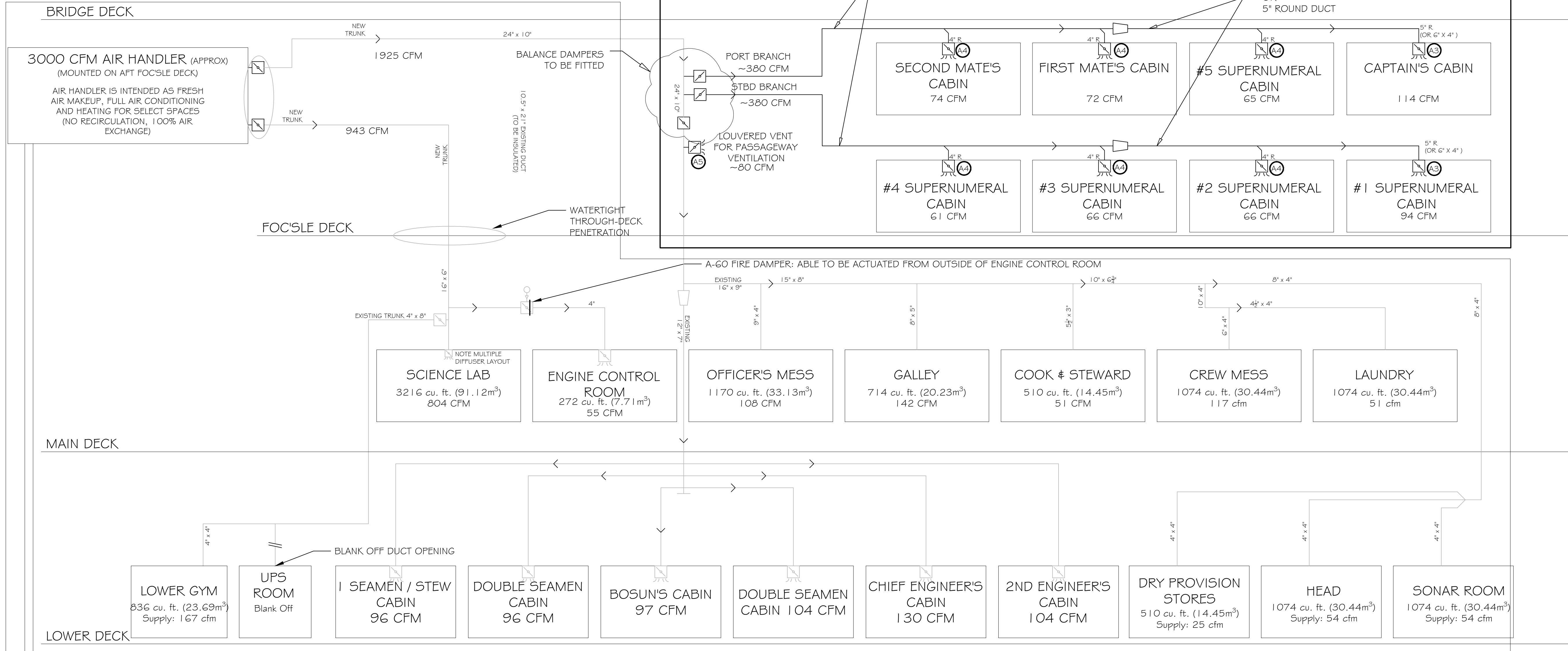


PIPING SYSTEM IDENTIFICATION COLOURS				
LINE	MAIN MEDIA	MARKING	SPECIFIC MEDIA	COLOUR
	AIR IN VENTILATION SYSTEMS	<div><div></div><div></div></div>	NATURAL EXHAUST AIR	WH - BN - WH
	AIR IN VENTILATION SYSTEMS	<div><div></div><div></div></div>	CONDITIONED SUPPLY AIR	WH - VT - WH

