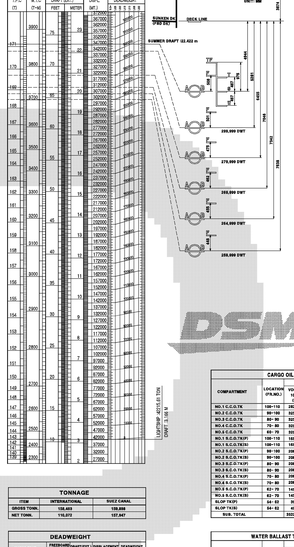
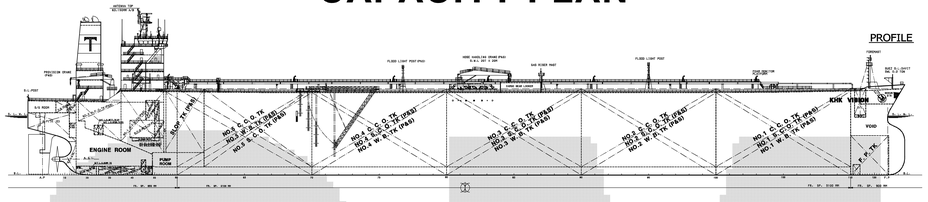
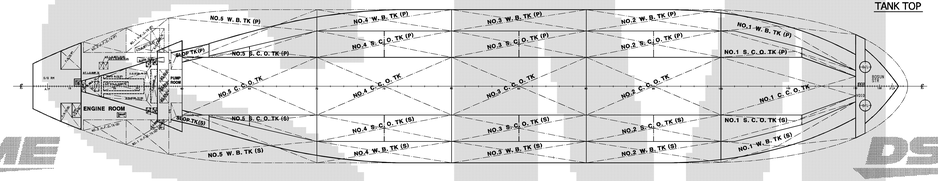
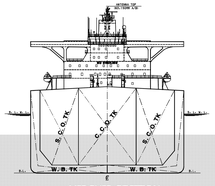
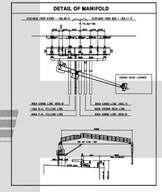
CAPACITY PLAN











DSME

TONNAGE		
ITEM	INTERNATIONAL	SUEZ CANAL
GROSS TONN.	156,464	159,836
NET TONN.	110,072	127,647

DEADWEIGHT					
MARKS ZONE	DISPLACEMENT (TONNE)	DRAFT (EST.) (SUMMER) FEET	METER	DISPLACEMENT (TONNE)	DEADWEIGHT (TONNE)
AT SCANTLING DRAFT					
TF TROPICAL FRESH	3,999	23.987	360.799.7	313,081.1	
F FRESH	4,456	23.600	347,611.5	300,743.9	
T TROPICAL	4,477	22.989	343,907.4	313,721.8	
S SUMMER	4,994	22.422	337,993.5	308,745.3	
W WINTER	5,411	21.855	330,003.8	297,757.5	
AT DEADWEIGHT 295,000 TONNES					
F FRESH	4,700	23.500	342,017.2	300,951.8	
S SUMMER	5,251	22.922	332,252.8	295,987.2	
AT DEADWEIGHT 276,000 TONNES					
F FRESH	4,900	23.300	325,338.7	280,815.1	
S SUMMER	5,455	22.811	322,213.7	276,901.1	
AT DEADWEIGHT 255,000 TONNES					
F FRESH	5,204	22.792	312,219.3	270,025.7	
S SUMMER	5,646	22.322	312,255.4	255,984.8	
AT DEADWEIGHT 264,000 TONNES					
F FRESH	4,897	23.479	297,215.3	264,993.7	
S SUMMER	7,242	22.033	307,195.1	254,993.3	
AT DEADWEIGHT 249,000 TONNES					
F FRESH	7,100	22.176	282,210.0	250,004.9	
S SUMMER	7,638	19.728	302,208.8	250,001.2	

