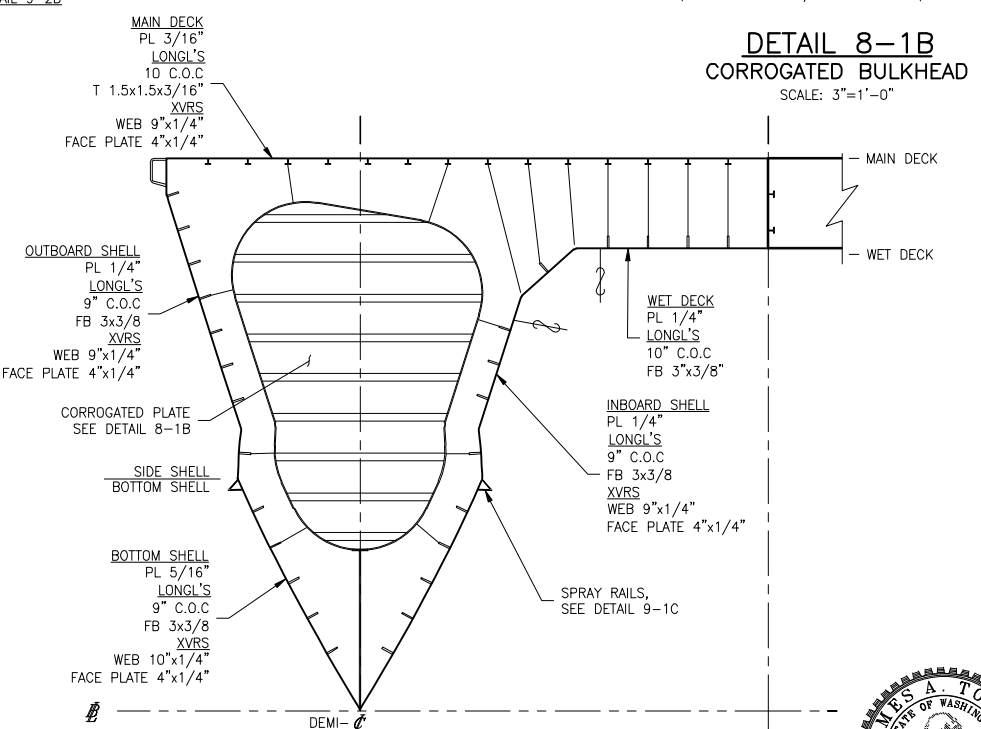
DETAIL 8-1B
CORROGATED BULKHEAD
 SCALE: 3"=1'-0"



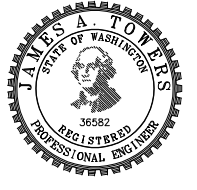
SECTION 8-5A
FRAME 3.5 - WT BHD
 PORT LOOKING FWD, STBD SIM. & OPP
 SCALE: 1/2"=1'-0"



SECTION 8-4A
FRAME 08 - WEB FRAME
 PORT LOOKING FWD, STBD SIM. & OPP
 SCALE: 1/2"=1'-0"



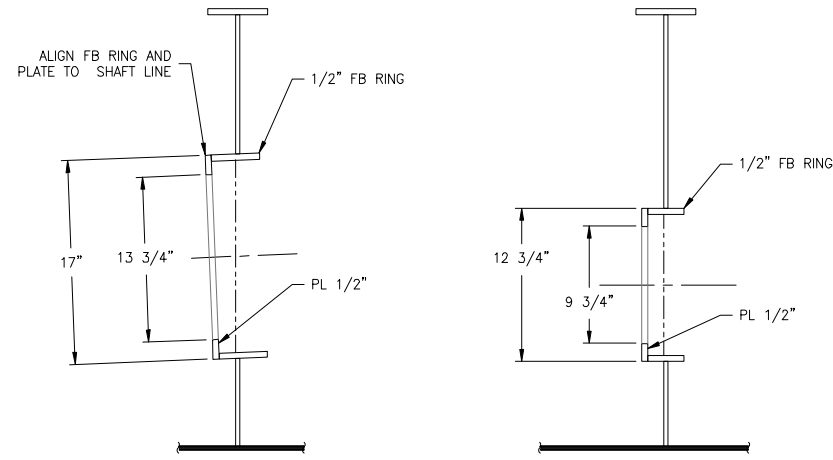
SECTION 8-2A
FRAME 20 - COLLISION BHD
 PORT LOOKING FWD, STBD SIM. & OPP
 SCALE: 1/2"=1'-0"



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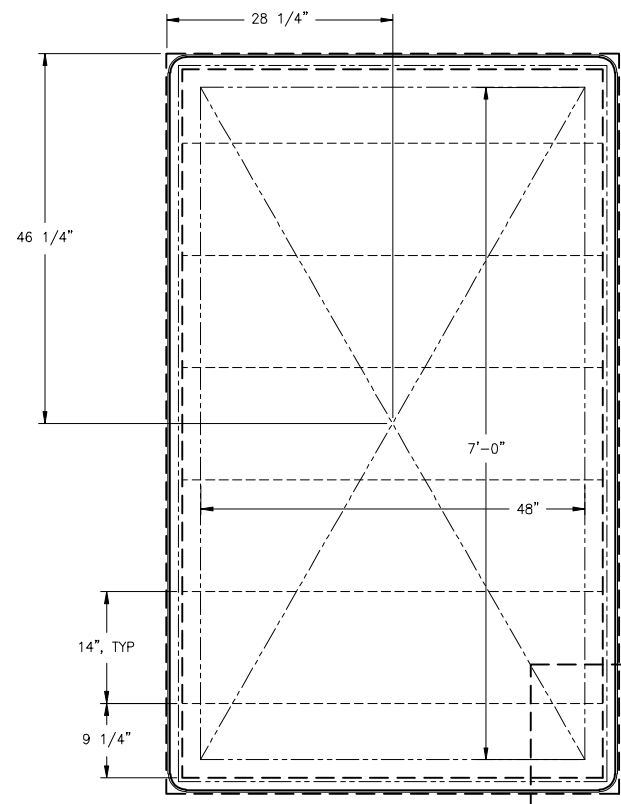
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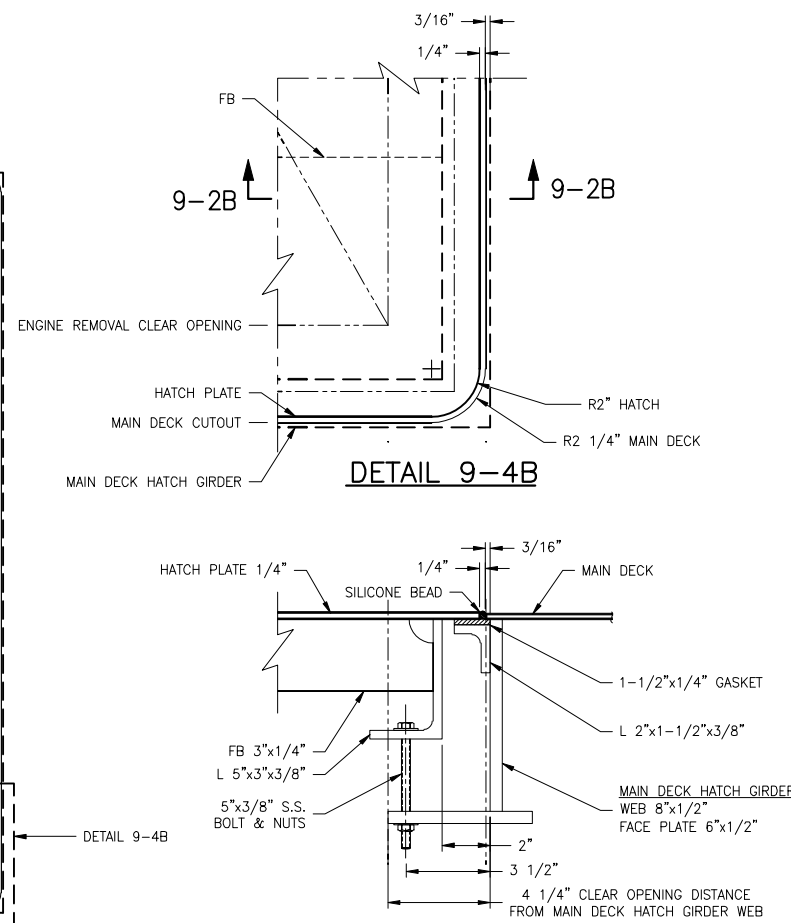


ELEVATION 9-6C
 OUTBOARD ENGINE SHAFT CUTOUT
 AT FR 3.5, SEE REF 4
 SCALE: 1-1/2"=1'-0"

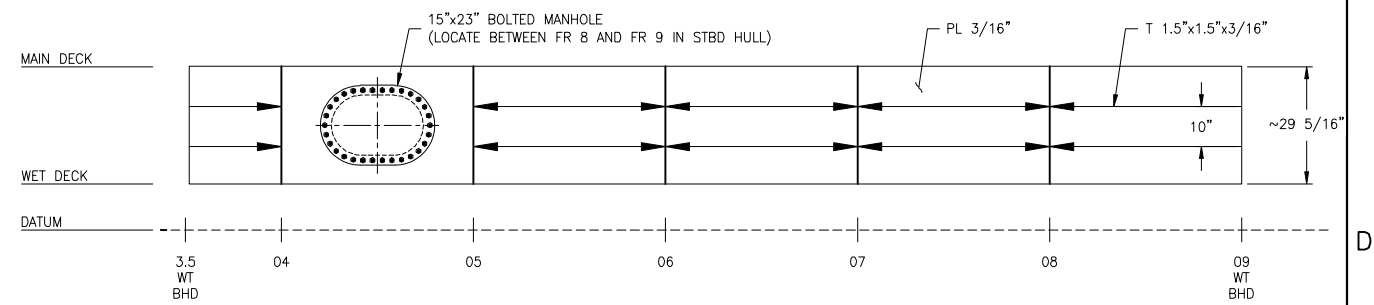
ELEVATION 9-5C
 INBOARD ENGINE SHAFT CUTOUT
 AT FR 3.5, SEE REF 4
 SCALE: 1-1/2"=1'-0"



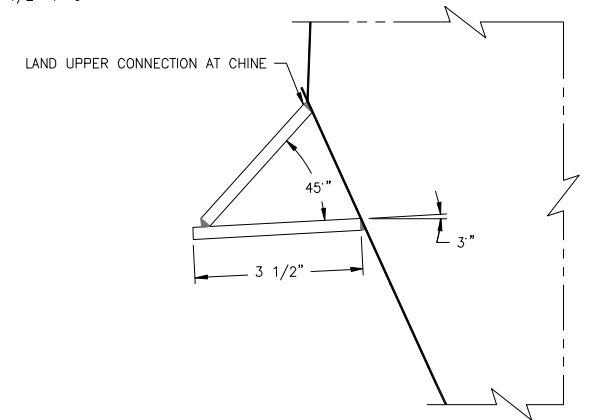
PLAN 9-5A
 TYP ENGINE ROOM ACCESS HATCH
 TYPICAL 4 PLACES
 SCALE: 1"=1'-0"



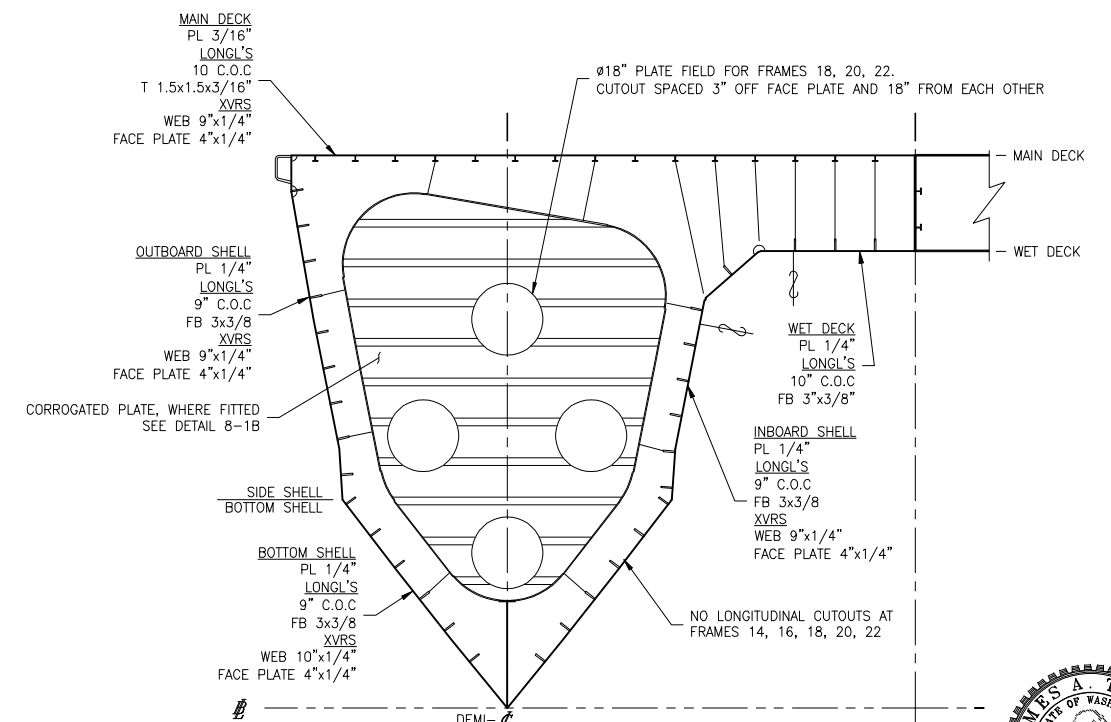
SECTION 9-4A
 WATERTIGHT HATCH STRUCTURE
 SCALE: 3"=1'-0"



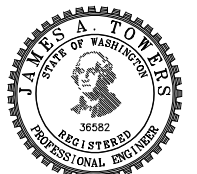
ELEVATION 9-2D
 ENGINE ROOM LONG'L W.T. BULKHEAD
 PORT HULL, AT DEMI-HULL CL LKG TO VESSEL CL
 STBD HULL SIM & OPP EXCEPT FOR HATCH LOCATION
 SCALE: 1/2"=1'-0"



DETAIL 9-1C
 SPRAY RAIL AT FR 20
 PORT/OUTBOARD LOOKING FWD, PORT/INBOARD SIM. & OPP
 SEE REF 1 FOR DETAILED DESCRIPTION
 SCALE: 6"=1'-0"



SECTION 9-2A
 FRAME 18
 PORT LOOKING FWD, STBD SIM. & OPP
 SCALE: 1/2"=1'-0"

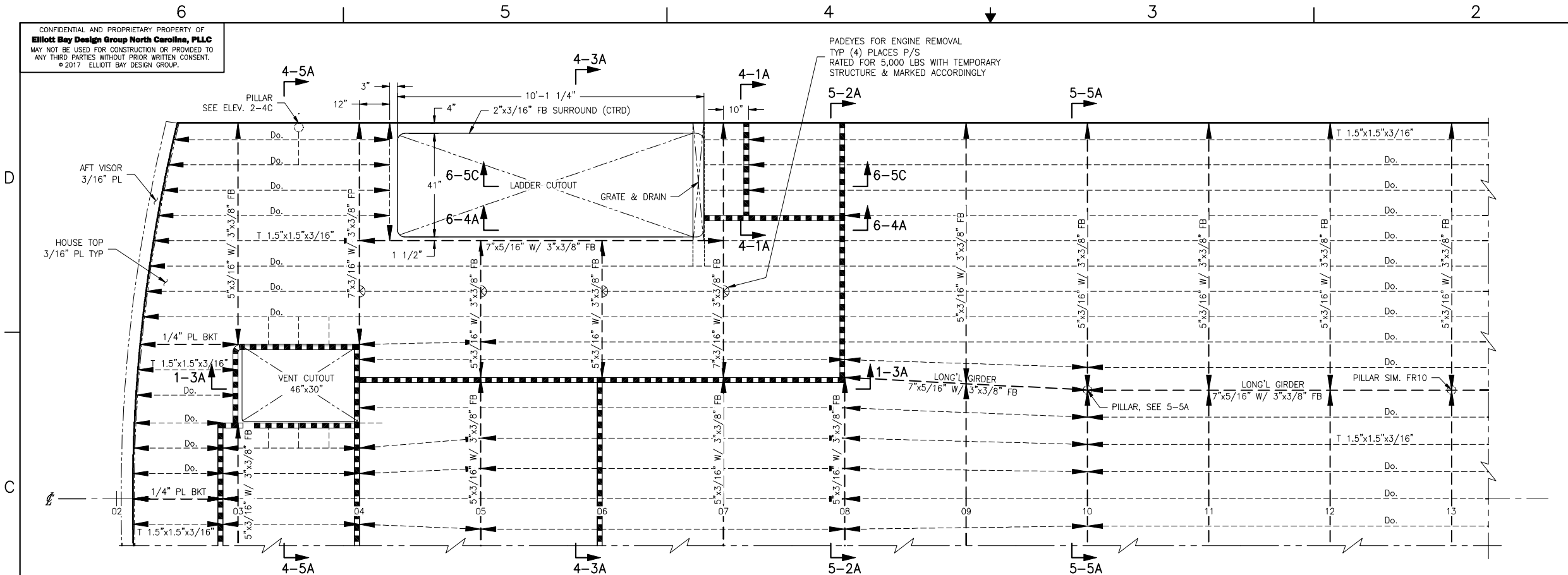


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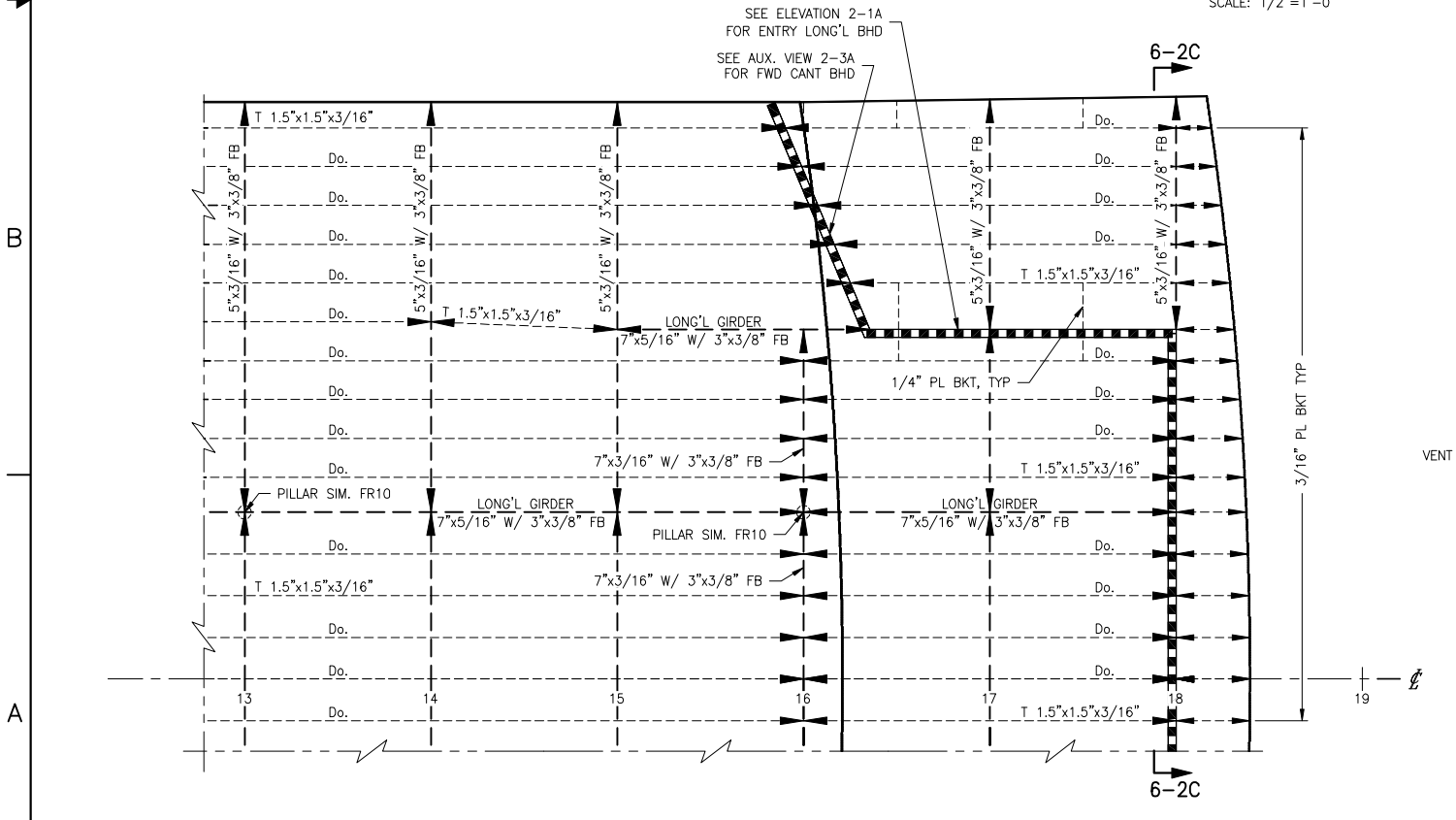
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REVISION HISTORY				
REV	ZONE	DESCRIPTION	DWN	APVD

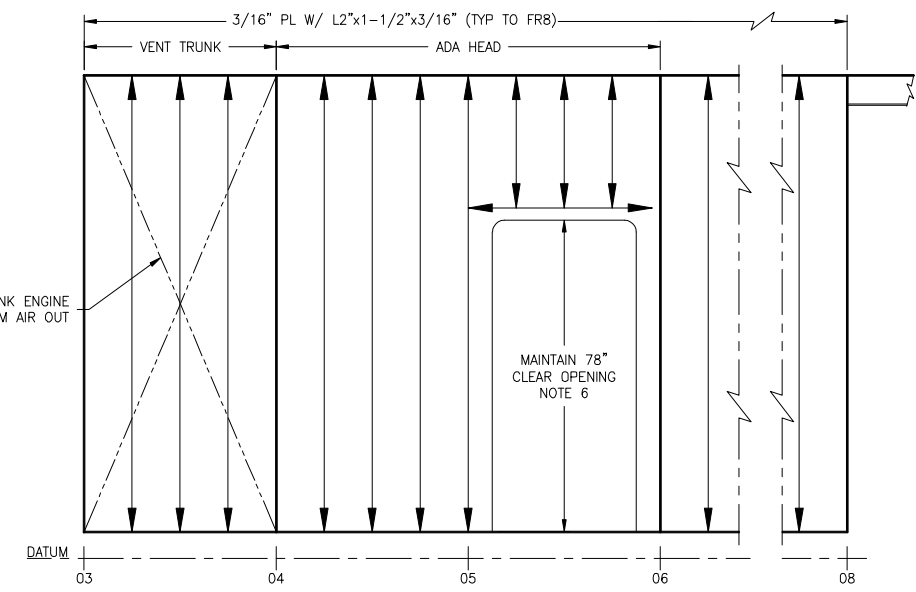


PLAN 1-4C
 UPPER DECK AFT
 26'-6" ABL W/ 6" CAMBER AT CL
 LOOKING DOWN FROM ABOVE
 SCALE: 1/2"=1'-0"

INDEX	
SHEET NO.	SHEET CONTENT
1	UPPER DECK PLAN, ADA HEAD LONG'L BHD
2	SUPERSTRUCTURE SIDE & BWKS
3	PILOTHOUSE STRUCTURE
4	TRANSOM, FR 3.5, 6, 7+10" & RAILING DETAILS
5	FR 08, 10 & TONNAGE DOOR DETAILS
6	FR 18 & PASSENGER STAIR DETAILS



PLAN 1-5A
 UPPER DECK FWD
 26'-6" ABL W/ 6" CAMBER AT CL
 LOOKING DOWN FROM ABOVE
 SCALE: 1/2"=1'-0"



ELEVATION 1-3A
 ADA HEAD LONG'L BHD
 LOOKING TO PORT FROM CL
 SCALE: 1/2"=1'-0"

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH LLOYD'S AND USCG REQUIREMENTS. PLATES SHALL BE 5083 H116/H321 ALUMINUM, SHAPES SHALL BE 6061-T6 UNLESS NOTED OTHERWISE.
- STRUCTURES SHALL BE ASSEMBLED USING ALL WELDED CONSTRUCTION UNLESS OTHERWISE NOTED. WELDING SHALL BE IN ACCORDANCE WITH APPLICABLE LLOYD'S RULES. ALL WELDING SHALL DEVELOP THE FULL STRENGTH OF THE STRUCTURAL MATERIAL.
- PROJECTING ENDS OF METAL SHALL BE GROUND SMOOTH TO PROVIDE SUITABLE OPERATING CONDITIONS AND TO ENSURE SAFETY OF PERSONNEL.
- STRUCTURE DESIGNED IN ACCORDANCE WITH LLOYD'S RULES AND REGULATIONS FOR CLASSIFICATION OF SPECIAL SERVICE CRAFT, JULY 2016.
- PASSENGER DOORS SHALL MAINTAIN 78" CLEAR OPENING INCLUDING FINISHED DOOR FRAME AND SILL.

REFERENCES

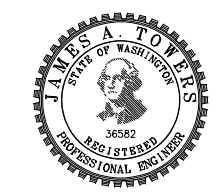
- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-061-0 LLOYD'S SCANTLINGS
- 16109-003-101-1 PROFILES AND ARRANGEMENTS
- 16109-003-110-0 MIDSHIP SECTION
- 16109-003-120-0 HULL STRUCTURE



Elliott Bay Design Group
 North Carolina, PLLC

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

PROJECT: PEDESTRIAN FERRY

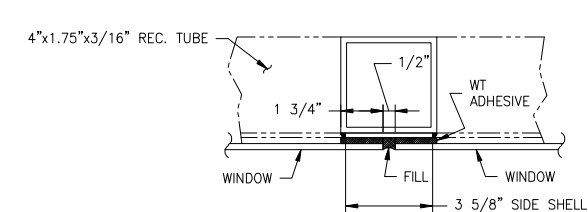
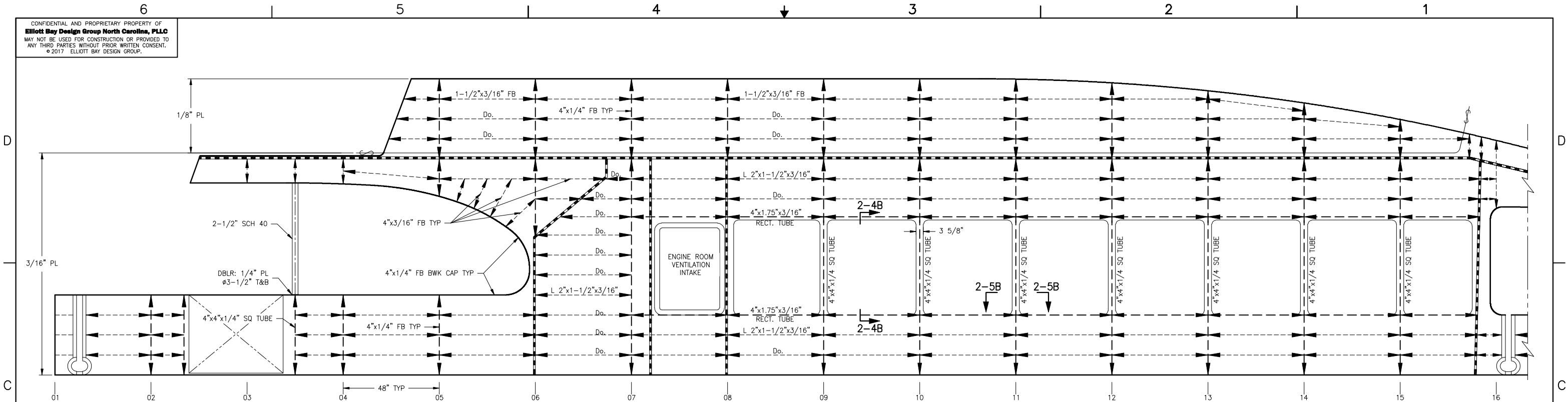


SUPERSTRUCTURE

SIZE	D	DWG NO.	16109-003-130-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-130-0-	SHEET	1 OF 6
DWN	JXB	MOD		APVD DATE	3/3/2017

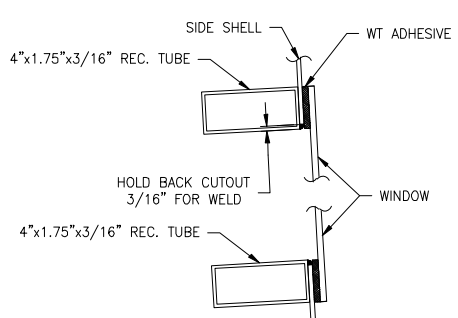
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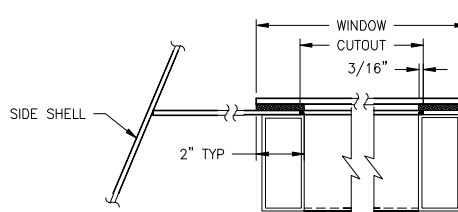


PLAN DETAIL 2-5B
 TYP. MULLION
 LOOKING DOWN I.W.O. WINDOW
 SCALE: 3"=1'-0"

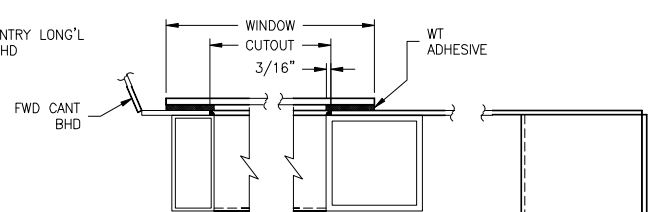
ELEVATION 2-4C
 SUPERSTRUCTURE SIDE AFT
 LOOKING OUTBOARD TO PORT
 SCALE: 1/2"=1'-0"



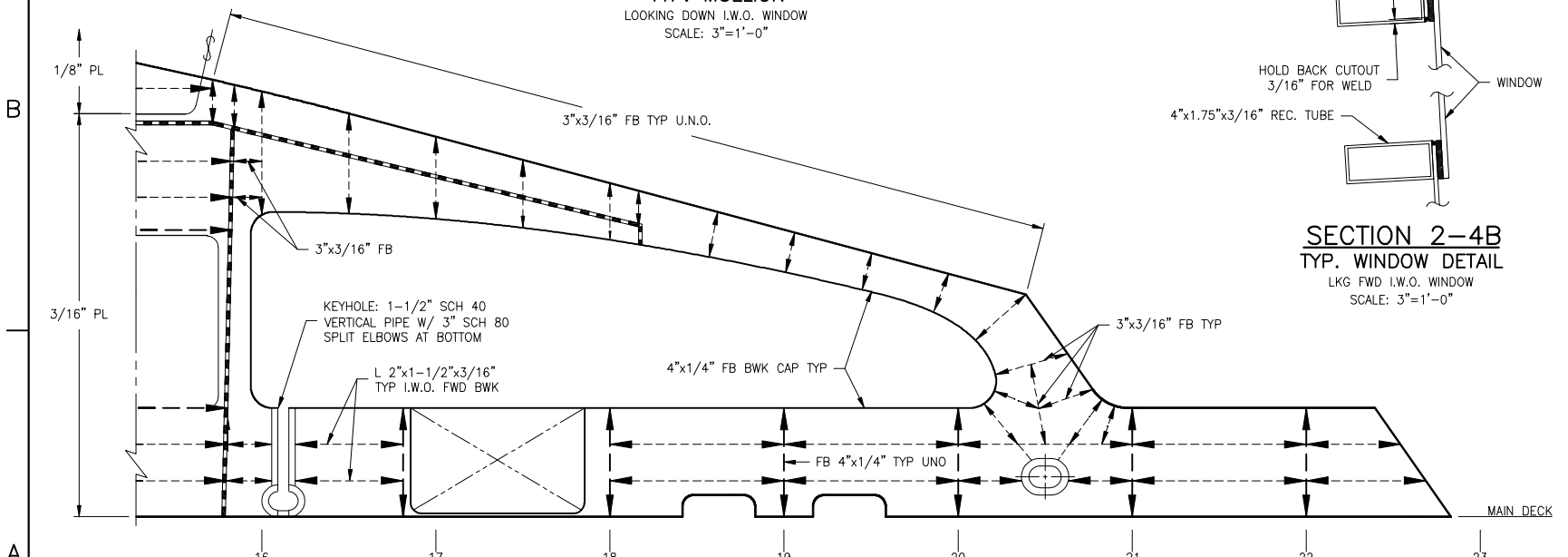
SECTION 2-4B
 TYP. WINDOW DETAIL
 LKG FWD I.W.O. WINDOW
 SCALE: 3"=1'-0"



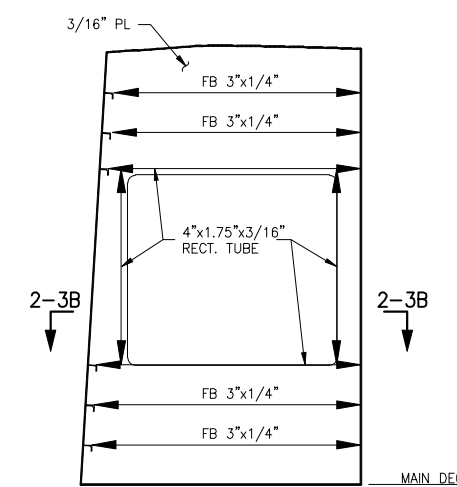
PLAN DETAIL 2-3B
 FWD CANT BHD
 LOOKING DOWN I.W.O. WINDOW
 SCALE: 3"=1'-0"



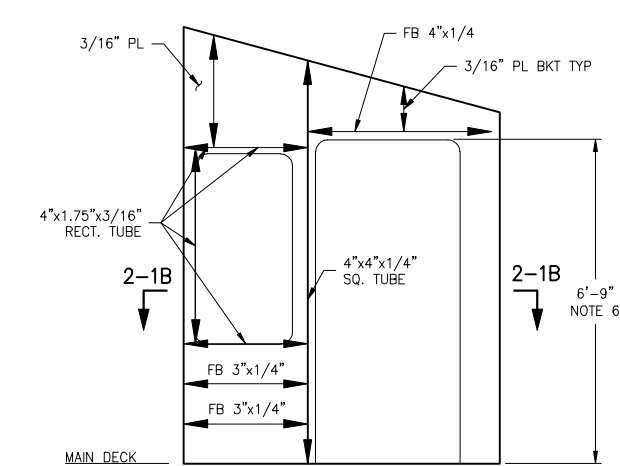
PLAN DETAIL 2-1B
 FWD ENTRY LONG'L BHD
 LOOKING DOWN I.W.O. WINDOW
 SCALE: 3"=1'-0"



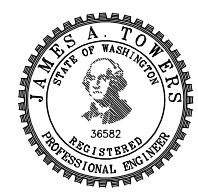
ELEVATION 2-5A
 SUPERSTRUCTURE SIDE FWD
 LOOKING OUTBOARD TO PORT
 SCALE: 1/2"=1'-0"



AUX VIEW 2-3A
 FWD CANT BHD
 LOOKING FWD
 SCALE: 1/2"=1'-0"



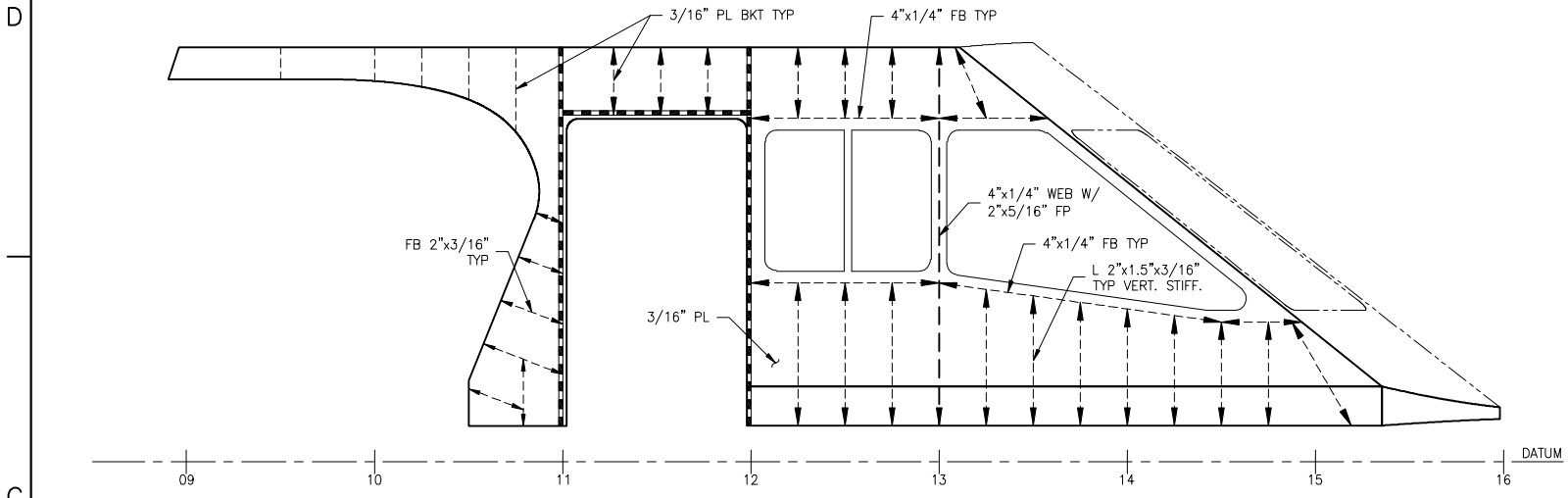
ELEVATION 2-1A
 ENTRY LONG'L BHD
 LOOKING OUTBOARD FROM CL
 SCALE: 1/2"=1'-0"



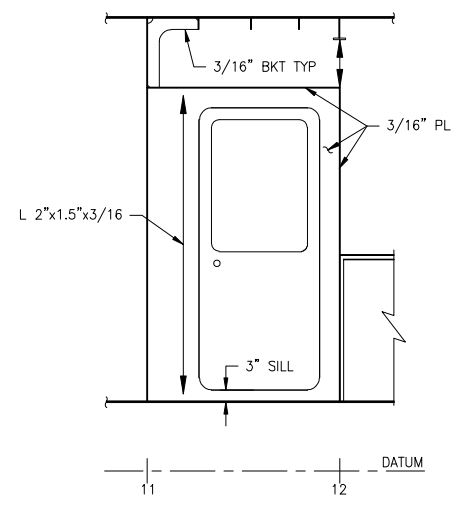
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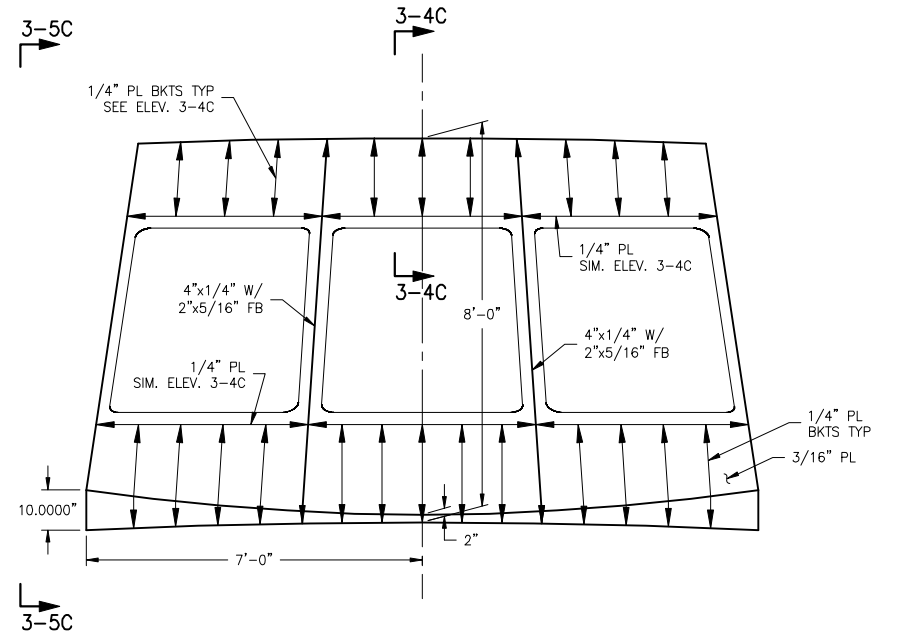
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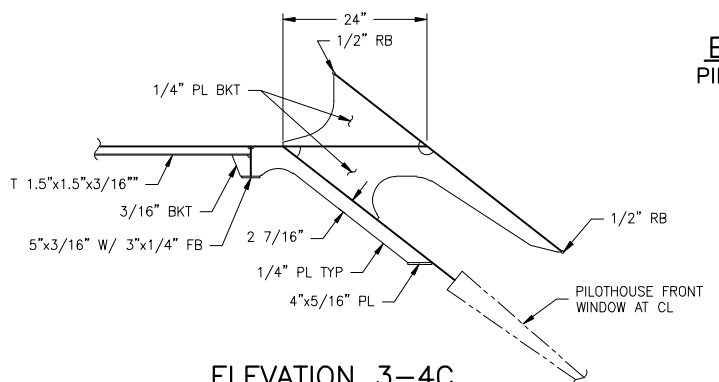
ELEVATION 3-5C
 PILOHOUSE SIDE
 LOOKING OUTBOARD FROM CL
 SCALE: 1/2"=1'-0"



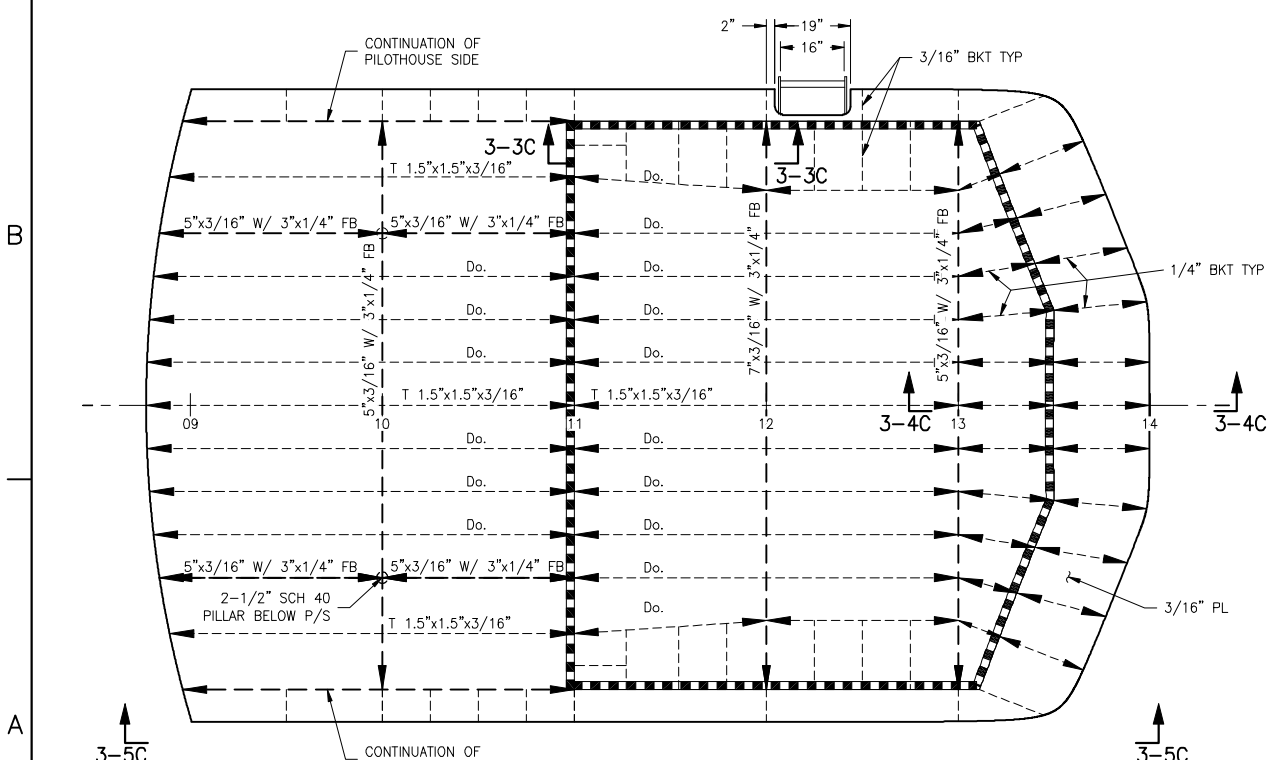
ELEVATION 3-3C
 PILOHOUSE DOOR BHD
 LOOKING TO PORT FROM CL
 SCALE: 1/2"=1'-0"



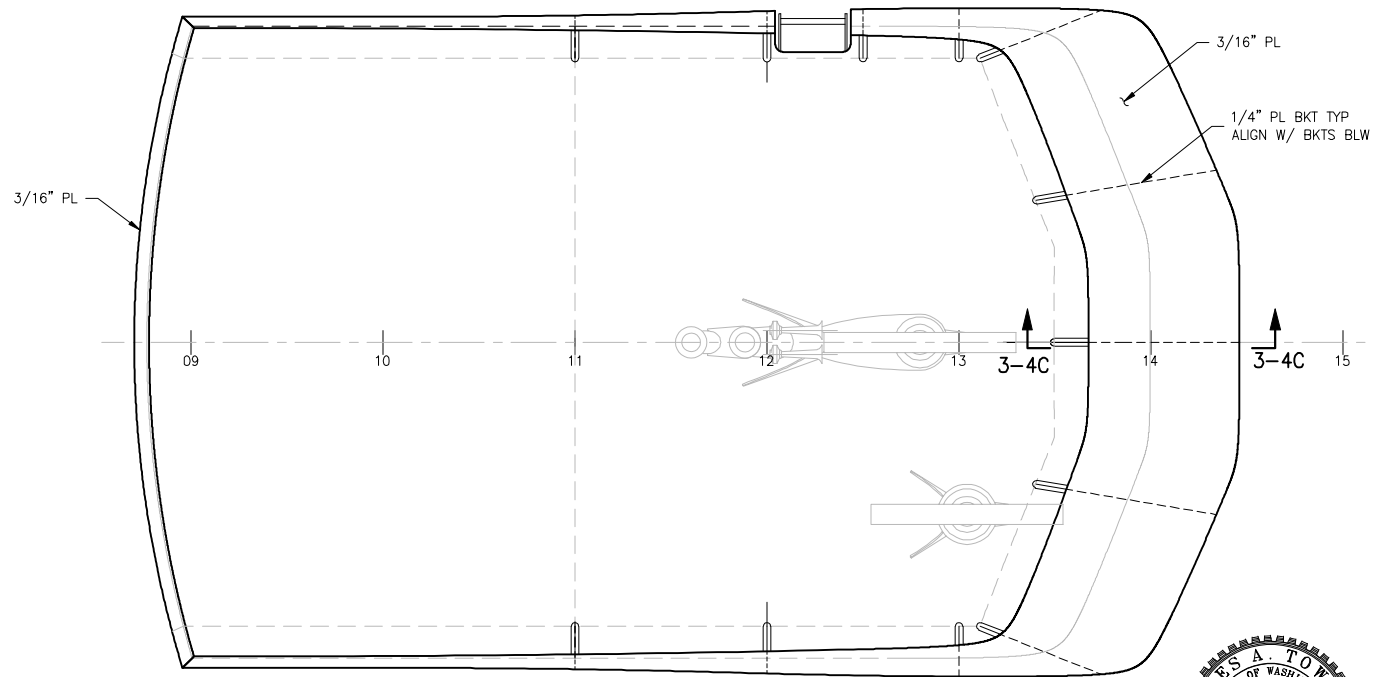
SECTION 3-2C
 PILOHOUSE FRONT
 LOOKING FWD FROM AFT
 SCALE: 1/2"=1'-0"



