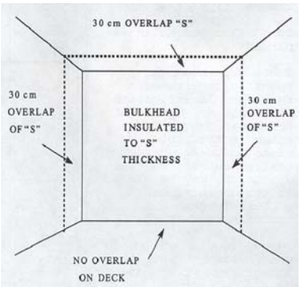
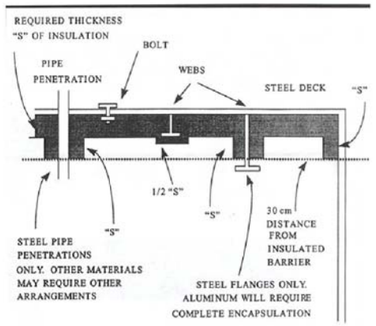
DO NOT SCALE, IF IN DOUBT ASK



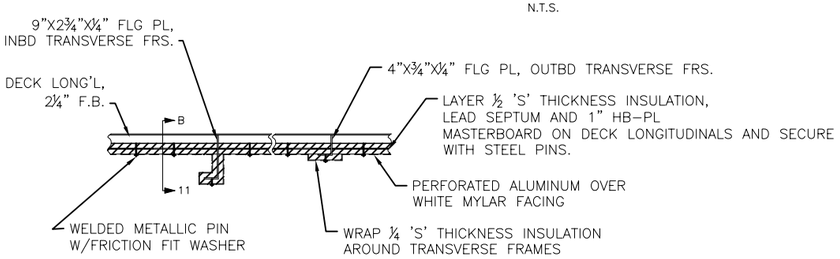
DETAIL E12

INSULATION OVERLAP REQUIREMENT
N.T.S.



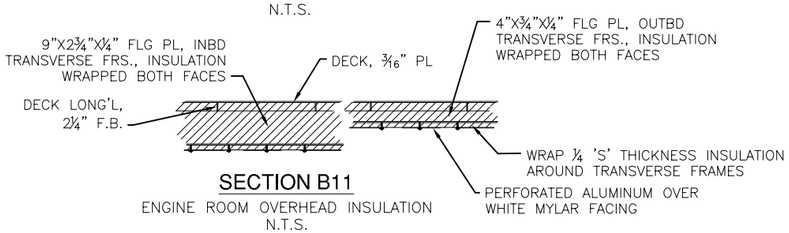
DETAIL E10

INSULATION OVERLAP DETAILS
N.T.S.



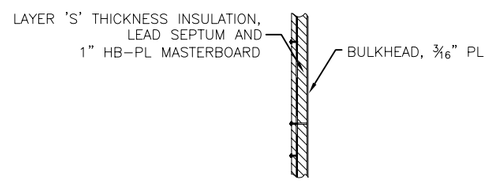
DETAIL C11

ENGINE ROOM OVERHEAD,
A-15 AND ACOUSTIC INSULATION
N.T.S.



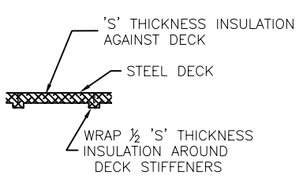
SECTION B11

ENGINE ROOM OVERHEAD INSULATION
N.T.S.



DETAIL C7

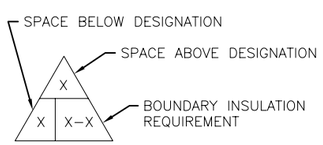
UPTAKE INSULATION
N.T.S.



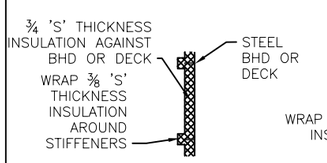
DETAIL B12

A-60 DECK INSULATION
N.T.S.

KEY

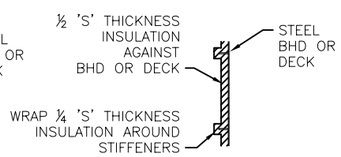


- (X) USCG SPACE TYPE DESIGNATION
- A-15 CLASS INSULATION
- A-30 CLASS INSULATION
- A-60 CLASS INSULATION
- THERMAL INSULATION



DETAIL A11

A-30 BULKHEAD OR DECK INSULATION
N.T.S.