CARGO OIL TANKS						
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	VOLUME 98% (M³)	WEIGHT 100% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
NO.1 C.C.O.TK	100~110	20,017.9	20019.1	277,408	17.731	22.922	32502
NO.2.C.C.O.TK	90~100	32,557.1	31886.4	229,320	17.739	22.894	43894
NO.3.C.C.O.TK	80~90	32,557.1	31886.4	178,956	17.739	22.894	43894
NO.4.C.C.O.TK	70~80	32,557.1	31886.4	127,956	17.739	22.894	43894
NO.5.C.C.O.TK	60~70	32,557.1	31886.4	77,320	17.739	22.894	43894
NO.1.S.C.O.TK(P)	100~110	10006.7	10000.2	139,704	17.739	16.247	12739
NO.1.S.C.O.TK(S)	100~110	10006.7	10000.2	139,704	17.739	16.247	12739
NO.2.S.C.O.TK(P)	90~100	20011.8	20108.8	239,500	17.758	13003	
NO.2.S.C.O.TK(S)	90~100	20011.8	20108.8	239,500	17.758	13003	
NO.3.S.C.O.TK(P)	80~90	20011.8	20108.8	178,956	17.758	13003	
NO.3.S.C.O.TK(S)	80~90	20011.8	20108.8	178,956	17.758	13003	
NO.4.S.C.O.TK(P)	70~80	20011.8	20108.8	127,956	17.758	13003	
NO.4.S.C.O.TK(S)	70~80	20011.8	20108.8	127,956	17.758	13003	
NO.5.S.C.O.TK(P)	60~70	10005.9	10004.5	63,955	18.802	8011	
NO.5.S.C.O.TK(S)	60~70	10005.9	10004.5	63,955	18.802	8011	
SLOP TANK(P)	84~93	2021.7	2031.8	12,929	21.811	2.021	318
SLOP TANK(S)	84~93	2021.7	2031.8	12,929	21.811	2.021	318
SUB. TOTAL		352221.7	341107.0		43.073	21.858	3847

HEAVY FUEL OIL TANKS (S.G.= 1.000)					
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
NO.1 H.F.O.TK(W)	50~64	2464.4	2464.7	36.110	23.382	2048
NO.1 H.F.O.TK(H)	50~64	2860.8	2823.0	36.473	22.999	2369
NO.2 H.F.O.TK(W)	19~34	874.8	905.5	23.187	23.063	348
NO.2 H.F.O.TK(H)	19~34	874.8	905.5	23.187	23.063	348
H.F.O.SETT.TK(P)	49~52	249.3	250.3	41.850	24.720	208
H.F.O.SETT.TK(S)	49~52	249.3	250.3	41.850	24.720	208
SUB. TOTAL		7523.9	7600.4			

DIESEL OIL TANKS (S.G.= 0.900)					
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT 98% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
D.O.STOR.TK(P)	49~52	135.7	33.953	1.948	332	
D.O.STOR.TK(S)	49~52	196.8	153.3	33.951	2.021	318
D.O.SETT.TK(P)	19~32	37.2	31.8	43.500	22.857	7
D.O.SETT.TK(S)	49~52	74.5	62.3	40.850	22.857	13
SUB. TOTAL		444.4	282.7			

CARGO TANK SEGREGATION				
SYMBOL	GROUP	COMPARTMENT	PERCENT (%)	CAPACITIES VOL.(100%) (M³)
	SEG.1	NO.2.S.C.O.TK NO.2.C.C.O.TK(P&S) SLOP TK(P&S)	35.4	114015.9 / 113886.8
	SEG.2	NO.3.S.C.O.TK NO.3.C.C.O.TK(P&S)	29.0	131986.4 / 89946.9
	SEG.3	NO.4.S.C.O.TK NO.4.C.C.O.TK(P&S)	35.4	133265.8 / 133058.0