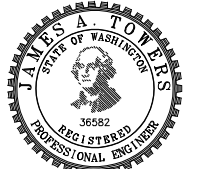
ELEVATION 3-4C
 VISOR AT CL
 LOOKING OUTBOARD FROM CL
 SCALE: 3/4"=1'-0"



PLAN 3-5A
 PILOHOUSE TOP
 29'-0" ABL W/ CAMBER SIMILAR TO PASS. DK.
 LOOKING DOWN FROM ABOVE
 SCALE: 1/2"=1'-0"



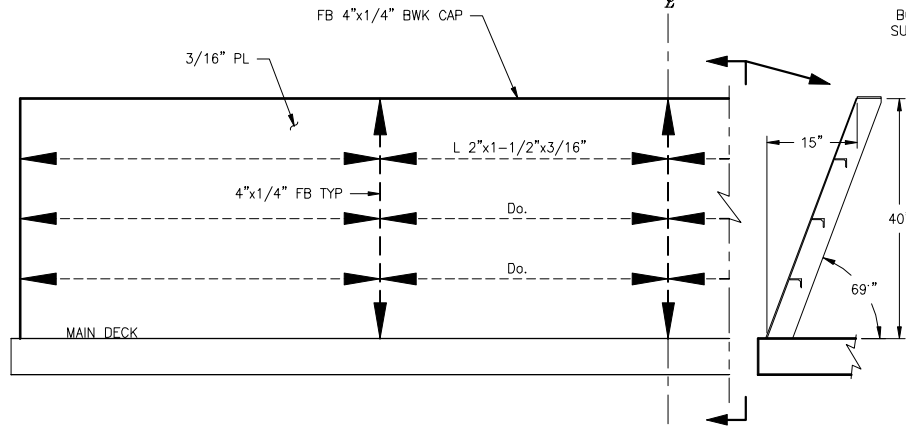
PLAN 3-2A
 PILOHOUSE VISOR
 LOOKING DOWN FROM ABOVE
 SCALE: 1/2"=1'-0"



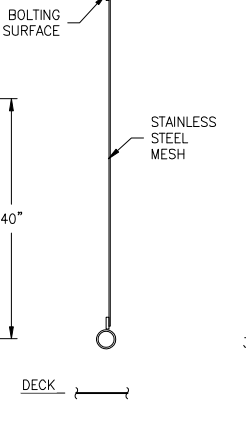
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SCALE	AS NOTED	FILE NAME	16109-003-130-0-	SHEET	3 OF 6

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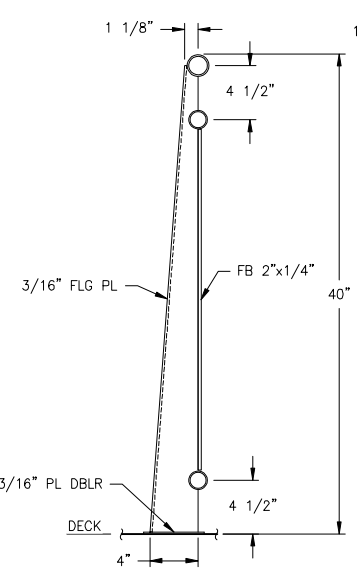
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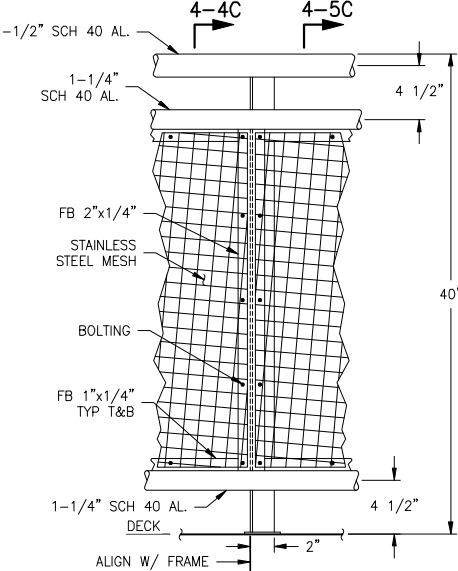
SECTION 4-6C
 FR 01 (AFT BWK)
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



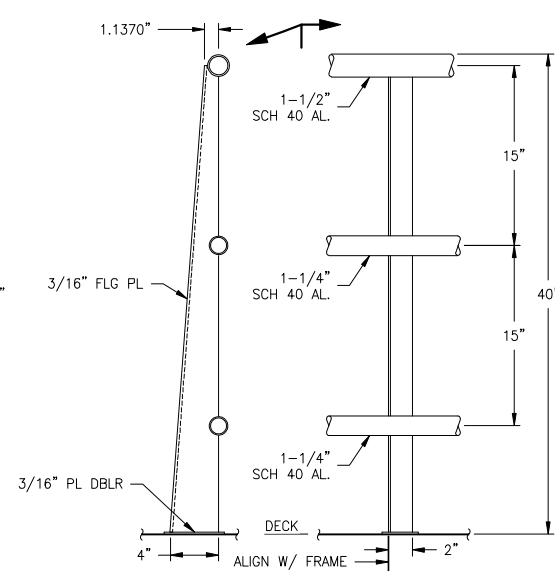
DETAIL 4-5C
 TYP PASSENGER RAILINGS
 SCALE: 1-1/2"=1'-0"



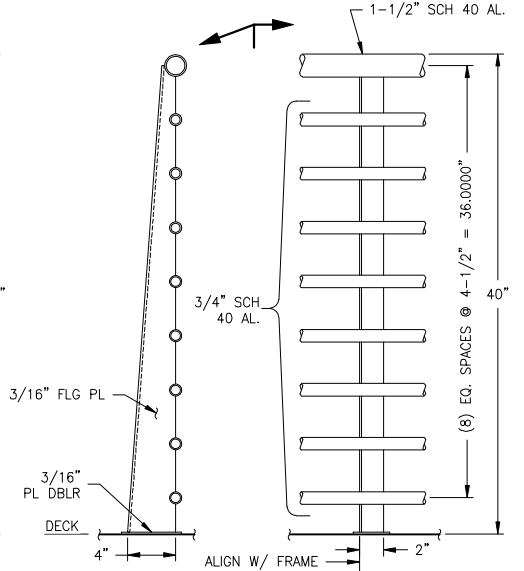
DETAIL 4-4C
 TYP PASSENGER RAILINGS
 SCALE: 1-1/2"=1'-0"



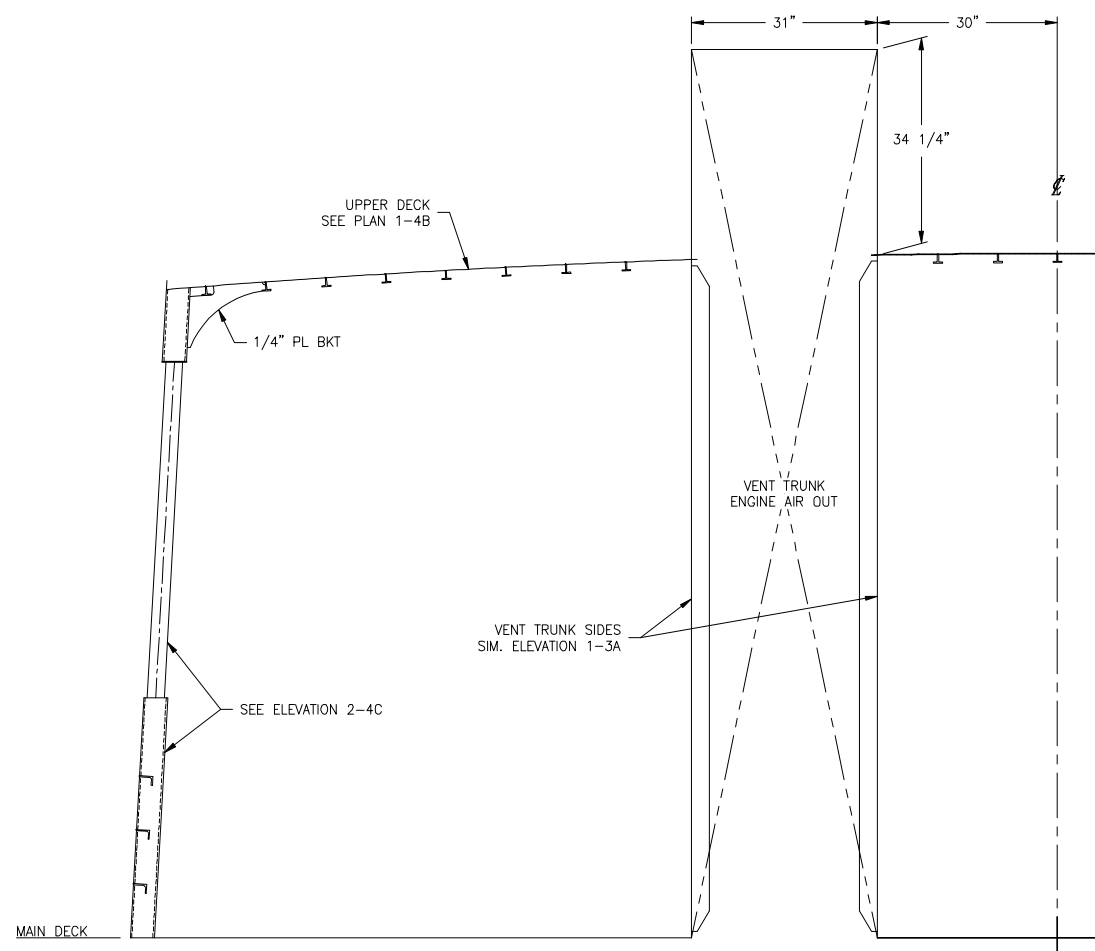
DETAIL 4-3C
 TYP PASSENGER RAILINGS
 SCALE: 1-1/2"=1'-0"



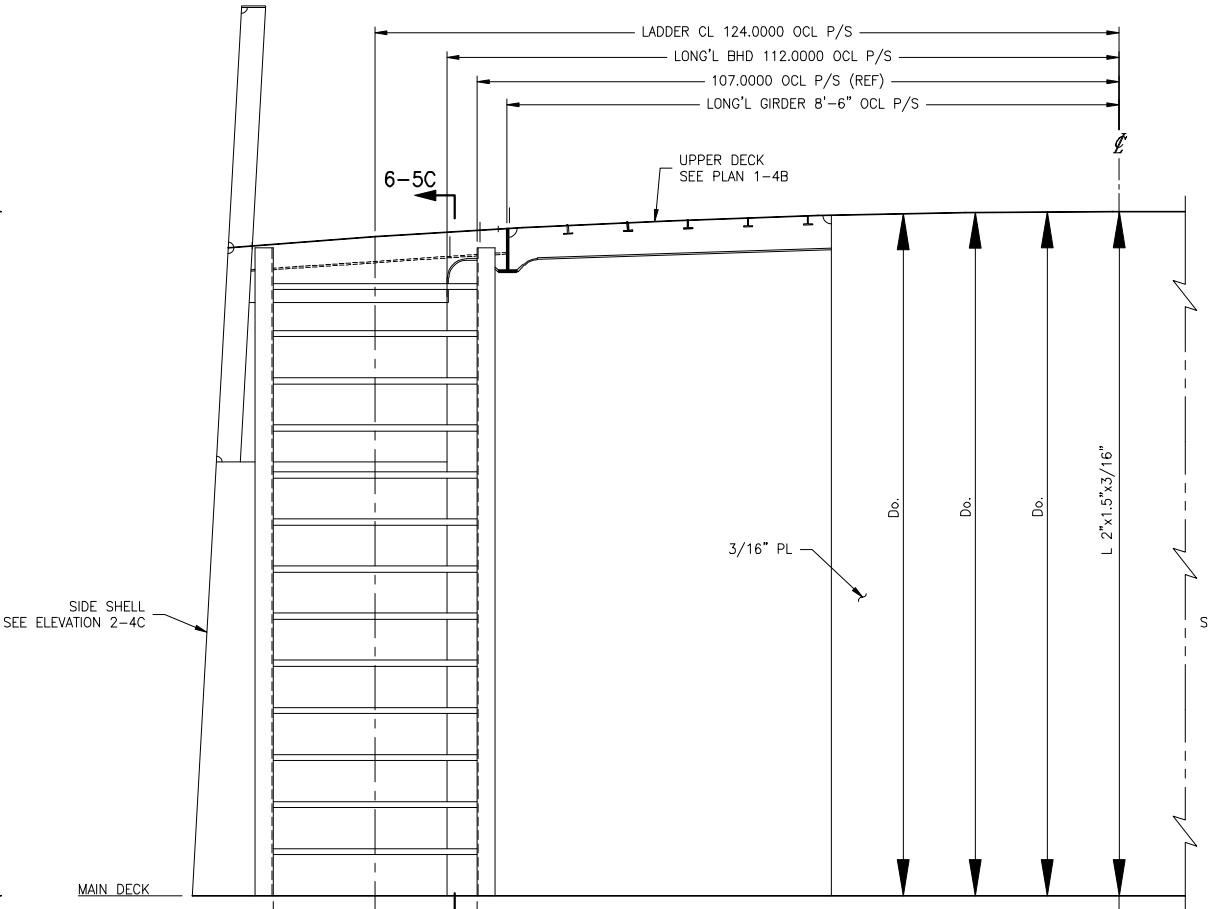
DETAIL 4-2C
 TYP CREW RAILINGS
 SCALE: 1-1/2"=1'-0"



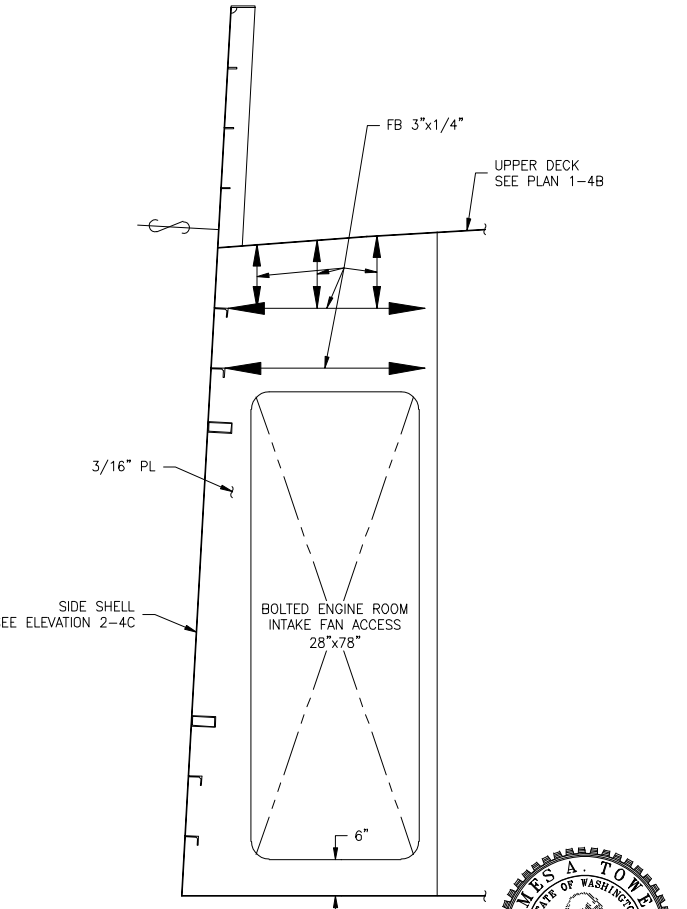
DETAIL 4-1C
 TYP BOW RAILINGS
 SCALE: 1-1/2"=1'-0"



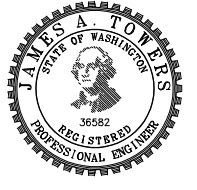
SECTION 4-5A
 FRAME 3.5
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



SECTION 4-3A
 FRAME 06
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



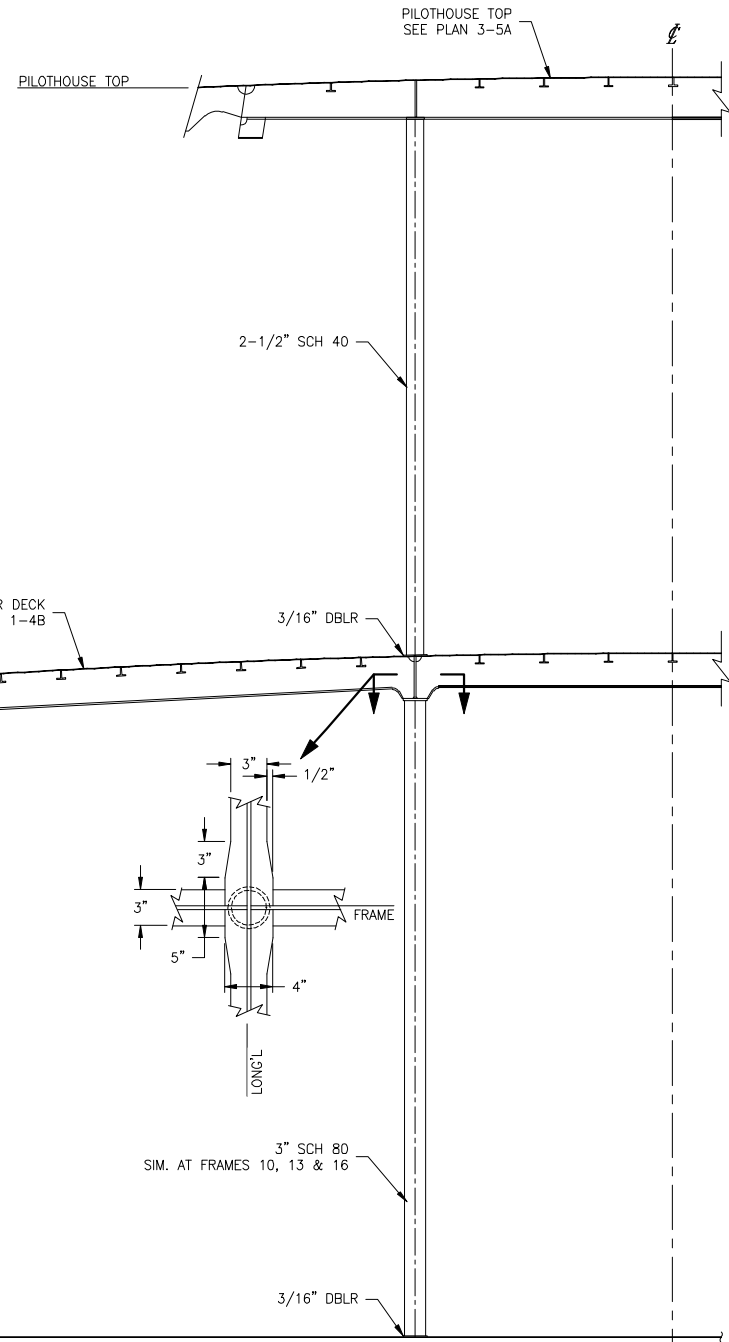
SECTION 4-1A
 FRAME 07+10
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



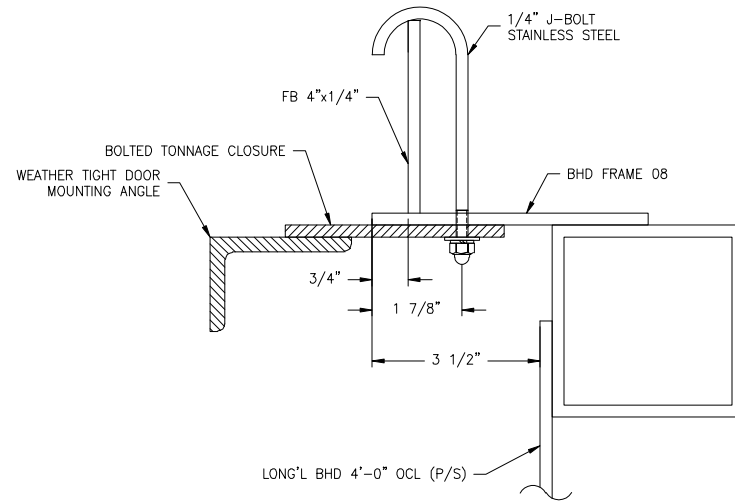
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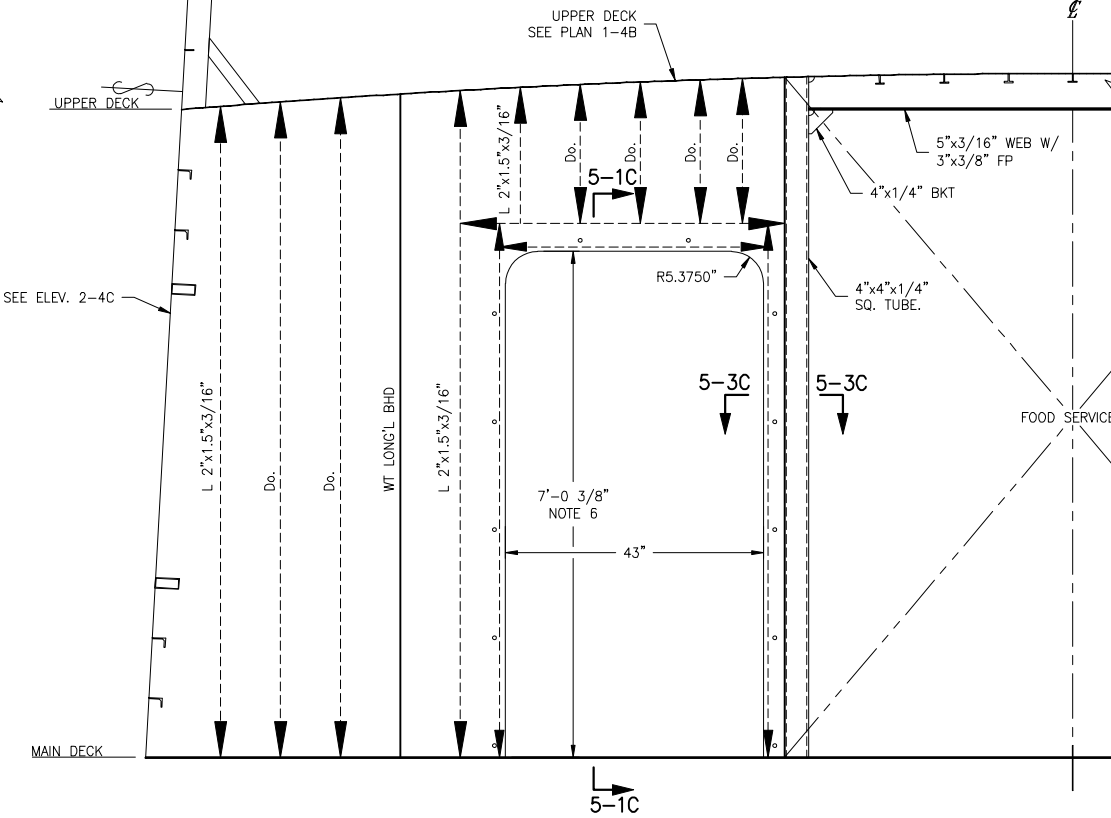
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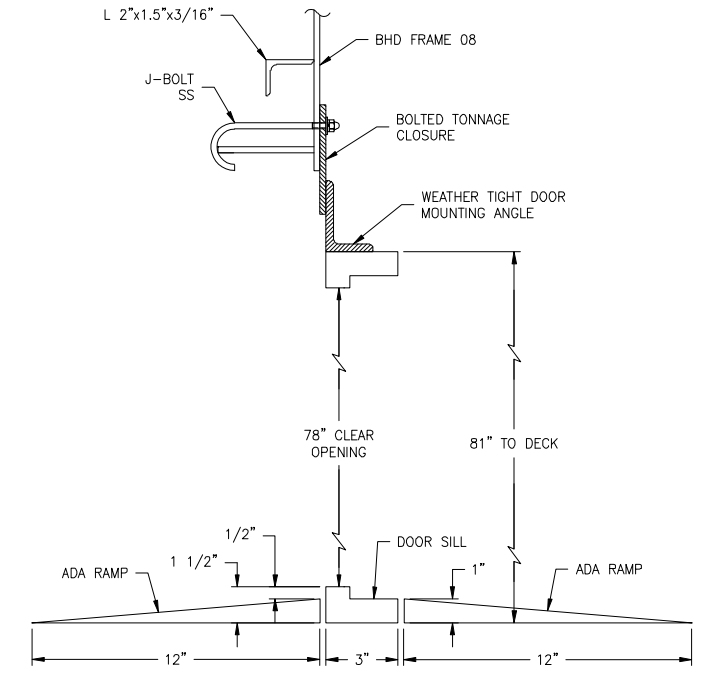
SECTION 5-5A
 FRAME 10
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



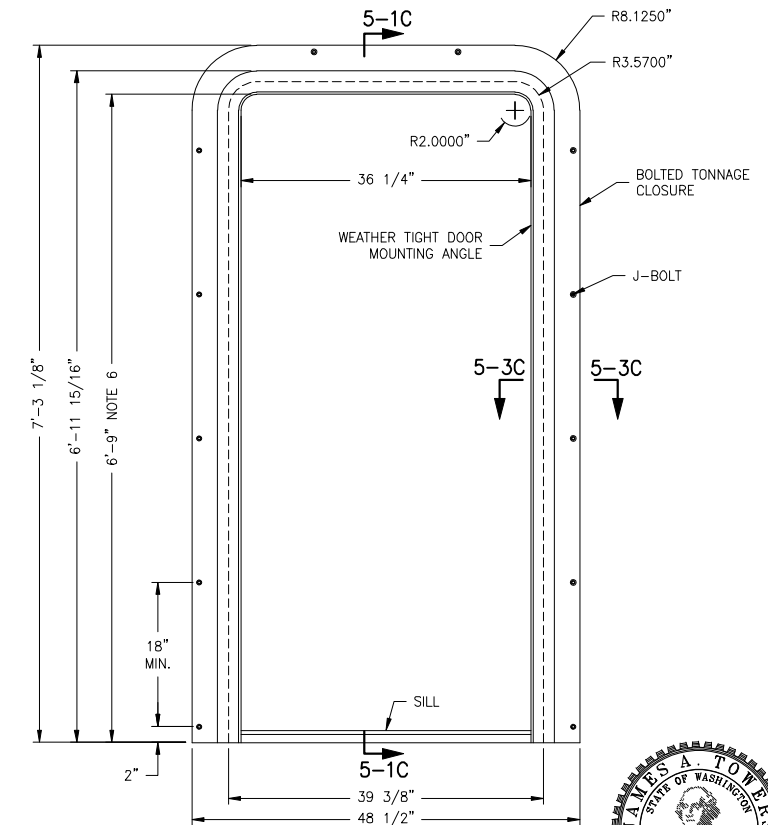
PLAN DETAIL 5-3C
 TONNAGE DETAILS
 LKG DOWN I.W.O. FRAME 08
 SCALE: 6"=1'-0"



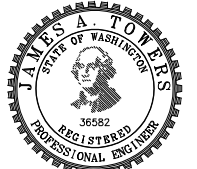
SECTION 5-3A
 FRAME 08
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



ELEV. DETAIL 5-1C
 TONNAGE CLOSURE & WT DOOR SILL
 LKG TO CL FROM PORT
 SCALE: 3"=1'-0"



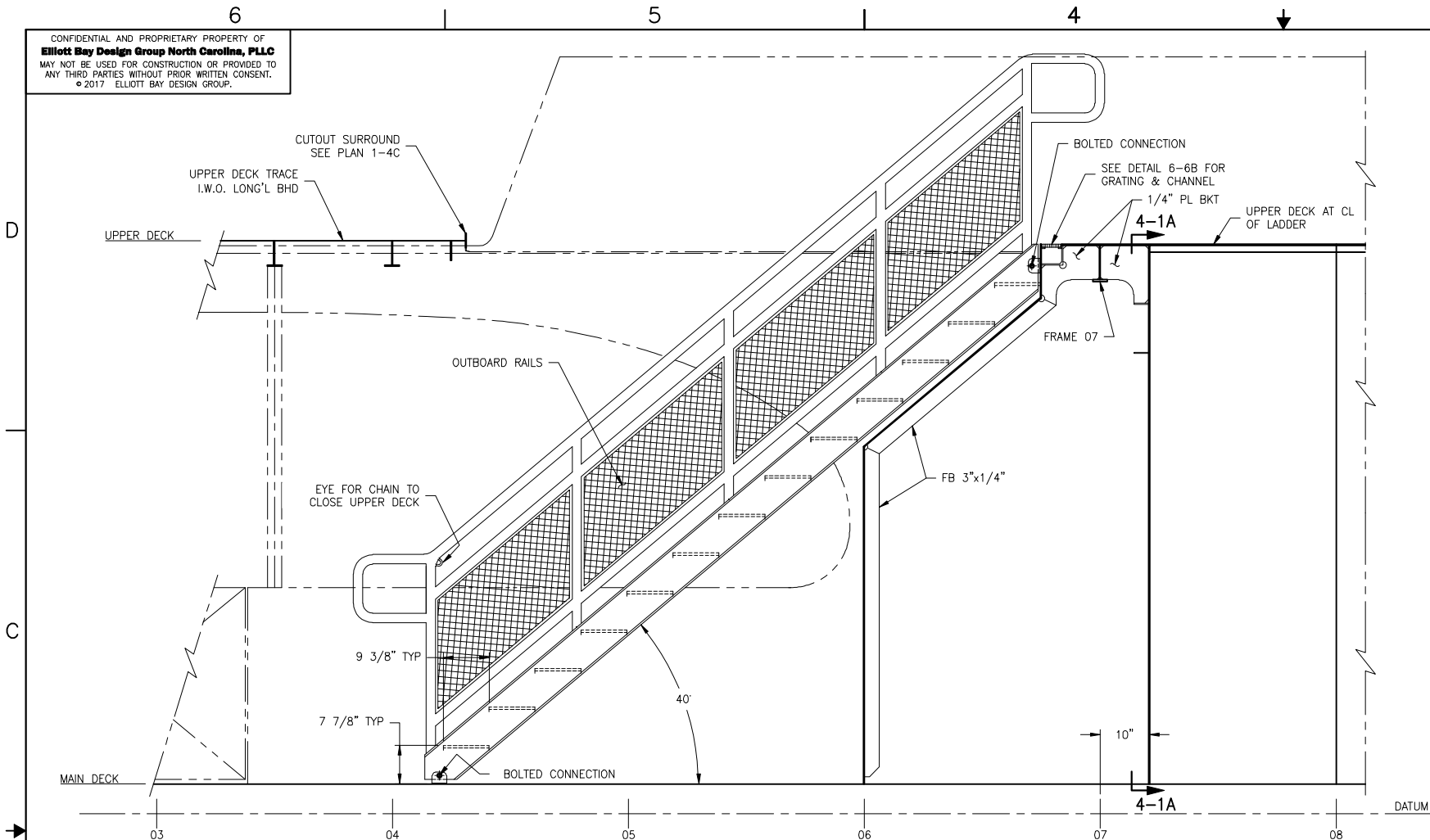
DETAIL 5-1A
 BOLTED TONNAGE CLOSURE
 PORT LKG FWD, STBD SIM.
 SCALE: 1"=1'-0"



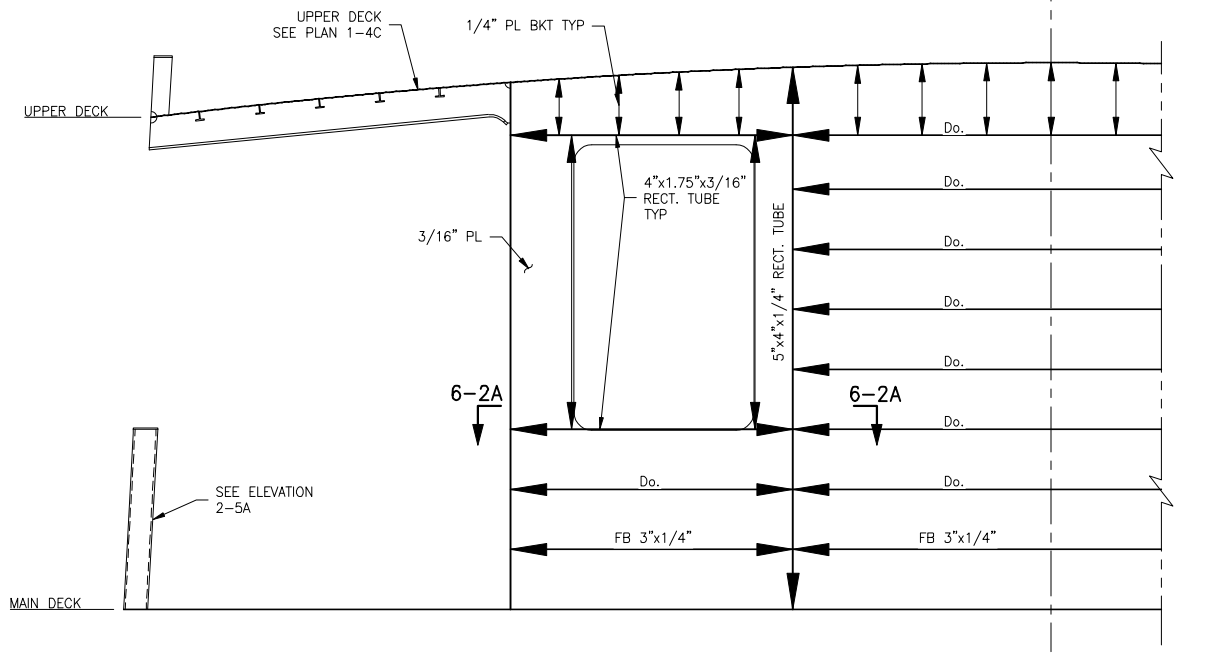
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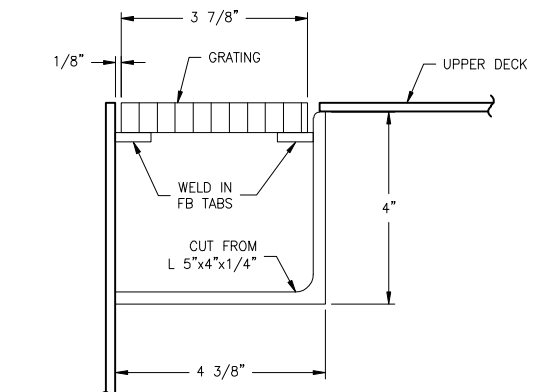
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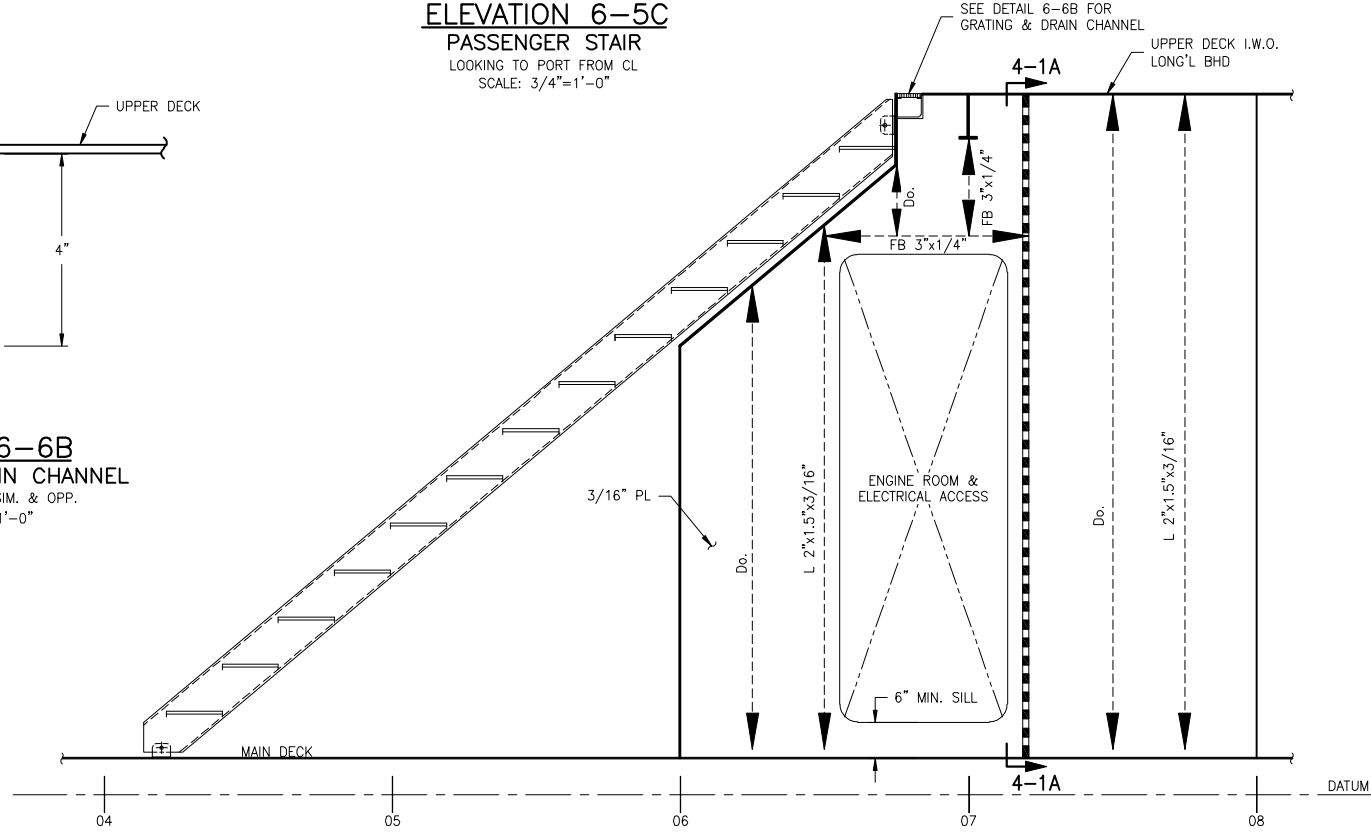
ELEVATION 6-5C
 PASSENGER STAIR
 LOOKING TO PORT FROM CL
 SCALE: 3/4"=1'-0"



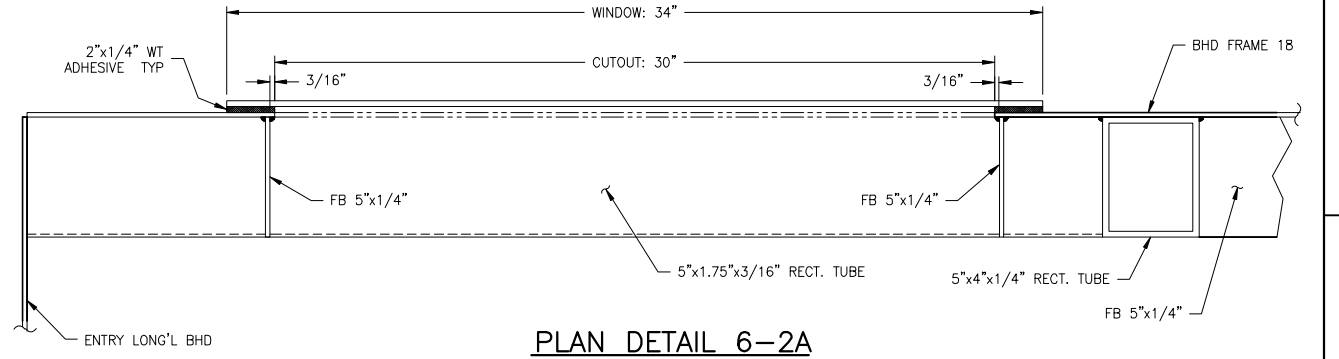
SECTION 6-2C
 FRAME 18
 PORT, LOOKING FORWARD
 SCALE: 3/4"=1'-0"



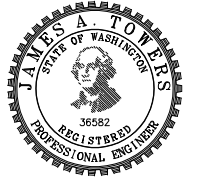
DETAIL 6-6B
 GRATING & DRAIN CHANNEL
 LKG PORT, STBD SIM. & OPP.
 SCALE: 3"=1'-0"



ELEVATION 6-4A
 E.R. ACCESS BHD
 LOOKING TO PORT FROM CL
 SCALE: 3/4"=1'-0"



PLAN DETAIL 6-2A
 HOUSE FRONT STRUCTURE
 PORT LKG DOWN, STBD SIM.
 SCALE: 3"=1'-0"



SIZE	D	DWG NO.	16109-003-130-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-130-0-	SHEET	6 OF 6

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REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD
A	1-1B	1. REMOVED MANUFACTURER AND MODEL NAMES	JHP	3/24/17	MEJ

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- DIMENSIONS PROVIDED ARE CONTRACT GUIDANCE AND REFERENCE ONLY PENDING DETAILED SHAFTING DESIGN, THE BUILDER'S TORSIONAL ANALYSIS, AND FINAL DEVELOPMENT OF THE ARRANGEMENT. SEE REF 1.
- SHAFT ASSEMBLIES (CARDAN SHAFTS, BULKHEAD SEAL, AND BEARINGS) SHALL BE DESIGNED AND SUPPLIED AS AN INTEGRATED PACKAGE. SEE REF 1.
- INSTALL AND ALIGN ENGINES, JETS, AND SHAFTING IN STRICT ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
- FABRICATE ALUMINUM SAFETY GUARDS OVER SHAFTING FOR PERSONNEL PROTECTION AND TO PREVENT DAMAGE TO CARBON FIBER SHAFTING.
- CONTRACTOR TO SUPPLY CUSTOM BRACKETS FOR RESILIENT MOUNTS AT ENGINE AND GEAR.
- MOUNTING BOLTS TO BE GRADE 8.8

MACHINERY DATA

MAIN ENGINES:	803 HP @ 2100 RPM	A ¹
REDUCTION GEARS:	VERTICAL OFFSET, 1.2:1 RATIO	
WATERJETS:	800 HP @ 1750 RPM	

REFERENCES

- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-120-0 HULL STRUCTURE

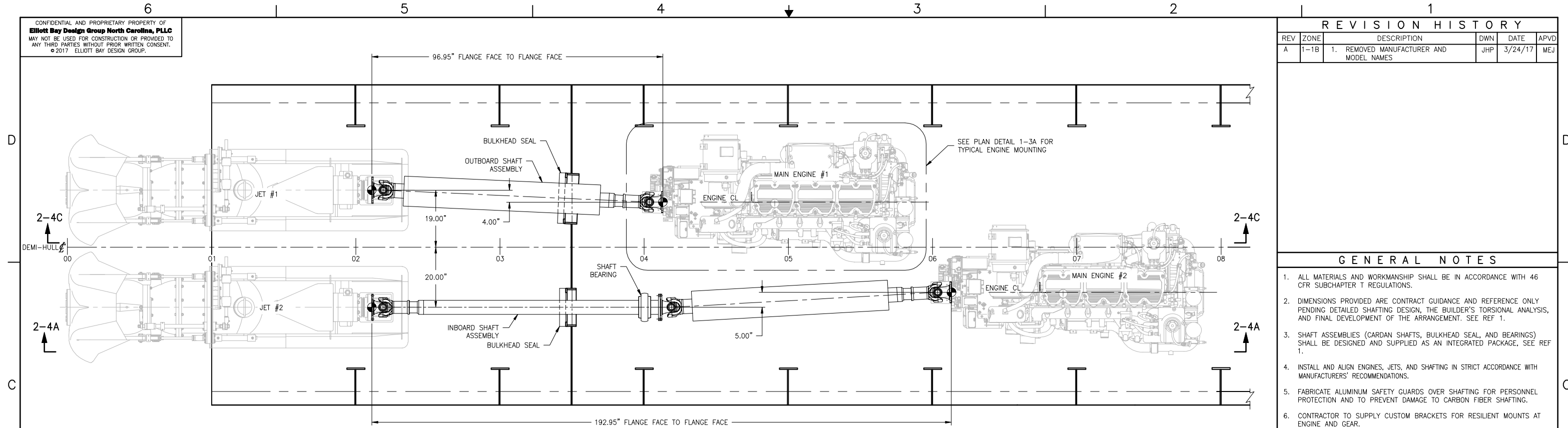


**Elliott Bay Design Group
 North Carolina, PLLC**

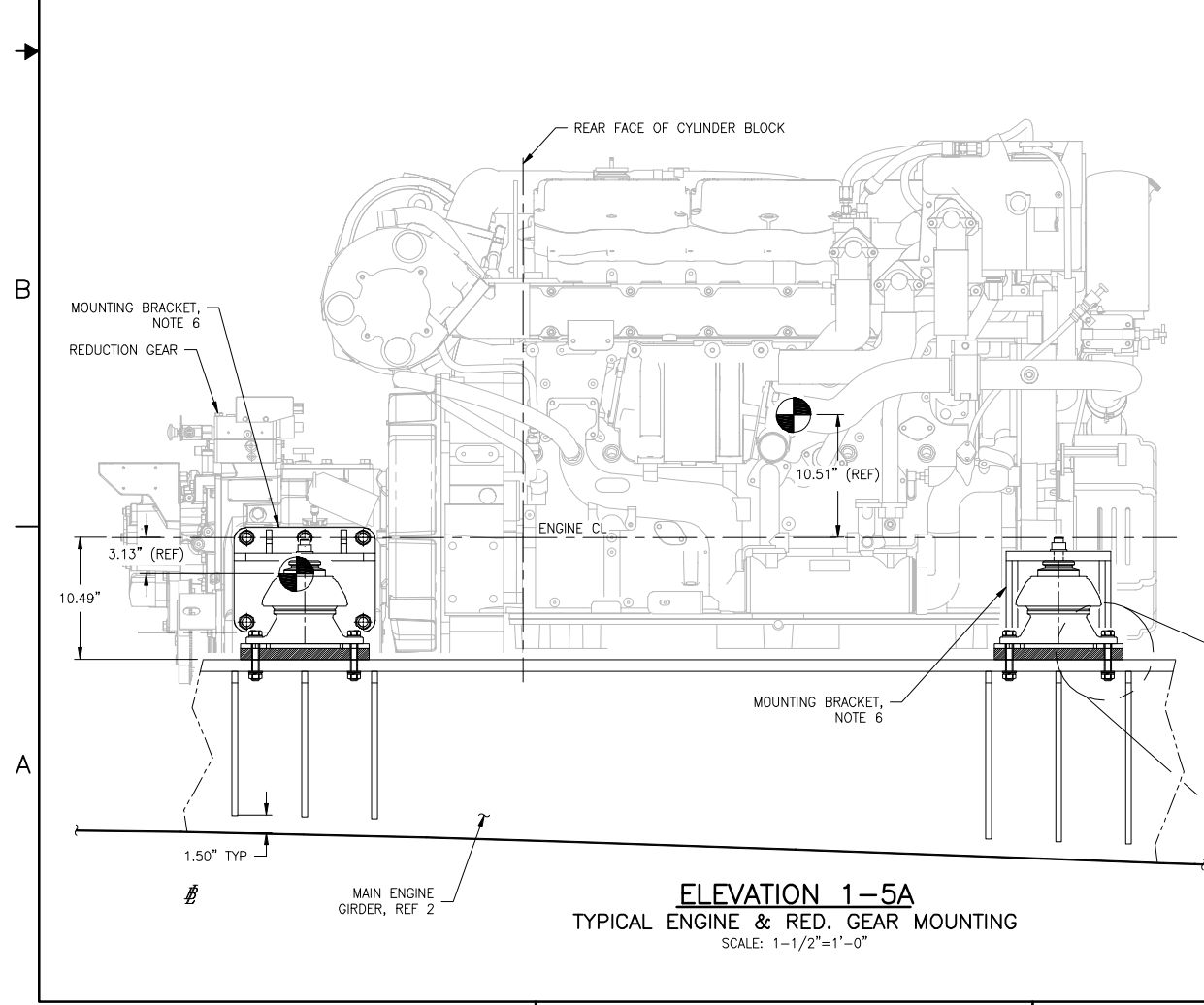
CLIENT: **NORTH CAROLINA D.O.T.**
 RALEIGH, NORTH CAROLINA
 PROJECT: **PEDESTRIAN FERRY**