ITEM LIST				
ITEM	DESCRIPTION	QUANTITY	REFERENCE	MATERIAL
A1	EXHAUST VENTILATION FANS VENTS US, TT SILENT M 200, 120 VAC, 60 Hz	2	-	-
A2	VENTILATION EXTRACTION GRILLES HART & COCKEY A-501 8" DIFFUSERS NO DAMPER	7	-	-
A3	VENTILATION OUTLET GRILLES (TWO CARDS) HART & COCKEY A-504 MS. 8" DIFFUSERS WITH DAMPER	2	-	-
A4	VENTILATION GRILLES (INLETS AND OUTLETS) HART & COCKEY A-504 MS. 8" DIFFUSERS WITH DAMPER	6	-	-
A5	VENTILATION GRILLE (PASSAGEWAY) HART & COCKEY A-716MS DIFFUSER LOUVERS AND DAMPER	1	-	-

AREA OF FORECASTLE DECK REFIT

REMAINDER OF SYSTEM SHOWN FOR REFERENCE



NOTES:

- ALL SPACES REFIT WITH NEW DUCTING TO BE FITTED WITH DAMPERS ON DIFFUSER OUTLETS, WHERE CHOSEN DIFFUSERS DO NOT INCLUDE DAMPERS, A SEPARATE ADJUSTABLE DAMPER IS TO BE FITTED
- DUCTING TO BE INSULATED WITH ARMAFLEX OR EQUAL INSULATION
- EXISTING DUCTING TO BE INSULATED WITH ARMAFLEX OR EQUAL INSULATION WITH ADDITIONAL HARDCOAT WHERE EXPOSED (E.G. PASSAGEWAYS)
- INSULATION ON EXTERNAL DUCTS TO BE MINIMUM 1" THICK WITH HARD COVERS WHERE CLOSE TO DECKS
- INSULATION ON INTERNAL DUCTS TO BE MINIMUM 1/4" THICK
- FIRE DAMPERS TO BE INSTALLED AS NOTED
- DUCTING ARRANGEMENTS AND BALANCING DAMPERS TO BE ARRANGED BY HVAC SUPPLIER
- DUCTING SIZES TO BE CONFIRMED BY CONTRACTOR AND ADJUSTED AS REQUIRED FOR FLOW OR SPACIAL CONSTRAINTS

DESIGN CONDITIONS: Supplier to confirm that system to be supplied will achieve the following

Heating Design Temperature	Cooling Design Temperature
Outside air dry bulb -10 Deg C	Outside air dry bulb 30 Deg C
Inside air dry bulb 22 Deg C	Inside air dry bulb 22 Deg C