DETAIL A10

A-15 BULKHEAD OR DECK INSULATION
N.T.S.

GENERAL NOTES (CONT'D):

15. BULKHEAD TO BULKHEAD JOINTS AND BULKHEAD TO OVERHEAD JOINTS SHALL BE OVERLAPPED FOR A DISTANCE OF 30 CM (12 IN.) AT THE FULL THICKNESS OF THE INSULATION. SEE DETAIL E10.

16. ALL SEAMS AND PENETRATIONS ARE TO BE COVERED WITH A USCG APPROVED REINFORCED POLYESTER TAPE.

17. B-0 CLASS BULKHEADS ARE TO BE MINIMUM $\frac{1}{16}$" THICK STEEL AND SUITABLY STIFFENED.

18. C CLASS BULKHEADS ARE TO BE OF NONCOMBUSTIBLE CONSTRUCTION. C' CLASS BULKHEADS ARE TO BE SMOKE TIGHT BOUNDARIES AS DEFINED IN 46 CFR 116.415.

19. THERMAL INSULATION TO BE INSTALLED IN SUPERSTRUCTURE EXTERIOR BULKHEADS, EXTERIOR BULKHEADS NOTED AS A-0 CLASS, SECOND DECK EXPOSED OVERHEAD, PILOTHOUSE/CREW CABIN OVERHEAD AND UNDER PILOTHOUSE DECK. INSULATION TO BE MAS MARINE INSULATION, 3" THICK BLANKET, FABRICATED WITH 2 MIL ALUMINUM FOIL BARRIER FACING. INSULATION TO BE SECURED WITH 12 GAUGE WELD PINS AND CLIPS WITH JOINTS AND PENTERATIONS SEALED WITH PRESSURE SENSITIVE FOIL TAPE CONFORMING TO USCG 164.012.

20. MAIN AND SECOND DECK CABIN OVERHEAD THERMAL INSULATION TO BE COVERED WITH 2' BY 2' USCG APPROVED CERAMIC CEILING PANELS ATTACHED TO SUITABLE STEEL FRAMING WITH CRES FASTERNERS.

21. ANY SUBSTITUTIONS TO STRUCTURAL FIRE PROTECTION OR THERMAL INSULATION SHALL PROVIDE EQUIVALENT LEVEL OF INSULATION AND SHALL BE USCG APPROVED.

22. WINDOWS FACING AREAS OF REFUGE SHALL BE FITTED IN A FRAMING SYSTEM DESIGNED TO HOLD THE GLASS IN PLACE IN THE EVENT OF A FIRE.

23. ALL MAIN DECK HATCHES TO BE ALUMINUM, EXCEPT IN WAY OF ENGINE ROOM (FR. 14-15) WHICH SHALL BE A STEEL, SPRING-LOADED HATCH.

JOHN ALEXANDER HUNT
STATE OF WASHINGTON
33971
REGISTERED PROFESSIONAL ENGINEER
5-10-10
EXPIRES 5-7-12

FIRE LOAD CALCULATION				
SPACE DESCRIPTION: Main Deck Passenger Cabin				
46 CFR NVIC 9-97 SPACE TYPE DESIG: Type 5				
FIRE LOAD LIMIT: 3.0 lbs/sq. ft.	GROSS DECK AREA: 1360 sq. ft.			
ITEM	Qty.	Unit Wt.	Unit Comb. Wt. lbs.	Total Comb. Wt. lbs.
Combustible Const.				
Floor Covering	N/A			
Carpet	N/A			
Carpet Pad	N/A			
Bulkhead Veneer	N/A			
Ceiling Veneer	N/A			
Trim and Molding	N/A			
Electrical Wiring	N/A			
Fixed Seating (linear ft.)	174 ft.	19.8	19.8	3445.2
Fixed Seating, Type B	N/A			
Other Items				
Operational Comb.				
Bar Supplies	N/A			
Linens	N/A			
Office Supplies	N/A			
Life Jackets	217	1.8	1.8	390.6
Cash	N/A			
Total Combustible Wt. lbs.				3835.8
Fireload, lbs/sq.ft.				2.82