**PROPULSION EQUIPMENT
 ARRANGEMENT**

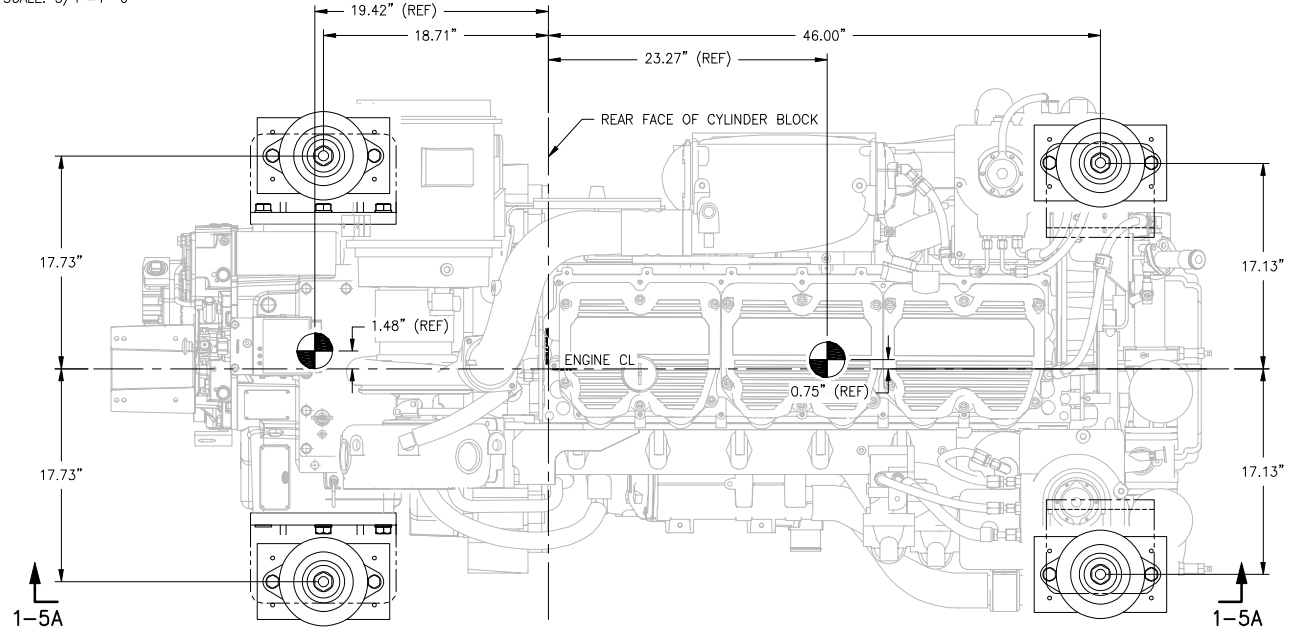
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DWN	JXB	MOD	MWR	CKD	JAT
APVD	MEJ	APVD DATE	3/3/2017		



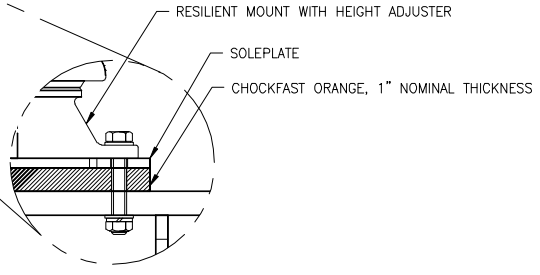
PLAN 1-4C
PROPULSION ARRANGEMENT
 PORT SHOWN, STBD OPP SIM
 SCALE: 3/4"=1'-0"



ELEVATION 1-5A
TYPICAL ENGINE & RED. GEAR MOUNTING
 SCALE: 1-1/2"=1'-0"

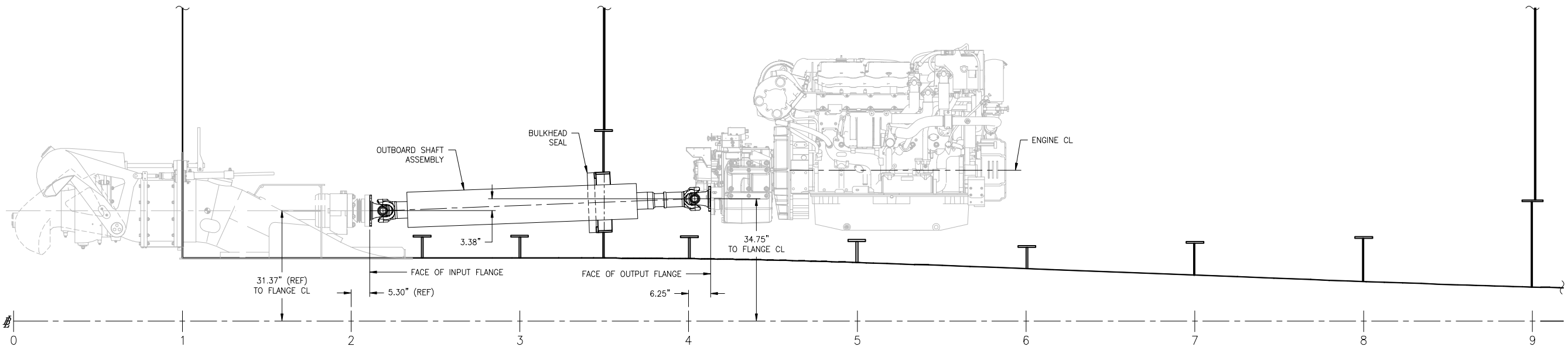


PLAN DETAIL 1-3A
TYPICAL ENGINE & RED. GEAR MOUNTING
 SCALE: 1-1/2"=1'-0"

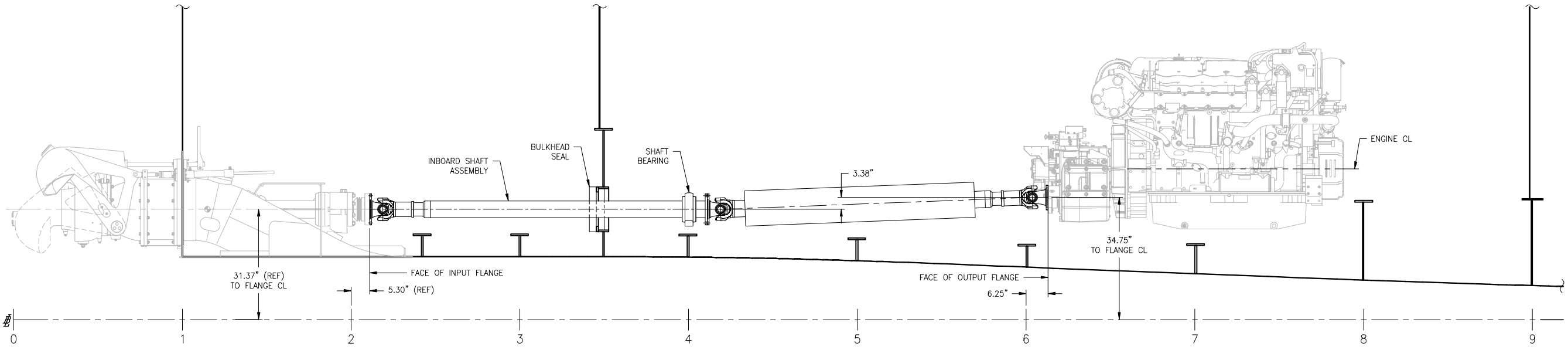


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ELEVATION 2-4C
OUTBOARD PROPULSION TRAIN
 PORT SHOWN, STBD OPP SIM
 SCALE: 3/4"=1'-0"



ELEVATION 2-4A
INBOARD PROPULSION TRAIN
 PORT SHOWN, STBD OPP SIM
 SCALE: 3/4"=1'-0"



SIZE	DWG NO.	REV
D	16109-003-170-1	A
SCALE	FILE NAME	SHEET
AS NOTED	16109-003-170-1A	2 OF 2

3/24/2017 11:30:21 AM

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REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD
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EQUIPMENT LIST

ITEM	QTY	DESCRIPTION	COMMENT
01	4	MAIN ENGINE	
02	4	REDUCTION GEAR	
03	4	WATERJET	
04	4	MAIN ENGINE EXHAUST SILENCER	
05	2	SSDG EXHAUST SILENCER	
06	2	SHIP SERVICE DIESEL GENERATOR	
07	5	SEA CHEST	
08	4	SEA WATER STRAINER	
09	2	FUEL TANK	1100 GALLON
10	1	POTABLE WATER TANK	200 GALLON
11	1	SEWAGE TANK	200 GALLON
12	2	ENGINE ROOM SUPPLY FAN	
13A	4	PASSENGER SPACE AC / HEAT	
13B	2	PILOTHOUSE AC / HEAT	
14	1	SWITCHBOARD	
15	2	ELECTRICAL DISTRIBUTION PANEL	
15	2	ELECTRICAL CONTROL PANEL	
16	10	BILGE PUMP	
17	2	POTABLE WATER PUMP	
18	1	POTABLE WATER FILTER	
19	1	POTABLE WATER PRESSURE TANK	18 GALLON
20	2	FIXED GAS FIRE FIGHTING SYSTEM	
21	1	FIRE PUMP	
22	1	FIRE PUMP STRAINER	
23	1	SEWAGE PUMP	
24	1	ISOLATION TRANSFORMER	
25	4	WATERJET HYDRAULIC RESERVOIR	WITH OIL COOLER
26	4	WATERJET CONTROL PANEL	

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- EQUIPMENT LAYOUT WITHIN A GIVEN AREA IS APPROXIMATE. PROVISION OF EQUIPMENT SHALL BE AS SHOWN ON THIS DRAWING AND AS DESCRIBED BY REFERENCE 1. FINAL EQUIPMENT POSITION IS SUBJECT TO OWNER APPROVAL.
- EQUIPMENT SHALL BE LOCATED TO ALLOW DISASSEMBLY AND MAINTENANCE.
- FOUNDATIONS SHALL RIGIDLY SUPPORT EQUIPMENT. SHARP EDGES AND CORNERS SHALL BE KNOCKED OFF.
- THIS DRAWING IS NOT INTENDED TO SHOW ALL EQUIPMENT.
- LIGHTWEIGHT ALUMINUM REMOVABLE GUARDS SHALL BE PROVIDED OVER EXPOSED ROTATING COMPONENTS.

REFERENCES

- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-101-1 PROFILES AND ARRANGEMENTS
- 16109-003-065-0 HVAC BLOCK DIAGRAM
- 16109-003-259-1 EXHAUST SYSTEM
- 16109-003-320-0 ONE LINE DIAGRAM
- 16109-003-520-0 SEA CHESTS AND SEAWATER PIPING
- 16109-003-521-0 FIRE MAIN PIPING
- 16109-003-528-0 SANITARY DRAINS AND SEWAGE DISCHARGE
- 16109-003-529-1 BILGE SYSTEM
- 16109-003-533-0 POTABLE WATER SYSTEM



Elliott Bay Design Group North Carolina, PLLC

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

PROJECT: PEDESTRIAN FERRY

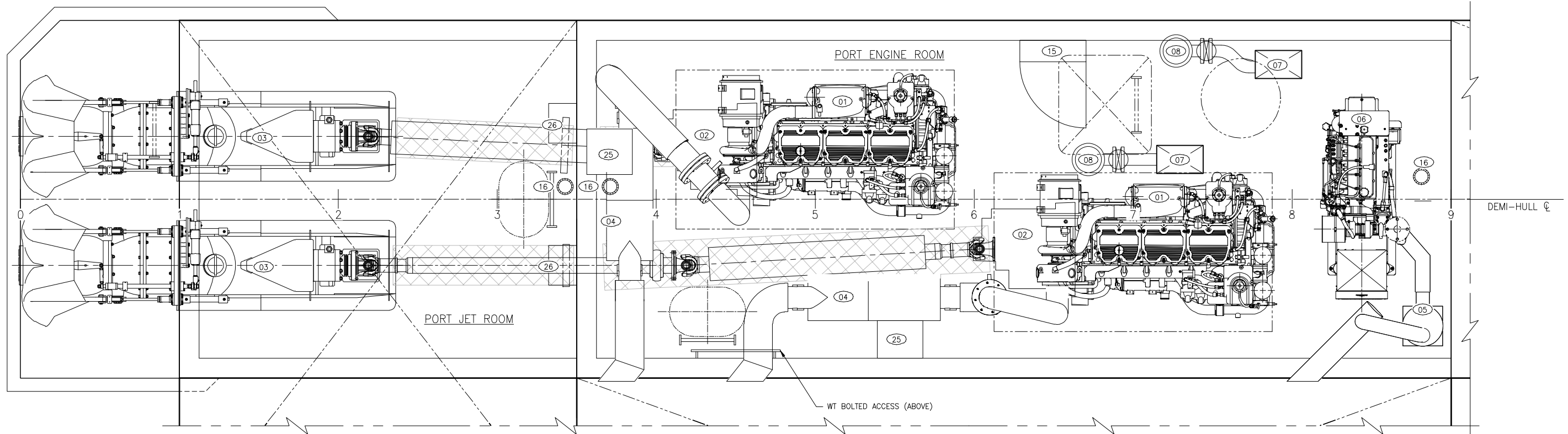


MACHINERY ARRANGEMENT

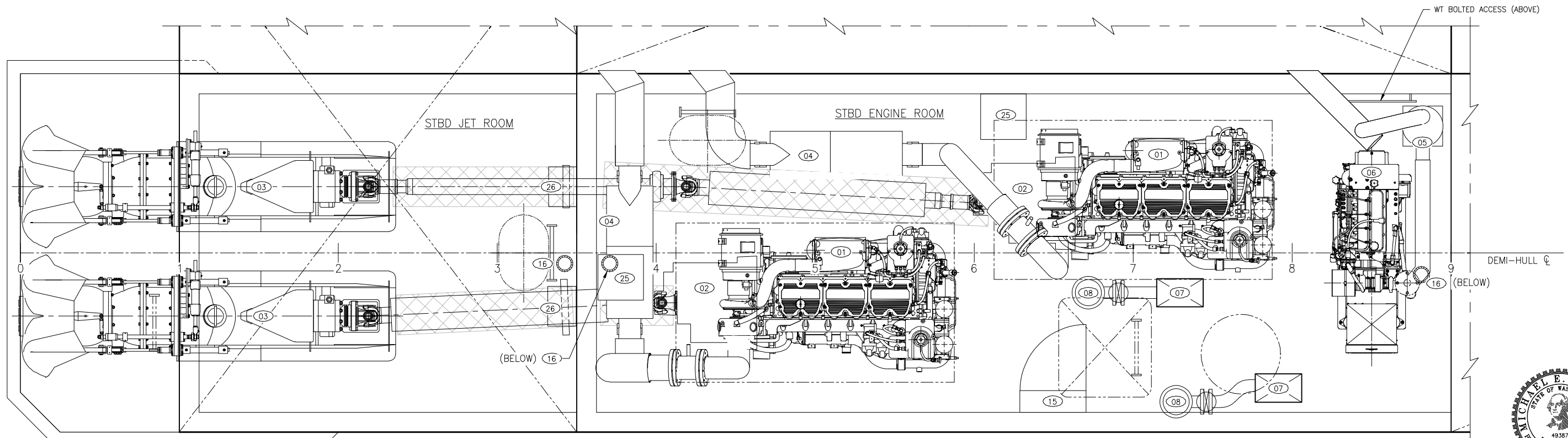
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SCALE	AS NOTED	FILE NAME	16109-003-201-1-	SHEET	1 OF 4
DWN	NJB	MOD	MWR	CKD	APVD MEJ
				APVD DATE	3/3/2017

3/2/2017 5:02:57 PM

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PLAN 2-3C
 PORT ENGINE ROOM & JET ROOM
 SCALE: 3/4"=1'-0"



PLAN 2-3A
 STBD ENGINE ROOM & JET ROOM
 SCALE: 3/4"=1'-0"



SIZE	D	DWG NO.	16109-003-201-1	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-201-1-	SHEET	2 OF 4

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6 | 5 | 4 | 3 | 2 | 1

D

C

B

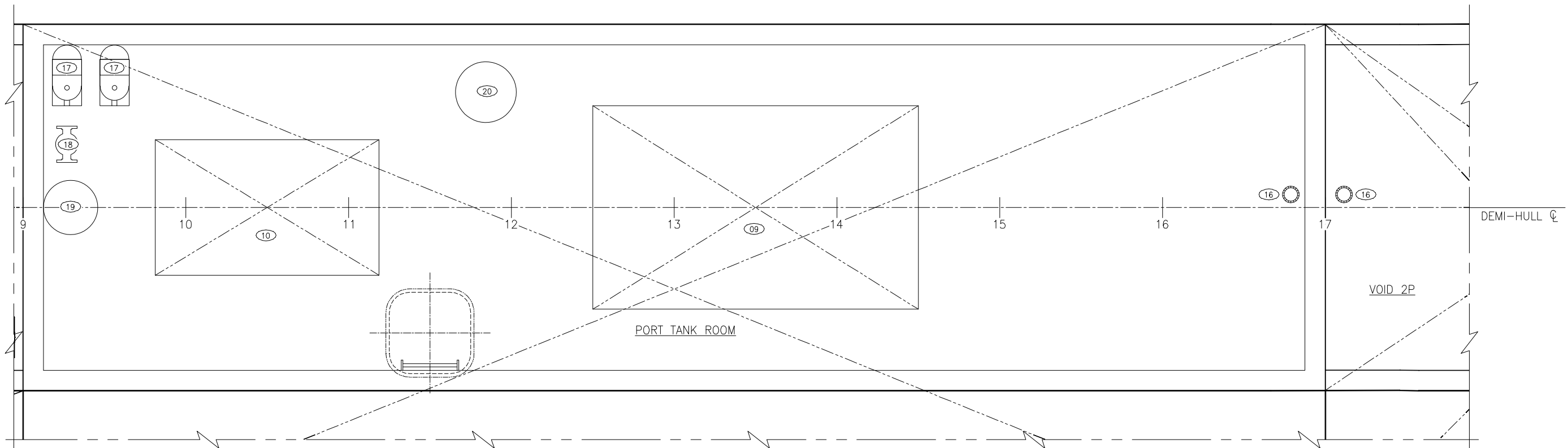
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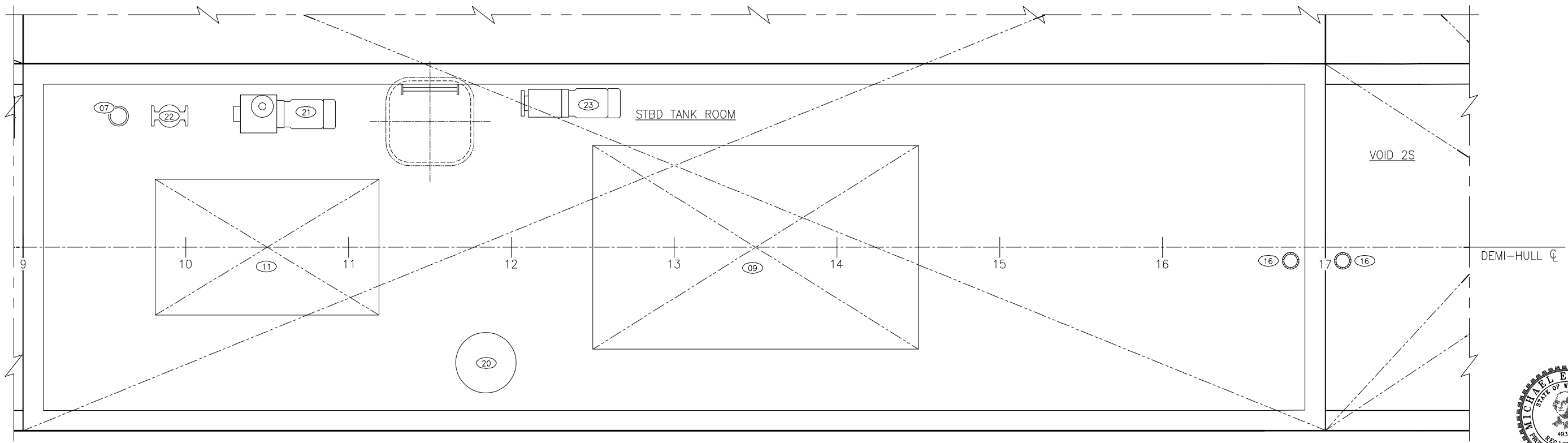
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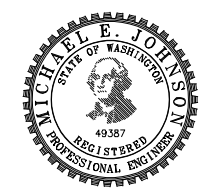
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PLAN 3-3C
 PORT TANK ROOM
 SCALE: 3/4"=1'-0"



PLAN 3-3A
 STBD TANK ROOM
 SCALE: 3/4"=1'-0"



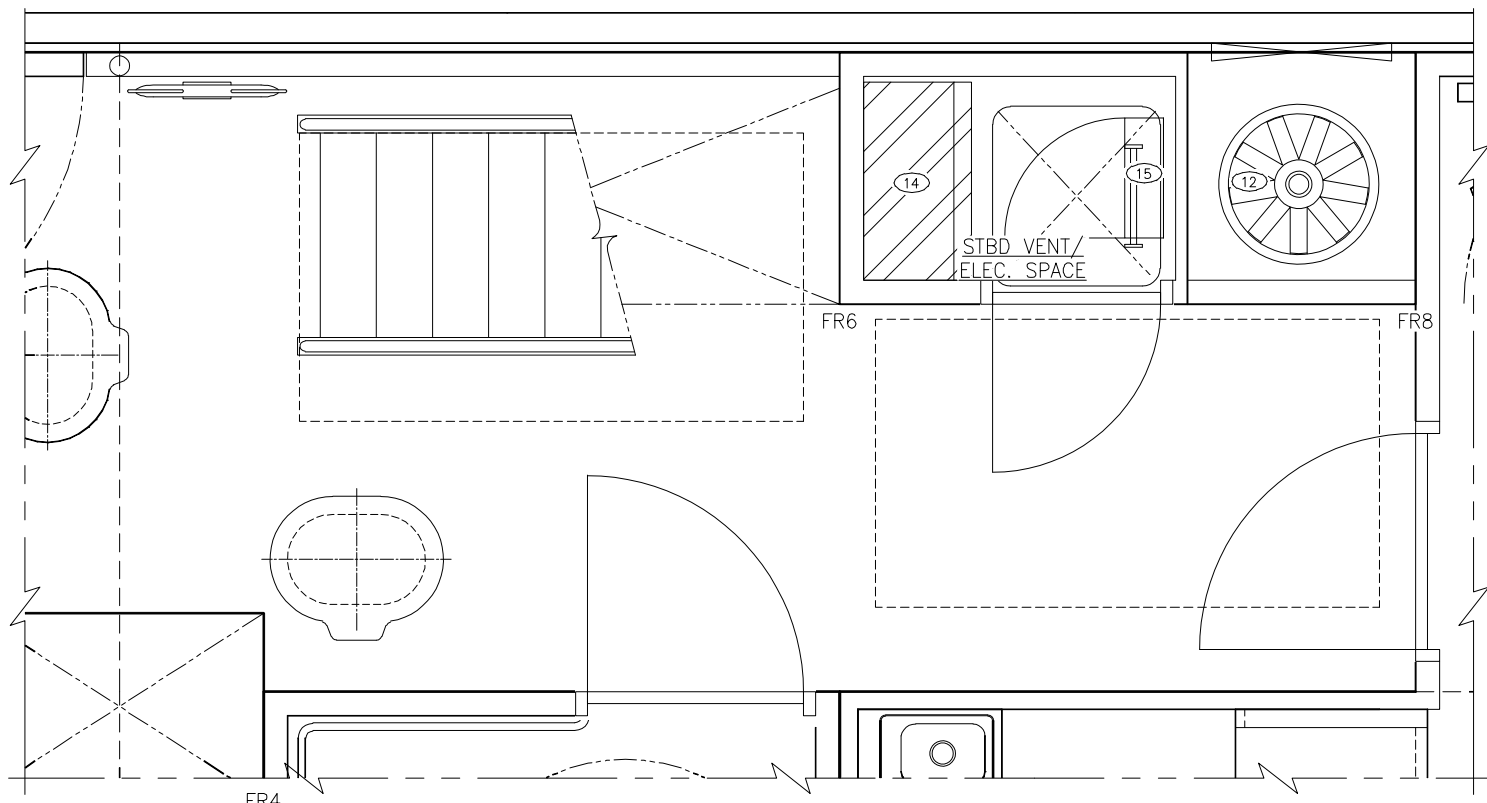
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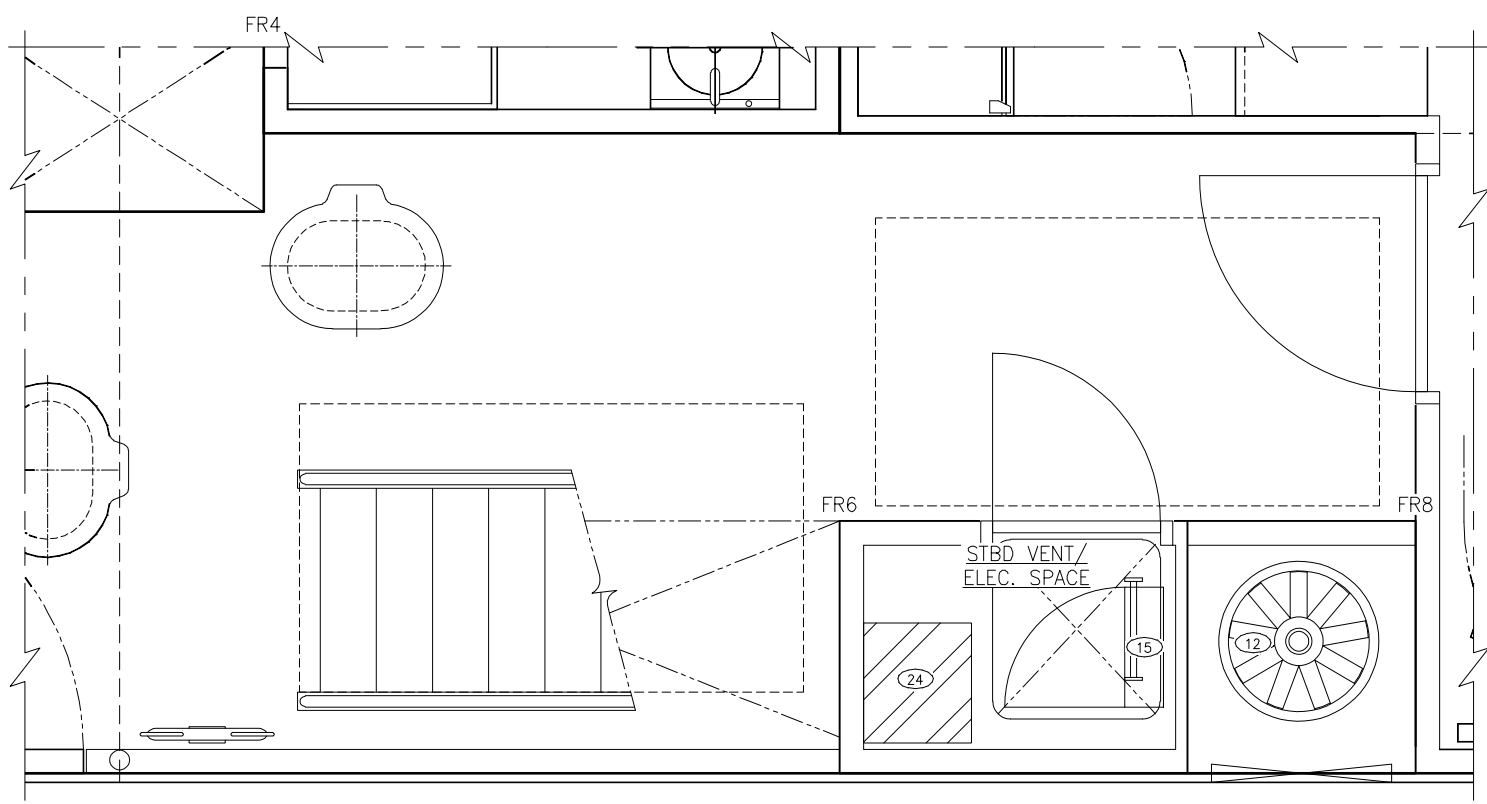
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6 | 5 | 4 | 3 | 2 | 1

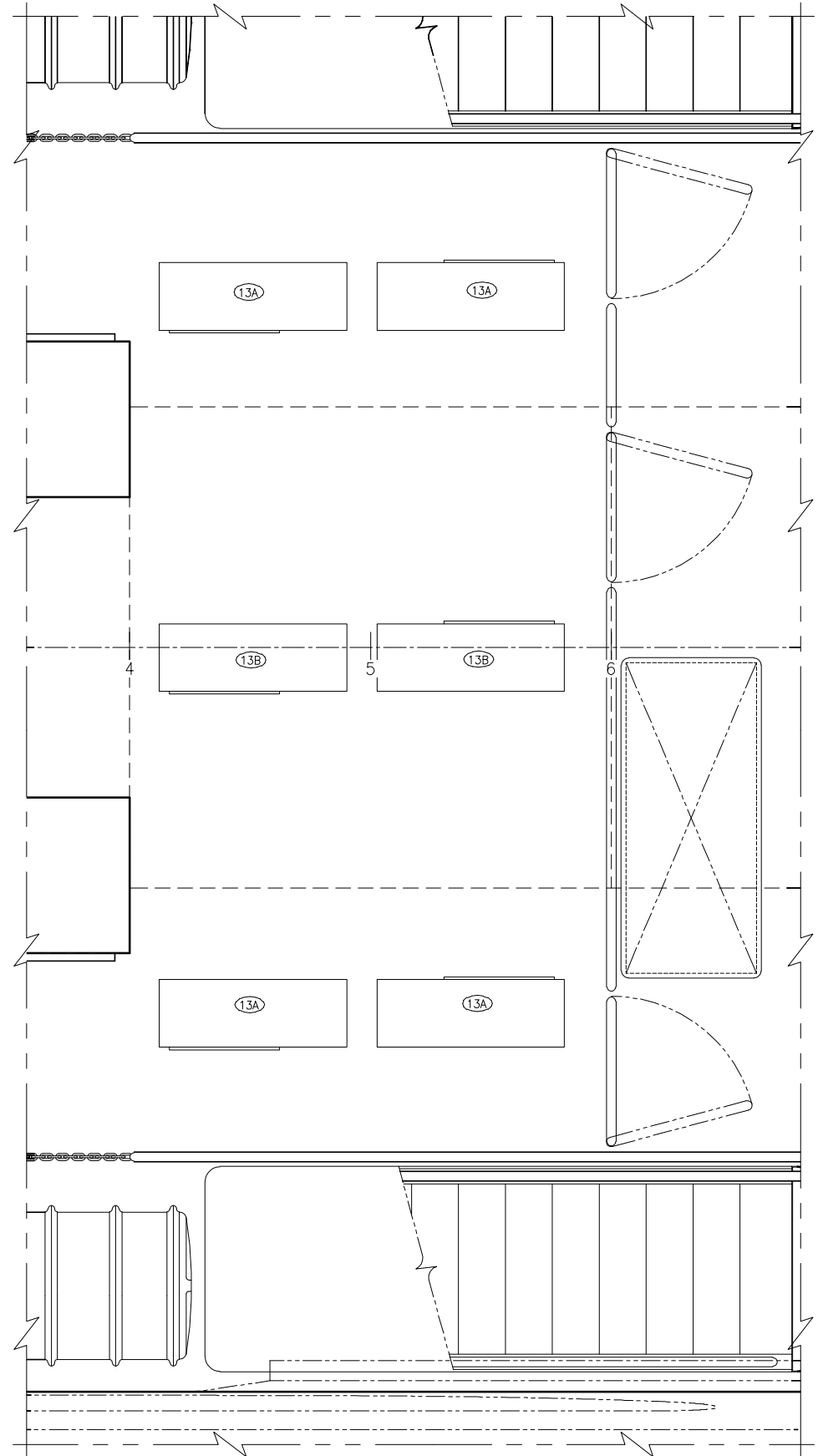
D
C
B
A



PLAN 4-5C
 PORT VENTILATION / ELECTRICAL SPACE
 MAIN DECK
 SCALE: 3/4"=1'-0"



PLAN 4-5A
 STBD VENTILATION / ELECTRICAL SPACE
 MAIN DECK
 SCALE: 3/4"=1'-0"



PLAN 4-2A
 PASSENGER AC / HEAT UNITS
 UPPER DECK
 SCALE: 3/4"=1'-0"



SIZE	D	DWG NO.	16109-003-201-1	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-201-1-	SHEET	4 OF 4

6 | 5 | 4 | 3 | 2 | 1

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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

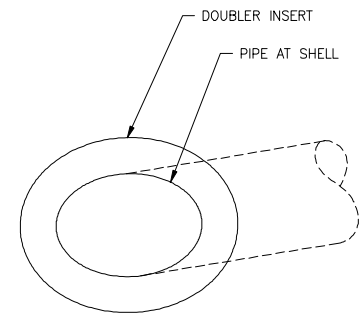
- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-101-1 PROFILES & ARRANGEMENTS
- 16109-003-120-0 HULL STRUCTURE
- 16109-003-520-0 SEA CHESTS & SEAWATER PIPING



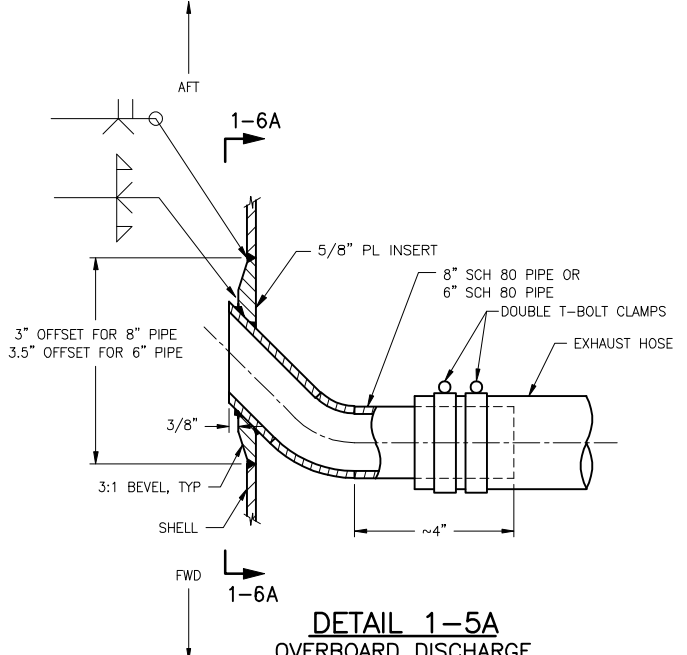
Elliott Bay Design Group North Carolina, PLLC
 CLIENT: NORTH CAROLINA D.O.T.
 PROJECT: PEDESTRIAN FERRY



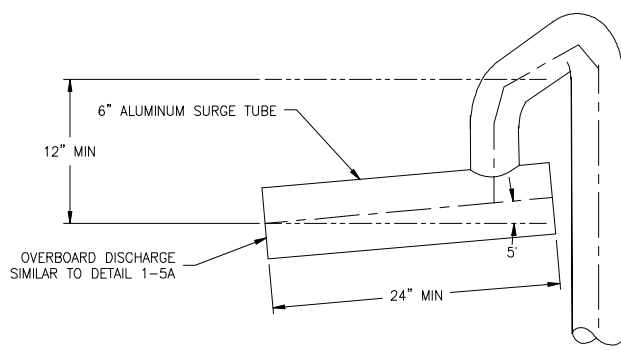
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 SCALE: AS NOTED FILE NAME: 16109-003-259-1A SHEET 1 OF 4
 DWN: MWR MOD: CKD: JHP APVD: LGB APVD DATE: 3/3/2017



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"

3/24/2017 11:32:58 AM

6

5

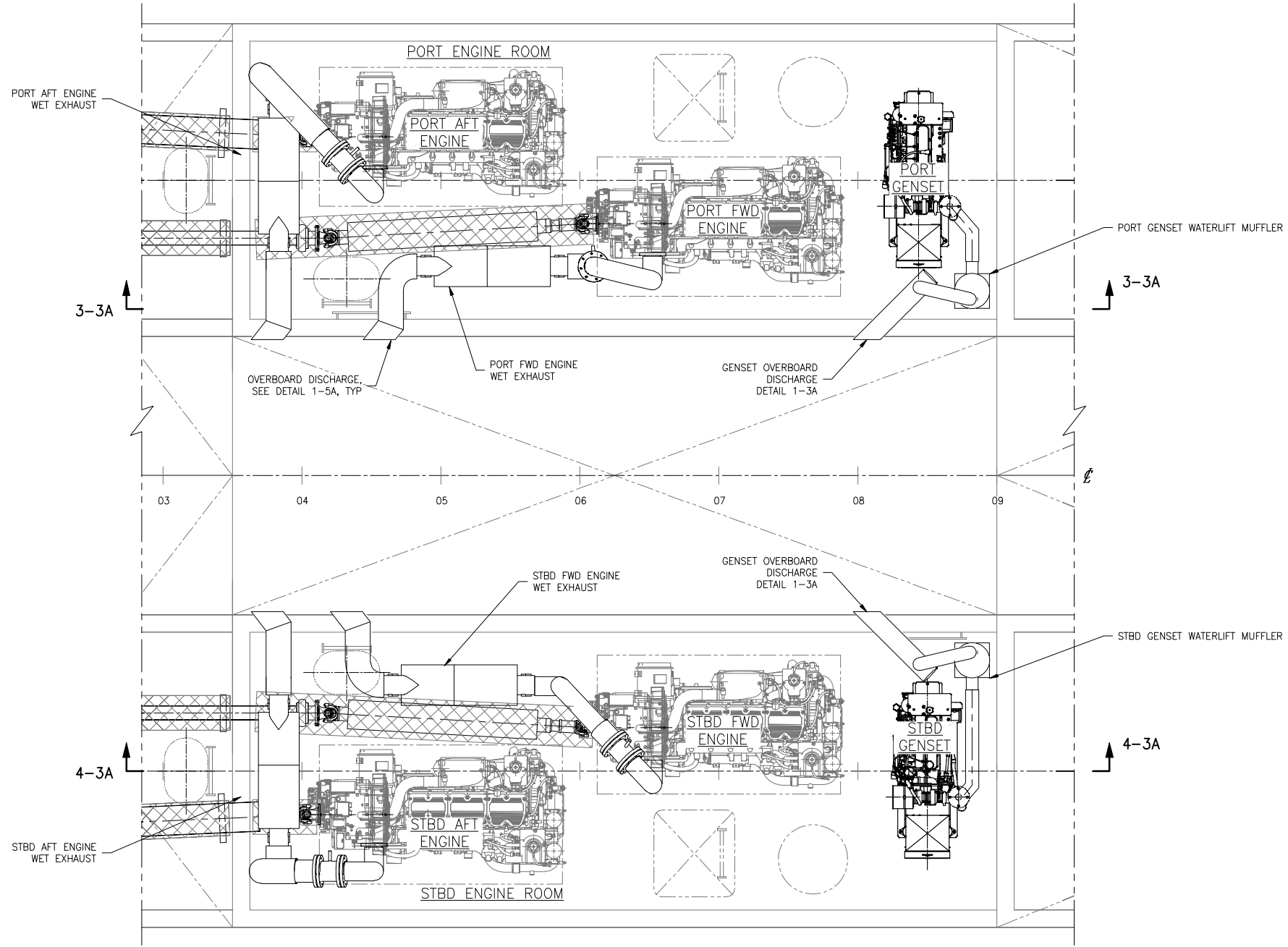
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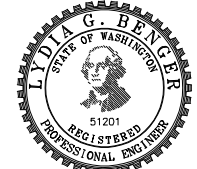
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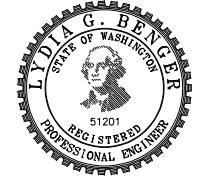
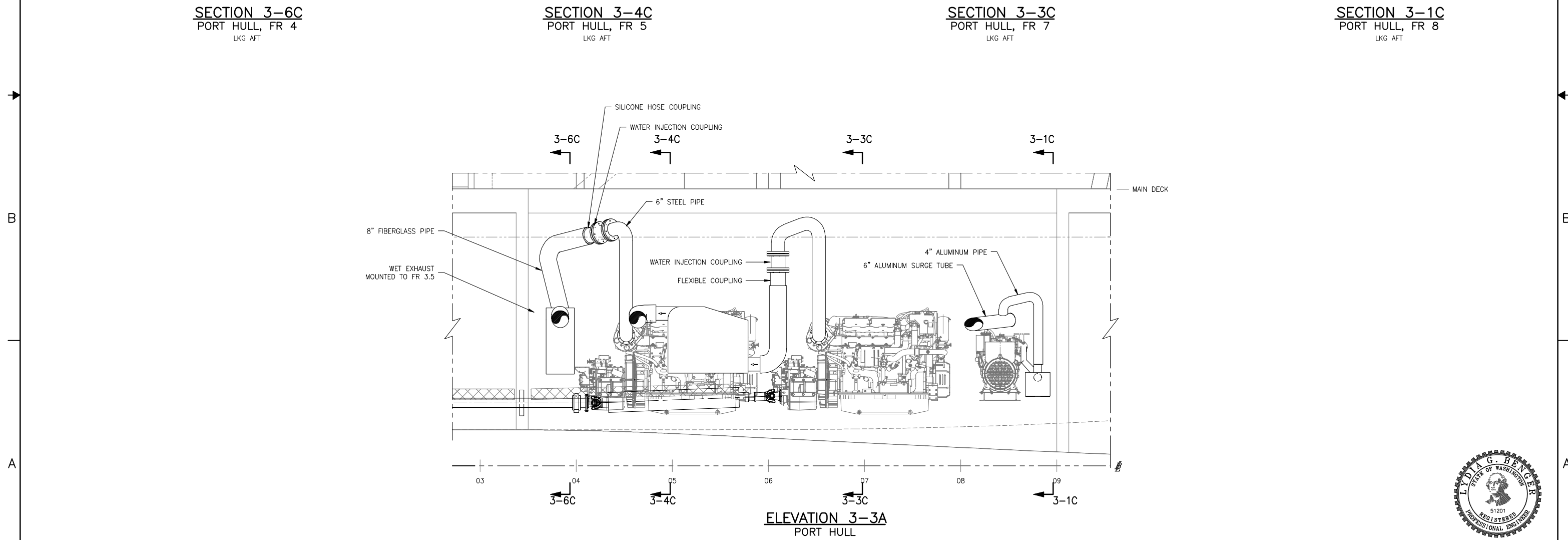
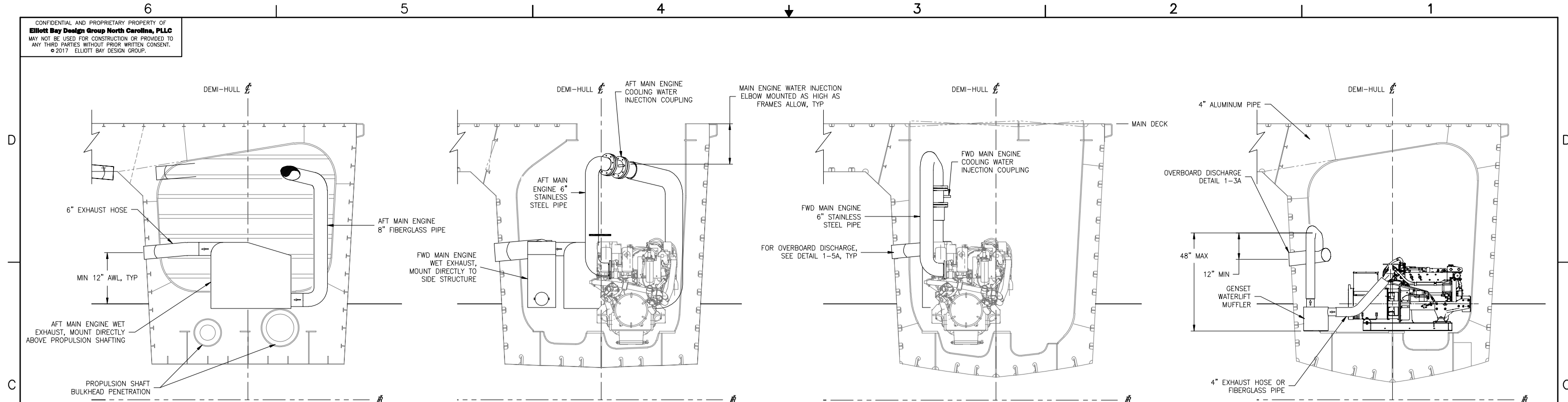
KEY PLAN 2-3A
HOLD



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SCALE	AS NOTED	FILE NAME	16109-003-259-1A	SHEET	2 OF 4

3/24/2017 11:33:41 AM

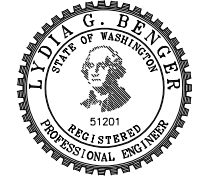
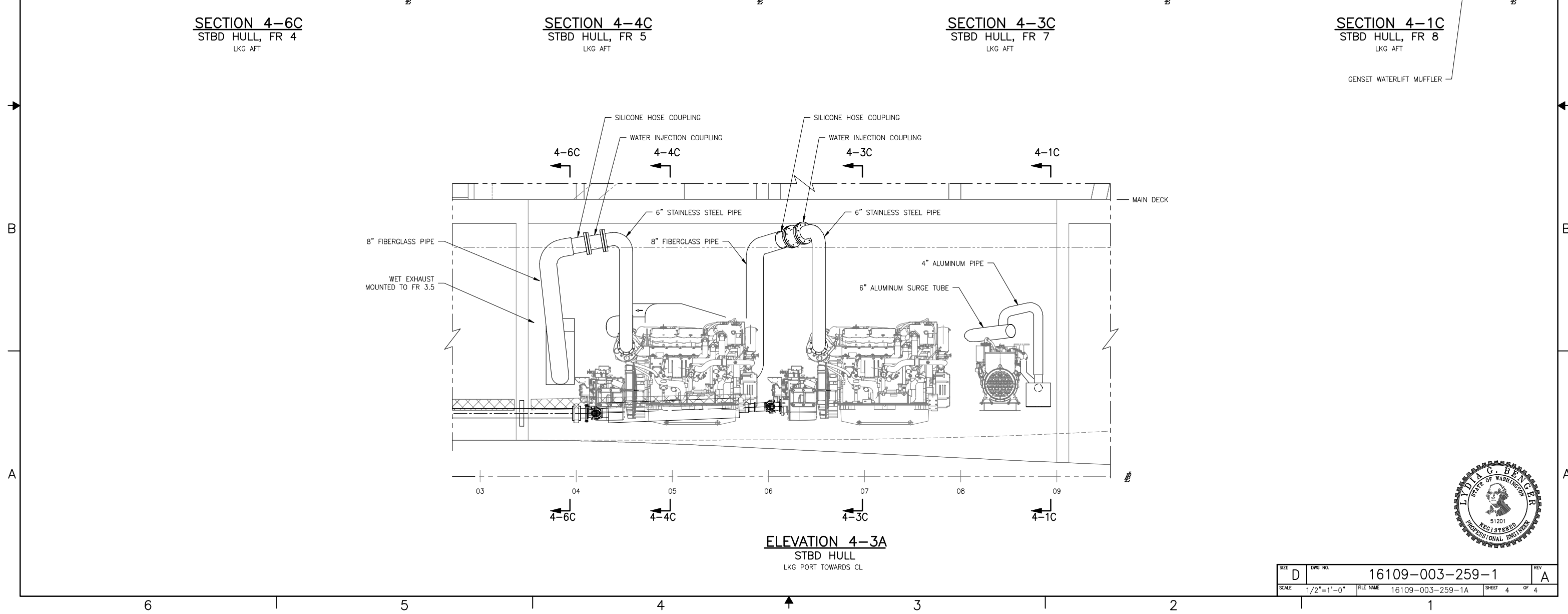
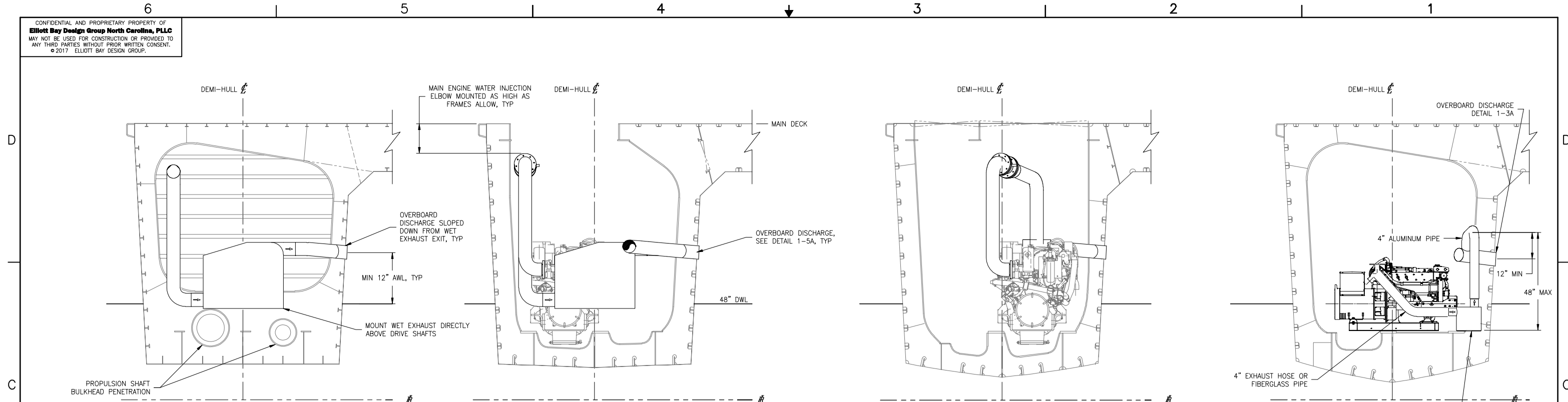
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SIZE	DWG NO.	REV
D	16109-003-259-1	A
SCALE	FILE NAME	SHEET
1/2"=1'-0"	16109-003-259-1A	3 OF 4

3/24/2017 11:34:06 AM

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SIZE	D	DWG NO.	16109-003-259-1	REV	A
SCALE	1/2"=1'-0"	FILE NAME	16109-003-259-1A	SHEET	4 OF 4

3/24/2017 11:35:28 AM

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REVISION HISTORY				
REV	ZONE	DESCRIPTION	DWN	DATE

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
2. POTABLE WATER AND SEWAGE TANKS USE A POLYETHYLENE, ROTOMOLDED TANK (200 GAL, ELLIPTICAL). FOUNDATION AND STRAPS TO BE PROVIDED BY THE SHIPYARD AND SIMILAR TO FUEL TANK MOUNTING.