Relative Humidity

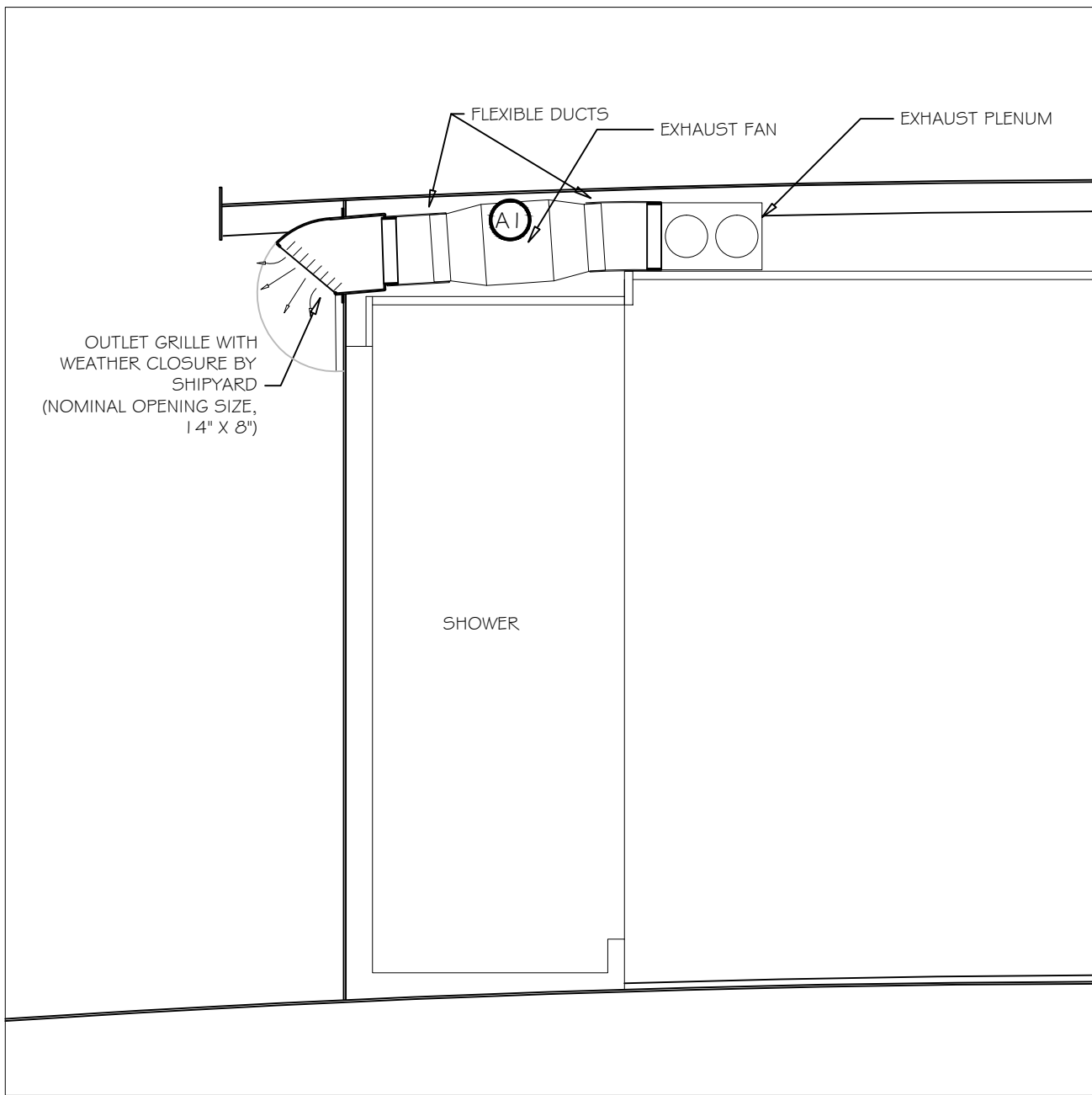
The design off coil relative humidity of the supply shall not exceed 95% R.H. The system design relative humidity shall not exceed 50% R.H. Individual rooms within the system shall not exceed 60% R.H.

REVISION DATE	ISSUED : APR 12, 2018
REVISION	DRAWING BY : MD
	CHECKED BY : MD

CCG VECTOR HVAC SYSTEM

STATUS:	APPROVED BY	REV -
SHEET# 1/3	PRELIMINARY - FOR REVIEW	1146-4-508-02 FOC'SLE DECK HVAC SYSTEM - FRESH AIR MAKEUP

PIPING SYSTEM IDENTIFICATION COLOURS				
LINE	MAIN MEDIA	MARKING	SPECIFIC MEDIA	COLOUR
	AIR IN VENTILATION SYSTEMS	[Orange]	NATURAL EXHAUST AIR	WH - BN - WH
	AIR IN VENTILATION SYSTEMS	[Purple]	CONDITIONED SUPPLY AIR	WH - VT - WH
	AIR IN VENTILATION SYSTEMS	[Black]	DISCHARGE AIR	WH - BK - WH
ITEM LIST				
ITEM	DESCRIPTION	QUANTITY	REFERENCE	MATERIAL
A1	EXHAUST VENTILATION FAN VENTS US, 11" DIA/RT 1/200, 120 VAC, 60 Hz	2	-	-
A2	VENTILATION EXTRACTION GRILLES HART # COOLEY A-504 18" DIFFUSERS NO DAMPER	7	-	-
A3	VENTILATION OUTLET GRILLES (FWD CABINS) HART # COOLEY A-504 18" DIFFUSERS WITH DAMPER	2	-	-
A4	VENTILATION GRILLES (AFTERS AND OUTLETS) HART # COOLEY A-504 18" DIFFUSERS WITH DAMPER	6	-	-