FIRE LOAD CALCULATION				
SPACE DESCRIPTION: Second Deck Passenger Cabin				
46 CFR NVIC 9-97 SPACE TYPE DESIG: Type 5				
FIRE LOAD LIMIT: 3.0 lbs/sq. ft.	GROSS DECK AREA: 434.6 sq. ft.			
ITEM	Qty.	Unit Wt.	Unit Comb. Wt. lbs.	Total Comb. Wt. lbs.
Combustible Const.				
Floor Covering	N/A			
Carpet	N/A			
Carpet Pad	N/A			
Bulkhead Veneer	N/A			
Ceiling Veneer	N/A			
Trim and Molding	N/A			
Electrical Wiring	N/A			
Fixed Seating, Type A	42 ft.	19.8	19.8	831.6
Fixed Seating, Type B	N/A			
Table/Booth Laminate	9 lbs.	1.0	1.0	9
Operational Comb.				
Bar Supplies	N/A			
Linens	N/A			
Office Supplies	N/A			
Life Jackets	247	1.8	1.8	444.6
Cash	N/A			
Total Combustible Wt. lbs.				1285.2
Fireload, lbs/sq.ft.				2.96

BILL OF MATERIALS

ITEM	PART CODE	DESCRIPTION	MATERIAL	QTY	MOD.
1	–	–	–	–	–
2	–	–	–	–	–
3	–	–	–	–	–
4	–	–	–	–	–
5	–	–	–	–	–
6	–	–	–	–	–
7	–	–	–	–	–
8	–	–	–	–	–
9	–	–	–	–	–
10	–	–	–	–	–
11	–	–	–	–	–
12	–	–	–	–	–
13	–	–	–	–	–
14	–	–	–	–	–

GENERAL NOTES:

1. ALL MATERIALS, WORKMANSHIP AND INSTALLATION TO MEET THE REQUIREMENTS OF CFR 46 SUBCHAPTER K AND REFERENCE 1, AND BE TO THE SATISFACTION OF THE USCG OCMI.

2. ALL DIMENSIONS ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD PRIOR TO INSTALLATION.

3. BULKHEADS AND DECKS ARE TO BE CONSTRUCTED AS INDICATED, BASED ON DEFINITIONS PROVIDED IN 46 CFR 116.415.

4. INSULATION IS TO BE CAREFULLY FITTED TO MINIMIZE NOISE TRANSMISSION.

5. ELEVATOR IS TO BE BUILT TO ANSI/ASME A17.1 SPECIFICATIONS WITH DOORS HAVING A $1\frac{1}{2}$ HOUR RATING. INSULATION OF TRUNK SHALL BE AS INDICATED ON THIS DRAWING.

6. A-0 CLASS BULKHEADS AND DECKS ARE TO BE MINIMUM $\frac{1}{8}$" THICK STEEL AND SUITABLY STIFFENED.

7. BASE INSULATION TO BE 'S' = 2½" THICK, 7 LB MASTERSHIELD (THERMAFIBER INDUSTRIAL FELT MINERAL WOOL, USCG APPROVAL 164.007/0040/0). ANY SUBSTITUTIONS SHALL PROVIDE EQUIVALENT LEVEL OF INSULATION AND SHALL BE USCG APPROVED.

8. WHERE A-60 CLASS DECKS ARE REQUIRED, INSTALL 'S' THICKNESS INSULATION AGAINST DECK AND FACE WITH MAS-CF FIBERGLASS CLOTH (USCG 164.009). DECK STIFFENERS TO BE WRAPPED WITH ½ 'S' THICKNESS INSULATION AS INDICATED IN DETAIL B12.