REFERENCES

1. 16109-003-802-0 CONTRACT SPECIFICATIONS
2. 16109-003-101-1 PROFILES AND ARRANGEMENTS
3. 16109-003-120-0 HULL STRUCTURE



Elliott Bay Design Group
 North Carolina, PLLC

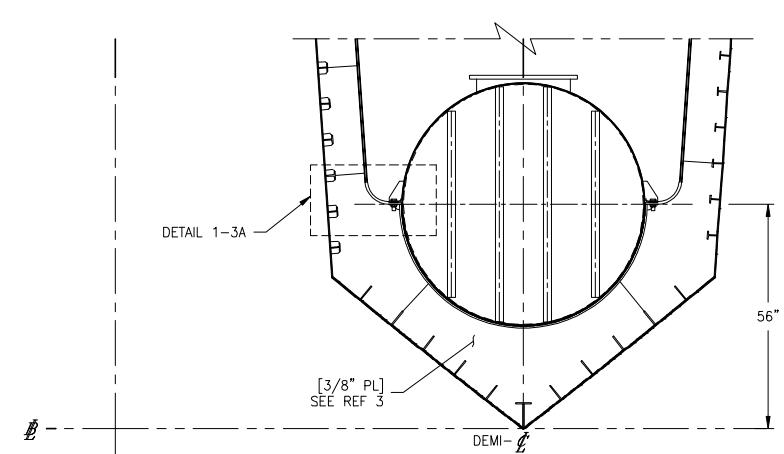
CLIENT: NORTH CAROLINA D.O.T.
 RALEIGH, NORTH CAROLINA

PROJECT: PEDESTRIAN FERRY

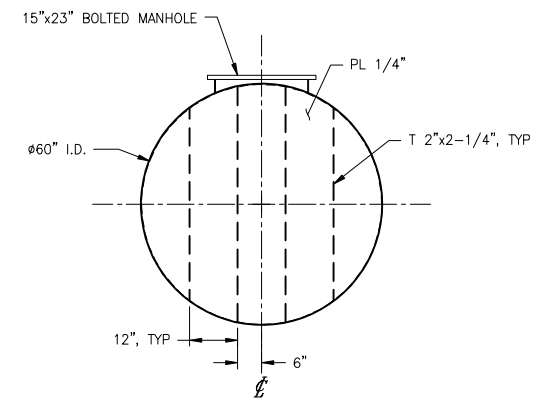


FUEL, WATER & SEWAGE TANK CONFIGURATION & STRUCTURE

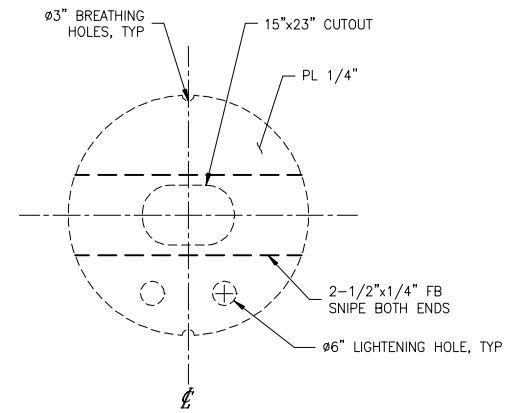
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				APVD DATE	3/3/2017



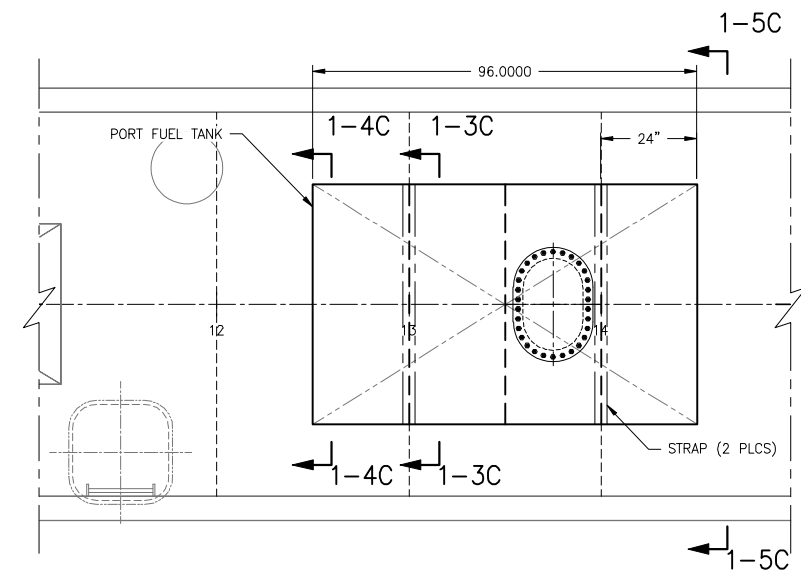
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ALUMINUM FUEL TANK
 PORT LOOKING AFT AT FR 14
 STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



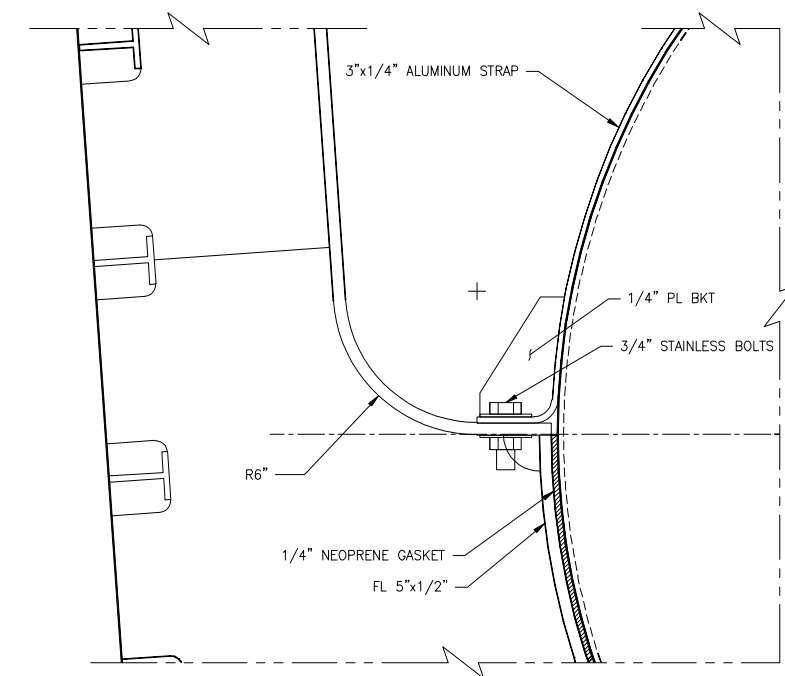
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TANK END
 PORT LOOKING AFT
 SCALE: 1/2"=1'-0"



SECTION 1-3C
TANK BAFFLE
 PORT LOOKING AFT
 3 PLCS
 SCALE: 1/2"=1'-0"



PLAN 1-5A
PORT TANK ROOM
 STBD SIM. & OPP.
 SCALE: 1/2"=1'-0"



DETAIL 1-3A
TANK MOUNTING DETAIL
 PORT, INBOARD LOOKING AFT
 SCALE: 3"=1'-0"

3/2/2017 5:03:35 PM

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MATERIAL SCHEDULE									
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	FLEXIBLE CONNECTIONS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
FUEL OIL SERVICE MAWP: 10 PSIG MAX TEMP: 115°F	1-1/2" & BELOW	SS TUBING ASTM A269, GR 316L SEAMLESS 0.065" WT	COMPRESSION UNIONS SS ASTM A269, GR 316L	-	-	BALL/IN-LINE CHECK: STAINLESS STEEL ASTM A351, GR CF8M MSS-SP-110 150 PSIG THREADED ENDS	BALL: 316 SS BALL PTFE SEATS AND SEALS IN-LINE CHECK: PTFE BALL CHECK	COMPRESSION FITTINGS SS ASTM A269, GR 316L	SAE J1942 COMPLIANT SEE NOTE 6
FUEL OIL VENTS AND FILLS MAWP: 75 PSIG MAX TEMP: 115°F	ALL	ALUMINUM ASTM B241 6061 T6 ANSI 36.1 SCH 80	FLANGE ALUMINUM 6061 T6 ANSI B16.5 150#	APPROPRIATE FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE B8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	BUTTERFLY: 316 STAINLESS STEEL WAFFER TYPE, 150#	BUTTERFLY: 316 SS DISC BUNA-N SEATS	ALUMINUM 6061 T6 ANSI B16.9	-

EQUIPMENT & PUMP LIST					
QTY	SERVICE	TYPE	MODEL	CAPACITY	DRIVE
4	MAIN ENGINE FUEL OIL PUMP	SUPPLIED WITH ENGINE	-	-	-
2	SSDG FUEL OIL PUMP	SUPPLIED WITH GENERATOR	-	-	-
4	ME FUEL OIL FILTER	3 ELEMENT TURBINE MANIFOLDED WITH METAL BOWLS	-	9 GPM 10 MICRON	-
2	SSDG FUEL OIL FILTER	1 ELEMENT TURBINE WITH METAL BOWL	-	3 GPM 10 MICRON	-

SYMBOLS LIST	
	SUPPLY PIPE
	RETURN PIPE
	BULKHEAD/TANK PENETRATION
	REDUCER
	ACTUATED BALL VALVE
	BALL VALVE
	BALL CHECK VALVE
	FLEXIBLE CONNECTION
	TRIPLEX FILTER
	SIMPLEX FILTER
	SPILL CONTAINMENT/DRIP PAN
	PIPE CAP
	HIGH LEVEL ALARM
	LOW LEVEL ALARM
	CONTINUOUS LEVEL INDICATION

GENERAL NOTES CONT.

15. EACH VENT PIPE SHALL BE SLOPED CONTINUOUSLY TO PROVIDE EFFECTIVE DRAINAGE BACK TO THE TANK.

16. VENT TERMINALS SHALL BE VERTICAL BALL CHECK TYPE, WINTEB WIN2000 HIAS, OR EQUAL. VENT TERMINALS SHALL BE FITTED WITH STAINLESS STEEL FLAME SCREEN.

17. MATERIAL TRANSITIONS BETWEEN ALUMINUM PIPING AND STAINLESS STEEL VALVES SHALL BE ACCOMPLISHED WITH FLANGED JOINTS. FLANGES AT THE JUNCTIONS SHALL BE FITTED WITH GALVANIC ISOLATION KITS TO PREVENT METAL TO METAL CONTACT.

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD
A	1-4D	1. REMOVED MANUFACTURER NAME FROM THE MATERIAL SCHEDULE	JHP	3/24/17	LGB

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.
- DO NOT ROUTE PIPING CONTAINING FUEL OIL NEAR ANY ELECTRICAL DEVICES OR EQUIPMENT. DO NOT LOCATE TAKEDOWN JOINTS AROUND, NEAR, OR OVER ELECTRICAL EQUIPMENT. ROUTE ALL FUEL OIL PIPING AT LEAST 18 INCHES AWAY FROM ANY SURFACE THAT NORMALLY HAS AN OPERATING TEMPERATURE OF 450° OR GREATER.
- PIPING SHALL BE RUN AS DIRECTLY AS PRACTICABLE WITH A MINIMUM NUMBER OF BENDS AND FITTINGS AND WITH SUFFICIENT JOINTS TO PROVIDE FOR REMOVAL, INSPECTION, SERVICING, AND REPLACEMENT OF EQUIPMENT. PIPING SHALL BE RUN TO MINIMIZE CUTTING OF THE SHIP'S STRUCTURE.
- FUEL OIL SUPPLY SUCTION BELLMOUTH AREA SHALL BE AT LEAST 1 1/2 TIMES THE SUCTION PIPE INTERNAL AREA.
- FLEXIBLE HOSE SECTIONS BETWEEN THE ENGINE ATTACHED CONNECTIONS AND VESSEL PIPING SHALL BE 37 SAE FLARE SWIVEL ON BOTH ENDS. FLEXIBLE HOSE SHALL BE FLAME RESISTANT IN ACCORDANCE WITH 46 CFR 182.720. HOSE ASSEMBLIES SHALL NOT BE LESS THAN 9" IN LENGTH NOR MORE THAN 30" IN LENGTH.
- INTEGRATE TANK LEVEL SENSORS WITH SHIP'S ALARM AND MONITORING SYSTEM. CONFIGURE FOR CONTINUOUS INDICATION, LOW LEVEL ALARM AT 25% OF TANK CAPACITY, AND HIGH LEVEL ALARM AT 95% OF TANK CAPACITY. A CONTINUOUS READING TANK LEVEL INDICATION SYSTEM SHALL BE PROVIDED FOR EACH TANK. REMOTE TANK LEVEL INDICATION SHALL BE PROVIDED AT THE FILLING STATION AND IN THE PILOTHOUSE. HIGH LEVEL ALARM SHALL BE AUDIBLE AT THE FILLING STATION.
- DRIP PANS WITH UP-TURNED, SEALED, FLANGED EDGES SHALL BE PROVIDED BENEATH ALL FILTERS, PUMPS, STRAINERS, AND ANY OTHER EQUIPMENT THAT CONTAINS OIL AND REQUIRES PERIODIC MAINTENANCE. EACH DRIP PAN SHALL BE FITTED WITH A LOW POINT DRAIN VALVE.
- FUEL OIL PIPING SHALL BE HYDROSTATICALLY TESTED AT 1.5 TIMES THE MAWP AFTER ASSEMBLY.
- TANK ISOLATION VALVES SHALL BE FITTED WITH A MANUALLY OPERATED REMOTE ACTUATION SYSTEM. CONTRACTOR SHALL PROVIDE CABLE PULL TYPE OPERATOR TO ALLOW FOR EMERGENCY VALVE CLOSURE FROM THE FOOD SERVICES AREA.
- PIPING SHALL BE SUPPORTED BY HANGERS IN ACCORDANCE WITH ASTM F708.
- TANK SHUT OFF VALVES SHALL HAVE FIRE SAFE METALLIC SEATS.
- PIPE BENDS SHALL BE USED IN LIEU OF ELBOWS WHERE PRACTICABLE.
- USE USCG COMPLIANT BULKHEAD PENETRATION FOR STAINLESS STEEL TUBING.

REFERENCES

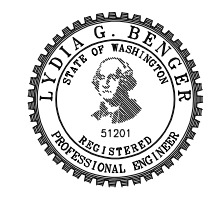
- 16109-003-802-0 CONTRACT SPECIFICATIONS



Elliott Bay Design Group North Carolina, PLLC

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

PROJECT: PEDESTRIAN FERRY

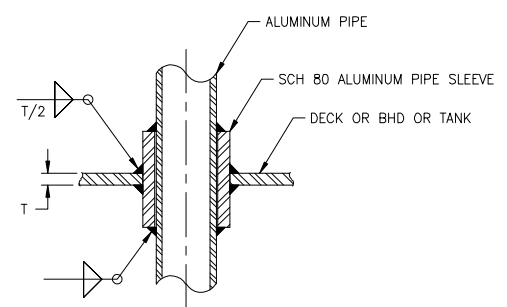


TITLE: FUEL OIL DIAGRAM

SIZE: D DWG NO.: 16109-003-261-1 REV: A

SCALE: AS NOTED FILE NAME: 16109-003-261-1A SHEET: 1 OF 2

DWN: JHP MOD: CKD: LGB APVD: LGB APVD DATE: 3/3/2017



DETAIL 1-6A
TYP DECK/BHD/TANK PENETRATION
FOR ALUMINUM PIPE
NO SCALE

3/24/2017 11:45:27 AM

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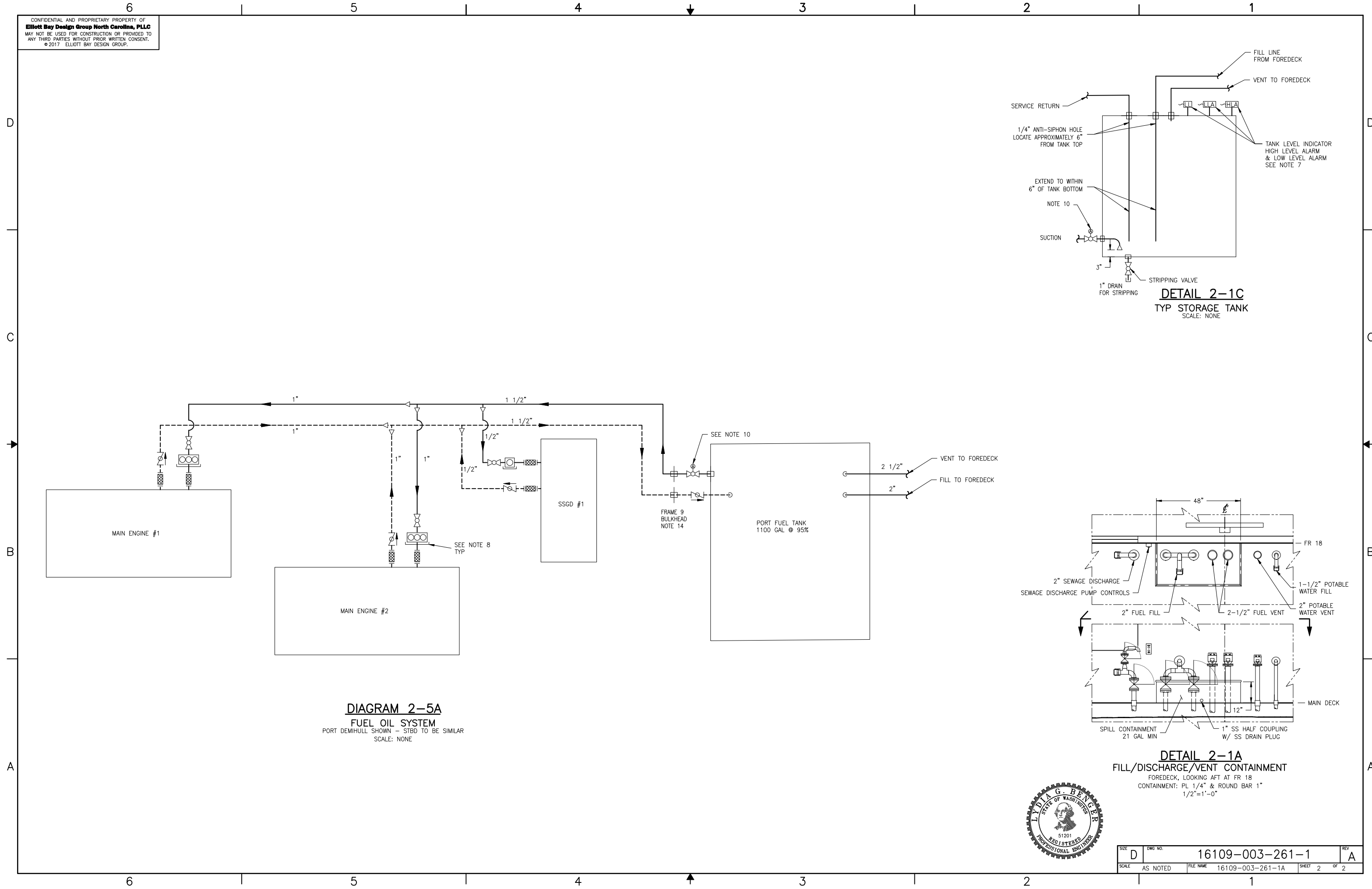
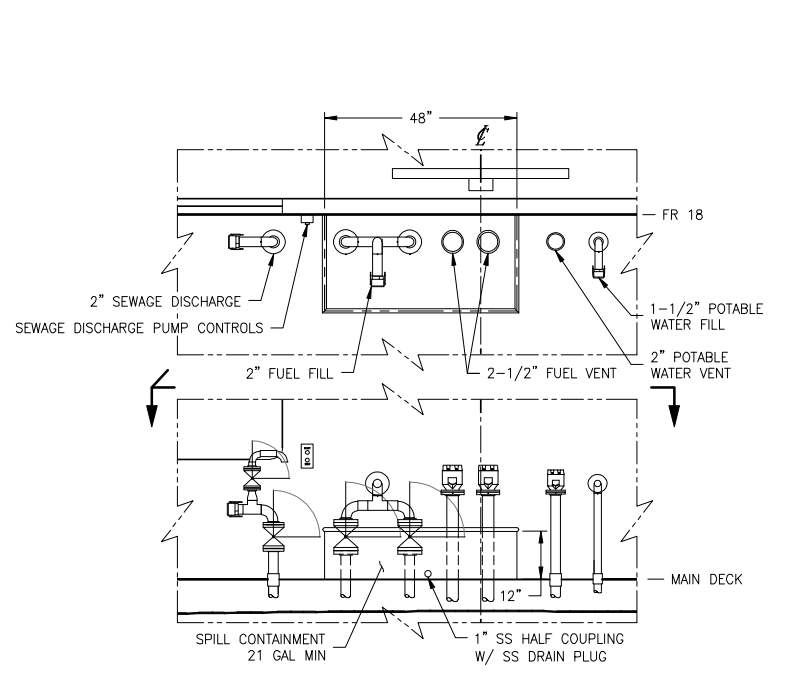
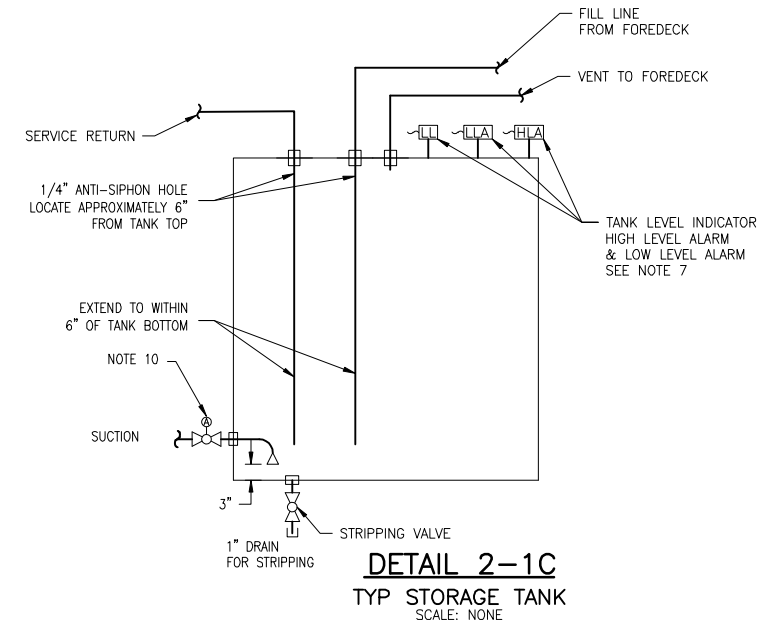


DIAGRAM 2-5A
FUEL OIL SYSTEM
 PORT DEMIHULL SHOWN - STBD TO BE SIMILAR
 SCALE: NONE



SIZE	D	DWG NO.	16109-003-261-1	REV	A
SCALE	AS NOTED	FILE NAME	16109-003-261-1A	SHEET	2 OF 2

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SYMBOLS LIST	
	CIRCUIT BREAKER X - POLES Y - FRAME SIZE Z - TRIP RATING
	EQUIPMENT
	RECEPTACLE
	LIGHTING
	MOTOR
	GENERATOR
	SHORE POWER RECEPTACLE
	INSTRUMENTATION V - VOLT, A - AMPERES, kW - KILOWATTS, Hz - FREQUENCY PA - POWER AVAILABLE
	MOTOR CONTROLLER W - R S, RUN STOP, H O A, HAND OFF AUTO X - FVNR, FULL VOLTAGE NON REVERSING VFD, VARIABLE FREQUENCY DRIVE Y - NEMA SIZE Z - LVP, LOW VOLTAGE PROTECTION LVR, LOW VOLTAGE RELEASE
	CONTROL DEVICES/FUNCTIONS PB - PUSH-BUTTON PB/IL - PUSH-BUTTON, ILLUMINATED PS - PRESSURE SWITCH FR - FIRE SHUTDOWN
	FUSE
	VENDOR PROVIDED MOTOR CONTROLLER
	TRANSFORMER

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

- GENERAL NOTES**
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
 - SHIP SERVICE DISTRIBUTION IS A 3 PHASE 4 WIRE SYSTEM, 208/120V, 60 Hz, WITH A GROUNDED NEUTRAL. SEE REFERENCE 3 FOR SWITCHBOARD AND DISTRIBUTION PANEL LOCATIONS.
 - ALL PERMANENTLY INSTALLED ELECTRICAL EQUIPMENT SHALL HAVE METAL ENCLOSURES PROPERLY GROUNDED PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, UNLESS NOTED OTHERWISE.
 - THE SWITCHBOARD SHALL BE ARRANGED FOR PARALLELED OPERATION OF GENERATORS, WITH A TIMED INTERLOCK MECHANISM TO PREVENT CONNECTION OF MULTIPLE GENERATORS FOR LONGER THAN 20 SECONDS. SHORE POWER SHALL BE INTERLOCKED TO PREVENT CONNECTION WITH EITHER GENERATOR.
 - ALL POWER CABLE SHALL COMPLY WITH THE REQUIREMENTS OF IEEE 1580. ALL CABLE SHALL BE LOW SMOKE, ZERO HALOGEN TYPE.
 - NYLON OR BRASS STUFFING TUBES SHALL BE USED WHEN PENETRATING ELECTRICAL ENCLOSURES OR JUNCTION BOXES.
 - ALL CABLES SHALL BE RATED AT 90°C CONDUCTOR TEMPERATURE IN ACCORDANCE WITH IEEE STANDARD NO. 45 2002 TABLE 25.
 - EACH CABLE SHALL BE TAGGED WITH ITS UNIQUE CIRCUIT DESIGNATION USING EMBOSSED ALUMINUM TAGS ON EACH SIDE OF PENETRATIONS AND INTO CONNECTION BOXES AND/OR EQUIPMENT.
 - METAL USED FOR TERMINAL STUDS, LUGS, NUTS, AND WASHERS SHALL BE CORROSION RESISTANT AND GALVANICALLY COMPATIBLE WITH THE WIRE AND TERMINAL LUGS.
 - CABLE PENETRATIONS THROUGH BULKHEADS AND DECKS, BOTH WATERTIGHT AND NON-WATERTIGHT, SHALL COMPLY WITH REGULATORY BODY REQUIREMENTS. MULTI-CABLE TRANSIT TYPE PENETRATIONS MAY BE SUBSTITUTED FOR STUFFING TUBES FOR ALL PENETRATIONS EXCEPT THROUGH OPEN DECKS. EXTRA HEAVY, LOW ALLOY KICK PIPES WITH STUFFING TUBES, OR EQUIVALENT, SHALL BE WELDED INTO ALL OPEN DECKS AND SHALL BE NINE INCHES HIGH TO TOP OF THE STUFFING TUBE. BUILT-IN WATERTIGHT BOXES MAY BE USED IN LIEU OF KICK PIPES. POURED SEALERS SHALL NOT BE ALLOWED.
 - NON-MACHINERY SPACE VENTILATION FIRE SHUTDOWNS SHALL BE CONTROLLED FROM THE PILOTHOUSE.

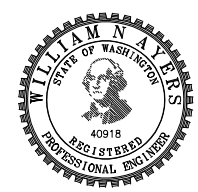
- REFERENCES**
- 16109-003-802-0 CONTRACT SPECIFICATIONS
 - 16109-003-300-0 ELECTRICAL LOADS ANALYSIS
 - 16109-003-201-1 MACHINERY ARRANGEMENT
 - 16109-003-635-1 CEILING AND LIGHTING PLAN



Elliott Bay Design Group North Carolina, PLLC

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

PROJECT: PEDESTRIAN FERRY



TITLE		ELECTRICAL ONE-LINE DIAGRAM		
SIZE	DWG NO.	16109-003-320-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-320-0-	SHEET 1 OF 5
DWN	EMT	MOD	WNA	APVD DATE 3/3/2017

INDEX	
SHEET NO.	SHEET CONTENT
1	GENERAL NOTES, SYMBOL LIST
2	SWITCHBOARD, PANELS P201, P202
3	PANELS L201, L202
4	PANELS L203, 12DC1
5	PANELS 24DC1, 24DC2, 24DC3

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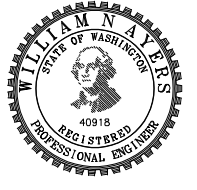
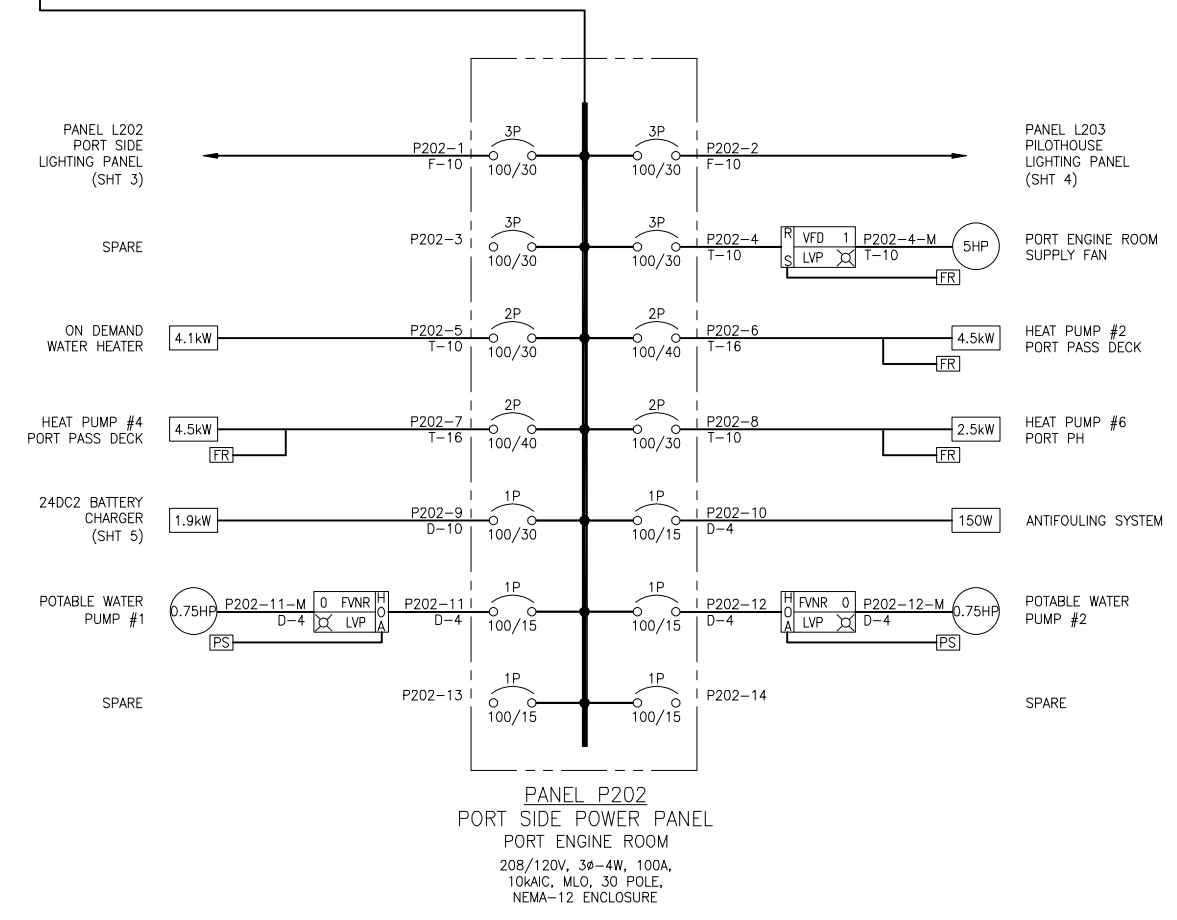
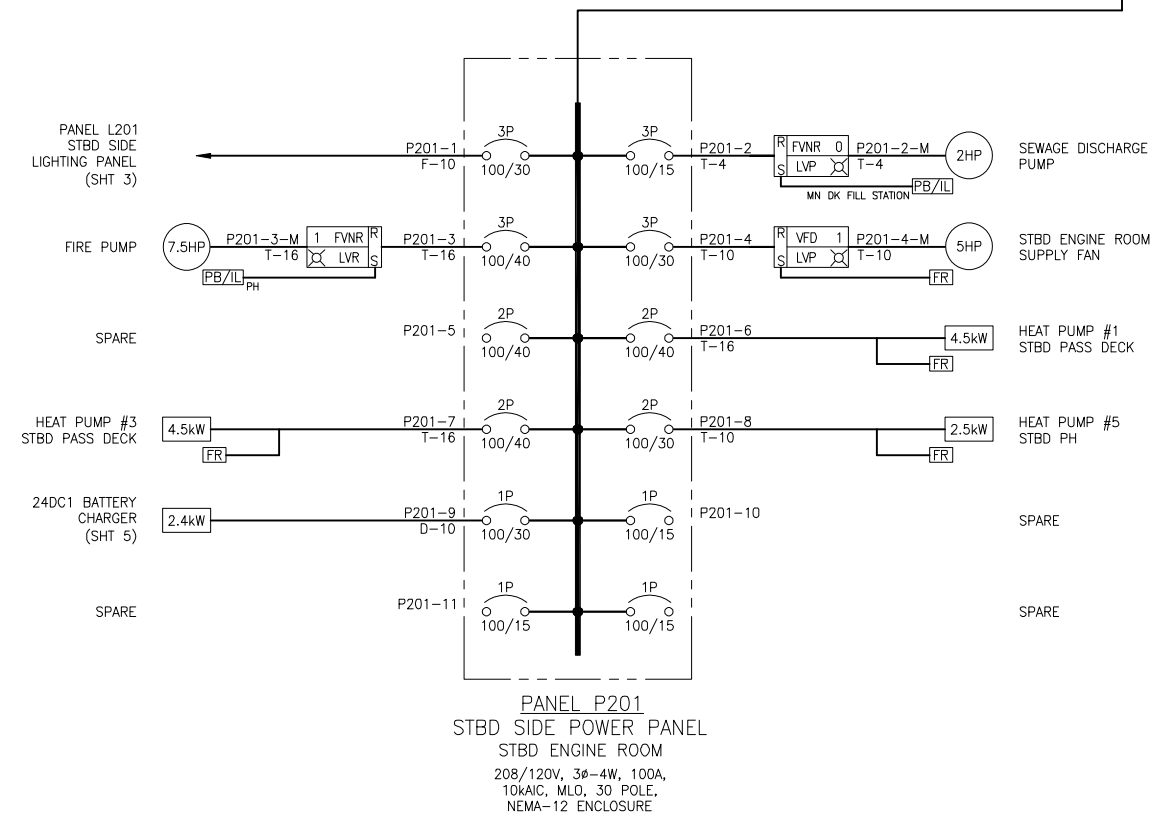
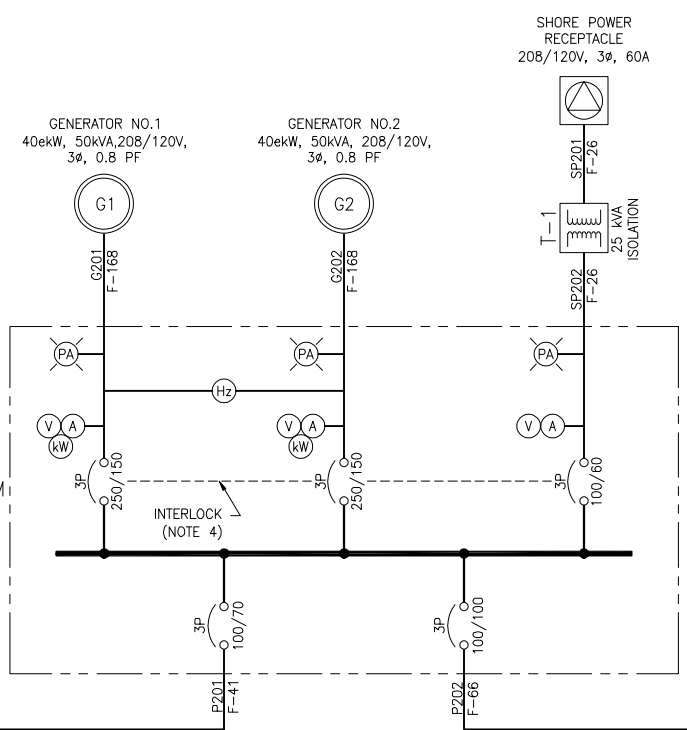
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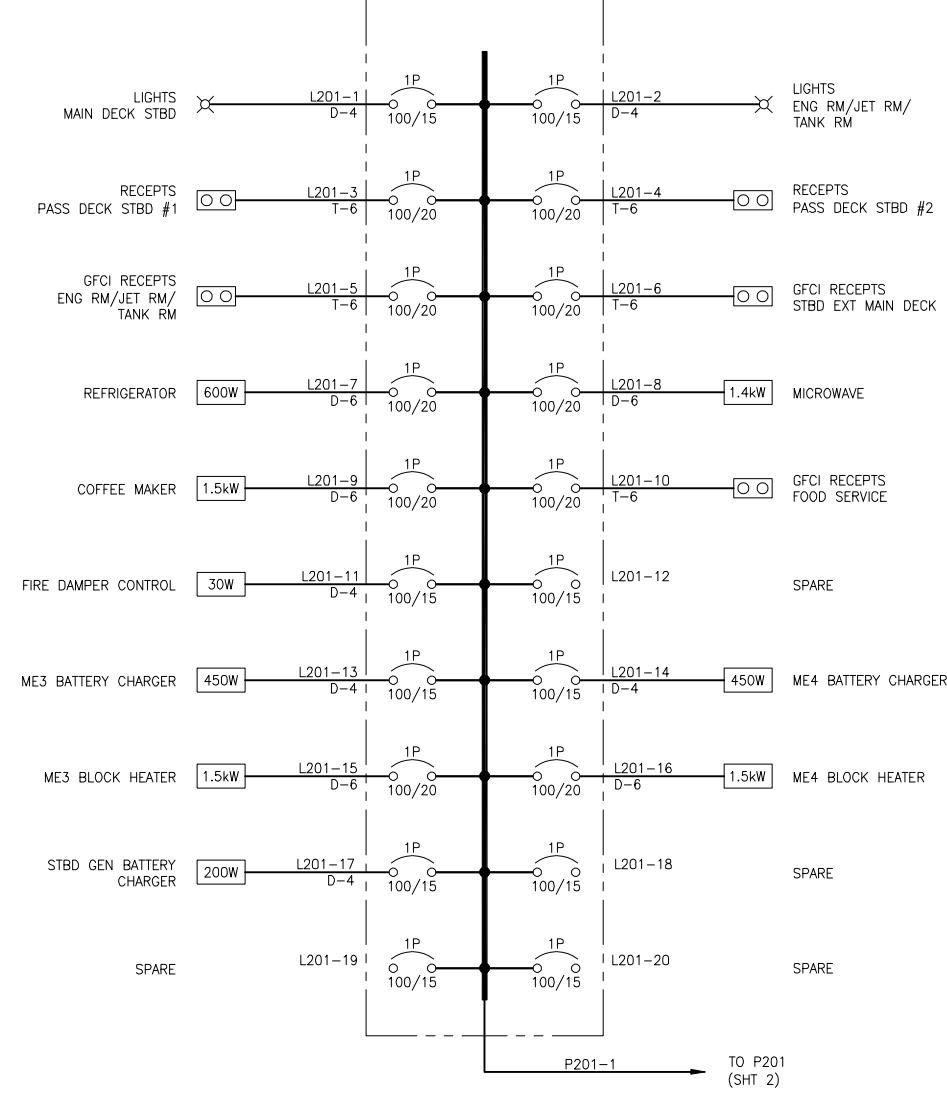
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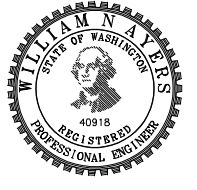
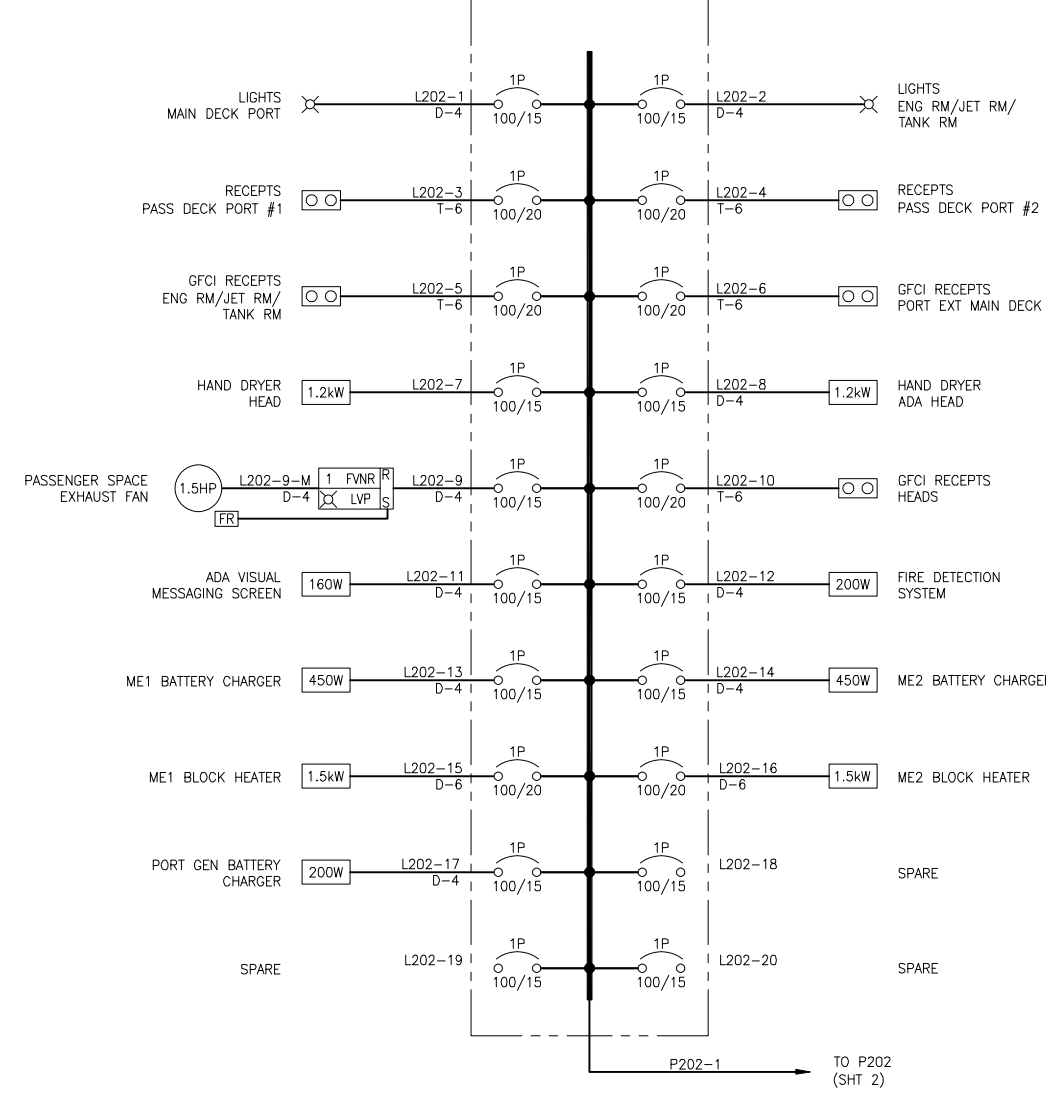
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1

PANEL L201
 STBD SIDE LIGHTING PANEL
 STBD UPPER ENGINE ROOM
 208/120V, 3ø-4W, 100A, 10kAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



PANEL L202
 PORT SIDE LIGHTING PANEL
 PORT UPPER ENGINE ROOM
 208/120V, 3ø-4W, 100A, 10kAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



SIZE	D	DWG NO.	16109-003-320-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-320-0-	SHEET	3 OF 5