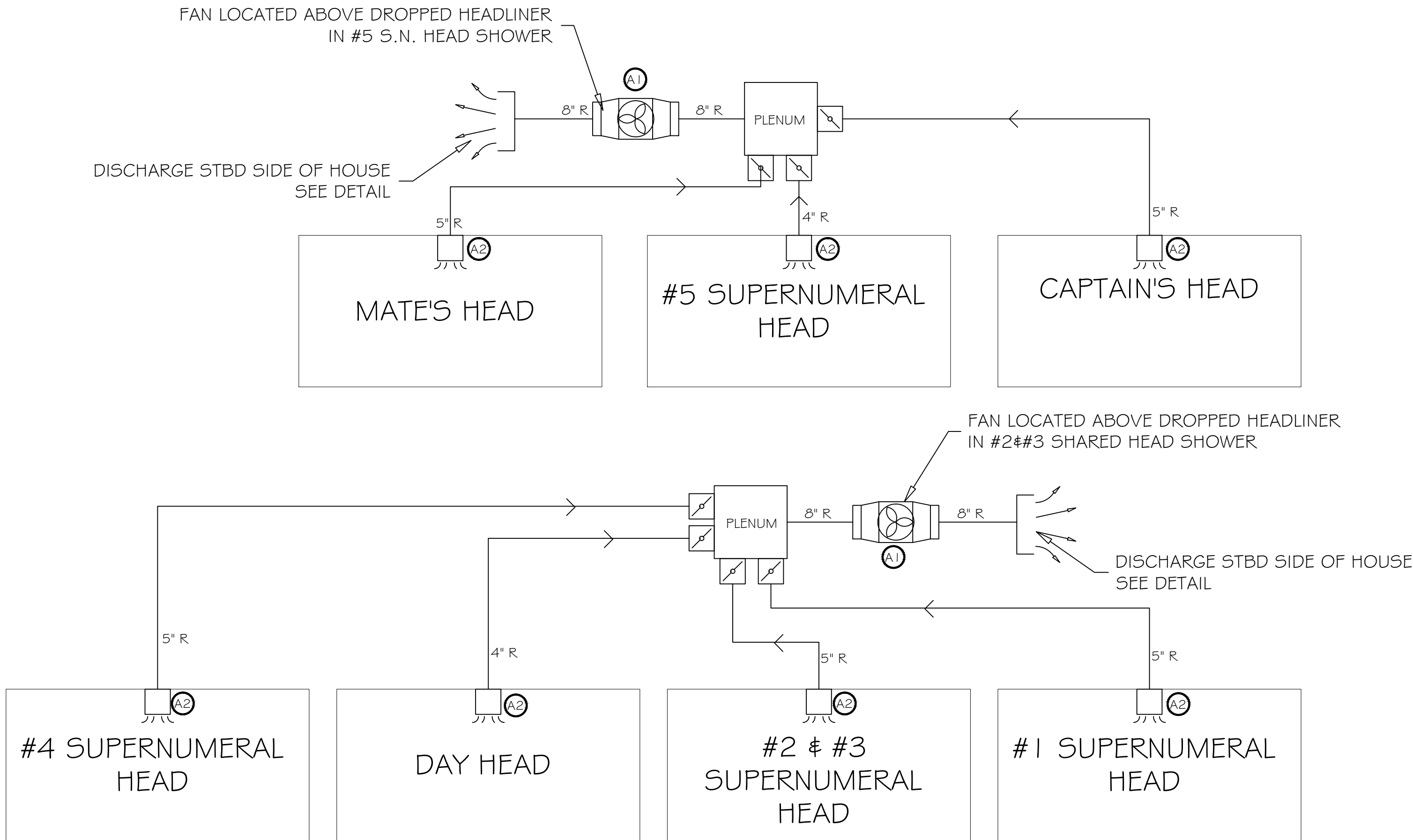


VENT OUTLET SUGGESTED DETAIL
N.T.S.
FINAL ARRANGEMENTS TO BE DETERMINED ON SITE, TO BE IN
KEEPING WITH LOAD LINE REQUIREMENTS FOR VENTILATION
OPENINGS

NOTES:

1. DUCTING TO BE GALVANIZED SPIRAL DUCT OR SIMILAR. CUSTOM DUCTING AND FITTINGS WILL BE REQUIRED IN CERTAIN AREAS DUE TO SPACE CONSTRAINTS OR CONNECTION POINTS.
2. DUCTING ROUTES SHOWN ARE EXAMPLE ONLY. ACTUAL ROUTING OF DUCTS TO BE DETERMINED BY THE INSTALLER ON SITE.
3. DUCTING PATHS FINALLY INSTALLED ARE TO BE SKETCHED, AND PROVIDED TO THE VESSEL FOR ITS RECORDS.
4. INLET AND OUTLET DUCTS ARE AS NOTED. WHERE REQUIRED, ROUND DUCTING CAN BE SUBSTITUTED FOR EQUIVALENT SIZED RECTANGULAR DUCTING
5. EXTRACTION FANS ARE TO BE INSTALLED ON SOFT-MOUNTS AND ARE TO HAVE FLEXIBLE DUCTING CONNECTIONS AT BOTH ENDS. IF ACOUSTIC NOISE IS OBJECTIONABLE, ADDITIONAL ACOUSTIC ENCLOSURES ARE TO BE PROVIDED.
6. EXHAUST FAN LOCATIONS SHOWN ARE PRELIMINARY ONLY. ACTUAL LOCATION TO BE DETERMINED AFTER TEAR OUT.
7. EXHAUST FANS TO BE SHUT OFF THROUGH THE VESSEL'S EMERGENCY VENTILATION SHUT DOWN SYSTEM
8. SYSTEM TO BE BALANCED DURING COMMISSIONING. ROOM INLET DIFFUSERS TO BE LEFT AT 100% OPEN DURING INITIAL SETTING OF DAMPERS AT THE FRESH AIR PLENUM. CREW TO BE ALLOWED FINE CONTROL OF AIR FLOWS AT THE DIFFUSERS.