9. WHERE A-30 CLASS BULKHEADS AND DECKS ARE REQUIRED, INSTALL ¾ 'S' THICKNESS INSULATION FACED WITH MAS-CF FIBERGLASS CLOTH (USCG 164.009). BULKHEAD/DECK STIFFENERS TO BE WRAPPED WITH ⅜ 'S' THICKNESS INSULATION AS INDICATED IN DETAIL A11.

10. WHERE A-15 CLASS BULKHEADS AND DECKS ARE REQUIRED (EXCEPT IN ENGINE ROOM AND EXHAUST UPTAKES), INSTALL ½ 'S' THICKNESS INSULATION FACED WITH MAS-CF FIBERGLASS CLOTH (USCG 164.009). BULKHEAD/DECK STIFFENERS TO BE WRAPPED WITH ¼ 'S' THICKNESS INSULATION AS INDICATED IN DETAIL A10.

11. IN THE ENGINE ROOM OVERHEAD (A-15 CLASS), INSTALL ½ 'S' THICKNESS INSULATION, LEAD SEPTUM INSERT AND AN ADDITIONAL 1" THICK HB-PL MASTERBOARD (USCG 164.109) AGAINST DECK LONGITUDINALS WITH MAS-CF FIBERGLASS CLOTH (USCG 164.009) AND PERFORATED ALUMINUM LAYER OVER TOP. SEE DETAIL C11 AND SECTION B11. ENGINE ROOM OVERHEAD INSULATION TO BE CONTINUED DOWN FORWARD AND AFT BULKHEADS FOR A DISTANCE OF 4 FEET.

12. ENGINE UPTAKES TO BE INSULATED WITH 'S' THICKNESS INSULATION, LEAD SEPTUM INSERT AND AN ADDITIONAL 1" HB-PL MASTERBOARD (USCG 164.109) AGAINST THE BULKHEAD, COVERED WITH MAS-CF FIBERGLASS CLOTH AS SHOWN IN DETAIL C7.

13. BULKHEAD AND DECK STRUCTURAL FIRE PROTECTION INSULATION TO BE INSTALLED WITH STEEL PINS ON LESSER OF 12" CENTERS OR MANUFACTURER'S SPECIFICATIONS, AND SECURED WITH FRICTION FIT WASHERS. PINS TO BE LOCATED NO MORE THAN 2" AWAY FROM BLANKET JOINTS.

14. THE INSULATION OF A BULKHEAD SHALL EXTEND OVER ANY PROTRUSIONS OUT TO 30 CM (12 IN.) NORMAL FROM THE BULKHEAD. FOR PROTRUSIONS THAT ARE FULLY WRAPPED, SUCH AS SMALL STIFFENERS, THE INSULATION THICKNESS NEED ONLY BE HALF OF WHAT IS REQUIRED FOR THE BULKHEAD. FOR PROTRUSIONS THAT ARE NOT FULLY COVERED BECAUSE THEY EXTEND OUT MORE THAN 30 CM (12 IN.) SUCH AS DEEP WEBS, PIPES, CABLES, OR VENT DUCTING, THE INSULATION SHALL BE THE SAME THICKNESS AS THE BUKLHEAD INSULATION OUT TO A DISTANCE OF 30 CM (12 IN.). SEE DETAILS E10 AND E12.

APPROVALS:	SUBMIT DATE	APPRVD BY	APPRVD DATE	RE-SUBMIT DATE	APPRVD BY	APPRVD DATE
OWNER	–	–	–	–	–	–
USCG	–	–	–	–	–	–
ABS	–	–	–	–	–	–
USPHS	–	–	–	–	–	–

REV.	DATE	REVISION	PAGE	ZONE	AUTH#
G	–	–	–	–	–
F	–	–	–	–	–
E	–	–	–	–	–
D	–	–	–	–	–
C	–	–	–	–	–
B	–	–	–	–	–
A	–	–	–	–	–

NO.	REFERENCES
7	–
6	–
5	–
4	–
3	–
2	GENERAL ARRANGEMENT, DWG. 283-32A-010
1	USCG NVIC 9-97, GUIDE TO STRUCTURAL FIRE PROTECTION