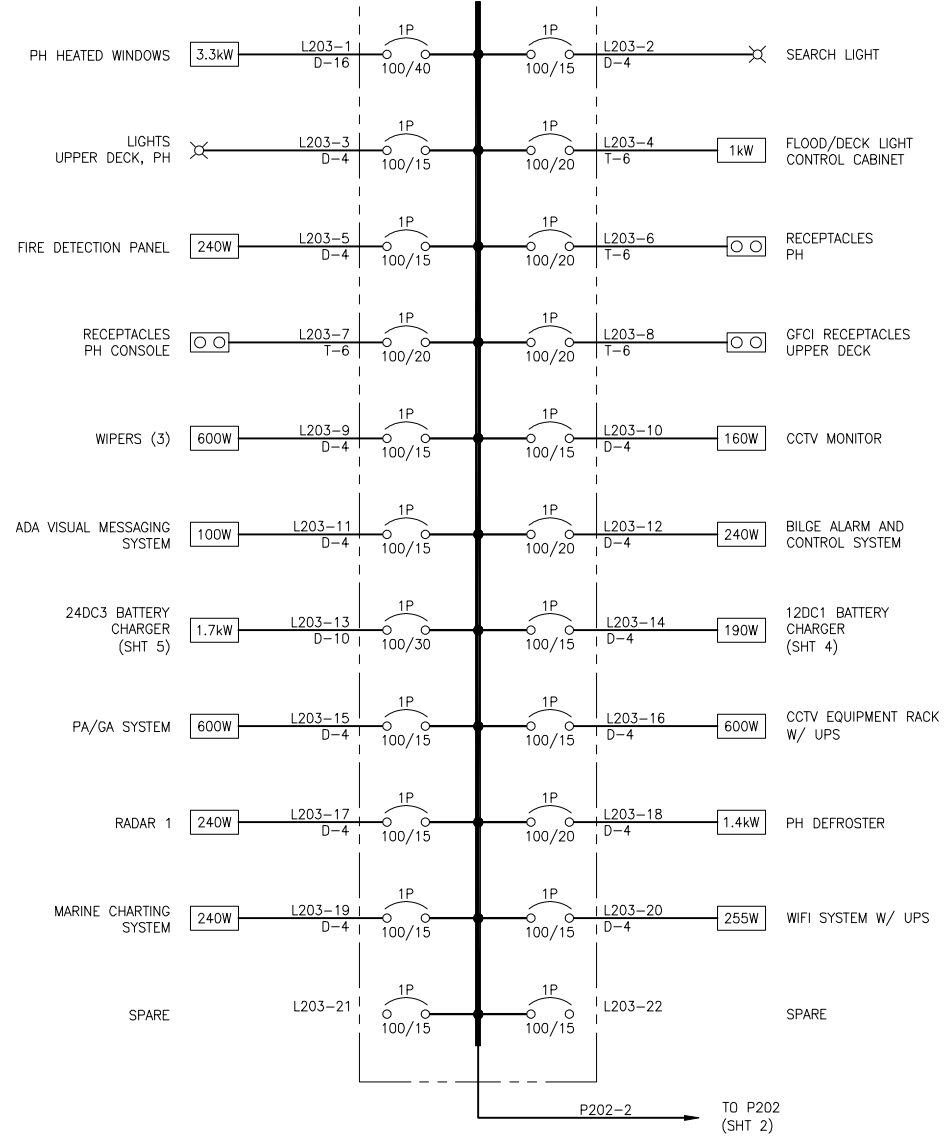
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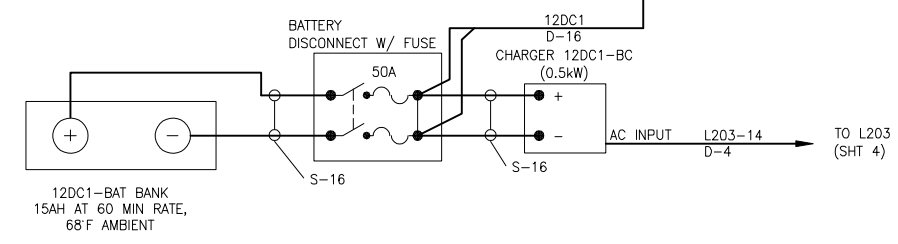
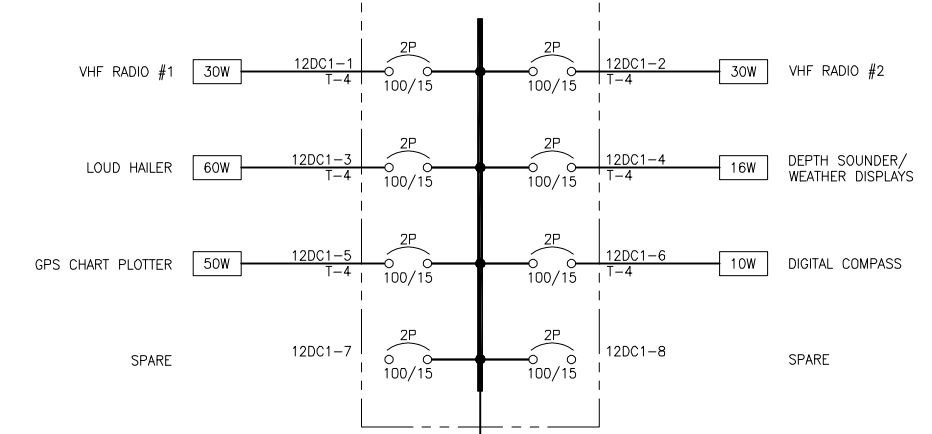
PANEL L203
 PILOTHOUSE LIGHTING PANEL
 PILOTHOUSE

208/120V, 3Ø-4W, 100A, 10KAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



PANEL 12DC1
 12VDC DISTRIBUTION
 PILOTHOUSE

12VDC, 2W, 100A, 10KAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



SIZE	D	DWG NO.	16109-003-320-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-320-0-	SHEET	4 OF 5

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2

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D

C

B

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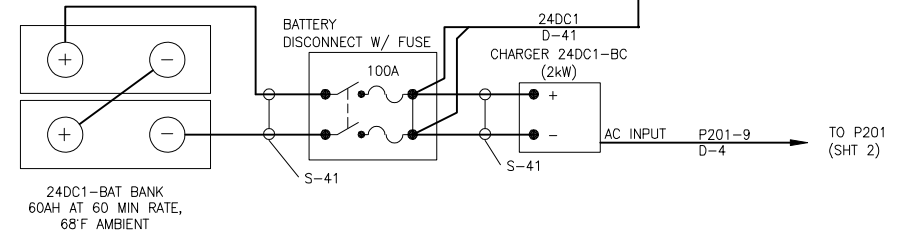
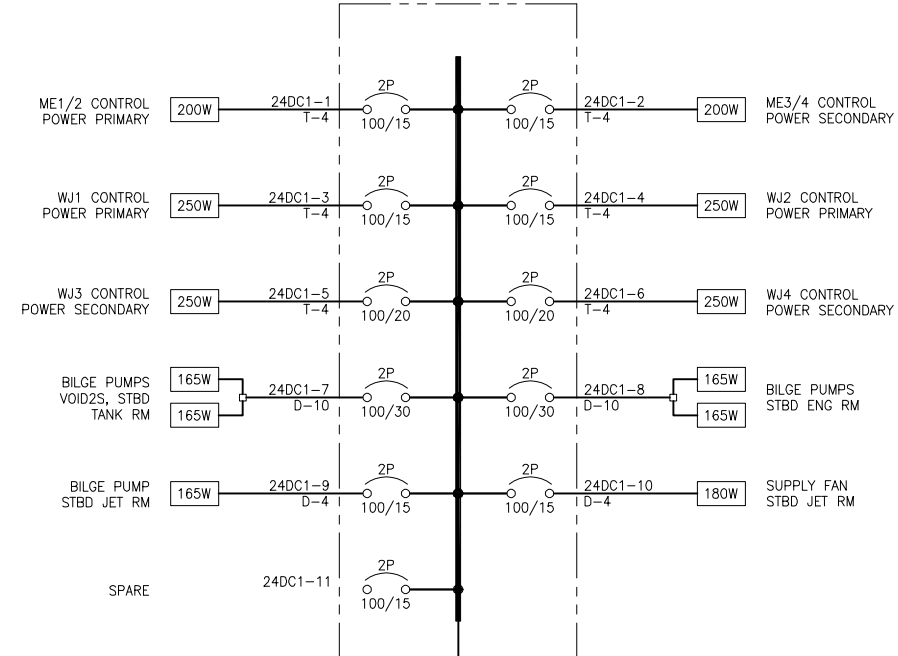
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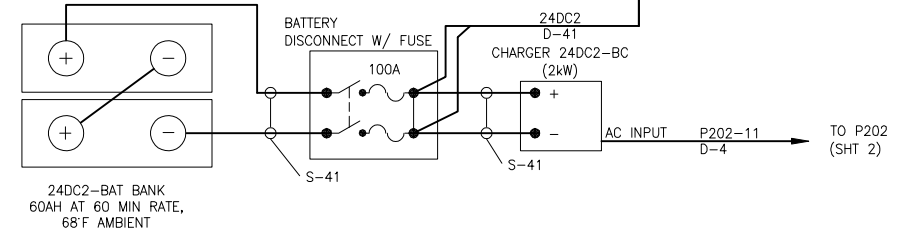
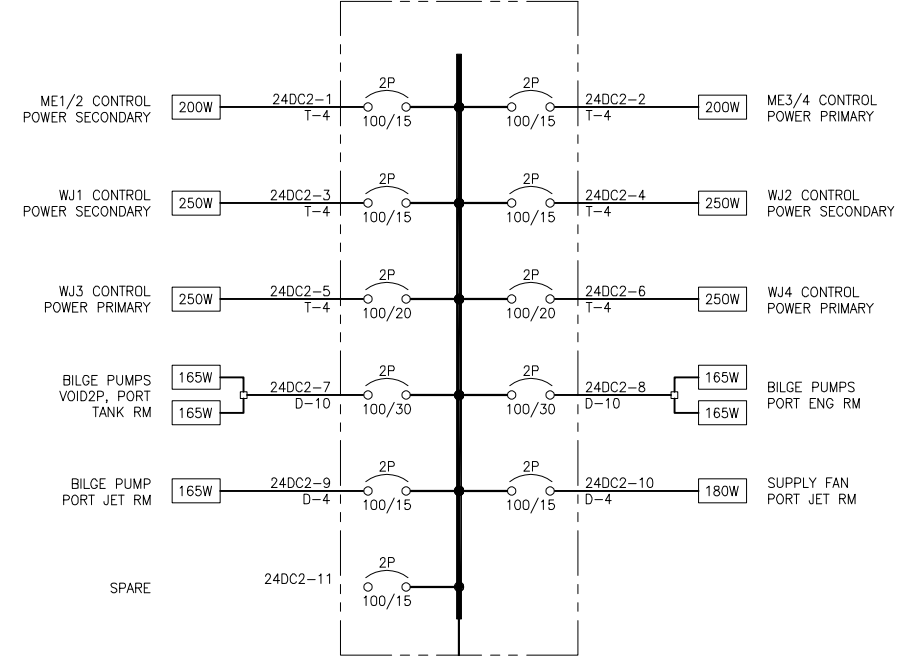
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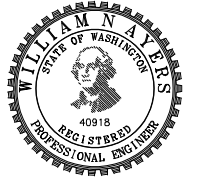
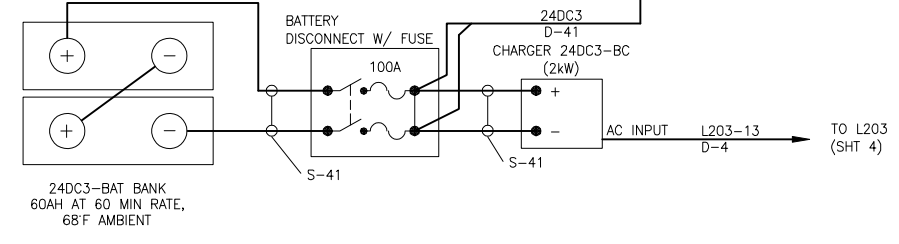
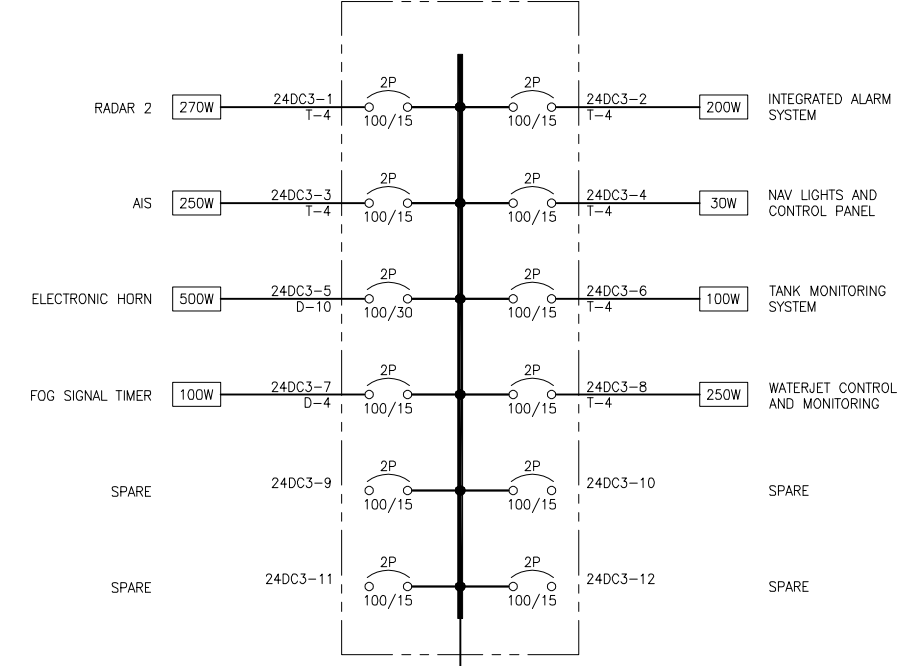
PANEL 24DC1
 24VDC DISTRIBUTION
 STBD JET ROOM
 24VDC, 2W, 100A, 10kAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



PANEL 24DC2
 24VDC DISTRIBUTION
 PORT JET ROOM
 24VDC, 2W, 100A, 10kAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



PANEL 24DC3
 24VDC DISTRIBUTION
 PILOTHOUSE
 24VDC, 2W, 100A, 10kAIC, MLO
 30 POLE, NEMA-12 ENCLOSURE



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EQUIPMENT LIST				
ITEM	QTY	DESCRIPTION	NOTES	LOCATION IN DWG
01	1	CAPTAIN'S CHAIR		2-2C
02	1	RADAR OBSERVER'S CHAIR		2-2B
03	3	STATION PANEL		SHEET 2
04	3	DOCKING JOYSTICK		SHEET 2
05	4	GEAR PANEL		SHEET 2
06	2	STEERING JOYSTICK		SHEET 2
07	2	PROPULSION LEVERS		2-2B
08	2	BACKUP PANEL		2-2B
09	4	ENGINE START / EMERGENCY STOP	STOPS WITH SWITCH GUARDS	2-3B
10	1	EMERGENCY VENTILATION SHUTDOWN BUTTON		2-3B
11	1	FIRE PUMP CONTROL AND PRESSURE INDICATOR PANEL		2-2C
12	2	ENGINE CONTROL PANELS		3-2C
13	2	GENERATOR CONTROL PANEL	FLUSH MOUNT	3-2C
14	1	VESSEL MONITORING & CONTROL TOUCHSCREEN		3-2C
15	1	FIRE ALARM PANEL		3-5A
16	1	12 VDC DISTRIBUTION PANEL		3-2C
17	1	24 VDC DISTRIBUTION PANEL		3-2C
18	1	208/120 VAC DISTRIBUTION PANEL		3-5A
19	1	NAVIGATION LIGHT PANEL		3-2C
20	1	RADAR & GPS TOUCHSCREEN		3-2C
21	2	VHF RADIO		3-2D
22	1	CCTV MONITOR	18.5" SCREEN	3-2C
23	1	PA/GA SYSTEM CONTROL & MICROPHONE		2-2B
24	1	SHIP'S TELEPHONE		2-2B
25	1	SEARCHLIGHT ON-OFF & JOYSTICK CONTROL		2-2B
26	1	WIPER CONTROLS		2-2B
27	1	WINDOW HEATER CONTROL PANEL		2-3B
28	2	WIPER MOTOR	PANTOGRAPH	SHEET 2
29	1	WIPER MOTOR	STRAIGHTLINE	2-1C
30	1	DEFROST/LIGHTING SWITCH PANEL		2-2C
31	1	FOG SIGNAL TIMER		2-2C
32	1	BILGE PUMP CONTROL PANEL		2-2C
33	1	DIGITAL COMPASS		2-1C
34	1	12 VDC BATTERY BOX		2-2A
35	1	24 VDC BATTERY BOX		2-2D
36	1	EXTERIOR LIGHT SWITCHES		2-2B
37	3	AIR HORN	PUSH BUTTON	SHEET 2
38	1	PORTABLE FIRE EXTINGUISHER		2-3B
39	1	FOG BELL	8" CHROME	2-3B
40	2	ACCESS DOOR, LOUVERED	24" x 27"	SHEET 3
41	1	ACCESS DOOR, LOUVERED	24" x 23"	3-1C
42	1	CCTV UPS		3-2A
43	8	DE-MISTING LOUVER		SHEET 2
44	11	DUPLEX RECEPTACLE		SHEET 2
45	3	WINDOW HEATING UNIT		SHEET 2
46	2	BATTERY CHARGER		SHEET 2
47	1	FORCED AIR DEFROSTER		2-1B
48	3	INSTRUMENT LIGHT	GOOSENECK DIMMABLE	SHEET 2
49	2	DISPLAY CASE FOR DOCUMENTS		3-2B
50	2	WINDOW SHADES		3-2B
51	1	INCLINOMETER		3-2B
52	1	ANALOG CLOCK		3-2B
53	1	ANEMOMETER		3-2B
54	1	BAROMETER		3-2B
55	1	THERMOMETER		3-2B
56	1	BENCH	WITH HINGED LID & STORAGE UNDER	2-3C

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- EQUIPMENT LOCATIONS ARE DIAGRAMMATIC ONLY AND SHALL BE VERIFIED WITH ACTUAL DELIVERED VENDOR EQUIPMENT PRIOR TO INSTALLATION.
- CONTRACTOR SHALL CREATE A COMPLETE MOCKUP OF THE PILOTHOUSE CONSOLE WITH EQUIPMENT FOR OWNER-OPERATOR INPUT AND REVIEW PRIOR TO FINAL CONSTRUCTION.

REFERENCES

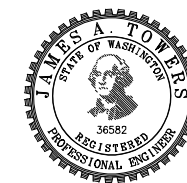
- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-101-1 PROFILES AND ARRANGEMENTS



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CLIENT: NORTH CAROLINA D.O.T.
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PROJECT: PEDESTRIAN FERRY

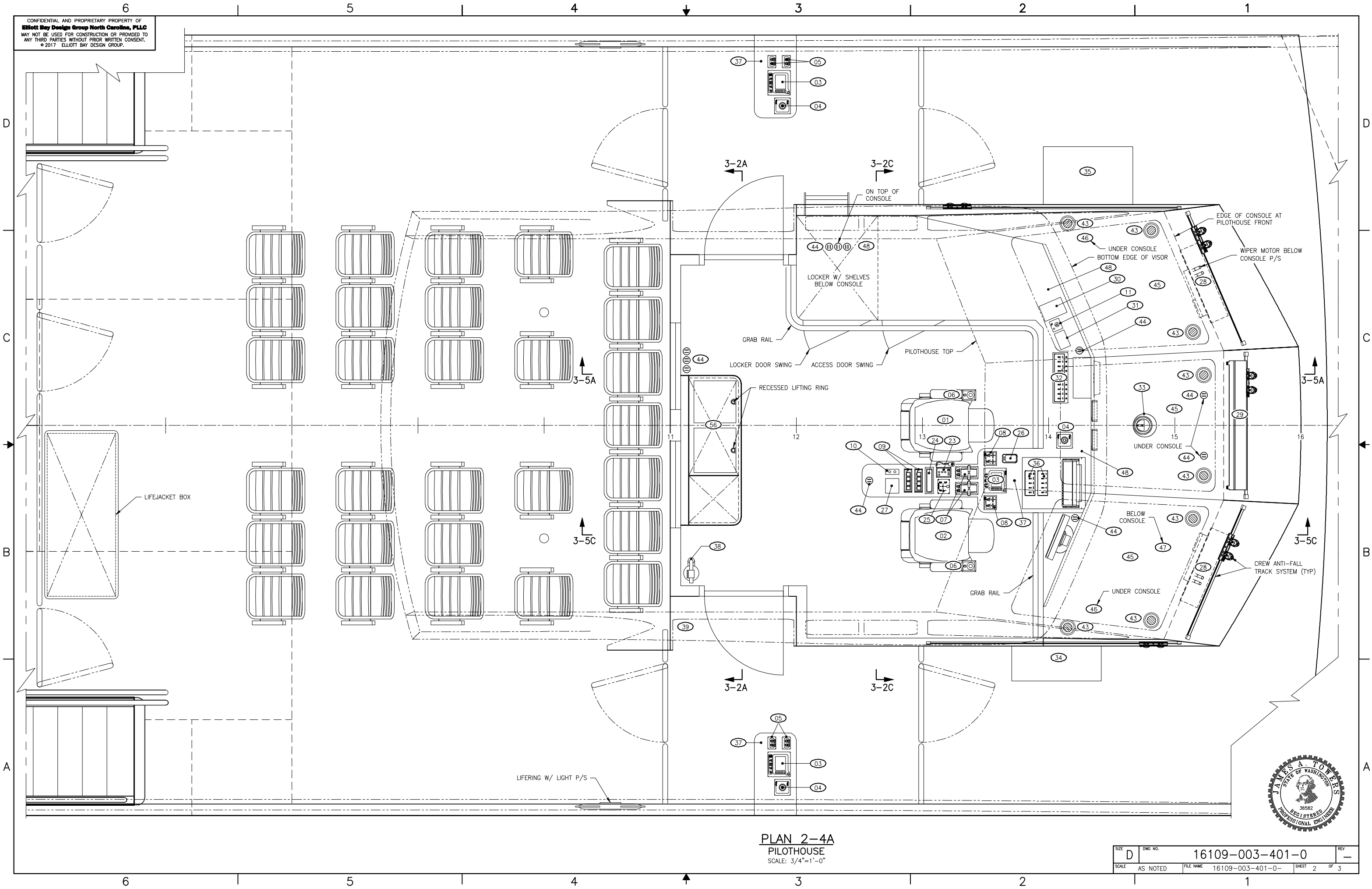


PILOTHOUSE ARRANGEMENT

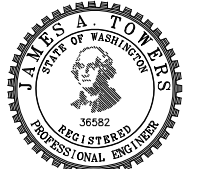
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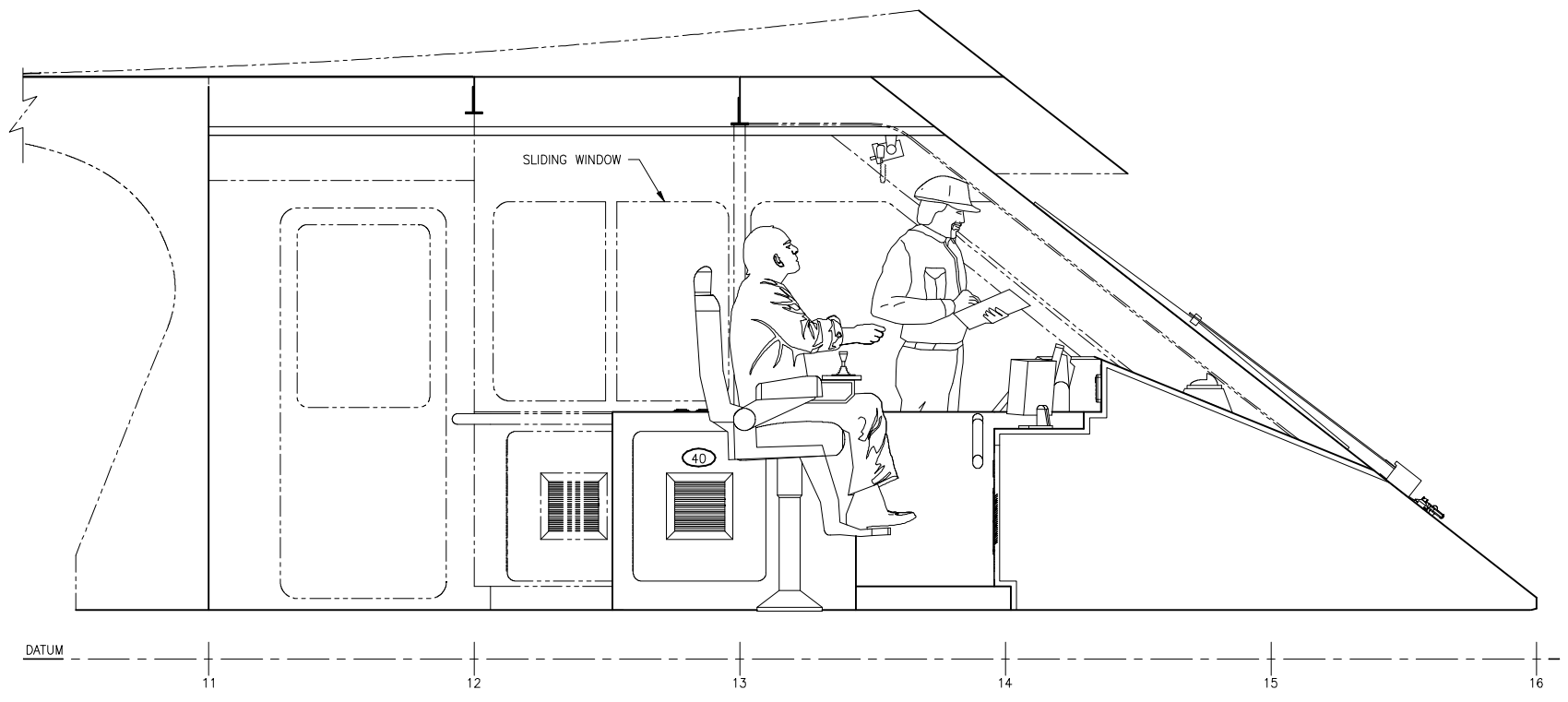
PLAN 2-4A
 PILOTHOUSE
 SCALE: 3/4"=1'-0"



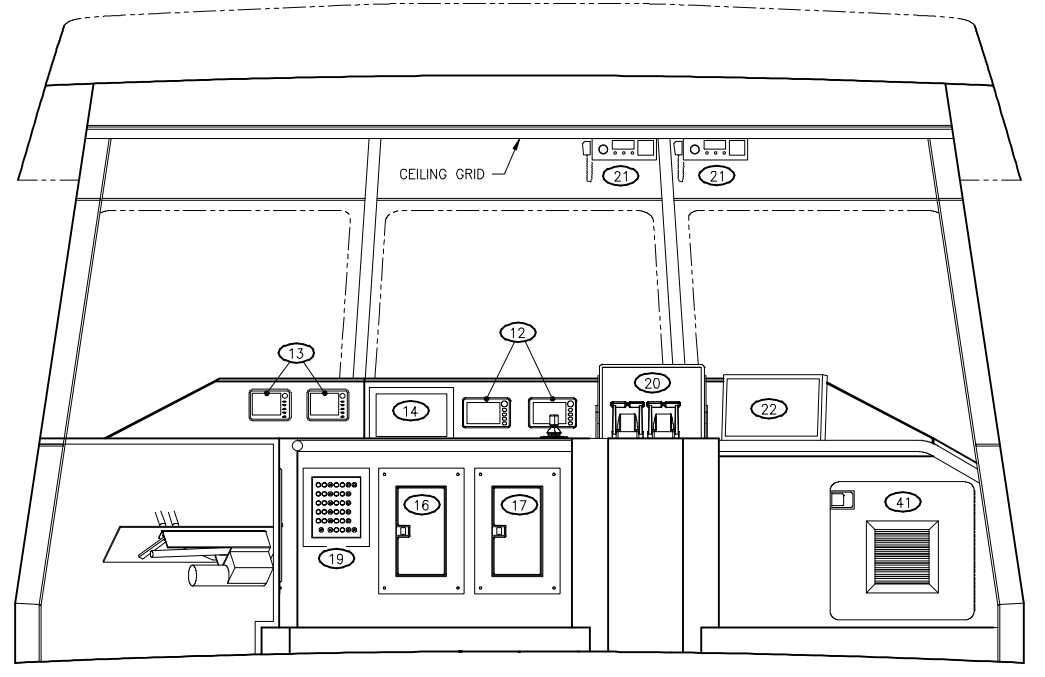
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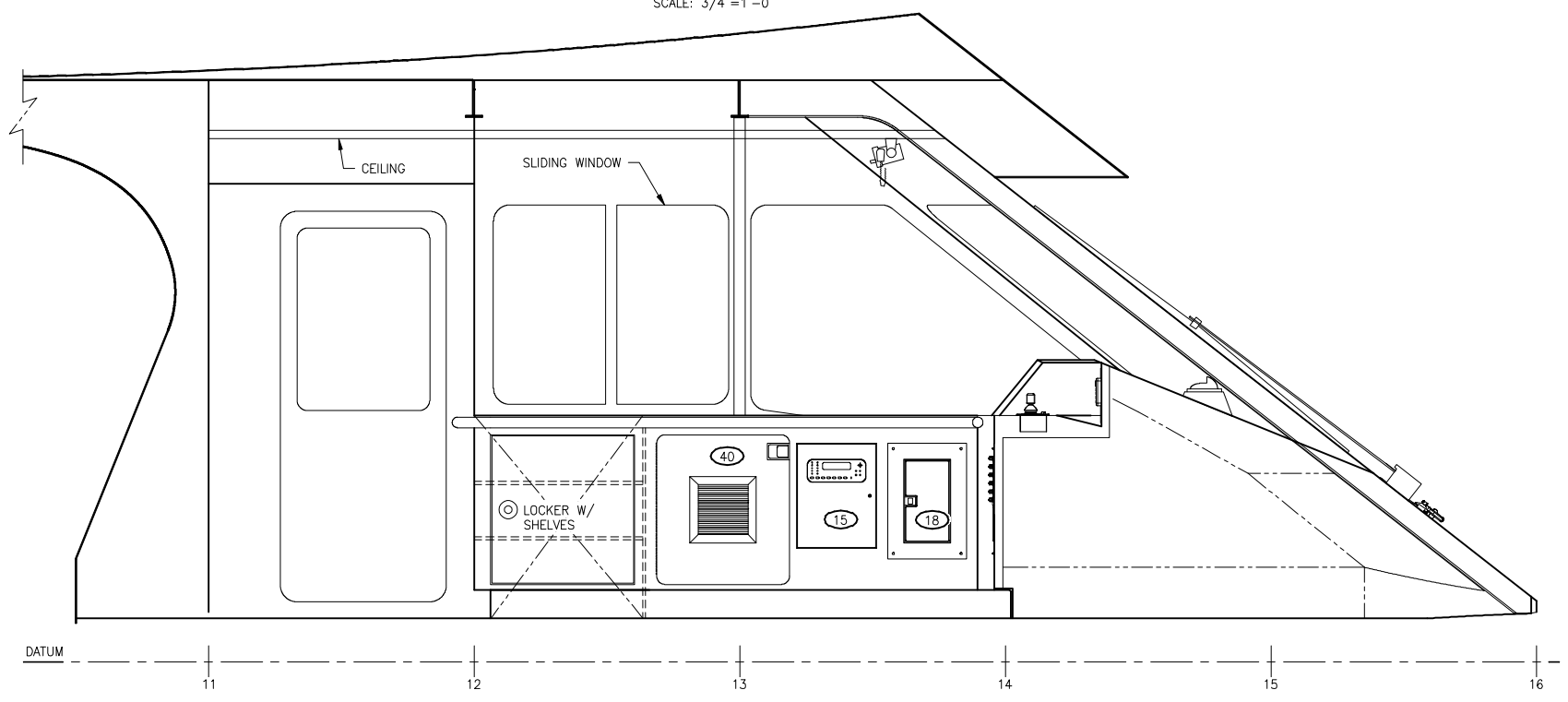
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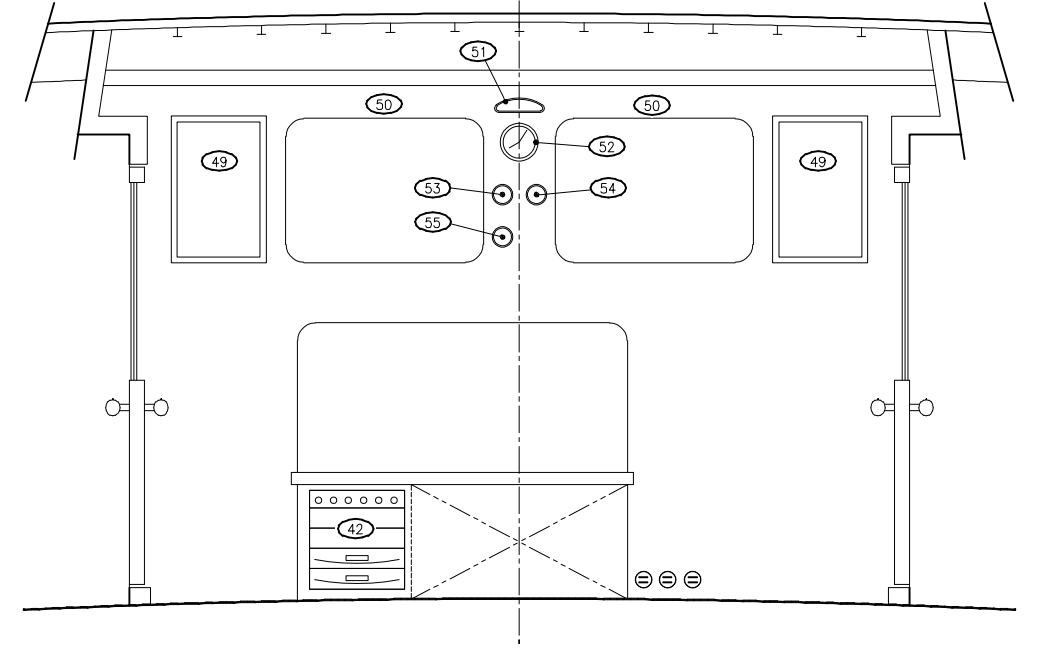
ELEVATION 3-5C
 PILOTHOUSE CONSOLE & EQUIPMENT
 LOOKING TO CL FROM STBD
 SCALE: 3/4"=1'-0"



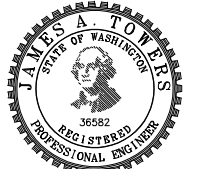
SECTION 3-2C
 PILOTHOUSE FRONT
 LOOKING FWD AT CONSOLE
 STIDD CHAIRS HIDDEN FOR CLARITY
 SCALE: 3/4"=1'-0"



ELEVATION 3-5A
 PILOTHOUSE CONSOLE & EQUIPMENT
 LOOKING TO PORT FROM CL
 CAPTAINS CHAIR HIDDEN FOR CLARITY
 SCALE: 3/4"=1'-0"



SECTION 3-2A
 AFT PILOTHOUSE BHD
 LOOKING AFT TO FRAME 11
 SCALE: 3/4"=1'-0"



SIZE	D	DWG NO.	16109-003-401-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-401-0-	SHEET	3 OF 3

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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.

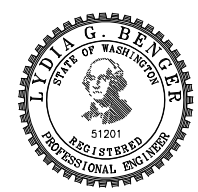
- REFERENCES**
- 16109-003-802-0 CONTRACT SPECIFICATIONS
 - 16109-003-259-1 EXHAUST SYSTEM
 - 16109-003-521-0 FIRE MAIN SYSTEM
 - 16109-003-120-0 HULL STRUCTURE



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 REV: -

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

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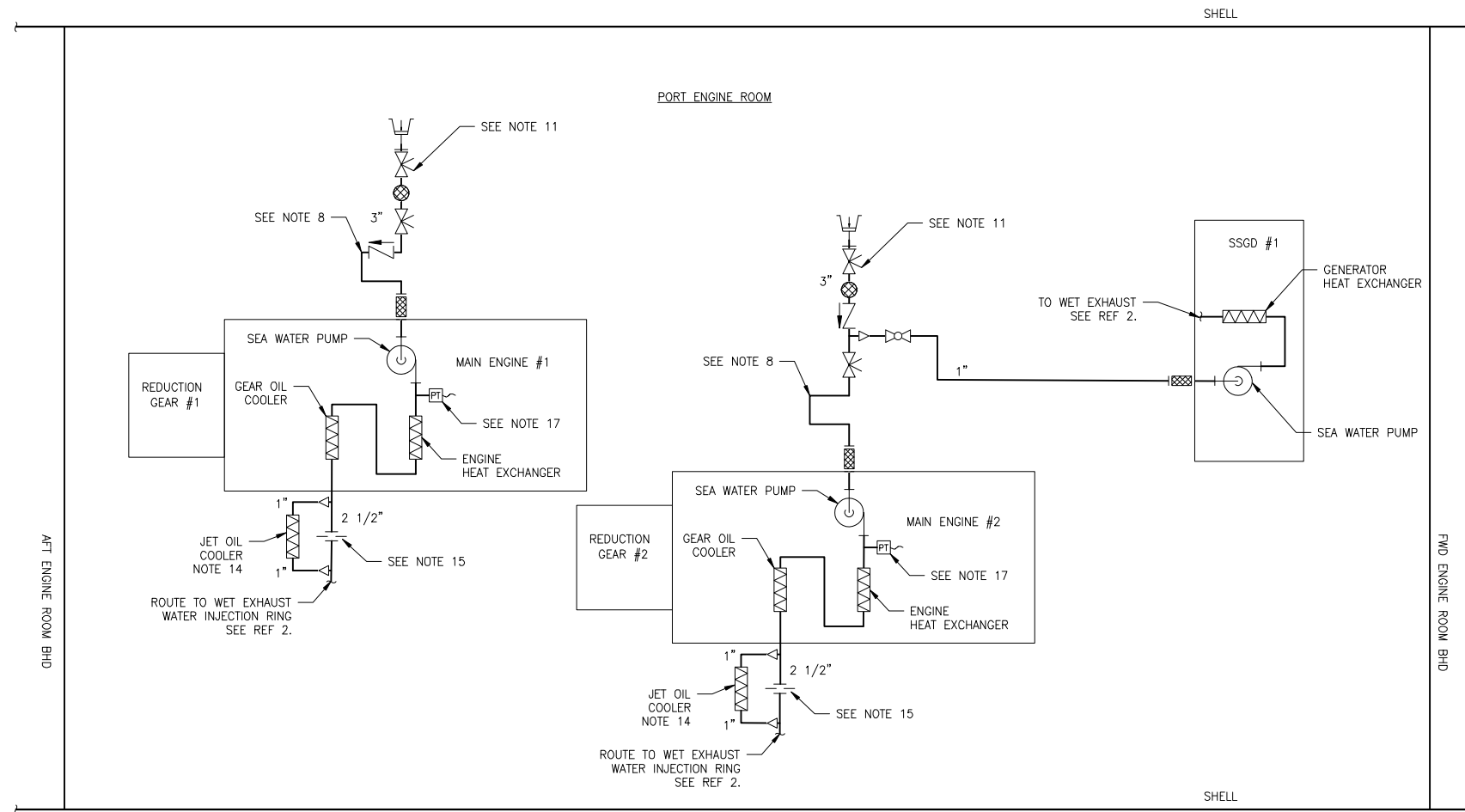


DIAGRAM 2-4A
 SEA WATER COOLING SYSTEM
 PORT DEMIHULL SHOWN - STBD TO BE SIMILAR
 SCALE: NONE

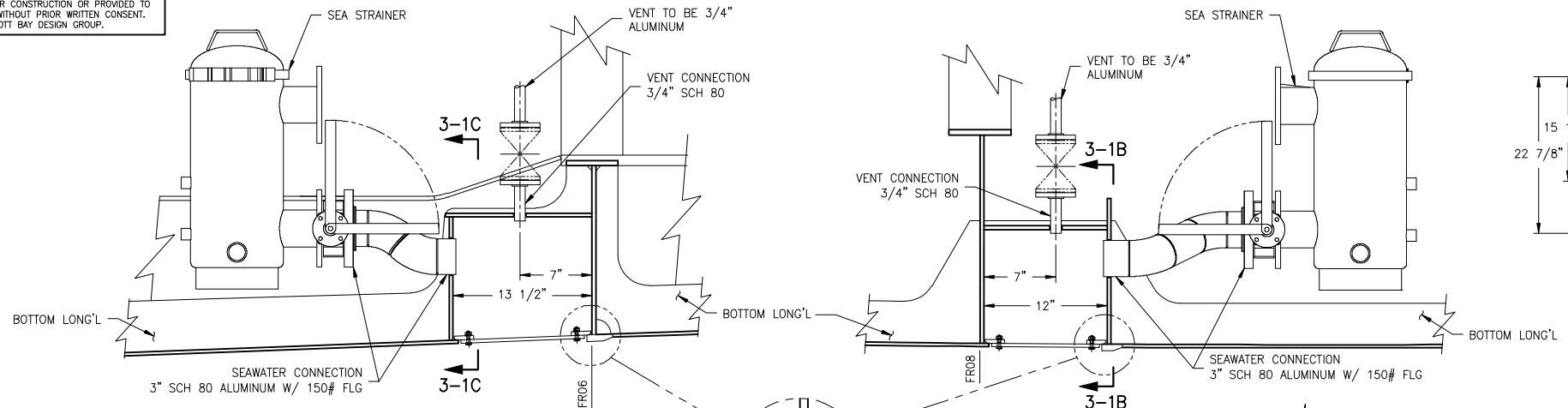


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SCALE	AS NOTED	FILE NAME	16109-003-520-0-	SHEET	2 OF 4

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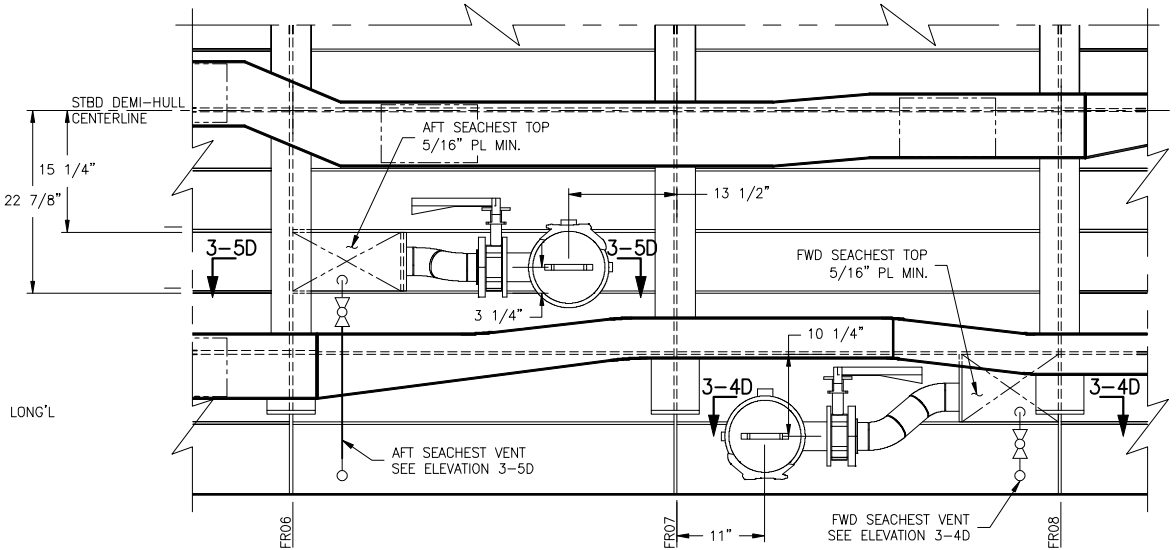
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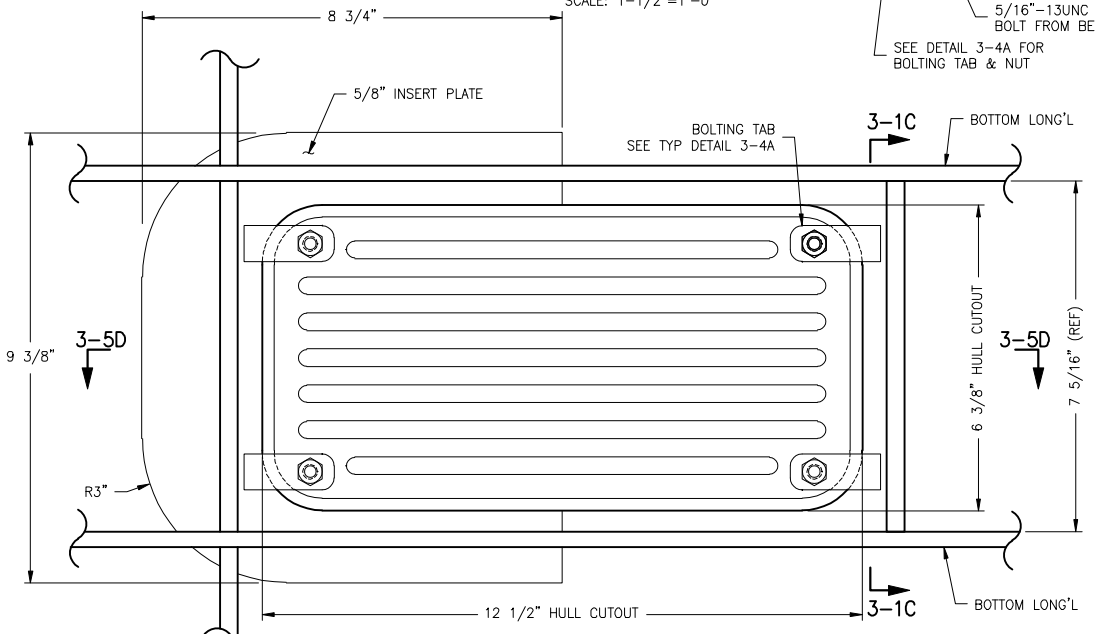


ELEVATION 3-5D
AFT SEACHEST
 LKG TO STBD FROM DEMI-HULL CL
 PORT HULL SIM. & OPP.
 SCALE: 1'-1/2"=1'-0"

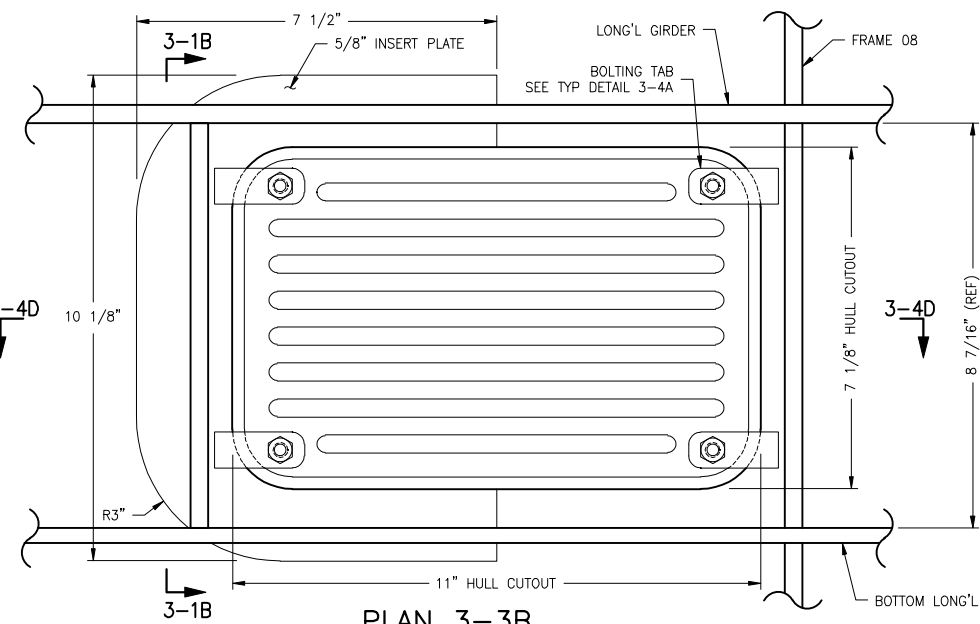
ELEVATION 3-4D
FWD SEACHEST
 LKG TO STBD FROM DEMI-HULL CL
 PORT HULL SIM. & OPP.
 SCALE: 1'-1/2"=1'-0"