FORECASTLE DECK AIR EXHAUST SYSTEM



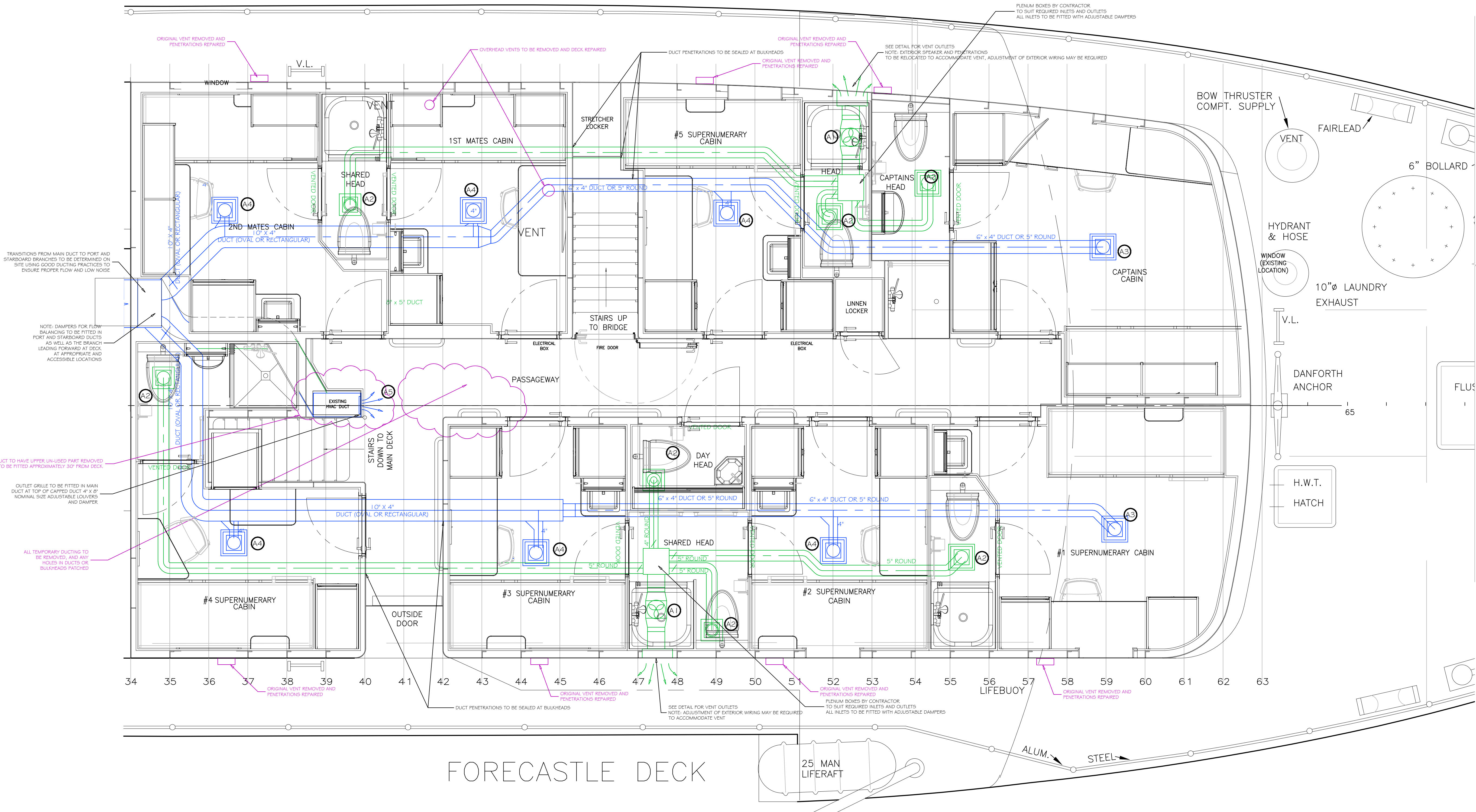
REVISION	REVISION DATE		
	ISSUED : APR 12, 2018	DRAWING BY : MD	CHECKED BY : MD

CCG VECTOR
HVAC SYSTEM

SHEET# 2/3	APPROVED BY	
	PRELIMINARY - FOR REVIEW	REV -
1146-4-508-02 FOCLE DECK HVAC SYSTEM - EXHAUST AIR SYSTEM		

- NOTES:
- ALL SPACES REFIT WITH NEW DUCTING TO BE FITTED WITH DAMPERS ON DIFFUSER OUTLETS, WHERE CHOSEN DIFFUSERS DO NOT INCLUDE DAMPERS, A SEPARATE ADJUSTABLE DAMPER IS TO BE FITTED
 - DUCTING TO BE INSULATED WITH ARMAFLEX OR EQUAL INSULATION
 - INSULATION ON INTERNAL DUCTS TO BE MINIMUM $\frac{1}{4}$ " THICK
 - DUCTING ARRANGEMENTS AND BALANCING DAMPERS TO BE ARRANGED BY HVAC SUPPLIER
 - DUCTING SIZES TO BE CONFIRMED BY CONTRACTOR AND ADJUSTED AS REQUIRED FOR FLOW OR SPACIAL CONSTRAINTS
 - ALL PATHS SHOWN ARE FOR REFERENCE ONLY, CONTRACTOR TO DETERMINE ACTUAL PATHS BASED UPON VESSEL CONSTRAINTS

PIPING SYSTEM IDENTIFICATION COLOURS				
LINE	MAIN MEDIA	MARKING	SPECIFIC MEDIA	COLOUR
	AIR IN VENTILATION SYSTEMS		NATURAL EXHAUST AIR	WH - BN - WH
	AIR IN VENTILATION SYSTEMS		CONDITIONED SUPPLY AIR	WH - VT - WH
	AIR IN VENTILATION SYSTEMS		DISCHARGE AIR	WH - BK - WH
ITEM LIST				
ITEM	DESCRIPTION	QUANTITY	REFERENCE	MATERIAL
A1	EXHAUST VENTILATION FANS VENTS UP, 11" DIA IN 200, 120 VAC, 60 HZ	2	-	-
A2	VENTILATION EXTRACTION GRILLES HART & COOLEY A-504 18" 4" DIFFUSERS NO DAMPER	7	-	-
A3	VENTILATION OUTLET GRILLES (PND CABINS) HART & COOLEY A-504 MS 6" DIFFUSERS WITH DAMPER	2	-	-
A4	VENTILATION GRILLES (INLETS AND OUTLETS) HART & COOLEY A-504 MS 6" DIFFUSERS WITH DAMPER	6	-	-
A5	VENTILATION GRILLE (PASSAGEWAY) HART & COOLEY A7 (LWS) DIFFUSERS LOUVERS AND DAMPER	1	-	-



REVISION	ISSUED : APR 12, 2018		
	DRAWING BY : MD		
REVISION	CHECKED BY : MD		

CCG VECTOR HVAC SYSTEM

SHEET# 3/3	PRELIMINARY - FOR REVIEW	REV -	
		1146-4-508-02 FOCISLE DECK HVAC SYSTEM - LAYOUT	