CHECKED JAH 5-10-10
AUTH# JEK 5-10-10
DRAWN BEM
ORIG. DATE 5-10-10
SCALE AS STATED
DIMS IN INCHES UNLESS OTHERWISE STATED

Seaworthy Systems, Inc.
P.O. BOX 965
ESSEX, CT 06426
USA
TEL: (860) 767-9061
FAX: (860) 767-1263

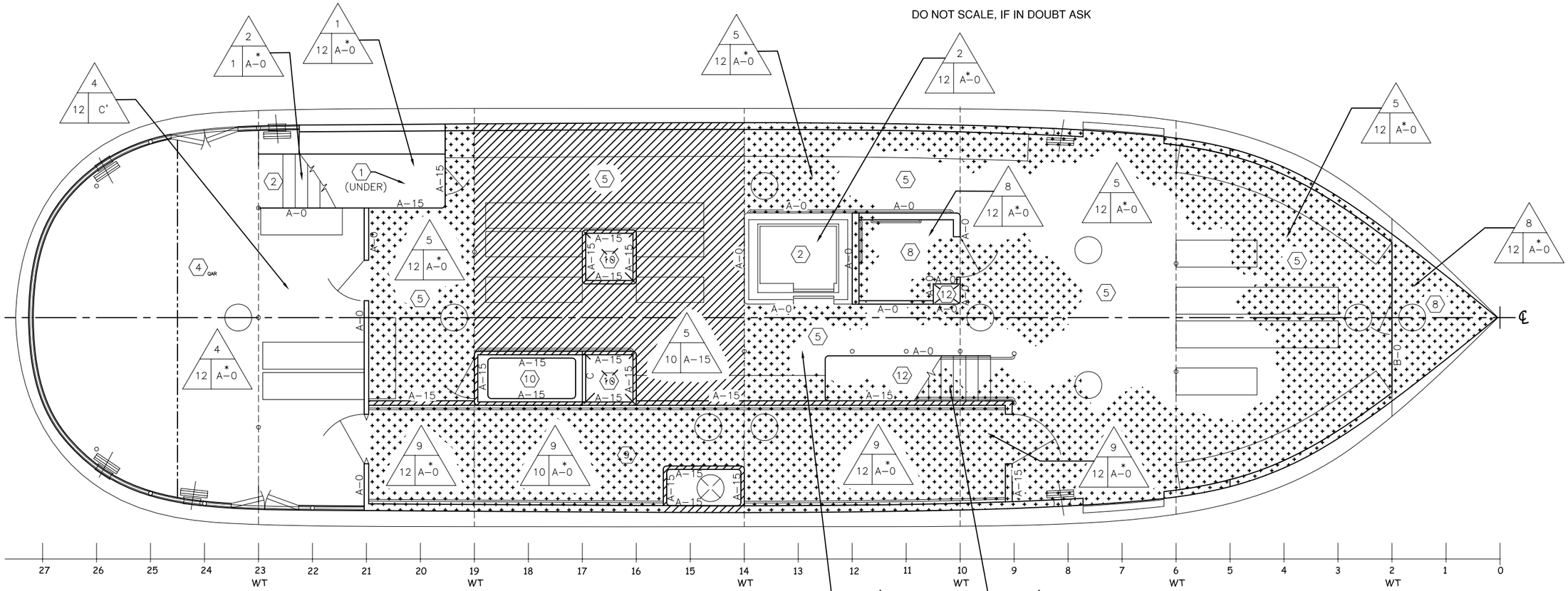
CASCO BAY LINES
PO BOX 4656
PORTLAND, ME 04112