DECK EQUIPMENT			
EQUIPMENT	Q'TY	SPECIFICATION	MAKER
HEAD CARGO/GE CRANE	2	SLW: 17.5M SWING TYPE SLW: 12.5M SWING TYPE WORKING RANGE: MAX. 32 M	MACGREGOR CRANES AB
PIN-DECK CRANE	2	SLW: 41.0M SWING TYPE S.W.L.: 41TON (P), 11TON (S) WORKING RANGE: MAX. 32 M (P), 14.5 M (S) LIFTING SPEED : 14.5MIN (1/1 S)	MACGREGOR CRANES AB
PUMP ROOM CRAVT	1	40M WITH SWINGING TYPE S.W.L.: 5.0TON (P) WORKING SPEED : 0 ~ 10.0MIN	YOUNG MIN MINING MACH. CO.,LTD
ANCHOR	2	HIGH HOLDING POWER TYPE (STOCKLESS) WEIGHT : 13.5TON SLW: 9.0MT	POSR RED CAST STEEL CO.,LTD
ANCHOR CHAIN CABLE	1	76 / CHAIN 2 TON 8 GRADE 3	SIN SUNG ANCHOR CHAIN MFG.CO.,LTD
MEY TOWING STA.	1	APT OF SHIP SWL: 400TON (TOWING & STRAIGHT PUSH) STORAGE CAPACITY TOWING LINE PULL OF SHIP TOWING BITTS, PINPLANE, CHAPESS CHAIN GRADE 3	SAE.AN MAERITIMAL CO.,LTD
MOOR MACHINERY	1	SLEC. AFT. HIGH PRESSURE TYPE WARPING : 2 DRUM SLW: 20.0TON (1ST LAYER CHAIN GOLD) WARPING SPEED : 0 ~ 43MTS / 0.7MIN (IN SERIAL) AT FIRST LAYER FOR FIX-CO ARM 2 STAW SLW: 10.0TON (2ND) CHAIN GRADE PACK : 2 SHTS	SHILLA METCO OF AB (FINLAND)
LIFE / RESCUE BOAT	2	F.A.R. TOTALLY ENCLOSED TYPE SLW: 4.0TON / 4.0MAN DIESEL ENGINE STARTER TYPE	BUSE CIA. KOREA/BART CO.,LTD
LIFE RAFT	2	25 PERSONS 25 PERSONS 6 PERSONS	DEVILLER/ SAVING EQUIPMENT PTE. LTD

MACHINERY EQUIPMENT			
EQUIPMENT	Q'TY	SPECIFICATION	MAKER
MAIN ENGINE, ENGINE	1	TYPE : 2-STROKE CYLINDER : 6 CYLINDER MCR : 26,250 PS x 76.0 RPM NCR : 23,625 PS x 73.6 RPM	HYUNDAI HEAVY IND. CO.,LTD / DSME
STERNING GEAR	1	TYPE : SEAL-LESS, 2-RING 4 CYL. MCR : 26,250 PS MOTOR : 4.5KW x 4NOS.(3PH x 1NOS.) SPEED : 1.5 ~ 3.0 RPM	YOSHIDA MFG. LTD.
FIXED PITCH PROPELLER	1	TYPE : FIXED PITCH MATERIAL : Ni-Al BRONZE DIAMETER : 5.8 M BLADE : 4 PCS	HYUNDAI HEAVY IND. CO.,LTD
PROPELLER SHAFT	1	MATERIAL : FORGED STEEL LENGTH : 5,777 MM DIAMETER : 1,000 MM	DONGKUK STEEL(CORP) & MIHANG ENG.CO.,LTD
INTERMEDIATE SHAFT	1	MATERIAL : FORGED STEEL LENGTH : 10,150 MM DIAMETER : 1,000 MM	DONGKUK STEEL(CORP) & MIHANG ENG.CO.,LTD
MAIN BOILER	2	TYPE : VERTICAL OIL FIRED CAPACITY : 60 TON/H STEAM : 18 KG/CM2 SATURATED	MITSUBISHI HEAVY IND.,LTD.
EXHAUST GAS ECONOMIZER	1	TYPE : FORCED CIRCULATION CAPACITY : 12.5TON/H x 7.5 KG/CM2 GAS FLOW : 207,000 KG/H x 320 C MAX	MITSUBISHI HEAVY IND.,LTD.
DIESEL GENERATOR ENGINE	3	TYPE : 4-STROKE TRUNK PISTON CONTINUOUS : 1,800KW AT 720 RPM MCR : 1800 x 0.9CSR = 1 % MAKER : HYUNDAI	STX ENGINE CO.,LTD
EMERGENCY GENERATOR ENGINE	1	TYPE : 4-STROKE MONITOR CIRCULATING CAPACITY : 175 PS x 1,800 RPM	STX ENGINE CO.,LTD
FRESH WATER GENERATOR	1	TYPE : LOW PRESS CAPACITY : 30 TON/DAY AT 4CH OF 90 C	HANJUNG MAN.CO.,LTD
INCINERATOR	1	CAPACITY : 100 KGH (CLASS A) 100 KG/H WASTE MIX. : MAX. 100 KG/H LIQUID WASTE : MAX. 50 L/H	DONGBU MARINE EQUIPMENT CO.,LTD