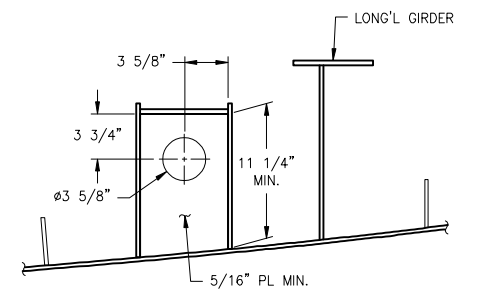
PLAN DETAIL 3-1D
SEACHEST LOCATIONS (STBD)
 STBD DEMI-HULL LOOKING DOWN, PORT SIM. & OPP.
 SEE REF 4 FOR BOTTOM STRUCTURE, FRAMES & GIRDERS
 SCALE: 1"=1'-0"



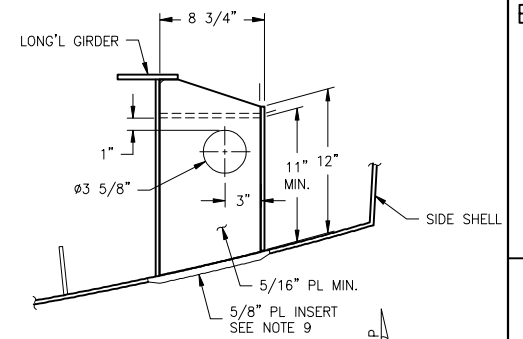
PLAN 3-5B
AFT SEACHEST ASSEMBLY
 LKG DOWN INSIDE SEACHEST
 BOTTOM SHELL HIDDEN FOR CLAIRTY
 SCALE: 6"=1'-0"



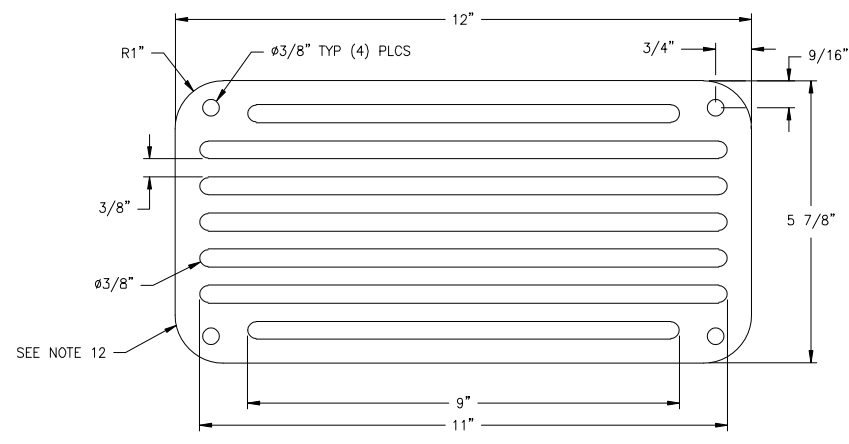
PLAN 3-3B
FWD SEACHEST ASSEMBLY
 LKG DOWN INSIDE SEACHEST
 BOTTOM SHELL HIDDEN FOR CLAIRTY
 SCALE: 6"=1'-0"



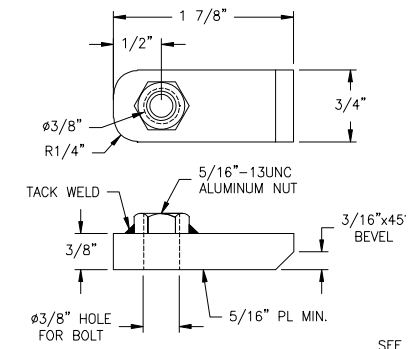
SECTION 3-1C
AFT SEACHEST
 LKG FWD INSIDE SEACHEST
 SCALE: 1"=1'-0"



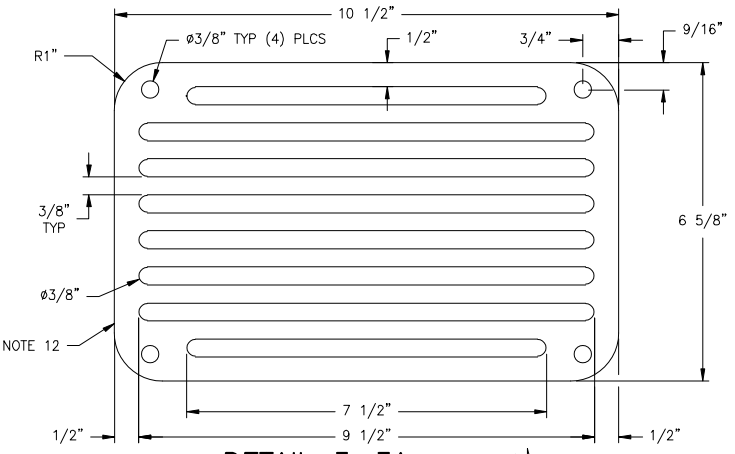
SECTION 3-1B
FWD SEACHEST
 LKG FWD TO SEACHEST
 SCALE: 1"=1'-0"



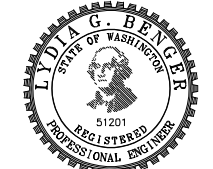
DETAIL 3-5A
AFT SEACHEST STRAINER PLATE
 SCALE: 6"=1'-0"



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

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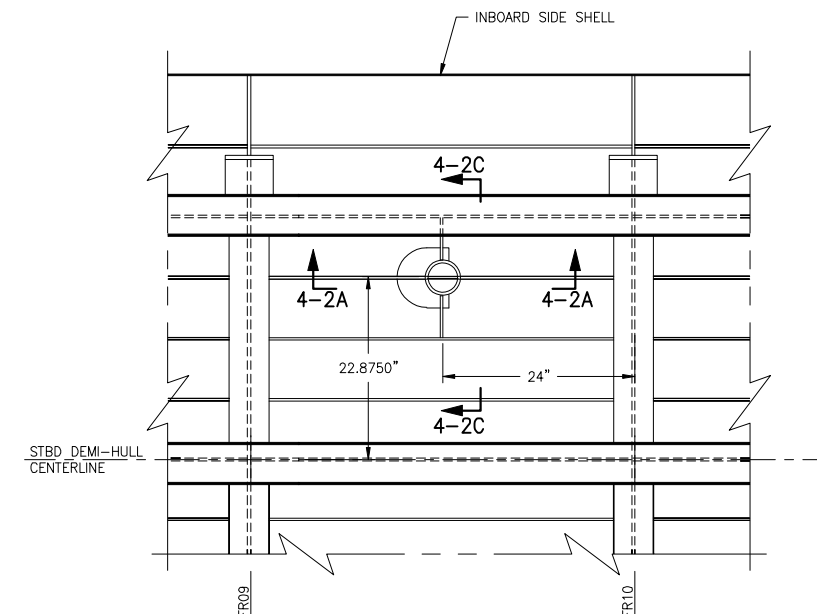
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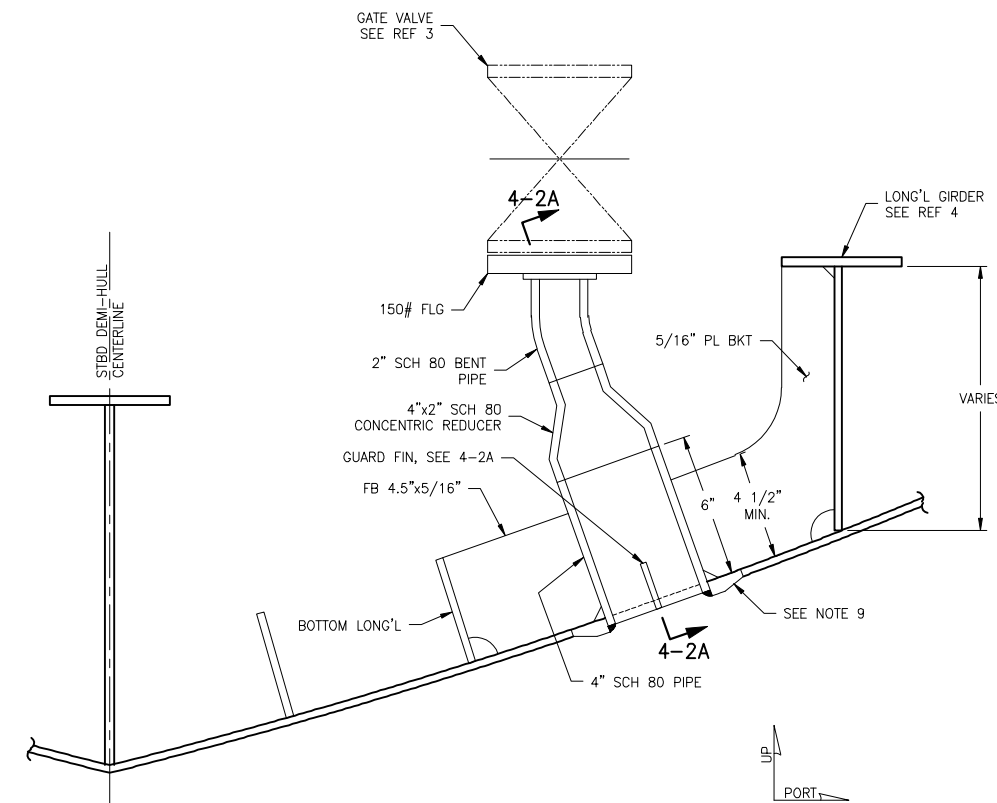
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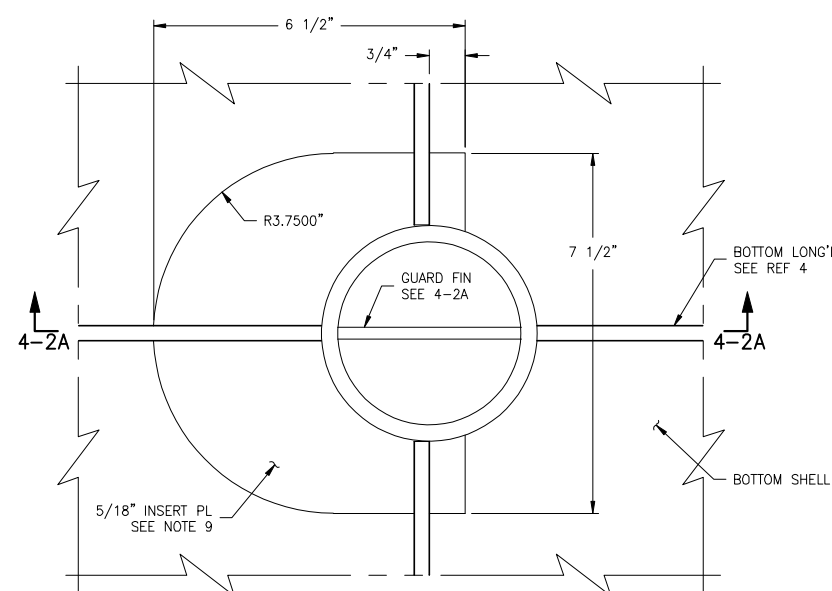
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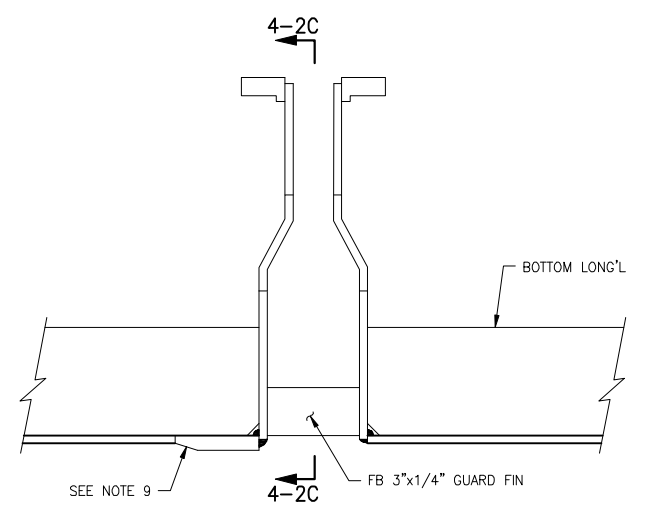
PLAN DETAIL 4-5C
FIRE MAIN SEACHEST
 STBD DEMI-HULL LOOKING DOWN
 SEE REF 4 FOR BOTTOM
 STRUCTURE, FRAMES & GIRDERS
 SCALE: 1"=1'-0"



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

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MATERIAL SCHEDULE									
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	FLEXIBLE CONNECTIONS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
FIRE MAIN MAWP: 100 PSIG MAX TEMP: 100°F	ALL	ALUMINUM ASTM B241 6061 T6 SEAMLESS SCH 40	FLANGE ALUMINUM ASTM B241 6061 T6 ANSI B16.5 150#	APPROPRIATE MATERIAL FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE B8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	BUTTERFLY: DUCTILE IRON LUGGED TYPE BALL: 316 STAINLESS STEEL FLANGED HOSE VALVES: BRONZE B-62 FLANGED BY NFP THREADED	BUTTERFLY: 316 SS DISC BUNA-N SEATS BALL: 316 SS BALL PTFE SEATS AND SEALS HOSE VALVES: BRONZE B-62	ALUMINUM ASTM B241 6061 T6 SCH 40	-
SHELL CONNECTIONS MAWP: 100 PSIG MAX TEMP: 100°F	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	-

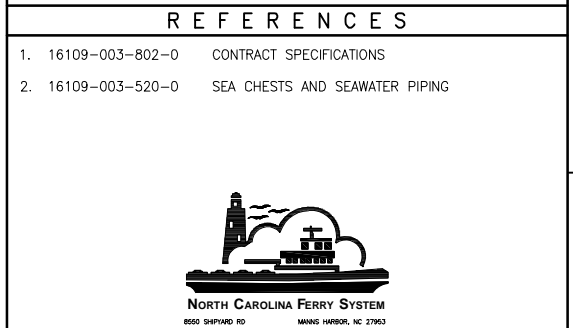
EQUIPMENT LIST						
QTY.	SERVICE	TYPE	MODEL	CAPACITY	DRIVE	REMARKS
1	FIRE PUMP	SELF-PRIMING HORIZONTAL CENTRIFUGAL	-	51 GPM @ 150 TDH	208V/3ø/60Hz 7.5 HP TEFC MOTOR 3500 RPM	STAINLESS STEEL BODY SHAFT & IMPELLER
1	SEA WATER STRAINER 2" NPS	SIMPLEX BASKET TYPE	-	-	-	STAINLESS STEEL BODY AND BASKET

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

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- AVOID POCKETS IN THE PIPE LINES, BOSSES AND VALVES OR SCREWED PLUGS SHALL BE FITTED TO ENABLE COMPLETE DRAINING OF PIPES WHERE POCKETS DO OCCUR.
- 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 THE BASIC SHIP STRUCTURE. HANGERS SHALL NOT BE ATTACHED BY WELDING DIRECTLY TO PIPES.
- 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.
- FIRE STATIONS SHALL BE 1 1/2" SIZE AND FITTED WITH FLANGED ANGLE GLOBE HOSE VALVE, 50' OF 1 1/2" HOSE CONFORMING TO UL19, A SPANNER WRENCH, HOSE RACK, AND USCG APPROVED COMBINATION FIRE NOZZLE WITH A 1/2" ORIFICE. FIRE HOSE SHALL BE CONNECTED AND STOWED IN APPROVED HOSE RACKS WITHIN A FIBERGLASS ENCLOSURE.
- THE FIRE PUMP SHALL HAVE REMOTE START/STOP CONTROLS, RUN INDICATION AND PRESSURE INDICATION AT THE PILOTHOUSE CONSOLE.
- WHERE PIPING PENETRATES BULKHEADS OR DECKS, THE PENETRATION SHALL MAINTAIN THE WATERTIGHT INTEGRITY OF THE SPACE. USE USCG COMPLIANT BULKHEAD PENETRATION FOR COPPER NICKEL PIPE.
- PROVIDE GAUGE PIPING ASSEMBLIES AND MATERIALS IN ACCORDANCE WITH THE ASTM F721. TUBING AND FITTINGS SHALL BE 316 STAINLESS STEEL. ROOT VALVES SHALL BE BALL TYPE. ROOT AND GAUGE VALVES SHALL BE MANUFACTURED FROM 316 STAINLESS STEEL.

REFERENCES					
1.	16109-003-802-0	CONTRACT SPECIFICATIONS			
2.	16109-003-520-0	SEA CHESTS AND SEAWATER PIPING			



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 North Carolina, PLLC

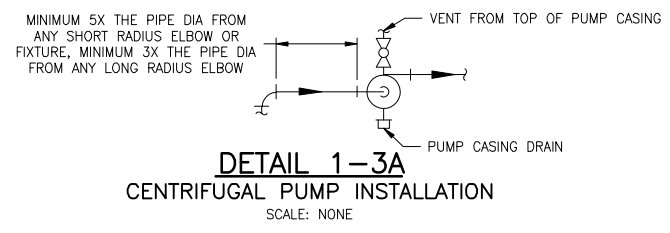
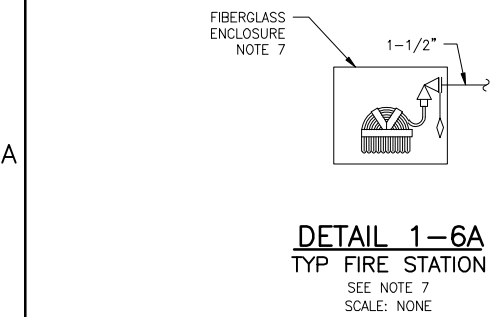
CLIENT: NORTH CAROLINA D.O.T.
 RALEIGH, NORTH CAROLINA

PROJECT: PEDESTRIAN FERRY

TITLE: FIRE MAIN SYSTEM

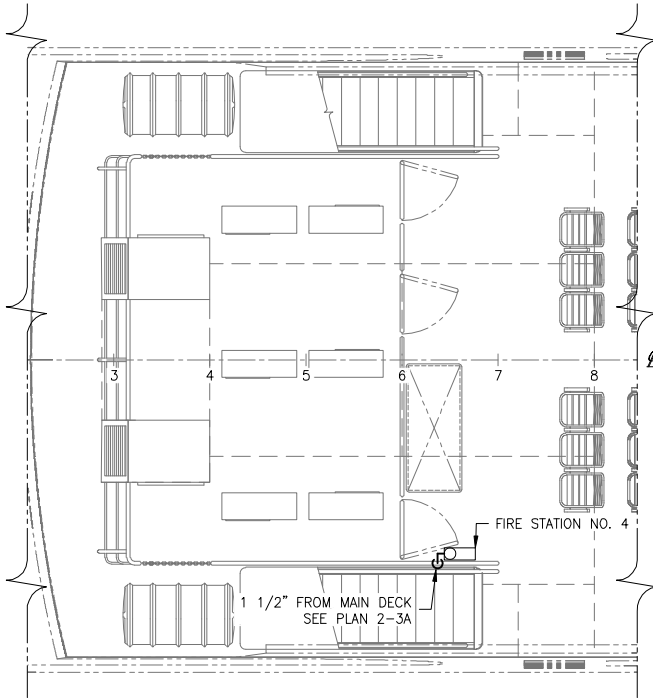
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SCALE	AS NOTED	FILE NAME
AS NOTED	AS NOTED	16109-003-521-0
SHEET	1	OF 2
DWN	JHP	MOD
JHP		
CKD	LGB	APVD
LGB	LGB	LGB
APVD DATE	3/3/2017	

SYMBOLS LIST	
	DIRECTION OF FLOW
	PIPE UP
	PIPE DOWN
	REDUCER
	PRESSURE GAUGE
	VACUUM PRESSURE GAUGE
	BUTTERFLY VALVE
	BALL VALVE
	ANGLE HOSE GLOBE VALVE
	SIMPLEX STRAINER
	FLANGE
	CENTRIFUGAL PUMP
	FIRE STATION
	BHD/DECK PENETRATION
	PRESSURE TRANSDUCER
	MATERIAL TRANSITION
	SEA CHEST
	PLUG

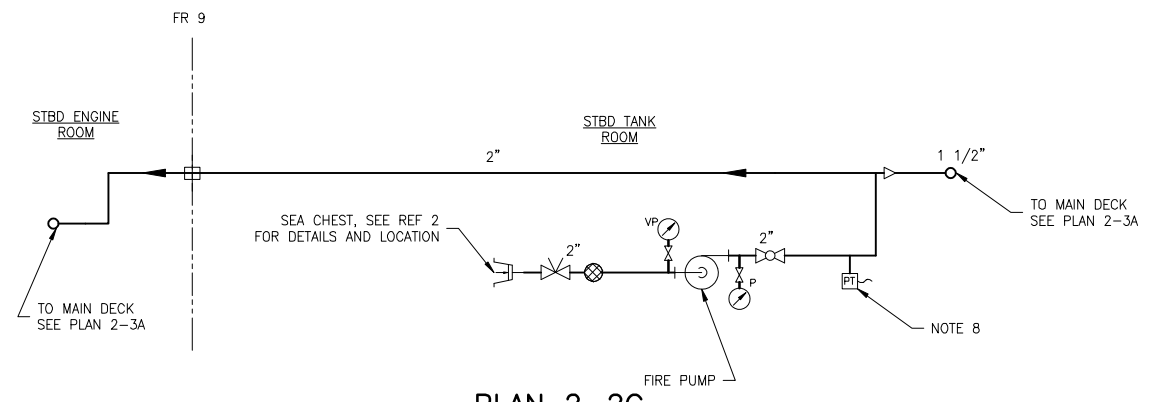


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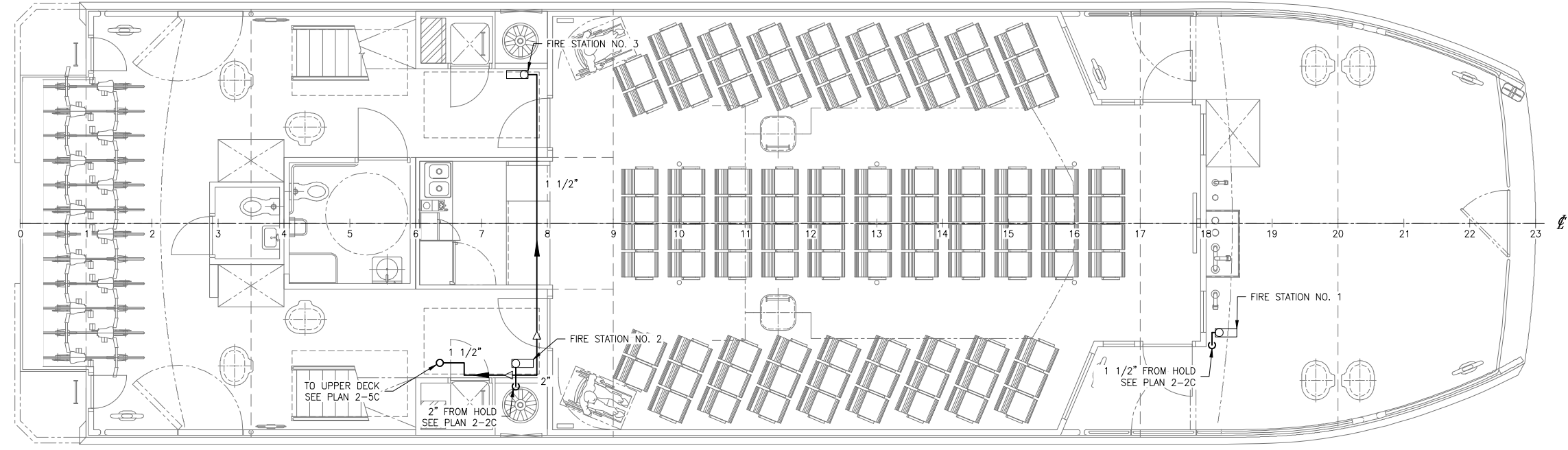
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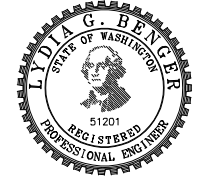
PLAN 2-5C
 UPPER DECK
 SCALE: 1/4"=1'-0"



PLAN 2-2C
 HOLD
 SCALE: NONE



PLAN 2-3A
 MAIN DECK
 SCALE: 1/4"=1'-0"



SIZE	D	DWG NO.	16109-003-521-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-521-0-	SHEET	2 OF 2

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MATERIAL SCHEDULE									
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	FLEXIBLE CONNECTIONS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
SANITARY DRAINS BELOW MAIN DECK SEWAGE DISCHARGE MAWP: 25 PSI MAX TEMP: AMBIENT	ALL	ALUMINUM ASTM B241 6061 T6 ANSI 36.1 SCH 80	FLANGE ALUMINUM 6061 T6 ANSI B16.5 150#	USE MATERIAL APPROPRIATE FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE B8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	GATE: STAINLESS STEEL FLANGED 150# ASTM A351 BALL: STAINLESS STEEL ASTM A351	GATE: 316 SS DISC BALL: 316 SS BALL PTFE SEATS AND SEALS	ALUMINUM 6061 T6 ANSI B16.9	-
SANITARY DRAINS MAIN DECK MAWP: AMBIENT MAX TEMP: AMBIENT	ALL	CPVC SCH 80 ASTM D1784 ASTM F441	SOCKET FLANGE CPVC ASTM F439 ANSI B16.5, 150#	USE MATERIAL APPROPRIATE FOR SYSTEM	-	-	-	SOCKET UNION CPVC ASTM F439	-

EQUIPMENT LIST					
QTY.	SERVICE	TYPE	MODEL	CAPACITY	DRIVE
1	SEWAGE DISCHARGE PUMP	CENTRIFUGAL GRINDER	CAST IRON BODY BRONZE IMPELLER	37 GPM @ 40 FT TDH	2 HP 3450 RPM TEFC MOTOR 208V/3φ/60Hz

SYMBOLS LIST	
	PIPE - GREY WATER
	PIPE - BLACK WATER
	PIPE - VENT
	PIPE CAP
	CAMLOCK W/ CAP
	P-TRAP
	BHD PENETRATION
	REDUCER
	GATE VALVE
	MATERIAL TRANSITION
	PUMP
	DECK DRAIN
	AIR ADMITTANCE VALVE
	BALL VALVE
	HIGH LEVEL ALARM
	CONTINUOUS LEVEL INDICATION

- GENERAL NOTES CONT.**
- AIR ADMITTANCE VALVES CONCEALED IN JOINER BULKHEADS OR SUSPENDED CEILINGS SHALL BE ACCESSIBLE VIA REMOVABLE PANEL OR CEILING TILE. INSTALL AIR ADMITTANCE VALVES ABOVE FLOOD RIM OF FIXTURE SERVED.
 - INTEGRATE TANK LEVEL SENSORS WITH SHIP'S ALARM AND MONITORING SYSTEM. THE SENSORS SHALL PROVIDE CONTINUOUS LEVEL INDICATION AND HIGH LEVEL ALARM AT 90% FULL. SEE REF 1.
 - PIPING AT THE MAIN DECK AND ABOVE IS TO BE CPVC WHILE PIPING BELOW THE MAIN DECK IS TO BE ALUMINUM. THE MATERIAL TRANSITION SHALL OCCUR JUST ABOVE THE MAIN DECK.
 - SANITARY WASTE DRAIN PIPING SHALL BE SLOPED DOWNWARD AT NO LESS THAN 1/2" PER FOOT.
 - ALL MATERIAL TRANSITIONS SHALL BE ACCOMPLISHED WITH FLANGED JOINTS. FLANGES AT THE JUNCTIONS SHALL BE FITTED WITH GALVANIC ISOLATION KITS TO PREVENT METAL TO METAL CONTACT.

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

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 - 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 THE BASIC SHIP STRUCTURE. CARE SHALL BE EXERCISED TO PLACE PIPE HANGERS SO THAT THE STRAIN IS AVOIDED WHERE PIPING IS CONNECTED TO MACHINERY. HANGERS SHALL NOT BE ATTACHED BY WELDING DIRECTLY TO PIPES.
 - SANITARY DRAIN PIPING ABOVE THE MAIN DECK SHALL BE CONCEALED BEHIND JOINER BULKHEADS OR SUSPENDED CEILINGS.
 - CHANGES OF DIRECTION IN HORIZONTAL DRAIN PIPING SHALL BE MADE WITH WYE'S OR BENDS OF 45° OR LESS. INTERSECTIONS BETWEEN BRANCHES OF DRAIN PIPING SHALL BE ACCOMPLISHED WITH THE USE OF LATERAL WYES OR SWEEP TEES. IN NO CASE SHALL TWO PIPES INTERSECT AT 90°.
 - HORIZONTAL DRAINAGE LINES WHICH CONNECT DIRECTLY WITH A VERTICAL STACK, SHALL ENTER THROUGH 45° WYE, 60° WYE, COMBINATION WYE AND 45° BEND, SANITARY TEE OR BRANCHES OF EQUIVALENT SWEEP.
 - CLEANOUTS WITH PLUGS SHALL BE FITTED AT THE UPPER TERMINAL OF EACH HORIZONTAL RUN, AT INTERVALS OF NO LESS THAN 1 PER 50 LINEAR FEET OF PIPE IN STRAIGHT RUNS, AND WHEREVER THE AGGREGATE HORIZONTAL CHANGE IN DIRECTION OF HORIZONTAL PIPING EXCEEDS 135°.
 - CLEANOUTS CONCEALED IN JOINER BULKHEADS SHALL BE ACCESSIBLE VIA REMOVABLE PANEL. PROVIDE 18" OF CLEAR SPACE IN FRONT OF THE CLEANOUT. ACCESS PANELS SHALL BE CLEARLY LABELED.
 - DECK DRAINS TO BE ALUMINUM WITH INTEGRAL TRAP.

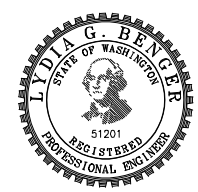
- REFERENCES**
- 16109-003-802-0 CONTRACT SPECIFICATIONS



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

PROJECT: PEDESTRIAN FERRY

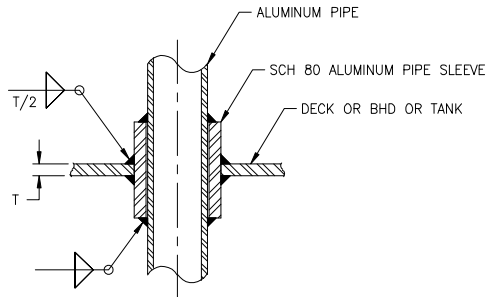


TITLE: SANITARY DRAINS AND SEWAGE DISCHARGE SYSTEM

SIZE: D DWG NO.: 16109-003-528-0 REV: -

SCALE: AS NOTED FILE NAME: 16109-003-528-0- SHEET 1 OF 2

DWN: MWR MOD: JHP CKD: LGB APVD: LGB APVD DATE: 3/3/2017



DETAIL 1-6A
 TYP DECK/BHD/TANK PENETRATION
 FOR ALUMINUM PIPE
 NOT TO SCALE

3/2/2017 2:07:46 PM

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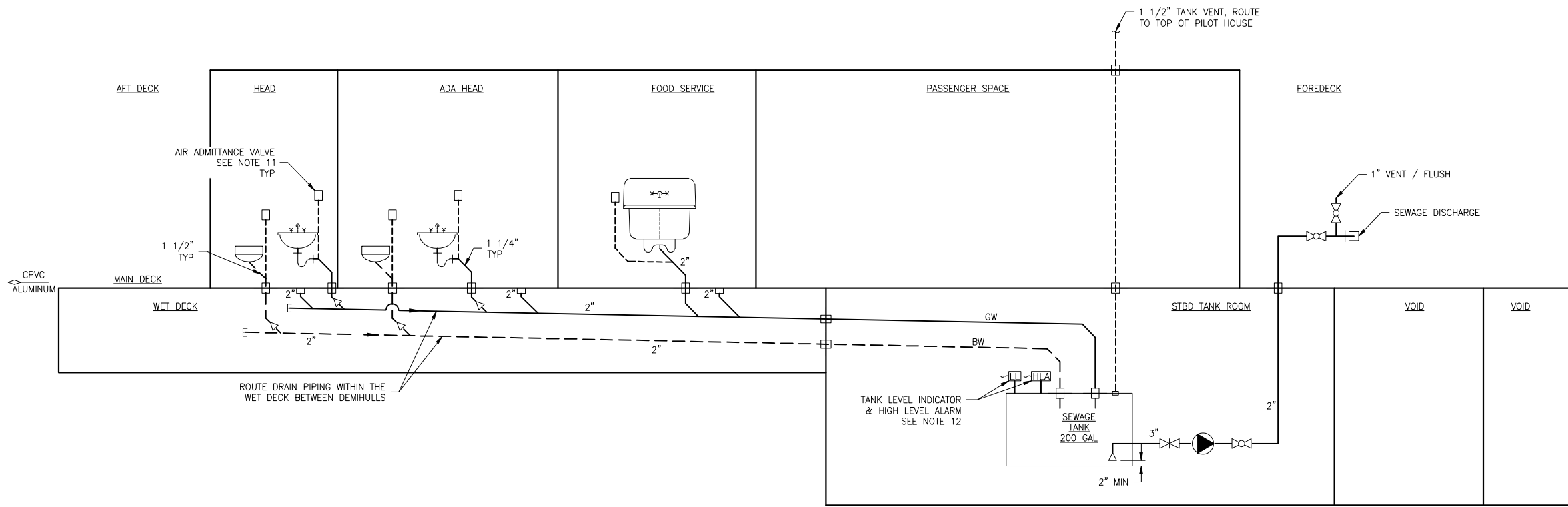
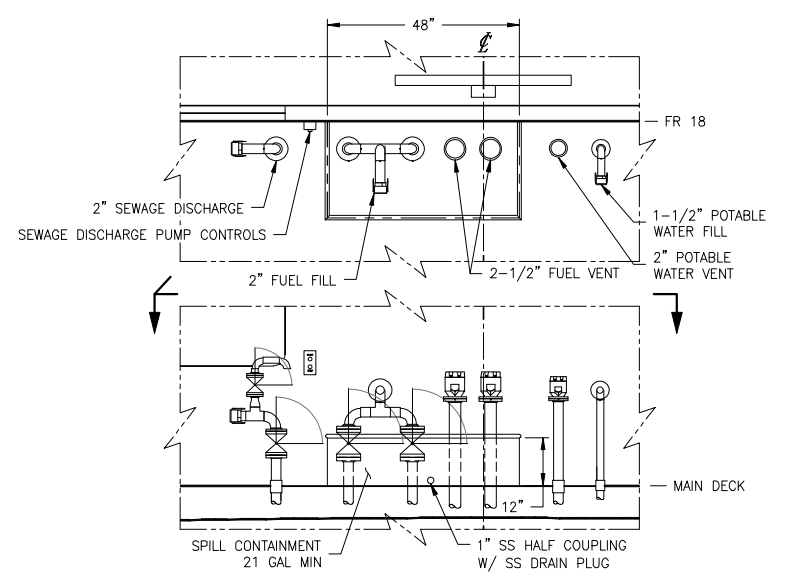


DIAGRAM 2-3B
 SANITARY DRAIN SYSTEM LAYOUT
 NOT TO SCALE



DETAIL 2-5A
 FILL/DISCHARGE/VENT CONTAINMENT
 FOREDECK, LOOKING AFT AT FR 18
 CONTAINMENT: PL 1/4\" & ROUND BAR 1"
 1/2\"=1'-0"



SIZE	D	DWG NO.	16109-003-528-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-528-0-	SHEET	2 OF 2

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MATERIAL SCHEDULE

SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	FLEXIBLE HOSE
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
BILGE MAWP: 20 PSIG MAX TEMP: AMBIENT	ALL	ALUMINUM ASTM B221 5086, 5083, 5456 H111 OR H112 SCH 80	-	-	-	-	-	ALUMINUM ASTM B221 5086, 5083, 5456 H111 OR H112 SCH 80	VACUUM EXTRA HEAVY DUTY, INDUSTRIAL GRADE

EQUIPMENT LIST

QTY.	SERVICE	TYPE	MODEL	CAPACITY	DRIVE	REMARKS
10	BILGE PUMP	SUBMERSIBLE SELF-PRIMING	-	35 GPM @ 11' TDH	24 VDC 6.9 AMP	-
1	EMERGENCY BILGE PUMP	SUBMERSIBLE SELF-PRIMING PORTABLE	-	35 GPM @ 11' TDH	24 VDC 6.9 AMP	NOTE 6
1	FOREPEAK / VOID1 HAND PUMP	MANUAL	-	11 GPM	-	NOTE 5

SYMBOLS LIST

	BILGE PIPE / HOSE
	OVERBOARD DISCHARGE
	PUMP
	MATERIAL TRANSITION

CALCULATIONS

BILGE SYSTEM (PER LLOYD'S RULES FOR SPECIAL CRAFT, P15/C2/S12)

DATA:

LENGTH OF DEMI HULL, L	92 FT	28.04 M
BREADTH OF DEMI HULL, B	9 FT	2.74 M
DEPTH TO WT DECK, D	11.5 FT	3.51 M

BILGE MAIN
 $dm = 1.68 \sqrt{L(B+D)} + 25mm = 47.24mm$

BRANCH SUCTION
 $d = 2.15 + \sqrt{C(B+D)} + 12.5mm$

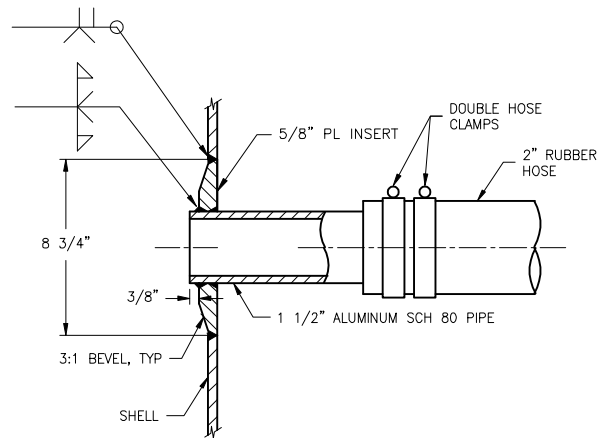
COMPARTMENT	LENGTH, C (FT)	(M)	PIPE SIZE, d (mm)	(IN)
JET ROOM	10.0	3.05	29.5	1.16
ENGINE ROOM	22.0	6.71	37.7	1.48
TANK ROOM	32.0	9.75	42.9	1.69
VOID 2	12.0	3.66	31.1	1.23

TOTAL PUMP CAPACITY
 $Qt = \frac{13.8}{1000} * dm^2 = 30.8 \text{ m}^3/\text{hr} = 136 \text{ gpm}$

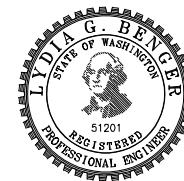
INDIVIDUAL PUMP CAPACITY
 $Qn = \frac{Qt}{N-1} = \frac{30.8}{5-1} \text{ m}^3/\text{hr} = 34 \text{ gpm}$

*IN NO CASE TO BE LESS THAN 8 m3/hr

N = 5 PUMPS, Qn = 7.7 m3/hr = 34 gpm
DEFAULT TO 8 m3/hr, 35 gpm



DETAIL 1-2A
 OVERBOARD DISCHARGE
 SCALE: NONE



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.
- HIGH BILGE ALARMS SHALL BE PROVIDED FOR ALL SPACES. ALARM PANEL SHALL BE COLLOCATED WITH THE PUMP CONTROLS IN THE PILOTHOUSE. SEE REF 1.
- ALL NEW PIPING SHALL BE HYDROSTATICALLY TESTED AT 150% OF THE SYSTEM PRESSURE, BUT NOT LESS THAN 50 PSI.
- VESSEL SHALL BE EQUIPPED WITH A HAND PUMP AND HOSE OF SUITABLE LENGTH TO DEWATER THE FOREPEAK VOID (VOID 1) OF EACH DEMI HULL TO COMPLY WITH USCG 46 CFR 182.510(o).
- VESSEL SHALL BE EQUIPPED WITH A PORTABLE EMERGENCY BILGE PUMP AND HOSE WITH THE SAME CAPACITY AS THE INSTALLED BILGE PUMPS.
- SYSTEM SHALL BE IN ACCORDANCE WITH LLOYD'S REGISTER RULES AND REGULATIONS FOR THE CLASSIFICATION OF SPECIAL SERVICE CRAFT CHAPTER 15, SECTION 12. A WAIVER SHALL BE OBTAINED FROM USCG FOR ALTERNATE BILGE SYSTEM.

REFERENCES

- 16109-003-802-0 CONTRACT SPECIFICATIONS



Elliott Bay Design Group
 North Carolina, PLLC

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

PROJECT
 PEDESTRIAN FERRY

TITLE
 BILGE SYSTEM

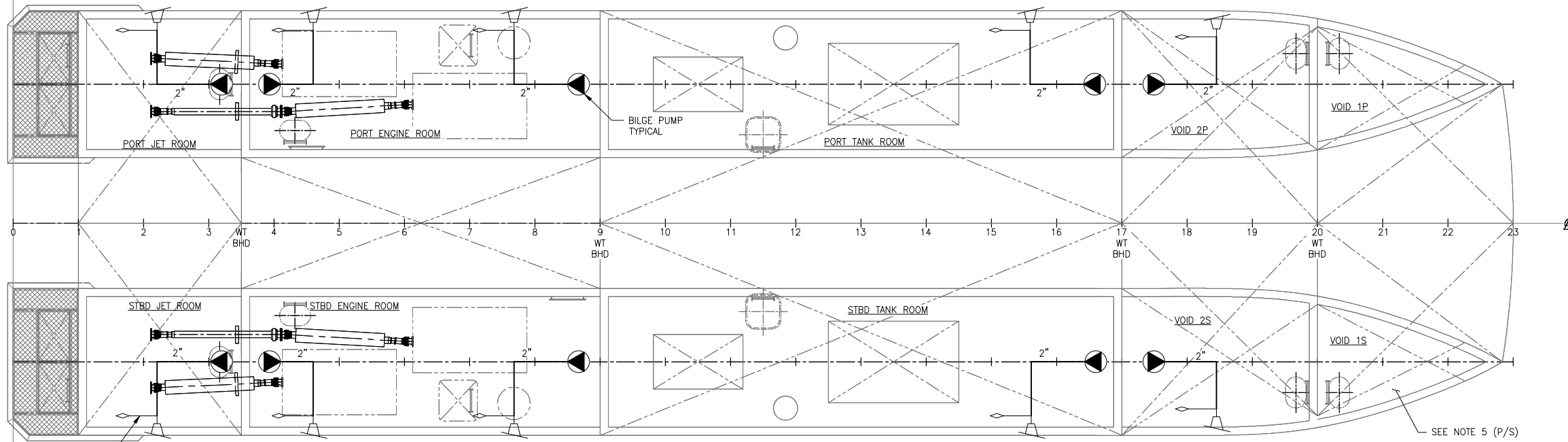
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SCALE AS NOTED	FILE NAME 16109-003-529-1-	SHEET 1 OF 2
DWN MWR	MOD	APVD DATE 3/3/2017

SYSTEM OPERATION INTENT

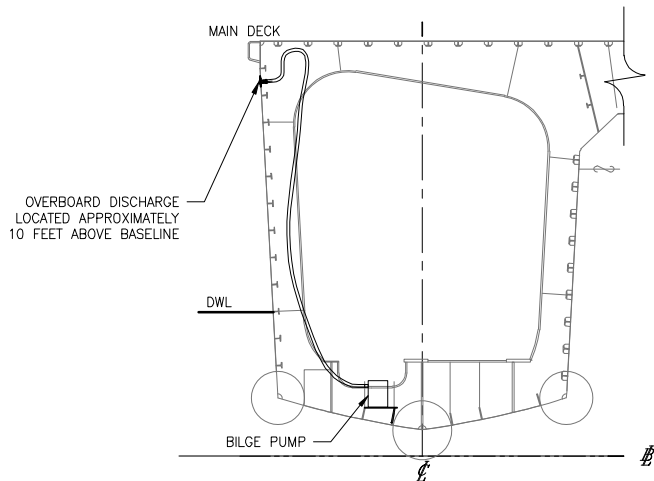
- BILGE SYSTEM IS DESIGNED IN ACCORDANCE WITH LLOYD'S REGISTER'S RULES AND REGULATIONS FOR SPECIAL SERVICE CRAFT, PART 15, CHAPTER 2, SECTION 12.
- EACH ENGINE ROOM IS EQUIPPED WITH TWO SUBMERSIBLE PUMPS. VOID 1 IS SERVED BY A HAND OPERATED PUMP AND HOSE. ALL OTHER WATERTIGHT SPACES ARE EQUIPPED WITH ONE SUBMERSIBLE PUMP.

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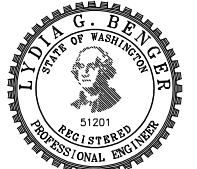
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DETAIL 2-3C
 BILGE SYSTEM LAYOUT
 1/4"=1'-0"



DETAIL 2-6A
 BILGE PUMP DETAIL
 LKG AFT, PORT HULL
 STBD HULL SIM
 3/8"=1'-0"



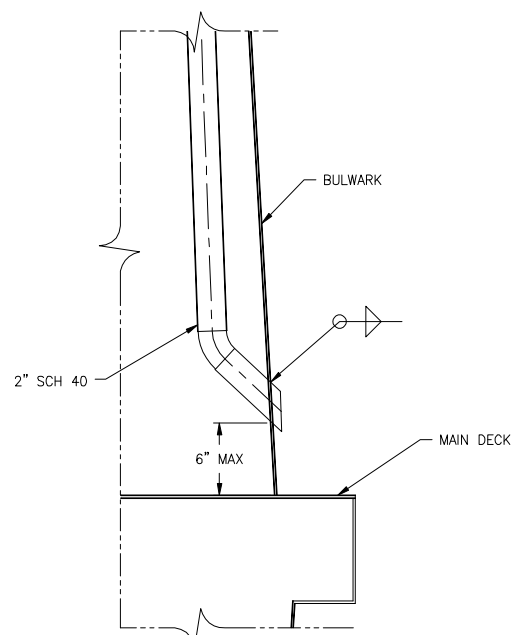
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SCALE	AS NOTED	FILE NAME	16109-003-529-1-	SHEET	2 OF 2

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MATERIAL SCHEDULE									
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	FLEXIBLE CONNECTIONS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
DECK DRAINS MAWP: 5 PSI MAX TEMP: AMBIENT	ALL	ALUMINUM ASTM B241 6061 T6 ANSI 36.1 SCH 40	FLANGE ALUMINUM 6061 T6 ANSI B16.5 150#	APPROPRIATE FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE B8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	-	-	ALUMINUM 6061 T6 ANSI B16.9 BUTT WELD	-

SYMBOL LIST	
—	DRAIN PIPE
—○	PIPE UP
⊠	DECK DRAIN
○≡	DECK DRAIN OUTLET
△	DECK DRAIN OVERBOARD



DETAIL 1-4A
 TYP DECK DRAIN OUTLET
 THROUGH BULWARK AT MAIN DECK
 SCALE: 1 1/2"=1'-0"

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

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- DECK DRAIN SLOPE FROM HORIZONTAL TO BE 1/2 INCH PER FOOT MINIMUM.