TITLE 399 PASSENGER FERRY
INSULATION DETAILS

DRG No. 283-32A-601 REV. – SHEET 1 OF 3

SSI FILE No. s:\active\projnumb\283-32\drafting\active\283-32A-601.dwg

DO NOT SCALE, IF IN DOUBT ASK



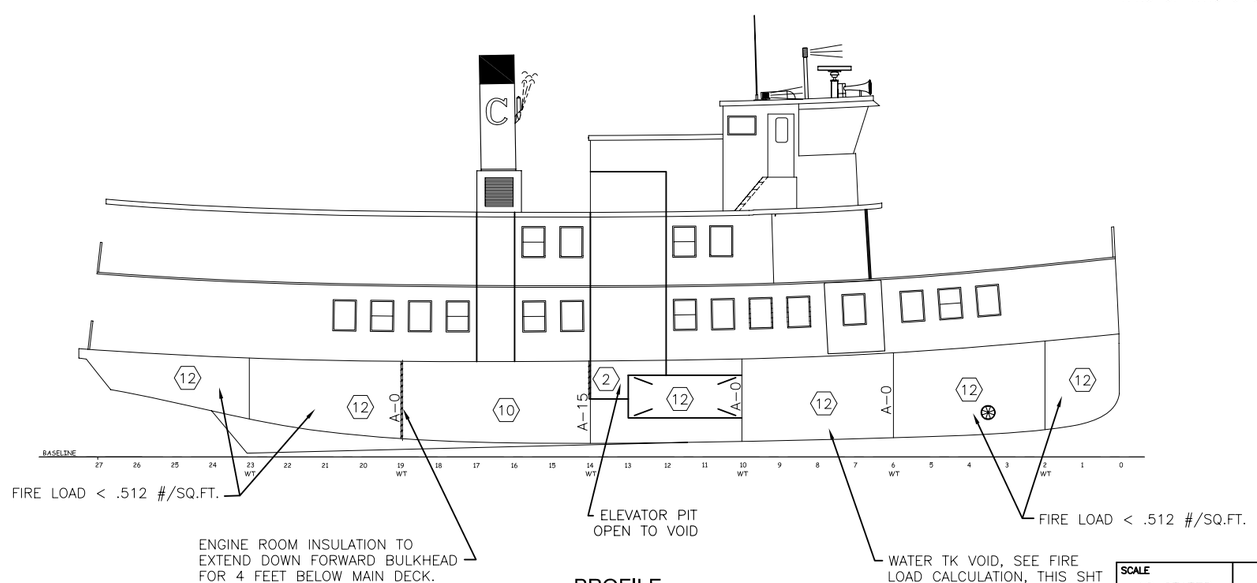
PLAN VIEW

MAIN DECK

SCALE: 1/4"=1'

NOTE: INSULATION SHOWN IS TO BE INSTALLED IN THE UNDERSIDE OF THE DECK.

*NOTE: AREA BELOW IS AN EXTREMELY LOW FIRE HAZARD SPACE. BOUNDARY HAS BEEN DESIGNATED AS A–0, BUT NO INSULATION IS REQUIRED, PER PARAGRAPH 4.4.3 OF NVIC 9–97, ENCL. (1) "GUIDE TO STRUCTURAL FIRE PROTECTION."



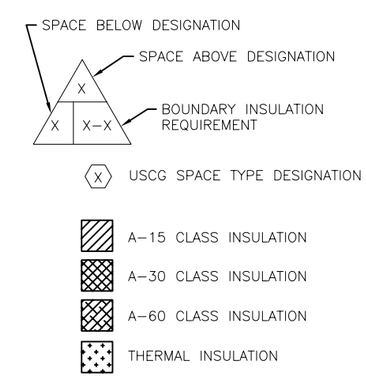
PROFILE

SCALE: 1/8"=1'

FIRE LOAD CALCULATION				
SPACE DESCRIPTION: Void Space, Fr. 6–10				
46 CFR NVIC 9–97 SPACE TYPE DESIG: Type 12				
FIRE LOAD LIMIT: .512 lbs/sq. ft. GROSS DECK AREA: 448 sq. ft.				
ITEM	Qty.	Unit Wt.	Unit Comb. Wt. lbs.	Total Comb. Wt. lbs.
Combustible Const.				
Floor Covering	N/A			
Carpet	N/A			
Carpet Pad	N/A			
Veneers	N/A			
Trim and Molding	N/A			
Electrical Wiring	N/A			
Fixed Seating	N/A			
Water Tanks	3	260	260	780
Total Combustible Wt. lbs.				780
Fireload, lbs/sq.ft.				1.74

NOTE: FIRE LOAD OF SPACE EXCEEDS .512 LB/SQ.FT. HOWEVER, THE TANKS NORMALLY CONTAIN WATER; THE SPACE CONTAINS ONLY THE TANKS, A 5–LB MOTOR, AND AN INCANDESCENT LIGHT FIXTURE; AND THERE IS NO SIGNIFICANT SOURCE OF IGNITION OR FIRE WITHIN THE VOID SPACE.