PUMPS			
EQUIPMENT	Q'TY	SPECIFICATION	MAKER
L.O.BOOS.PUMP L.O.BOOS.PUMP MOTOR CARGO PUMP	3	STEAM TURBINE DRIVEN CENTRIFUGAL CAPACITY : 1,200 M³/H x 7 KG/CM² STEAM TURBINE : 1,400 HP	SHING HAI,LTD
CARGO OIL STRIPPING PUMP	1	STEAM DRIVEN RECIPROCATING TYPE SUC HEADS : 10 MTS	SHING HAI,LTD
BALLAST PUMP	2	SLEC. MOTOR DRIVEN CENTRIFUGAL CAPACITY : 1,200 M³/H x 7 KG/CM² SLEC. MOTOR : 200 HP, 6 POLE 50HZ 3PH	SHING HAI,LTD
BILGE, FIRE,G.S. PUMP	3	SLEC. MOTOR DRIVEN VERT.CENTRIFUGAL CAPACITY : 200 M³/H x 7 KG/CM² SLEC. MOTOR : 50 HP, 6 POLE 50HZ 3PH	SHING HAI,LTD
FIRE & GS PUMP	1	MOTOR DRIVEN VERT.CENTRIFUGAL PUMP HEAD : 110M x 50 M	SHING HAI,LTD
AIR CO FAN PUMP	1	SLEC. MOTOR DRIVEN VERT SIR MOR : 5 M³/H	SHING HAI,LTD

NAVIGATION & COMMUNICATION EQUIPMENT			
EQUIPMENT	Q'TY	SPECIFICATION	MAKER
RADAR	1	X BAND (SCANNER) LMR-1932-1XAC S BAND (SCANNER) LMR-2932-1XAC	JAPAN RADIO CO.,LTD
SAT-COM	1	STD-C / JUE-95 STD-B / JRC-3100	JAPAN RADIO CO.,LTD
GMDSS NAVIGATOR	2	JUE-750 MKII	JAPAN RADIO CO.,LTD
RADAR PLOTTER	1	JAN-930	JAPAN RADIO CO.,LTD
NAVTEX RECEIVER	1	NCR-330	JAPAN RADIO CO.,LTD
SAT PHONE TELEPHONE	1	JRC-500	JAPAN RADIO CO.,LTD
ANTENNA SATA DECOMPOSER	1	JFY-1700	JAPAN RADIO CO.,LTD
AUTO CORRESPONDENCE UNIT	1	JRC-102	JAPAN RADIO CO.,LTD