REFERENCES

- 16109-003-802-0 CONTRACT SPECIFICATIONS



Elliott Bay Design Group
 North Carolina, PLLC

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

PROJECT: **PEDESTRIAN FERRY**



TITLE		DECK DRAINS		
SIZE	DWG NO.	REV		
D	16109-003-529-2	-		
SCALE	AS NOTED	FILE NAME	16109-003-529-2-	SHEET 1 OF 3
DWN	JHP	MOD	CKD LGB	APVD LGB
APVD DATE			3/3/2017	

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6

5

4

3

2

1

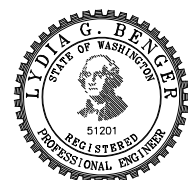
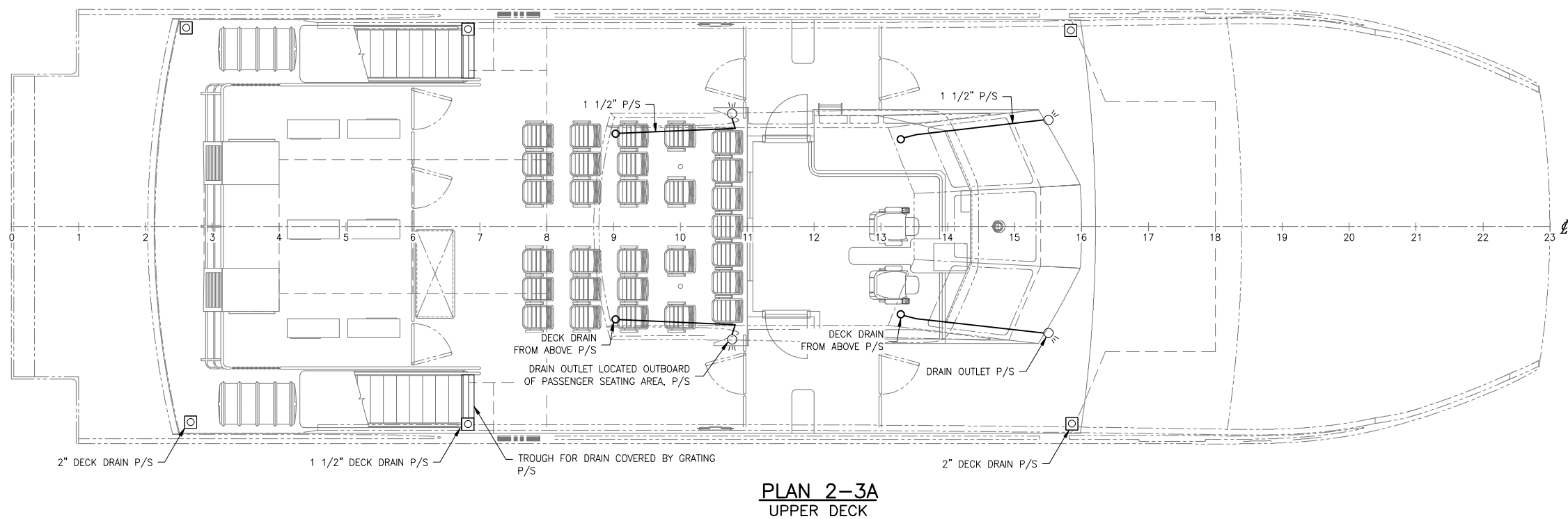
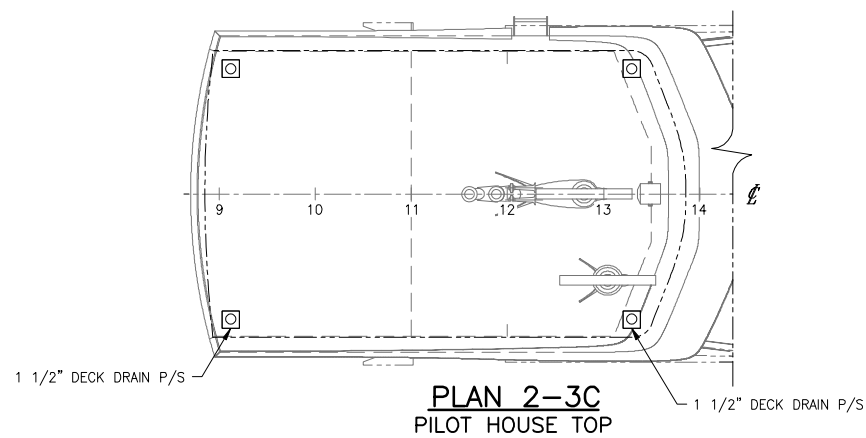
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D

C

B

A



SIZE	D	DWG NO.	16109-003-529-2	REV	-
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5

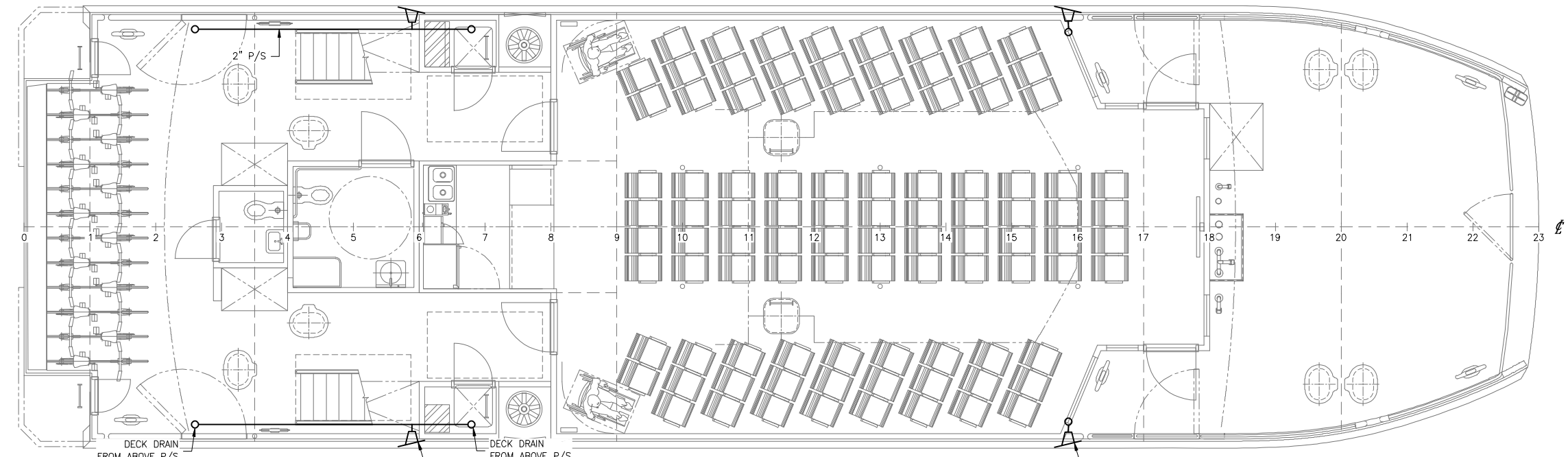
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2

1

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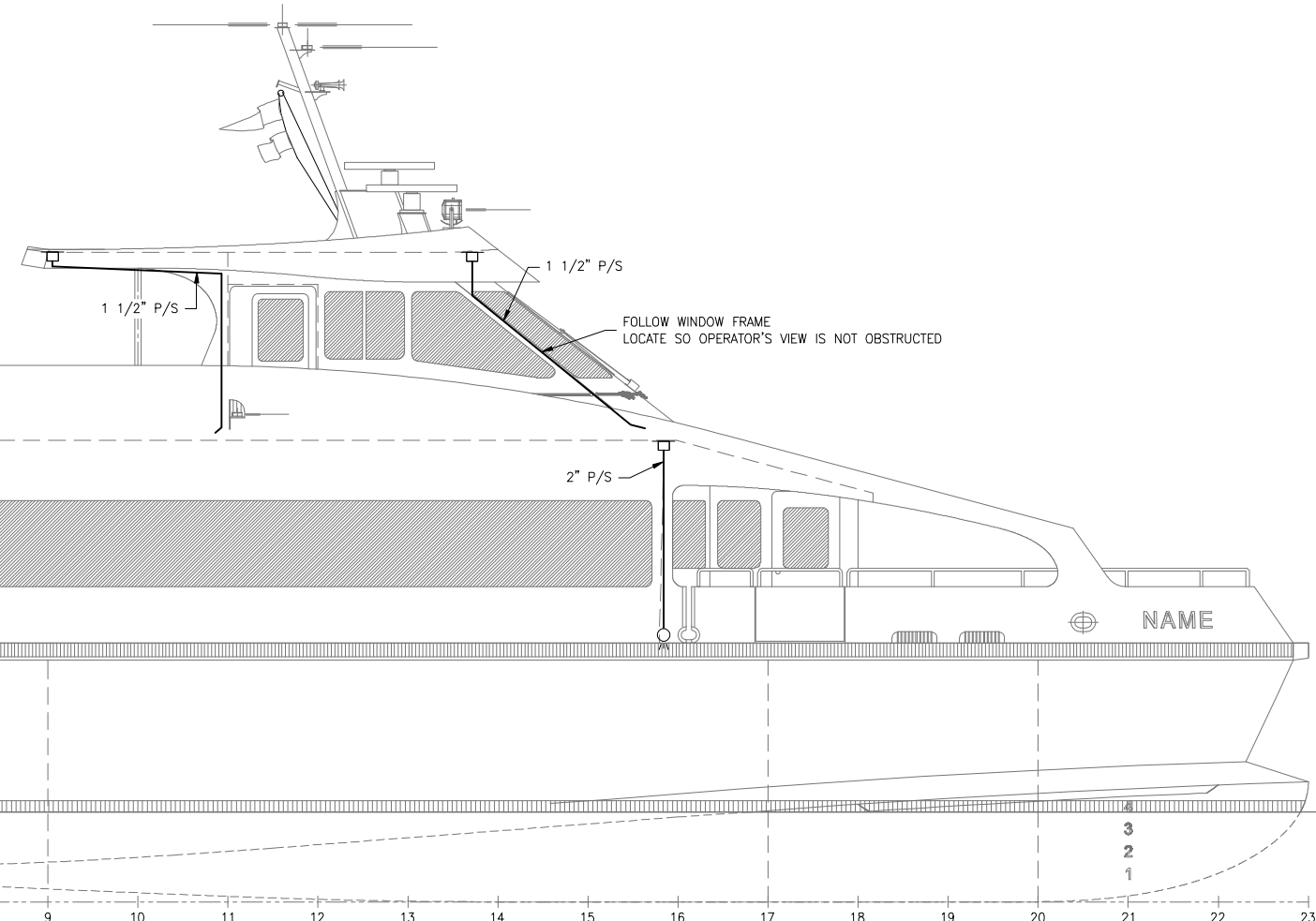


PLAN 3-3C
MAIN DECK

DECK DRAIN
FROM ABOVE P/S

DRAIN OVBD P/S
SEE DETAIL 1-4A

DRAIN OVBD P/S
SEE DETAIL 1-4A



ELEVATION 3-3A
OUTBOARD PROFILE

FOLLOW WINDOW FRAME
LOCATE SO OPERATOR'S VIEW IS NOT OBSTRUCTED

STBD SIDE SHOWN
PORT SIMILAR

NAME



SIZE	DWG NO.	REV
D	16109-003-529-2	-
SCALE	FILE NAME	SHEET
1/4"=1'-0"	16109-003-529-2-	3 OF 3

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6

5

4

3

2

1

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MATERIAL SCHEDULE									
SERVICE	SIZE	PIPE	TAKEDOWN JOINTS			VALVES		FITTINGS	REMARKS
			MATERIAL	GASKETS	BOLTING	BODY	TRIM		
POTABLE WATER MAIN DECK AND ABOVE MAWP: 85 PSIG MAX TEMP: 125 °F	ALL	CROSSLINKED POLYETHYLENE (PEX) ASTM F876 AND F877	-	-	-	BRASS NSF SAFE ASTM F877 AND F1807	PTFE SEATS	BRASS CRIMP STYLE FITTINGS ASTM F877 AND F1807	-
POTABLE WATER BELOW MAIN DECK MAWP: 85 PSIG MAX TEMP: 125 °F		COPPER, SEAMLESS HARD DRAWN, ASTM B88, TYPE K OR L	FLANGE, 150#, ANSI B16.24, SOLDER JOINT, BRONZE, ASTM B61	APPROPRIATE FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE B8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	BALL: BRONZE 150# THREADED OR SOLDER ENDS	CHROME PLATED BALL, PTFE SEATS	WROT COPPER, ANSI B16.22, ASTM B75	CERTIFIED LEAD FREE
POTABLE WATER FILL AND TANK VENT MAWP: 85 PSIG MAX TEMP: 125 °F	ALL	ALUMINUM ASTM B241 6061 T6 ANSI 36.1 SCH 40	FLANGE ALUMINUM 6061 T6 ANSI B16.5 150#	APPROPRIATE FOR SYSTEM	BOLTS: STAINLESS STEEL ASTM A193 GRADE B8M ANSI B18.2.1 NUTS: STAINLESS STEEL ASTM A194 GRADE 8M ANSI B18.2.2	-	-	ALUMINUM 6061 T6 ANSI B16.9 BUTT WELD	-

- GENERAL NOTES CONT.**
- THE POTABLE WATER PRESSURE TANK SHALL BE FITTED WITH AN 80 PSIG SAFETY RELIEF VALVE. THE HOT WATER HEATER SHALL BE FITTED WITH A TEMPERATURE/PRESSURE RELIEF VALVE.
 - USE USCG COMPLIANT BULKHEAD/DECK PENETRATIONS FOR COPPER AND PEX TUBING.
 - TOILETS SHALL BE SUPPLIED WITH SOLENOID FLUSHING VALVES.
 - EXTERIOR HOSE BIBS SHALL BE FITTED WITH A METHOD TO ISOLATE AND DRAIN THE WATER FOR FREEZE PROTECTION.
 - VENT TERMINAL SHALL BE BALL CHECK TYPE WITH FLANGED ALUMINUM BODY AND DEBRIS SCREEN.
 - THE POTABLE WATER SYSTEM SHALL BE SUPPLIED WITH TWO PRESSURE PUMPS. NORMAL OPERATION IS ONE PUMP PRESSURIZING THE SYSTEM AND THE SECOND PUMP ON STANDBY.

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

- GENERAL NOTES**
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 - 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.
 - AVOID POCKETS IN THE PIPE LINES, BOSSES AND VALVES OR SCREWED PLUGS SHALL BE FITTED TO ENABLE COMPLETE DRAINING OF PIPES WHERE POCKETS DO OCCUR.
 - 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 THE BASIC SHIP STRUCTURE. CARE SHALL BE EXERCISED TO PLACE PIPE HANGERS SO THAT THE STRAIN IS AVOIDED WHERE PIPING IS CONNECTED TO MACHINERY. HANGERS SHALL NOT BE ATTACHED BY WELDING DIRECTLY TO PIPES.
 - HOT & COLD WATER PIPING TO BE INSULATED ACCORDING TO REF 1.
 - HOT WATER THERMOSTAT SETTINGS NOT TO EXCEED 110° F.
 - THE POTABLE WATER PRESSURE PUMP SYSTEM SHALL BE SUPPLIED WITH INTEGRAL PRESSURE SWITCHES TO CONTROL THE PUMP OPERATION. THE PRESSURE SWITCHES SHALL BE SET TO START THE PUMP AT 40 PSI AND STOP IT AT 60 PSI. THE PUMP SUCTION ALSO SHALL HAVE AN INTEGRAL CHECK VALVE.
 - AFTER INSTALLATION & TESTING THE SYSTEM SHALL BE CLEANED, SANITIZED & FLUSHED IN ACCORDANCE WITH USPHS REQUIREMENTS. SEE REF 1
 - FILL CONNECTION TO BE MALE CAMLOCK WITH CAP. TO BE MOUNTED HORIZONTALLY AND MINIMUM 24" ABOVE DECK.
 - INTEGRATE TANK LEVEL SENSORS WITH SHIP'S ALARM AND MONITORING SYSTEM. CONFIGURE FOR CONTINUOUS INDICATION AND LOW LEVEL ALARM AT 25% OF TANK CAPACITY. SEE REF 1.

EQUIPMENT LIST

QTY.	DESCRIPTION	TYPE	MODEL	CAPACITY	DRIVE	REMARKS
2	POTABLE WATER SUPPLY PUMP SYSTEM	MULTI-STAGE CENTRIFUGAL	-	8 GPM @ 50 PSIG	9 AMPS 115V/1P/60Hz	SEE NOTES 8 & 17
1	POTABLE WATER PRESSURE TANK	ASME RATED	-	18 GAL 125 PSI	-	-
1	TANKLESS WATER HEATER	ELECTRIC	-	2 GPM	208V/1P/60Hz 4.1kW	MAX WATER TEMP OUTPUT OF 110 °F
1	STRAINER 1 1/2" NPS	SIMPLEX BASKET TYPE	-	-	-	BRONZE BODY

SYMBOLS LIST

	PIPE - POTABLE WATER SUPPLY
	PIPE - HOT WATER SUPPLY
	BHD PENETRATION
	REDUCER
	BALL VALVE
	RELIEF VALVE
	MATERIAL TRANSITION
	SIMPLEX STRAINER
	CENTRIFUGAL PUMP
	LOCAL GAUGE, PRESSURE
	BACKFLOW PREVENTER
	CAMLOCK W/ CAP
	LOW LEVEL ALARM
	CONTINUOUS LEVEL INDICATION

- REFERENCES**
- 16109-003-802-0 CONTRACT SPECIFICATIONS

North Carolina Ferry System
800 SHIPYARD RD WAREHOUSES, NC 27663

Elliott Bay Design Group North Carolina, PLLC

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

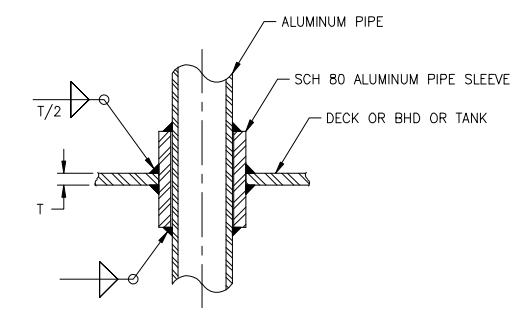
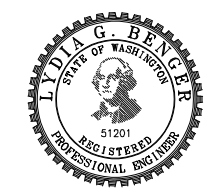
PROJECT: PEDESTRIAN FERRY

TITLE: POTABLE WATER SYSTEM

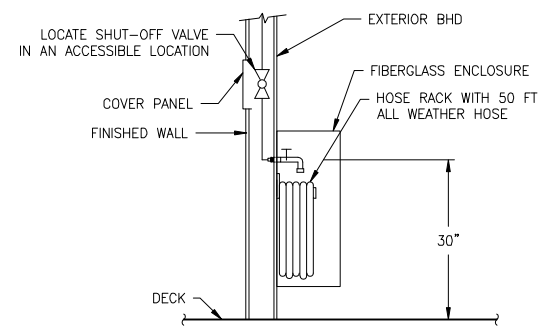
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SCALE: AS NOTED FILE NAME: 16109-003-533-0- SHEET 1 OF 2

DWN: MWR MOD: JHP CKD: LGB APVD: LGB APVD DATE: 3/3/2017



DETAIL 1-6A
TYP DECK/BHD/TANK PENETRATION
FOR ALUMINUM PIPE
NOT TO SCALE



DETAIL 1-4A
TYPICAL EXTERIOR HOSE BIB
NOT TO SCALE

3/2/2017 3:20:09 PM

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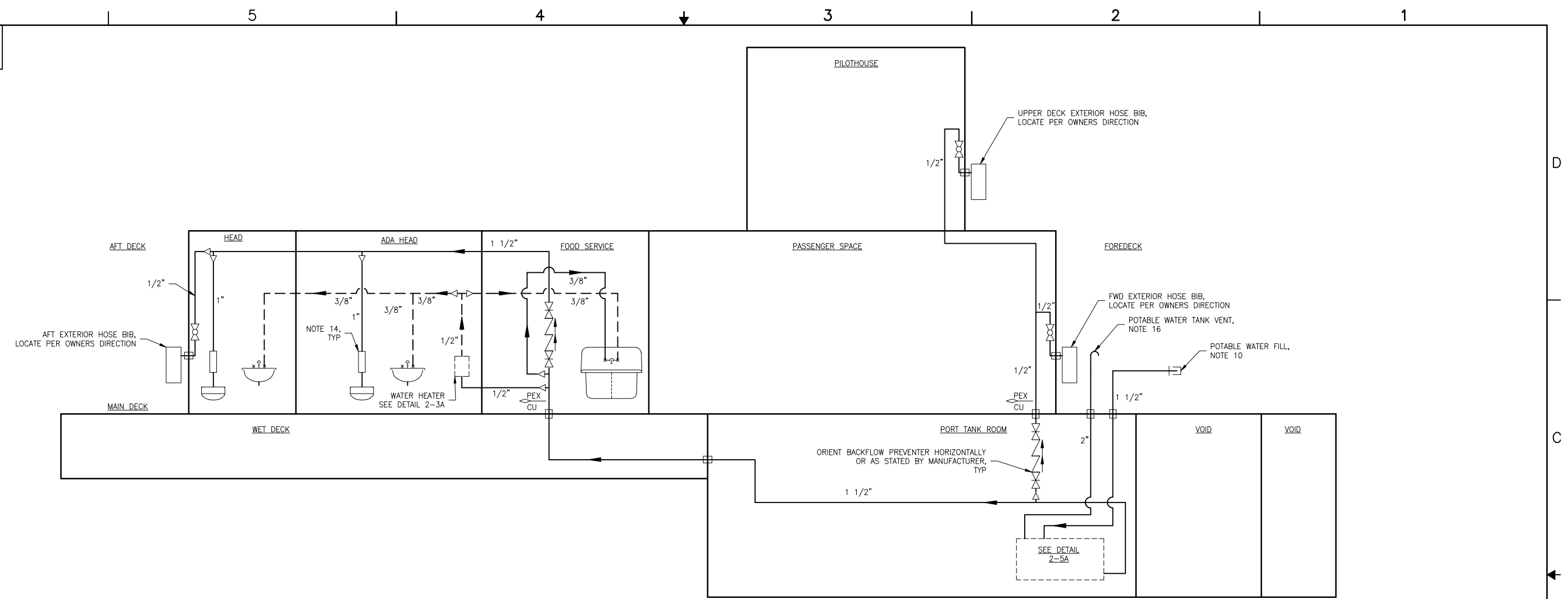
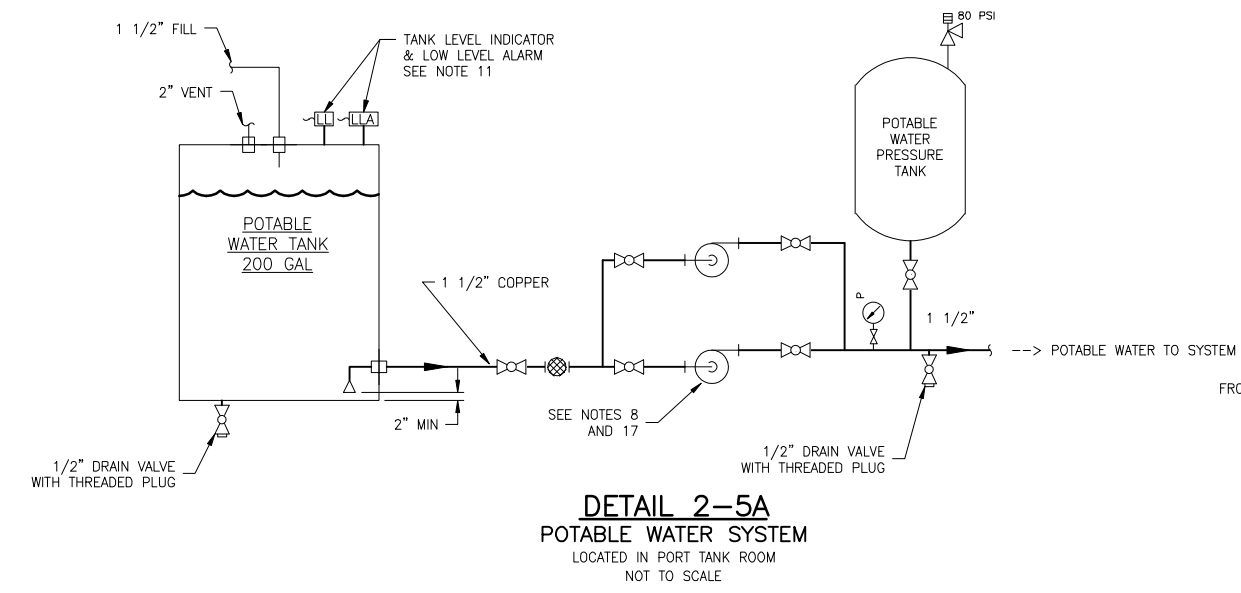
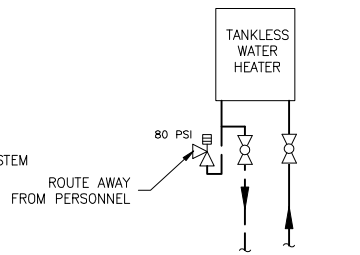


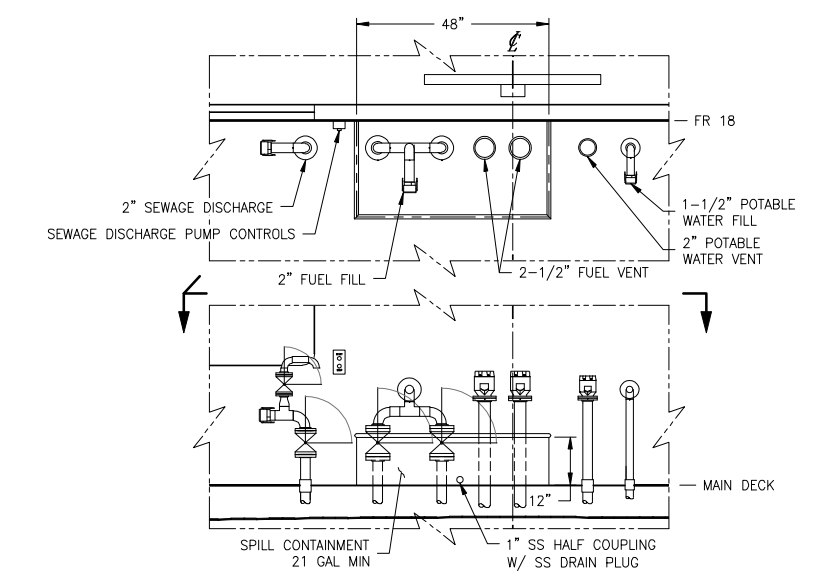
DIAGRAM 2-3B
 POTABLE WATER SYSTEM VESSEL LAYOUT
 NOT TO SCALE



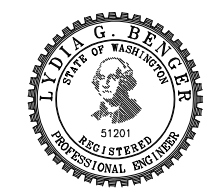
DETAIL 2-5A
 POTABLE WATER SYSTEM
 LOCATED IN PORT TANK ROOM
 NOT TO SCALE



DETAIL 2-3A
 HOT WATER HEATER
 ADA HEAD
 NOT TO SCALE



DETAIL 2-1A
 FILL/DISCHARGE/VENT CONTAINMENT
 FOREDECK, LOOKING AFT AT FR 18
 CONTAINMENT: PL 1/4\"/>



SIZE	D	DWG NO.	16109-003-533-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-533-0-	SHEET	2 OF 2

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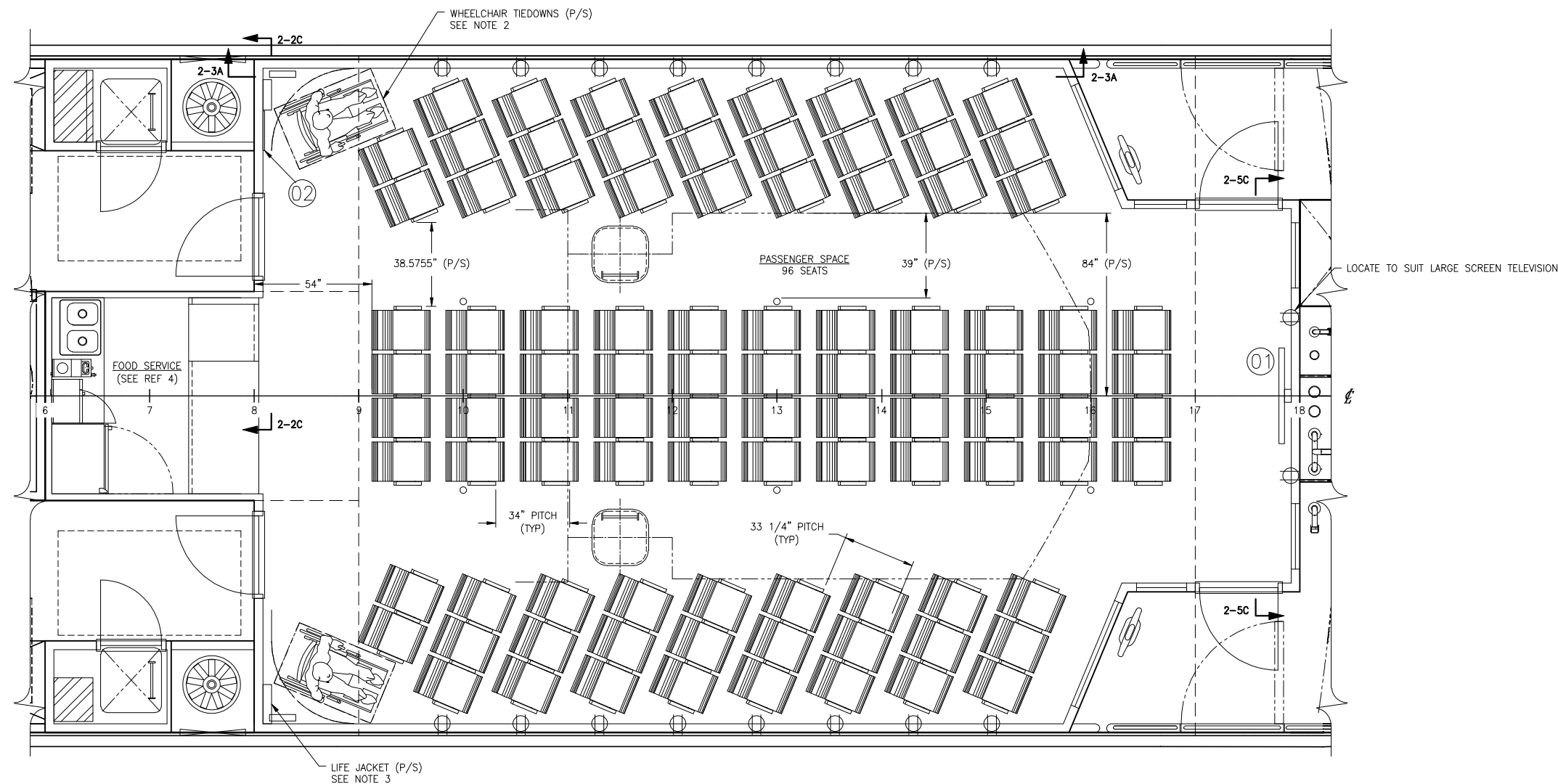
EQUIPMENT LIST			
ITEM	QTY	DESCRIPTION	MANUFACTURER, MODEL, NOTES
01	1	50" FLAT SCREEN TELEVISION	SEE REFERENCE 1
02	1	BUILDER'S PLAQUE	SEE REFERENCE 1
⊙	18	RECEPTACLE	DUPLEX, 120V, GFCI

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES


- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- WHEELCHAIR TIE DOWNS SHALL BE PROVIDED WITH STAINLESS STEEL HARDWARE AND LOCATED AS SHOWN IN THE PASSENGER SPACE. PROVIDE TWO ADDITIONAL WHEELCHAIR TIE DOWN LOCATIONS ON THE EXTERIOR MAIN DECK PER OWNER'S GUIDANCE.
- LIFE JACKETS MOUNTED NEAR WHEELCHAIR TIE DOWNS ARE TO BE LOCATED CLEAR OF WHEELCHAIR SWING RADIUS.

REFERENCES	
1.	16109-003-802-0 CONTRACT SPECIFICATIONS
2.	16109-003-101-1 PROFILES AND ARRANGEMENTS
3.	16109-003-130-0 SUPERSTRUCTURE
4.	16109-003-601-2 FOOD SERVICES ARRANGEMENT
5.	16109-003-635-1 CEILING AND LIGHTING PLAN




PLAN 1-4A
 MAIN DECK
 SCALE: 3/8"=1'-0"





North Carolina Ferry System
8500 SHIPYARD RD WAREHOUSING, NC 27153



Elliott Bay Design Group
North Carolina, PLLC

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

PROJECT
PEDESTRIAN FERRY

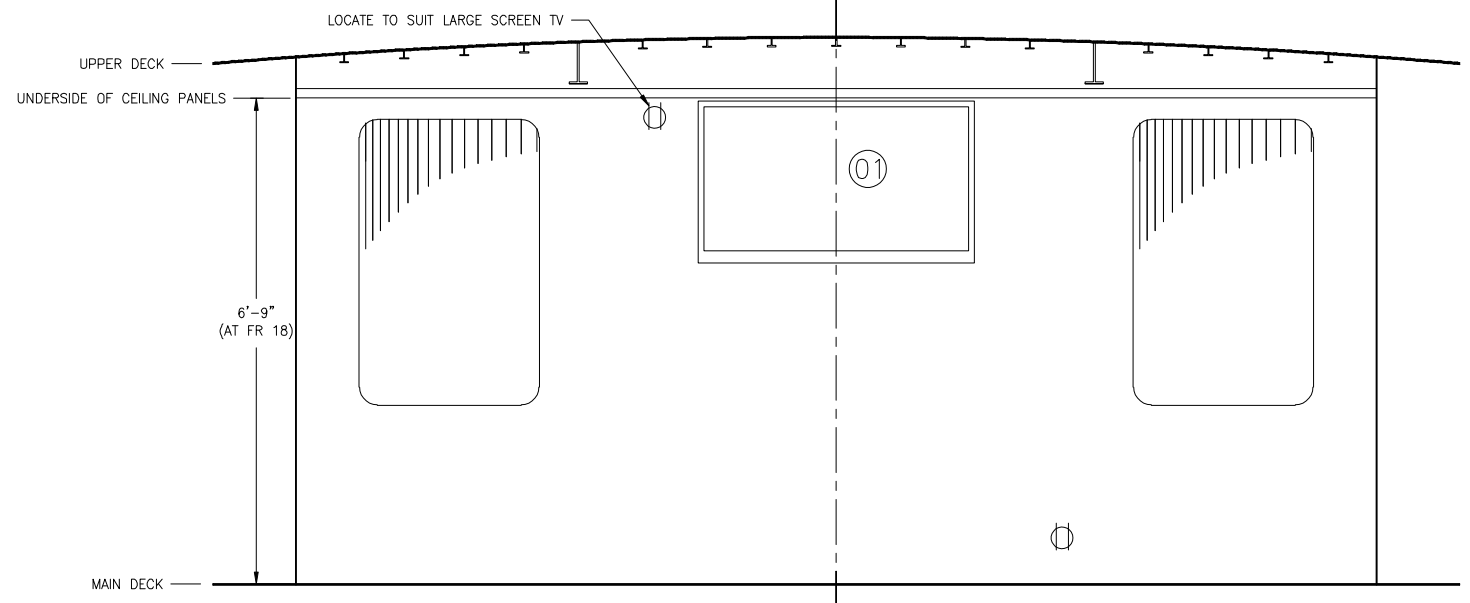
PASSENGER SPACE ARRANGEMENT

SIZE	D	DWG NO.	16109-003-601-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-601-0-	SHEET	1 OF 2
DWN	NJB	MOD		APVD	JAT
				APVD DATE	3/3/2017

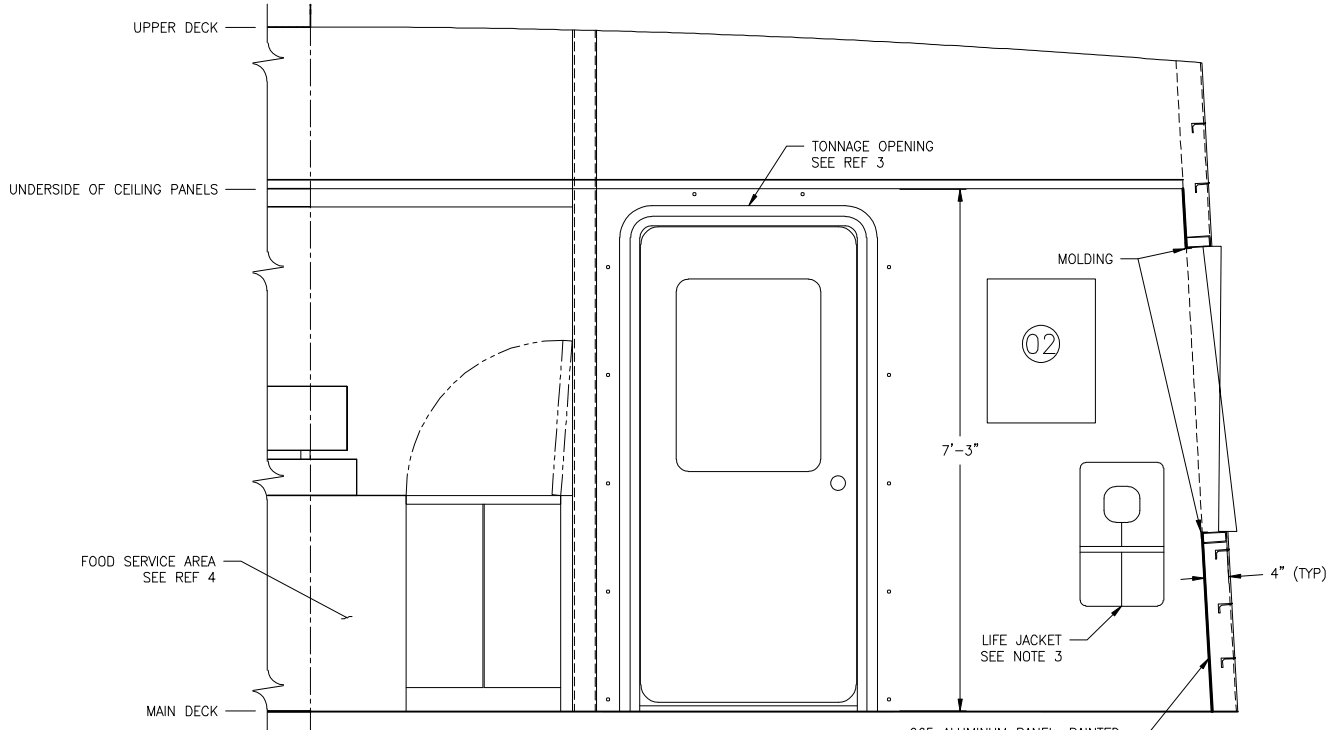
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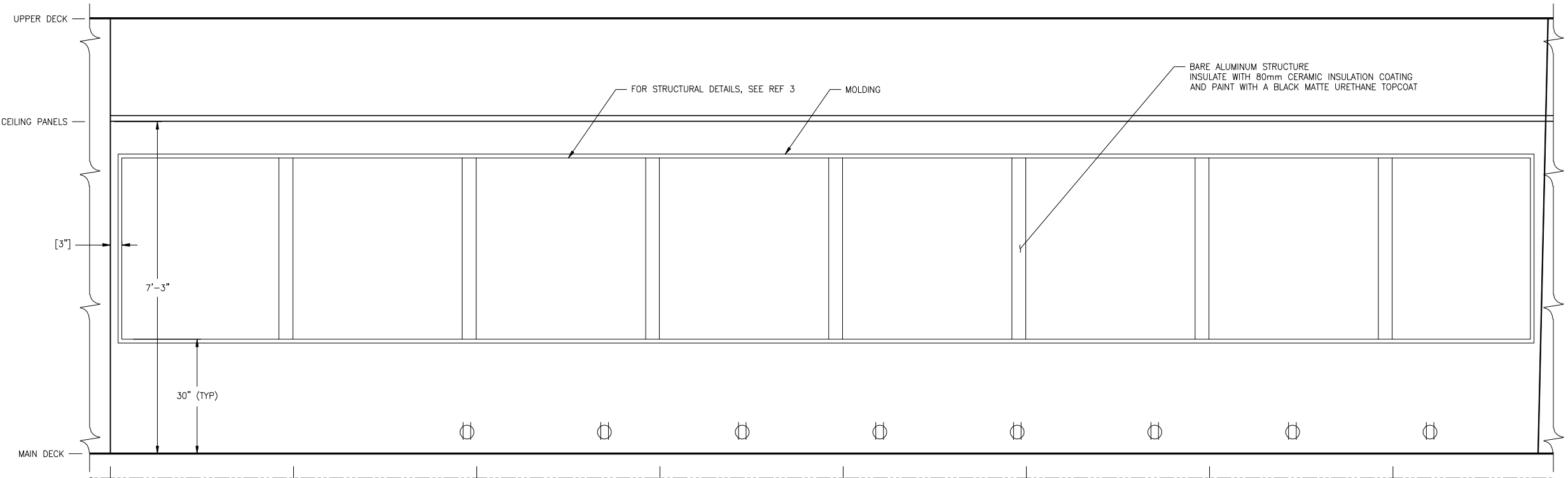
6 | 5 | 4 | 3 | 2 | 1



SECTION 2-5C
FRAME 18 LOOKING FWD
 SCALE: 3/4"=1'-0"



SECTION 2-2C
FRAME 8 LOOKING AFT
 PORT SIDE SHOWN, STBD SIMILAR
 SCALE: 3/4"=1'-0"



ELEVATION 2-3A
PORT BHD LOOKING OUTBOARD
 STBD SIDE SIMILAR
 SCALE: 3/4"=1'-0"

6 | 5 | 4 | 3 | 2 | 1



SIZE	D	DWG NO.	16109-003-601-0	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-601-0-	SHEET	2 OF 2

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EQUIPMENT LIST

ITEM	QTY	DESCRIPTION	NOTES
01	1	REFRIGERATOR	OWNER SUPPLIED, CONTRACTOR INSTALL
02	1	MICROWAVE	OWNER SUPPLIED, CONTRACTOR INSTALL
03	1	COFFEE MAKER	OWNER SUPPLIED, CONTRACTOR INSTALL
04	1	HOT DOG STEAMER	OWNER SUPPLIED, CONTRACTOR INSTALL
05	1	DISPLAY CASE	OWNER SUPPLIED, CONTRACTOR INSTALL
06	1	CASH REGISTER	OWNER SUPPLIED, CONTRACTOR INSTALL
07	1	DOUBLE-BASIN SINK	10"x14", 2-COMPARTMENT, DROP-IN, 10" DEEP
08	1	SOAP DISPENSER	OWNER SUPPLIED, CONTRACTOR INSTALL
09	1	PAPER TOWEL HOLDER	OWNER SUPPLIED, CONTRACTOR INSTALL
10	1	PASSENGER CABIN LIGHT SWITCH	SEE REFERENCE 1
11	1	FUEL OIL SHUTOFF	SEE REFERENCE 1
12	1	HVAC THERMOSTAT	SEE REFERENCE 1
13	1	MANUAL FIRE RELEASE	SEE REFERENCE 1
14	1	PHONE	SEE REFERENCE 1
⓪	6	RECEPTACLE	DUPLEX, 120V, GFCI

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- CABINET CONSTRUCTION SHALL COMPLY WITH ALL PERTINENT FDA HEALTH AND SAFETY CODE STANDARDS FOR COUNTERS AND CABINETS IN FOOD PREPARATION AREAS.
- 2" CORD HOLES SHALL BE PROVIDED IN THE COUNTER TOP OF THE FWD COUNTER FOR EACH PIECE OF POWERED EQUIPMENT ON THE FWD COUNTER. POWER SHALL BE SUPPLIED BY A REMOVABLE POWER STRIP LOCATED IN ON THE MIDDLE SHELF AND PLUGGED INTO THE PORT SIDE POWER RECEPTACLE.
- FORWARD COUNTER SECTION SHALL BE REMOVABLE. METHOD FOR FIXING TO DECK SHALL BE ACCEPTABLE TO APPLICABLE TONNAGE RULES. FASTENERS SHALL BE SS.
- COUNTER TOPS, SHELVING, CABINETS, AND CABINET DOORS SHALL BE CONSTRUCTED FROM LIGHTWEIGHT PANELS, AYRLITE 2054 OR EQUAL.
- THE AFT COUNTER TOP SHALL HAVE A 22 GA STAINLESS STEEL TOP WITH A #4 FINISH. THE AFT COUNTER TOP SHALL BE SEALED ALL AROUND TO THE BULKHEADS WITH SILICON CAULK. THE STAINLESS STEEL COUNTER TOP SHALL BE BENT DOWN WITH A RETURN TO PROVIDE A SEALED DRIP LINE. NO EXPOSED SHARP EDGES SHALL BE ALLOWED.
- THE FORWARD COUNTER TOP SHALL BE A PLASTIC LAMINATE. TEXTURE AND COLOR SHALL BE APPROVED BY OWNER'S REPRESENTATIVE. PLASTIC LAMINATE SHALL MEET NSF STANDARD NO. 35.
- FIT SEA RAILS TO OPEN SHELVES.
- ALL CUPBOARDS TO HAVE POSITIVE LOCKING LATCHES AND TO BE FITTED WITH SEA RAILS.
- CUTOUTS IN COUNTER TOP SHALL BE SEALED WITH EPOXY SEALER.