KEY



SCALE: AS STATED

DIMS IN INCHES UNLESS OTHERWISE STATED

Seaworthy Systems, Inc.
P.O. BOX 965
ESSEX, CT 06426
USA
TEL: (860) 767–9061
FAX: (860) 767–1263

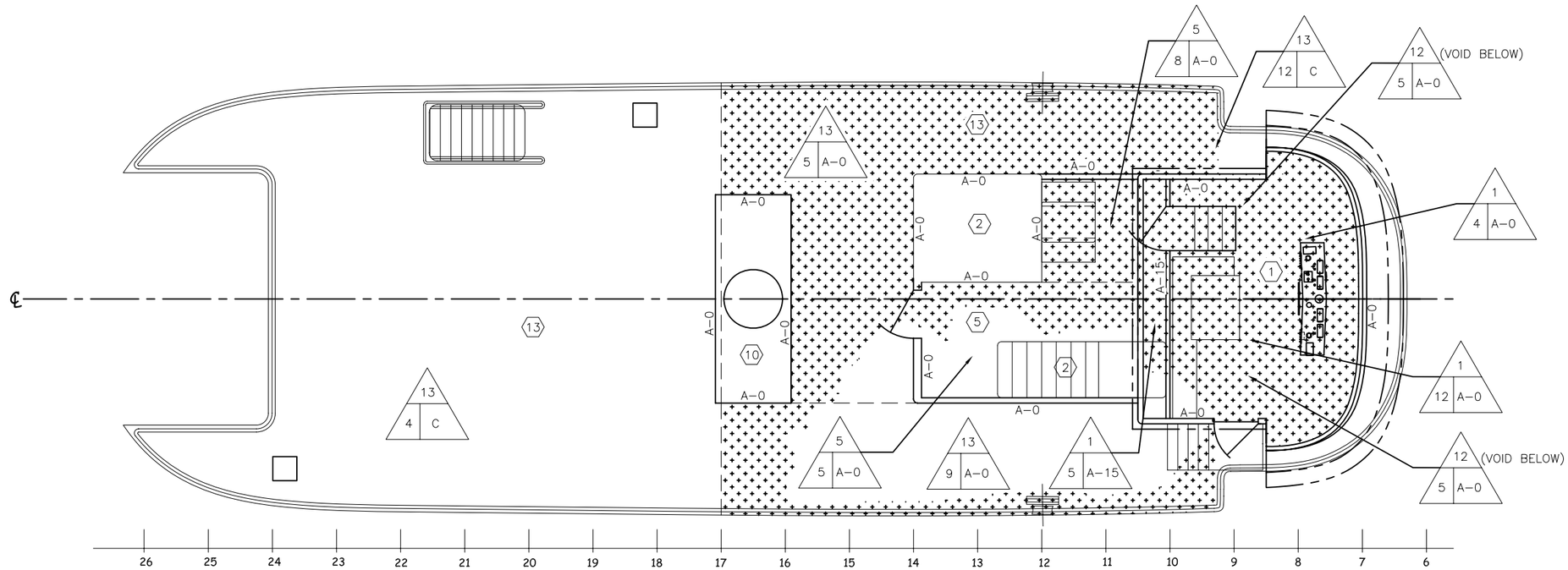
CASCO BAY LINES
PO BOX 4656
PORTLAND, ME 04112