CARGO OIL TANKS						
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	VOLUME 98% (M³)	WEIGHT 100% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
NO.1 W.B.TK(P)	100~110	5575.8	5700.3	276,075	17.199	13042	
NO.1 W.B.TK(S)	100~110	5575.8	5700.3	276,075	17.199	13042	
NO.2 W.B.TK(P)	90~100	5879.4	10130.4	229,520	9.832	10770	
NO.2 W.B.TK(S)	90~100	5879.4	10130.4	229,520	9.832	10770	
NO.3 W.B.TK(P)	80~90	4969.2	10219.2	178,500	9.855	10498	
NO.3 W.B.TK(S)	80~90	4969.2	10219.2	178,500	9.855	10498	
NO.4 W.B.TK(P)	70~80	5158.8	9973.0	127,496	8.777	9690	
NO.4 W.B.TK(S)	70~80	5158.8	9973.0	127,496	8.777	9690	
NO.5 W.B.TK(P)	54~70	8918.8	8130.8	76,608	11.704	42132	
NO.5 W.B.TK(S)	54~70	8902.7	8115.4	76,600	11.702	42122	
F.P.T.TK	110~120	4071.0	4173.3	210,027	8.429	15992	
A.P.TK	-6~10	2220.0	2275.8	5,568	25.497	25867	
SUB. TOTAL		140465.7	169977.0			

HEAVY FUEL OIL TANKS (S.G.= 1.000)					
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
NO.1 H.F.O.TK(W)	50~64	2464.4	2464.7	36.110	23.382	2048
NO.1 H.F.O.TK(H)	50~64	2860.8	2823.0	36.473	22.999	2369
NO.2 H.F.O.TK(W)	19~34	874.8	905.5	23.187	23.063	348
NO.2 H.F.O.TK(H)	19~34	874.8	905.5	23.187	23.063	348
H.F.O.SETT.TK(P)	49~52	249.3	250.3	41.850	24.720	208
H.F.O.SETT.TK(S)	49~52	249.3	250.3	41.850	24.720	208
SUB. TOTAL		7523.9	7600.4			

DIESEL OIL TANKS (S.G.= 0.900)					
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT 98% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
D.O.STOR.TK(P)	49~52	135.7	33.953	1.948	332	
D.O.STOR.TK(S)	49~52	196.8	153.3	33.951	2.021	318
D.O.SETT.TK(P)	19~32	37.2	31.8	43.500	22.857	7
D.O.SETT.TK(S)	49~52	74.5	62.3	40.850	22.857	13
SUB. TOTAL		444.4	282.7			

LUBRICATING OIL TANKS (S.G.= 0.900)					
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT 98% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
M/E CYL.O.STOR.TK(P)	50~64	62.5	72.0	44.200	16.860	28
M/E CYL.O.STOR.TK(S)	50~64	62.5	72.0	44.200	16.860	28
M/E SYS.O.SETT.TK(C)	50~64	55.8	55.1	44.200	16.860	13
G/E L.O.STOR.TK(P)	23~27	15.1	13.3	23.100	17.170	3
G/E L.O.SETT.TK(P)	23~25	15.1	13.3	20.400	17.170	3
SUB. TOTAL		210.9	225.8			

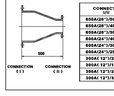
MISCELLANEOUS TANKS						
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT 98% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
M/E SYS.O.SUMP TK	50~61	48.6	48.4	27.950	2.763	39
H.F.O.OVERF.TK	49~52	108.8	108.8	46.577	1.717	455
B.W.HOLD.TK	19~24	65.6	65.4	17.150	1.992	101
SETT.W.TK	8~15	41.7	41.7	11.121	5.840	9
MARTO.O.TK(S)	23~32	41.0	41.0	28.440	2.230	16
L.O.SUMP TK(P)	39~40	13.3	13.3	26.125	13.525	3
L.O.SUMP TK(S)	40~50	7.0	7.0	34.800	13.525	2
CASCADE TK(S)	23~24	14.5	14.5	23.100	8.875	1
SPT.L.O.SUMP TK	21~25	8.1	8.1	16.700	8.875	2
L.O.DRAIN TK	23~24	3.0	3.0	19.875	2.875	3
SUB. TOTAL		357.7	357.7			