REFERENCES

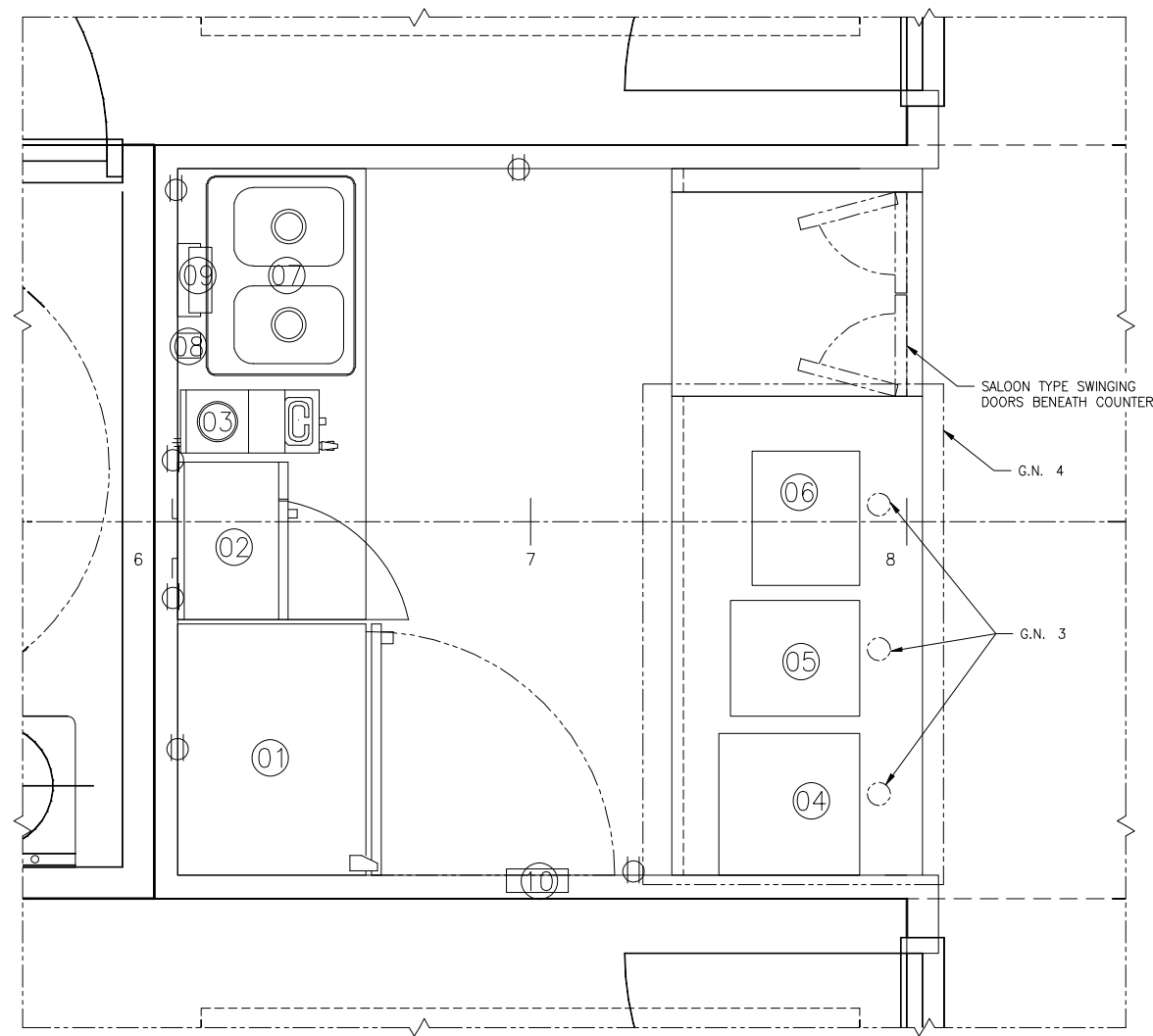
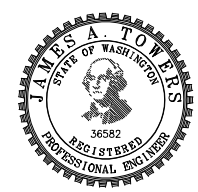
- 16109-003-802-0 CONTRACT SPECIFICATIONS



Elliott Bay Design Group North Carolina, PLLC

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

PROJECT: **PEDESTRIAN FERRY**



PLAN 1-4A
FOOD SERVICE ARRANGEMENT
 LOOKING DOWN FROM ABOVE
 SCALE: 1"=1'-0"

FOOD SERVICES ARRANGEMENT

SIZE	D	DWG NO.	16109-003-601-2	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-601-2-	SHEET	1 OF 2
DWN	SKW	MOD	CKD RCB	APVD	JAT
				APVD DATE	3/3/2017

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1

D

C

B

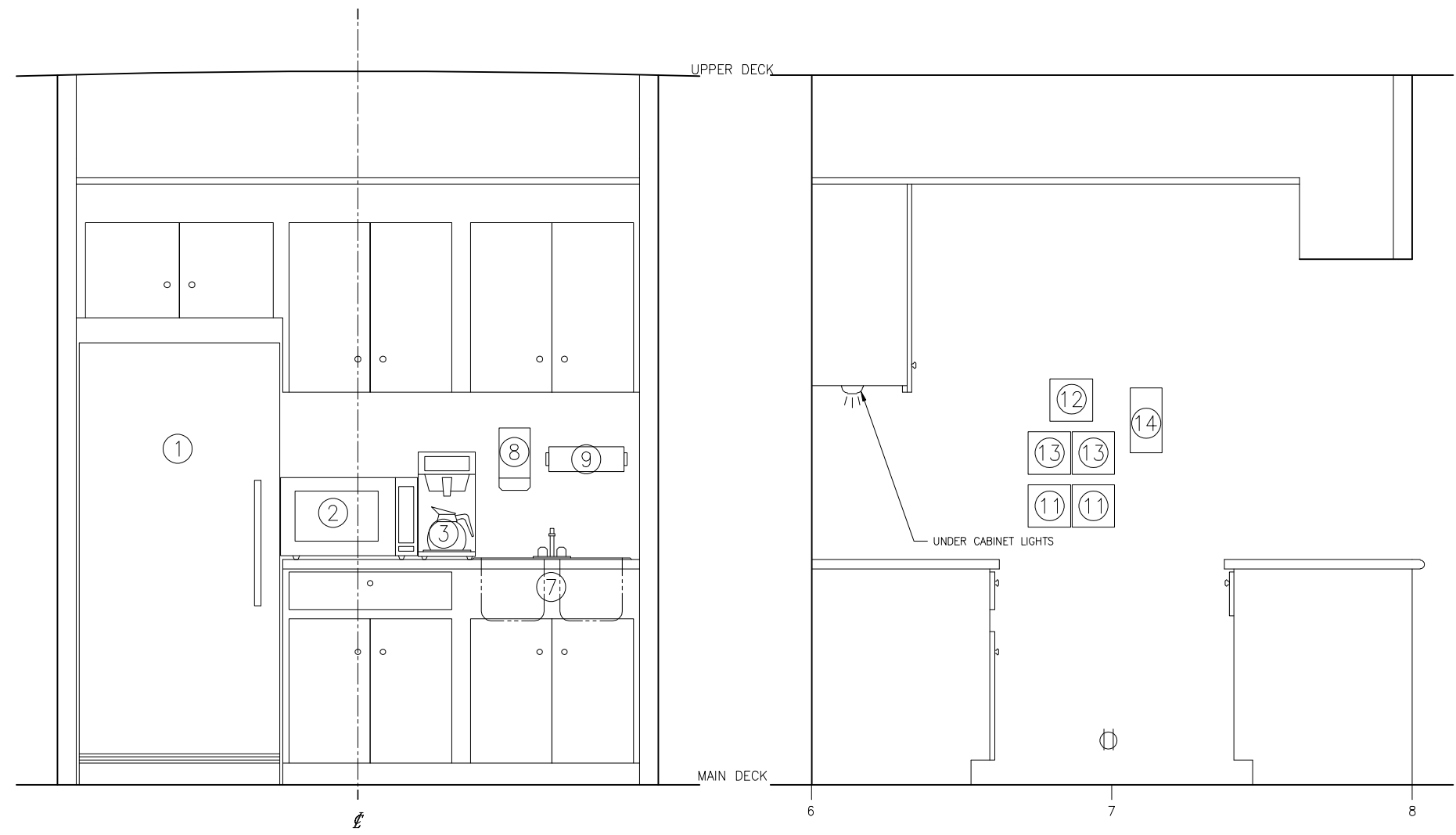
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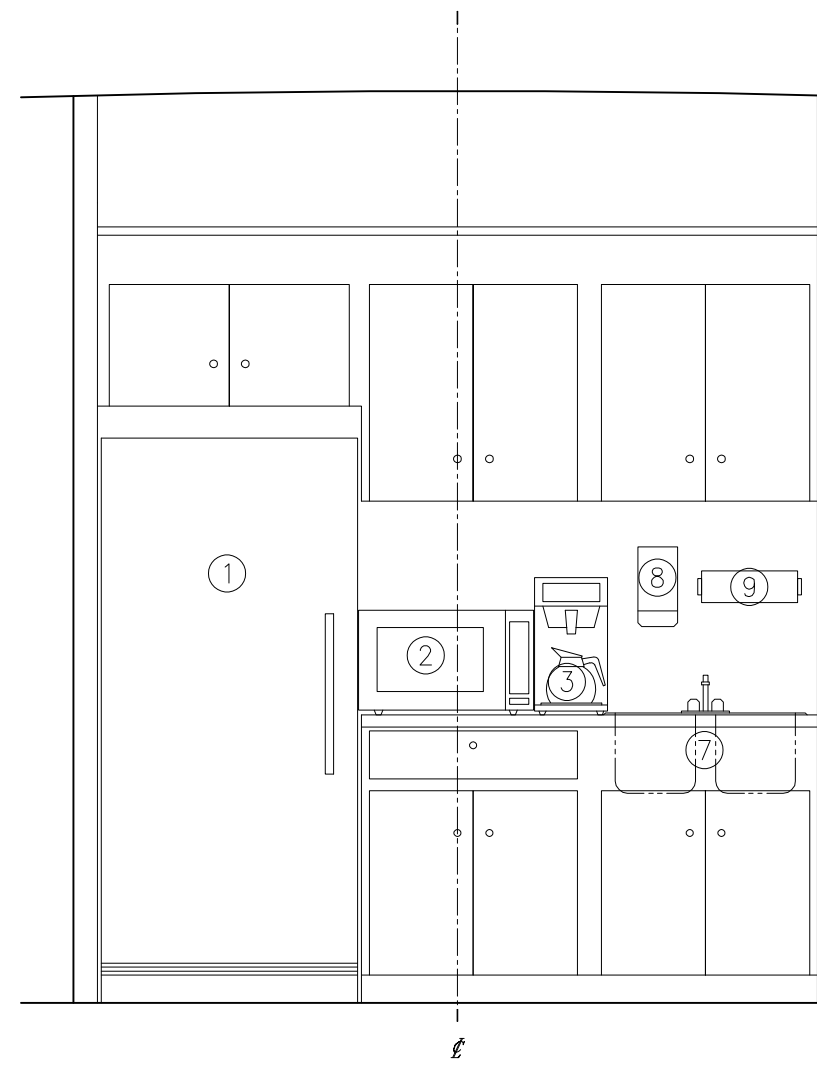
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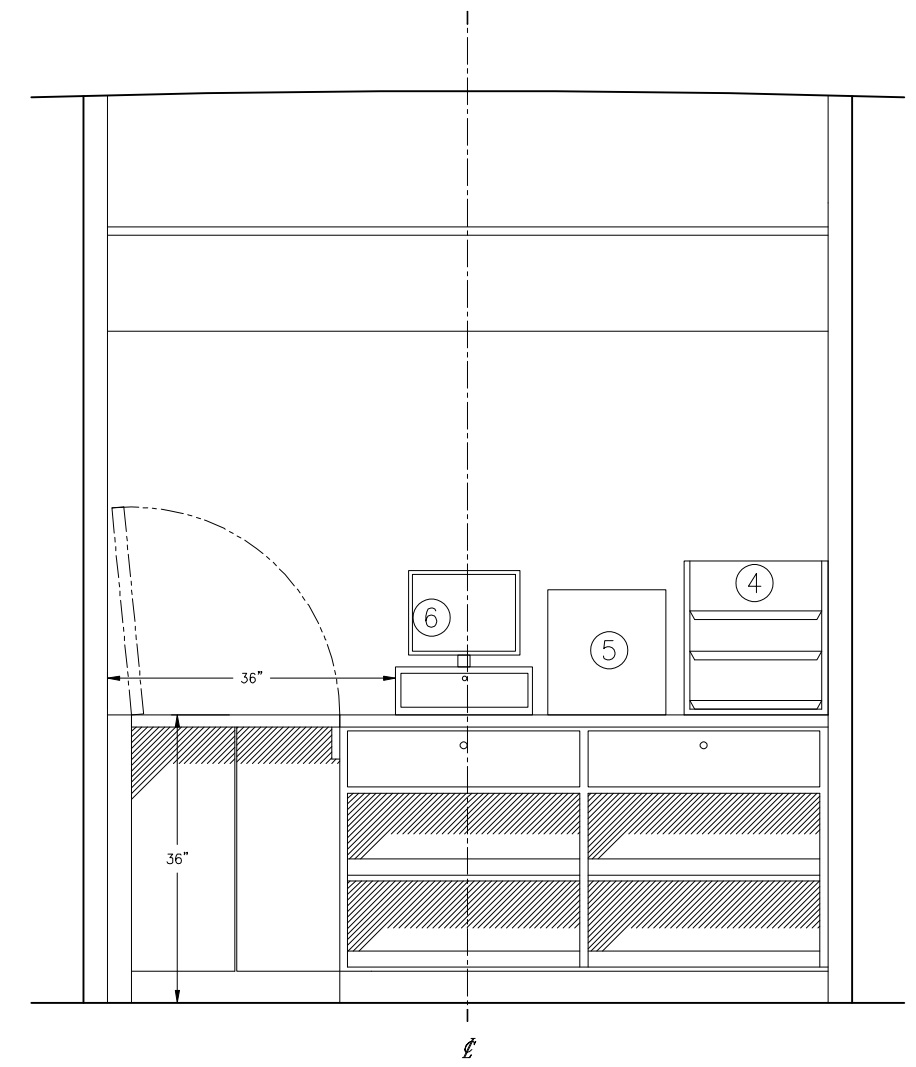
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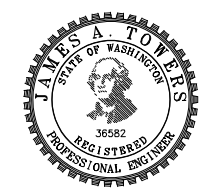
ELEVATION 2-3A
 FOOD SERVICE PORT ARRANGEMENT
 CL LOOKING PORT
 SCALE: 1"=1'-0"
 SCALE: 1/2"=1'-0"



SECTION 2-5A
 AFT FOOD SERVICE ARRANGEMENT
 FR 7 LOOKING AFT
 SCALE: 1"=1'-0"
 SCALE: 1/2"=1'-0"



SECTION 2-2A
 FOOD SERVICE FWD ARRANGEMENT
 FR 7 LOOKING FWD
 SCALE: 1"=1'-0"



SIZE	D	DWG NO.	16109-003-601-2	REV	-
SCALE	AS NOTED	FILE NAME	16109-003-601-2-	SHEET	2 OF 2

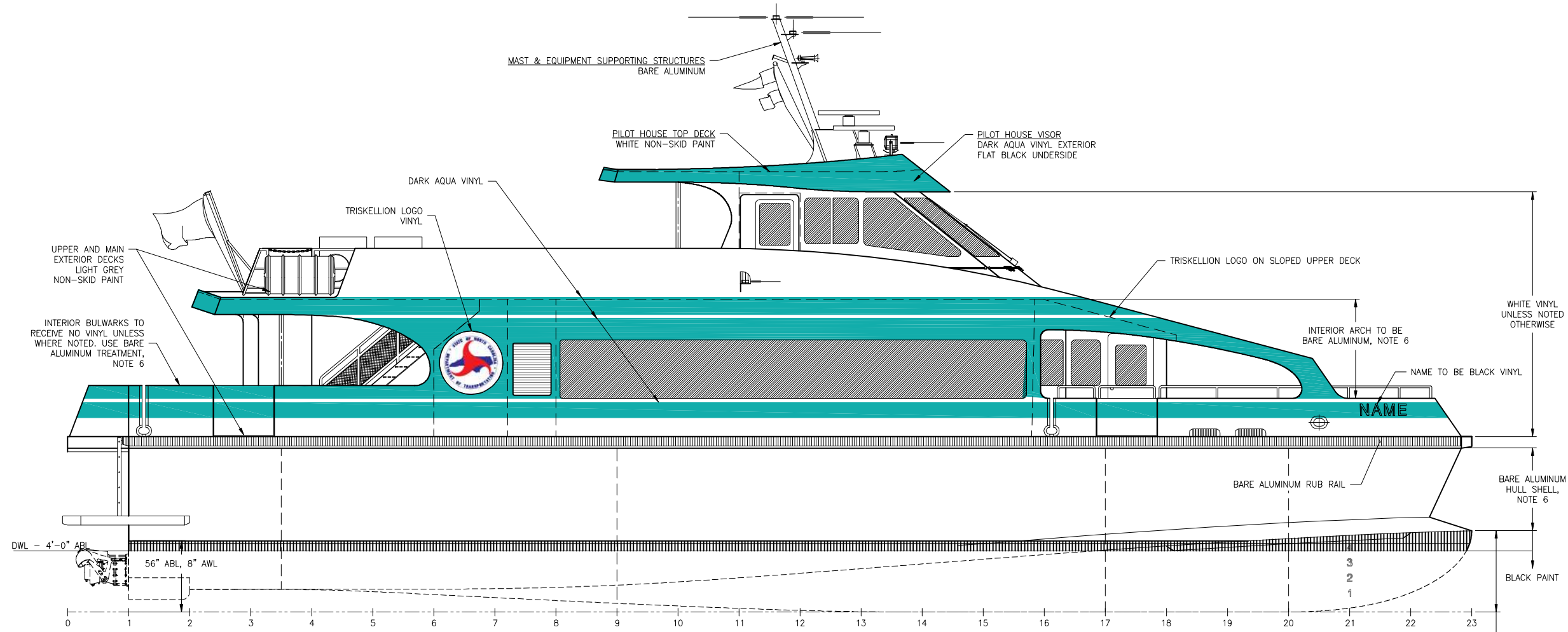
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REFERENCES	
1.	16109-003-802-0 CONTRACT SPECIFICATIONS
2.	16109-003-101-3 RENDERINGS

GENERAL NOTES	
1.	ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
2.	PAINT AND VINYL APPLICATION AND VENDORS SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATION, SECTION 631.
3.	SURFACE PREPARATION SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT SPECIFICATION, SECTION 631, AND VENDOR RECOMMENDATIONS.
4.	VINYL APPLICATION SHALL BE BY QUALIFIED PERSONNEL.
5.	TO BE USED IN CONJUNCTION WITH REFERENCE 2
6.	BARE ALUMINUM BETWEEN RUB RAIL AND BOTTOM PAINT TO BE GIVEN LIGHT SWEEP WITH WALNUT SHELL AFTER COMPLETION OF ALL FABRICATION.
7.	PLEASE NOTE TWO OR THREE STRIPES MAY BE ADDED PENDING OWNER'S DECISION.

REVISION HISTORY					
REV	ZONE	DESCRIPTION	DWN	DATE	APVD
A	ALL	INCORPORATED N.C. COLOR OPTIONS	JXB	3/8/17	BWK




 COLOR OPTION 1: DARK AQUA

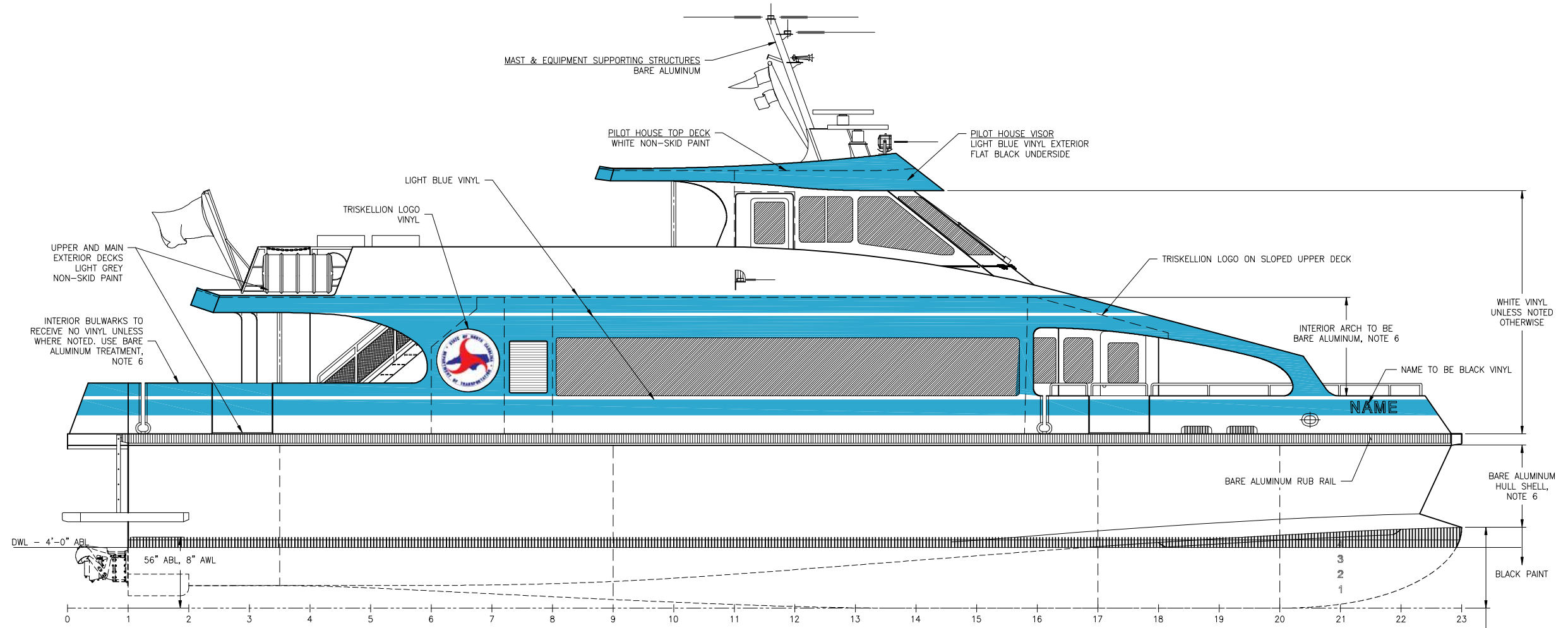


	Elliott Bay Design Group North Carolina, PLLC	
	CLIENT	NORTH CAROLINA D.O.T. RALEIGH, NORTH CAROLINA
PROJECT	PEDESTRIAN FERRY	
TITLE PAINT & VINYL LAYOUT		
SIZE D	DWG NO. 16109-003-631-0	REV A
SCALE AS NOTED	FILE NAME 16109-003-631-0A	SHEET 1 OF 2
DWN NJB	MOD MWR	CKD APVD EWK/JAT
		APVD DATE 3/7/2017

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6 5 4 3 2 1




COLOR OPTION 2: LIGHT BLUE

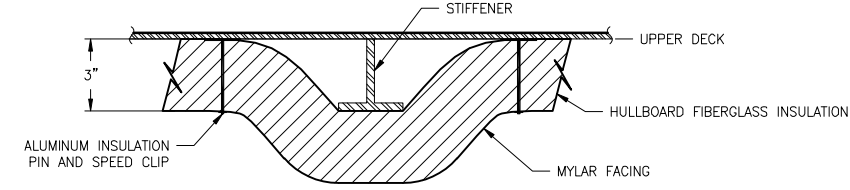
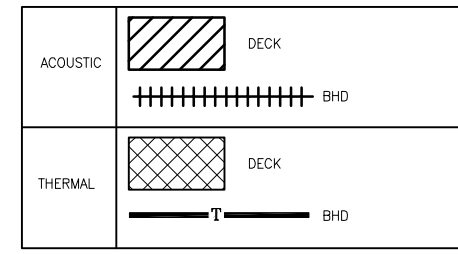
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SIZE	D	DWG NO.	16109-003-631-0	REV	A
SCALE	AS NOTED	FILE NAME	16109-003-631-0A	SHEET	2 OF 2

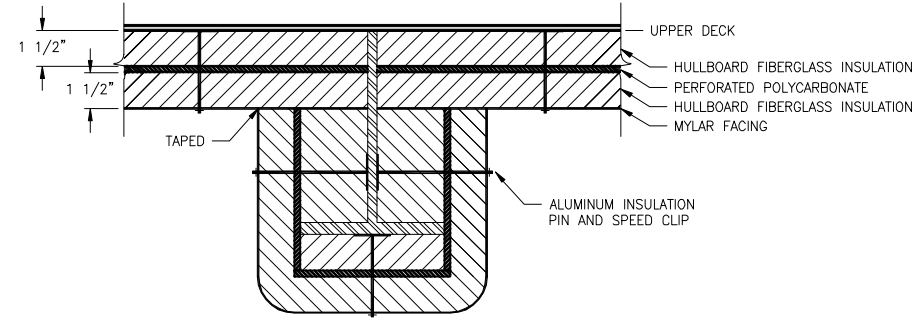
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INSULATION KEY



DETAIL 1-3D
 THERMAL INSULATION
 NO SCALE



DETAIL 1-3C
 ACOUSTIC INSULATION
 NO SCALE

LININGS SCHEDULE

DESCRIPTION	LOCATION	COLOR/FINISH	COMMENTS
JOINER LININGS	ALL INTERIOR SPACES	PAINTED/COLOR TBD	0.065 ALUMINUM SHEET PAINTED. ALUMINUM SQUARE TUBE FURRING WITH DOUBLE SIDED TAPED ADHESIVE
FLOOR COVERINGS			
CUT PILE CARPET CONTINUOUS	PILOTHOUSE	TBD	SHEET STYLE, USCG APPROVED
CUT PILE CARPET CONTINUOUS	PASSENGER CABIN	TBD	SHEET STYLE, USCG APPROVED
TRACTION FLOORING	WET SPACES / FOOD SPACES	TBD	CARRY FLOORING 4" UP BHD
LININGS			
THERMAL INSULATION	OVERHEAD AND BULKHEADS IN PASSENGER CABIN & PILOTHOUSE	FOIL FACED	3 INCH MINIMUM THICKNESS. VAPOR BARRIER MAY BE BoPET POLYESTER FILM/FIBERGLASS FACING OR FOIL FACE
ACOUSTIC INSULATION	OVERHEAD IN ENGINE ROOM	WHITE	INSULATION TO COVER OVERHEAD AND EXTEND DOWN 2 FEET FROM OVERHEAD ON SIDES AND BULKHEADS. SANDWICH BASE LAYER OF INSULATION (MIL-1-742, TY. II), PERFORATED POLYCARBONATE 1LB/SQFT, TOP LAYER INSULATION (MIL-1-22023, TY. III) WITH FACING TAPED AND SEALED. FINISH WITH PERFORATED ALUMINUM SHEET METAL LINING.
ACOUSTIC INSULATION	OVERHEAD AND BULKHEADS OF ACCESS TRUNKS	WHITE	SANDWICH BASE LAYER OF INSULATION (MIL-1-742, TY. II), PERFORATED POLYCARBONATE 1LB/SQFT, TOP LAYER INSULATION (MIL-1-22023, TY. III) WITH FACING TAPED AND SEALED. FINISH WITH PERFORATED ALUMINUM SHEET METAL LINING.

REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD
A	1-5D	1. REMOVED MANUFACTURER AND MODEL NAMES FROM THE LININGS SCHEDULE. ADDED MIL-SPECS	JHP	3/24/17	JAT

GENERAL NOTES

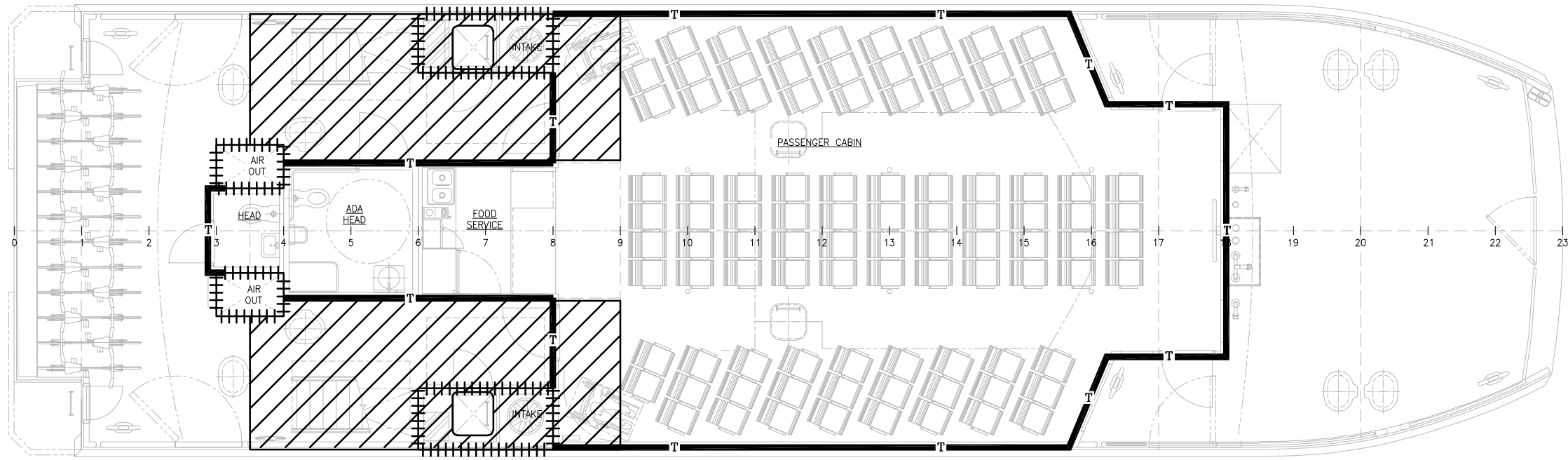
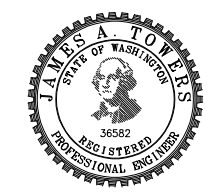
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- IN WAY OF ENGINE ROOM ACCESS TRUNKS AND MACHINERY SPACES ADD PERFORATED SHEET METAL LININGS. LININGS SHALL BE 12 GAUGE WITH Ø1/16" HOLES LOCATED 3/32" ON CENTER AND TOTAL OPEN AREA OF 41%. PERFORATED SHEET METAL LININGS ARE NOT REQUIRED IN THE AIR OUTLET DUCTS FROM THE ENGINE ROOM.

REFERENCES

- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-101-1 PROFILES AND ARRANGEMENTS



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 CLIENT: NORTH CAROLINA D.O.T. RALEIGH, NORTH CAROLINA
 PROJECT: PEDESTRIAN FERRY



MAIN DECK

INSULATION & LININGS PLAN

SIZE D	DWG NO. 16109-003-635-0	REV A
SCALE 1/4"=1'-0"	FILE NAME 16109-003-635-0A	SHEET 1 OF 2
DWN DKG	MOD	CKD NJB APVD JAT APVD DATE 3/3/2017

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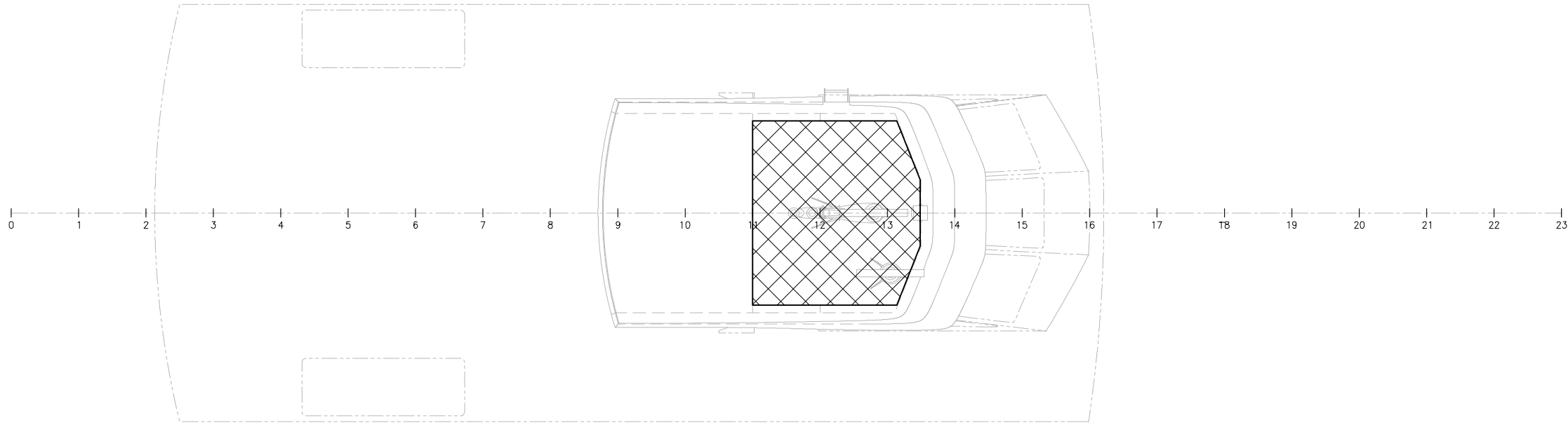
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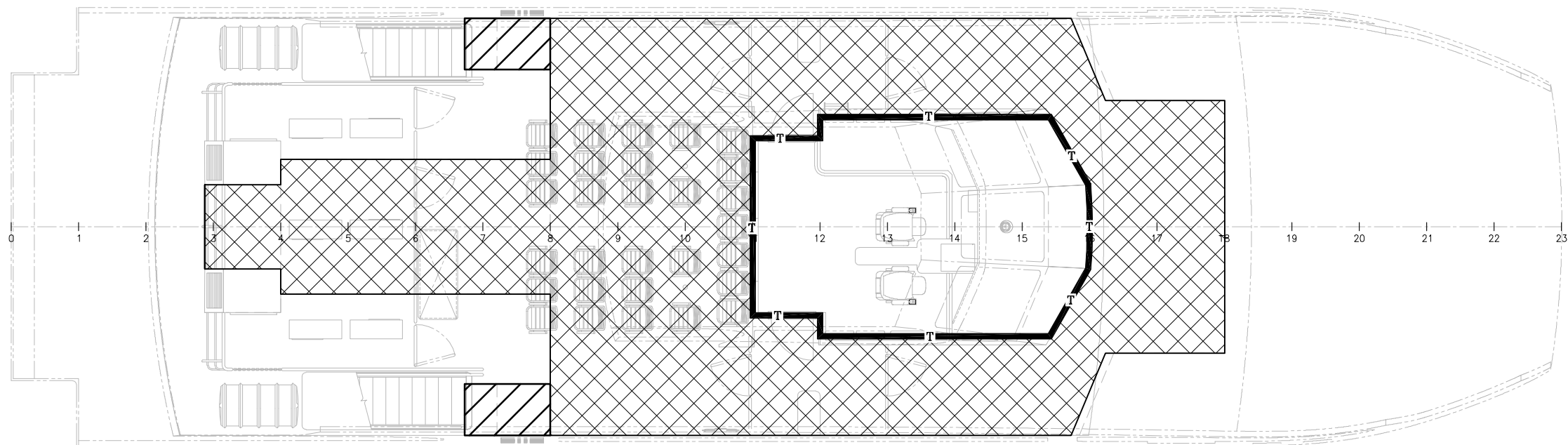
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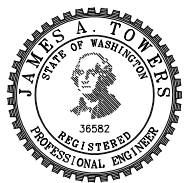
A



PILOT HOUSE TOP



UPPER DECK



SIZE	DWG NO.	REV
D	16109-003-635-0	A
SCALE	FILE NAME	SHEET
1/4"=1'-0"	16109-003-635-0A	2 OF 2

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REVISION HISTORY

REV	ZONE	DESCRIPTION	DWN	DATE	APVD

GENERAL NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER T REGULATIONS.
- LIGHT FIXTURES LABELED WITH AN 'E' SHALL BE EQUIPPING WITH BACKUP BATTERIES CAPABLE OF POWERING THE FIXTURE FOR AT LEAST 90 MINUTES.
- LIGHT FIXTURES IN THE INTERIOR SPACES SHALL BE INSTALLED IN THE OVERHEAD SPACE.

LIGHTING SYMBOLS LIST

SYMBOL	QTY	DESCRIPTION	REMARKS
	14	2FT LIGHT FIXTURE	--
	31	OVERHEAD RECESSED DOWN LIGHT	--
	2	OVERHEAD RECESSED DOWN LIGHT	W/ RED LENS
	4	OVERHEAD RECESSED DOWN LIGHT	W/ EMERGENCY BALLAST
	13	DECK LIGHT, OVERHEAD MOUNT	--
	6	DECK LIGHT, OVERHEAD MOUNT	W/ AMBER LENS
	2	DECK LIGHT, OVERHEAD MOUNT	W/ EMERGENCY BALLAST
	1	SEARCH LIGHT	--
	6	FLOODLIGHT	--
	2	LIFERAFT LAUNCHING FLOODLIGHT	--
	4	EXIT SIGN	PHOTOLUMINESCENT

LININGS SCHEDULE

DESCRIPTION	LOCATION	STYLE NAME/ STYLE NUMBER	COLOR/FINISH	COMMENTS
CEILINGS				
CEILING TILE SYSTEM	PASSENGER CABIN	CLIP-IN TILES WITH SHARP EDGES	WHITE	600mm x 600mm PERFORATED ALUMINUM TILES, CONTINUOUS STYLE PERFORATION, PAINTED SURFACE. DROP-IN THERMAL INSULATION WITH PERFORATED SCRIM FACING.
CEILING TILE SYSTEM	PILOTHOUSE	CLIP-IN TILES WITH SHARP EDGES	BLACK	600mm x 600mm PERFORATED ALUMINUM TILES, CONTINUOUS STYLE PERFORATION, PAINTED SURFACE. DROP-IN THERMAL INSULATION WITH PERFORATED SCRIM FACING.

REFERENCES

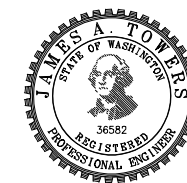
- 16109-003-802-0 CONTRACT SPECIFICATIONS
- 16109-003-101-1 PROFILES AND ARRANGEMENTS
- 16109-003-065-0 HVAC BLOCK DIAGRAM
- 16109-003-130-0 SUPERSTRUCTURE
- 16109-003-635-0 INSULATION AND LININGS PLAN



Elliott Bay Design Group North Carolina, PLLC

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 RALEIGH, NORTH CAROLINA

PROJECT: PEDESTRIAN FERRY

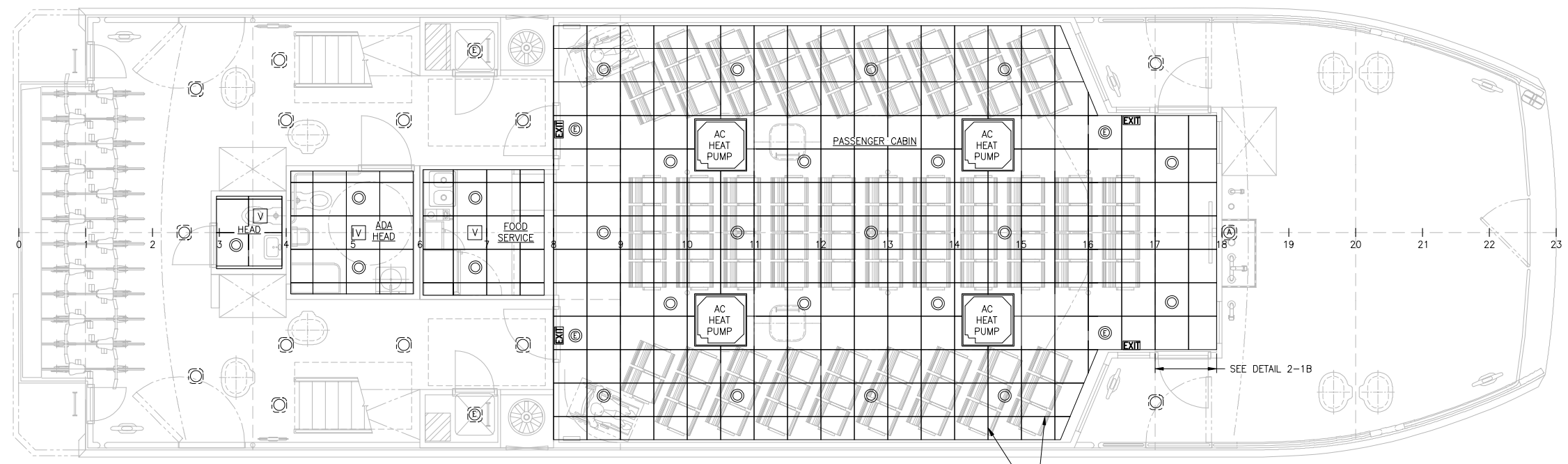


CEILING AND LIGHTING PLAN

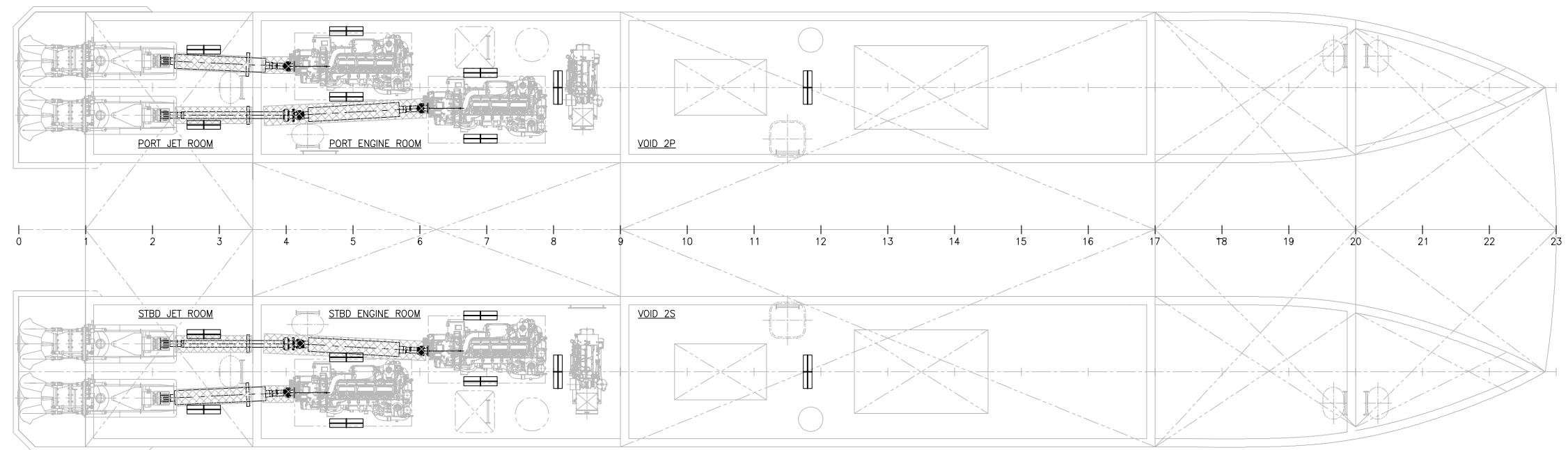
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				APVD DATE	3/3/2017

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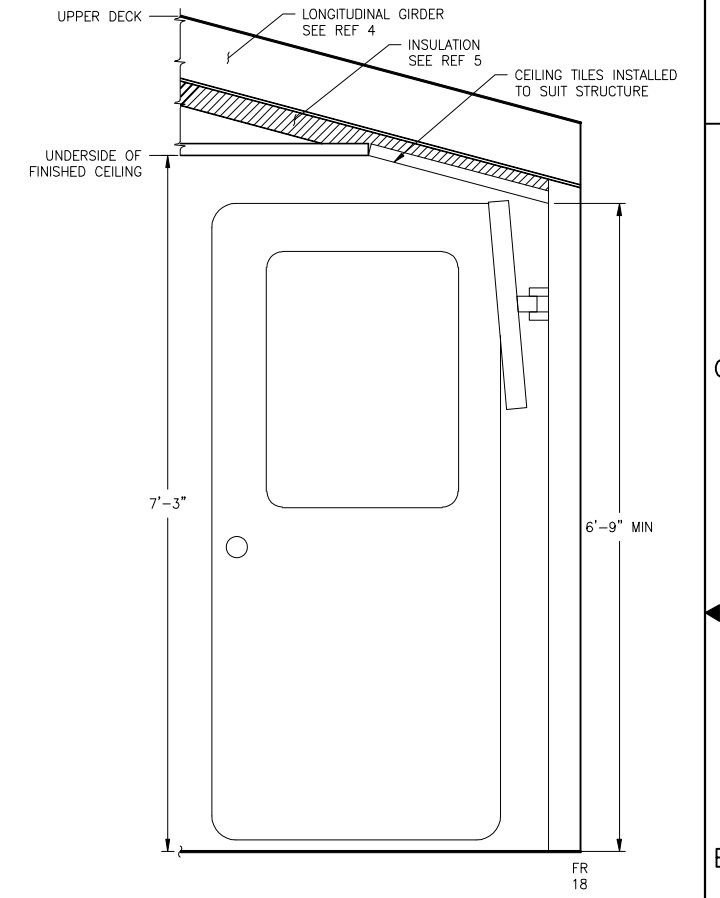
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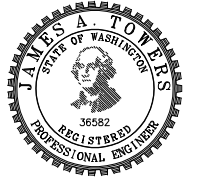
MAIN DECK
 SCALE: 1/4"=1'-0"



HOLD
 SCALE: 1/4"=1'-0"



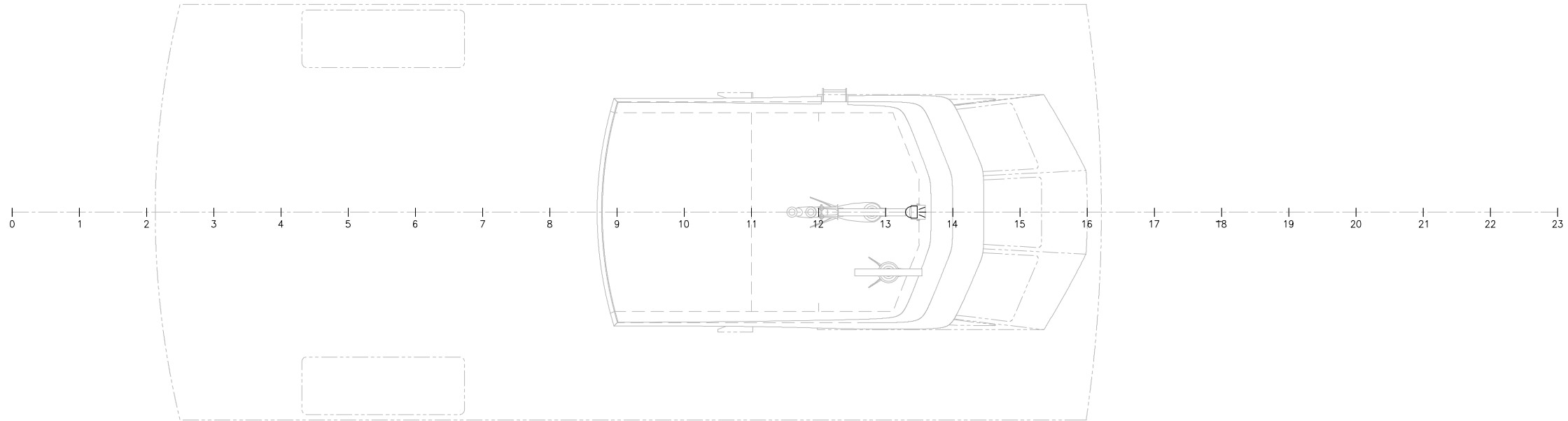
DETAIL 2-1B
 CEILING TILE TRANSITION
 MAIN DECK LOOKING OUTBOARD
 SCALE: 1"=1'-0"



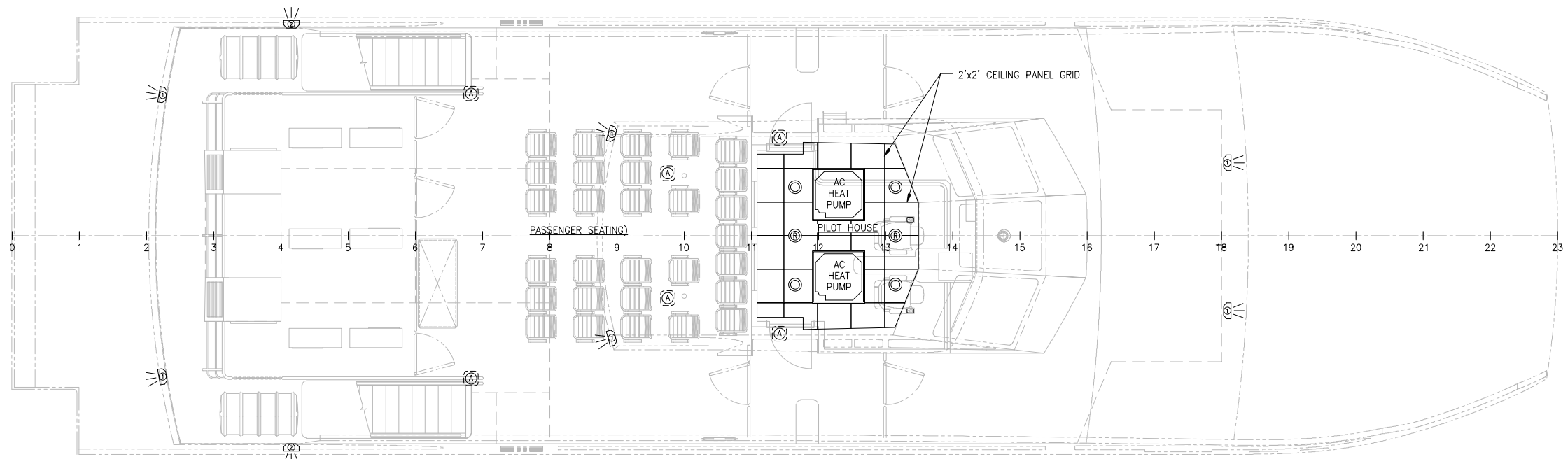
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PILOT HOUSE TOP



PILOT HOUSE DECK



SIZE	D	DWG NO.	16109-003-635-1	REV	-
SCALE	1/4"=1'-0"	FILE NAME	16109-003-635-1-	SHEET	3 OF 3

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