TITLE: 399 PASSENGER FERRY INSULATION DETAILS

DRG No. 283–32A–601 | REV. – | SHEET 2 OF 3

SSI FILE No. s:\active\projnumb\283–32\drafting\active\283–32A–601.dwg

DO NOT SCALE, IF IN DOUBT ASK



PLAN VIEW

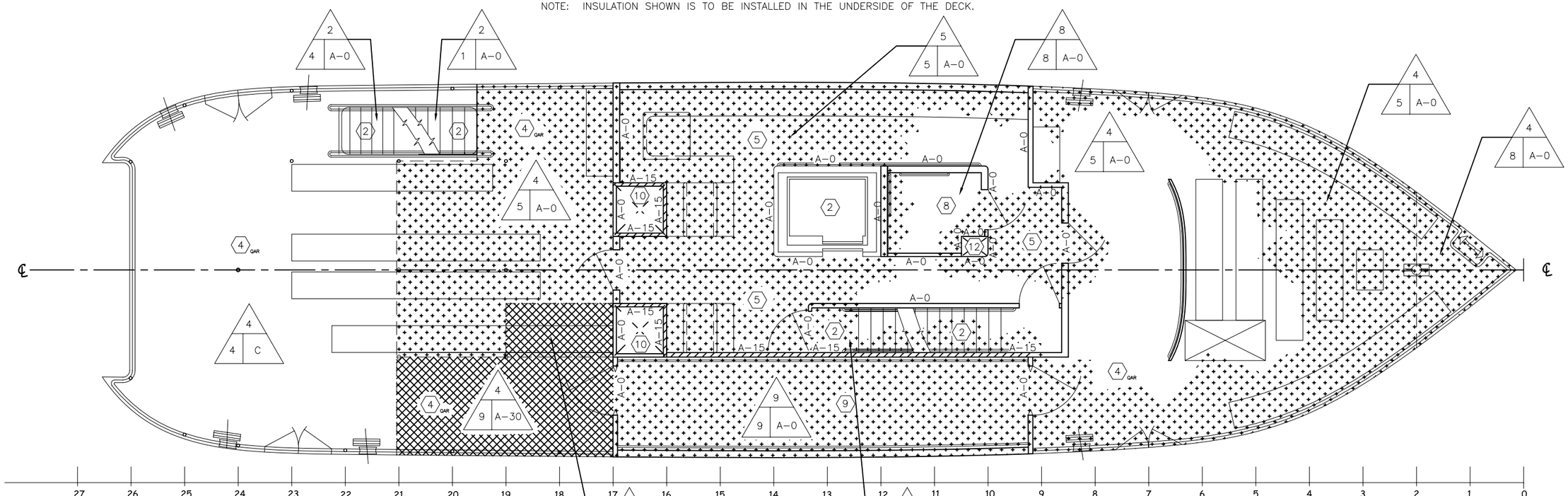
02 DECK

SCALE: 1/4"=1'

NOTE: INSULATION SHOWN IS TO BE INSTALLED IN THE UNDERSIDE OF THE DECK.

KEY

- SPACE BELOW DESIGNATION
- SPACE ABOVE DESIGNATION
- BOUNDARY INSULATION REQUIREMENT
- USCG SPACE TYPE DESIGNATION
- A–15 CLASS INSULATION
- A–30 CLASS INSULATION
- A–60 CLASS INSULATION
- THERMAL INSULATION



PLAN VIEW

01 DECK

SCALE: 1/4"=1'

NOTE: INSULATION SHOWN IS TO BE INSTALLED IN THE UNDERSIDE OF THE DECK.

SCALE AS STATED DIMS IN INCHES UNLESS OTHERWISE STATED	Seaworthy Systems, Inc. P.O. BOX 965 ESSEX, CT 06426 USA TEL: (860) 767-9061 FAX: (860) 767-1263	CASCO BAY LINES PO BOX 4656 PORTLAND, ME 04112	TITLE 399 PASSENGER FERRY INSULATION DETAILS DRG No. 283-32A-601 REV. — SHEET 3 OF 3 SSI FILE No. e:\active\projnumb\283-32\drafting\active\283-32A-601.dwg