WATER BALLAST TANKS (S.G.= 1.025)						
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT 100% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
NO.1 W.B.TK(P)	100~110	5575.8	5700.3	276,075	17.199	13042
NO.1 W.B.TK(S)	100~110	5575.8	5700.3	276,075	17.199	13042
NO.2 W.B.TK(P)	90~100	5879.4	10130.4	229,520	9.832	10770
NO.2 W.B.TK(S)	90~100	5879.4	10130.4	229,520	9.832	10770
NO.3 W.B.TK(P)	80~90	4969.2	10219.2	178,500	9.855	10498
NO.3 W.B.TK(S)	80~90	4969.2	10219.2	178,500	9.855	10498
NO.4 W.B.TK(P)	70~80	5158.8	9973.0	127,496	8.777	9690
NO.4 W.B.TK(S)	70~80	5158.8	9973.0	127,496	8.777	9690
NO.5 W.B.TK(P)	54~70	8918.8	8130.8	76,608	11.704	42132
NO.5 W.B.TK(S)	54~70	8902.7	8115.4	76,600	11.702	42122
F.P.T.TK	110~120	4071.0	4173.3	210,027	8.429	15992
A.P.TK	-6~10	2220.0	2275.8	5,568	25.497	25867
SUB. TOTAL		140465.7	169977.0			

FRESH WATER TANKS (S.G.= 1.000)						
COMPARTMENT	LOCATION (FR.NO.)	CAPACITIES VOLUME 100% (M³)	WEIGHT 100% (TONNE)	CON.OF GRAVITY L.C.G (M)	V.C.G (M)	MAX P.A.MOM. (M³)
F.W.TK(P)	8~13	280.1	280.1	8.147	25.870	424
F.W.TK(S)	8~13	280.3	280.3	8.000	25.865	310
F.W.TK(C)	11~15	82.8	82.8	11.000	25.840	45
SUB. TOTAL		643.2	643.2			

MANIFOLD DIMENSIONS

IN ACCORDANCE WITH OCIMF - RECOMMENDATION FOR OIL TANKER MANIFOLD AND ASSOCIATED EQUIPMENT, 1991.



CONNECTION	PIECES	STANDARD
650A(26"1/150A(6"))	3	ACCORDING TO ASME B16.5 CLASS 150
650A(26"1/450A(18"))	3	
650A(26"1/350A(14"))	3	
650A(26"1/400A(16"))	4	
650A(26"1/300A(12"))	2	
650A(24"1/250A(10"))	1	
350A(14"1/200A(8"))	4	
350A(14"1/150A(6"))	1	
350A(12"1/200A(10"))	1	
350A(12"1/150A(12"))	1	

DSME

DSME

DSME

PRINCIPAL PARTICULARS

LENGTH O. A.		approx.	332.0 M
LENGTH B. P.			320.0 M
BREADTH	(MLD)		58.0 M
DEPTH	(MLD)		31.2 M
DRAFT DESIGN	(MLD)		20.8 M
DRAFT SCANT.	(MLD)		22.4 M

SERVICE SPEED 15.2 Knots at designed draft

MAIN ENGINE

TYPE : 6MW 7580MC × 1 SET
MCR : 34,650 PS x 79.0 RPM
NCR : 29,450 PS x 74.8 RPM

COMPLEMENT : 34 persons (incl. Suez crews 6 persons)

CLASSIFICATIONS

ABS(American Bureau of Shipping)
+A(E1), "Oil Carrier", SH, SHCM, +AMS, +ACCU,
RW, with the descriptive notes of ESP, UWILD, TCM.

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5268	VANGUARD CARRIERS 306,000 TON CRUDE OIL TANKER		
APPD BY W.M.SHIN	TITLE CAPACITY PLAN		
CHKD BY I.G.LEE			
DWN BY N. B. HAN			
SCALE 1/ 1	REV 1		
DSME	BASIC SHIP DESIGN TEAM	DATE 2007.03.14	SIZE A0	DWG NO. DA5012036	0

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