

GENERAL NOTES

- THIS SHIP SHALL BE CONSTRUCTED ACCORDING TO ABS 2001 UNDER 90 METER RULES AS AMENDED AND USCG 1999 CFR. THE SHIP SHALL BE CLASSIFIED **A1(C)**, **AMS**, **ACCU**, **OPS-1**, UNRESTRICTED SERVICE, ICE CLASS CO AND ABS RECORD OF NOTATION FOR COMPLIANCE WITH CERTIFICATION OF CRANES (INCLUDING THE REQUIREMENTS OF API 2C). THE SHIP SHALL BE CONSTRUCTED AND CERTIFICATED IN ACCORDANCE WITH 46 CFR, SUBCHAPTER U.
- THE PRINCIPAL CHARACTERISTICS OF THIS VESSEL ARE LISTED AS FOLLOWS:
LENGTH OVERALL: 63.6 M
LENGTH BP: 58.0 M
BEAM: 15.0 M
DRAFT: 5.9 M (CENTERBOARD UP)
9.15 M (CENTERBOARD DOWN)
MOLDED DEPTH: 8.85 M
ESTIMATED TONNAGE: 2100
- PIPING SYSTEM SYMBOLS USED ON THIS DIAGRAM CONFORM TO MARITIME ADMINISTRATION STANDARDS.
- ALL PIPING MATERIALS AND WORKMANSHIP (WELDING PRACTICES) TO BE IN ACCORDANCE WITH ABS & USCG RULES AND REGULATIONS. PIPING TO BE INSTALLED IN ACCORDANCE WITH U.S.P.H. REGULATIONS. 45 DEGREE STEEL-BENDS, LATERALS, AND SWEEP TEES SHOULD BE UTILIZED. 90 DEGREE ELBOWS SHALL BE AVOIDED.
- ALL PIPING TO HAVE SUFFICIENT FLEXIBILITY TO PREVENT OVERSTRESSING OF PIPING MATERIALS. LEAKAGE OF JOINTS OR DISTORTION OF CONNECTED EQUIPMENT. PIPING SHALL BE RUN AS DIRECTLY AS PRACTICABLE WITH A MINIMUM NUMBER OF BENDS AND FITTINGS.
- PIPING SHALL BE ARRANGED SO THAT IT WILL NOT NORMALLY BE SUBJECT TO MECHANICAL INJURY AND TO PRECLUDE ITS USE FOR OTHER PURPOSES SUCH AS GRABRODS, STEPPING POINTS AND HANDRAILS.
- PIPING SHALL NOT BE RUN OVER IN THE VICINITY OF ELECTRICAL EQUIPMENT; IF UNAVOIDABLE, FLUID PIPING SHALL BE SHIELDED TO PREVENT FLUID DAMAGE.
- WHERE REQUIRED, RESILIENT HANGERS SHALL BE INSTALLED BETWEEN RESILIENTLY MOUNTED EQUIPMENT AND THE FIRST RIGID PENETRATION.
- CLEANOUTS ARE TO BE INSTALLED IN HORIZONTAL DRAIN PIPING AT EACH CHANGE IN DIRECTION GREATER THAN 45° AND NOT MORE THAN 15M APART. CLEANOUTS ARE TO BE AVOIDED IN THE OVERHEAD OF LIVING SPACES, SPACES WHERE FOOD IS STORED OR PREPARED, LABORATORIES, AND THE HOSPITAL.
- ALL VENTS TO BE HAYWARD/MEMARCO ANTISYPHONIC VENT PART NO. FF1.
- ROUTE GRAVITY DRAINS WITH A MINIMUM SLOPE OF 20mm/METER.
- A MINIMUM OF 915mm OF STRAIGHT PIPE IS REQUIRED ON THE DISCHARGE SIDE OF THE EDUCATOR. ALL BENDS ON THE DISCHARGE SIDE OF THE EDUCATOR SHALL 45 DEGREE OR HAVE A MINIMUM RADIUS OF 2 1/2 TIMES THE NOMINAL DIAMETER OF THE PIPE.
- A SIGN MUST BE PROVIDED AT THE GARBAGE GRINDER THAT READS AS FOLLOWS: DO NOT OPERATE GARBAGE GRINDER DURING ZERO DISCHARGE PERIODS.
- ONE DECK DRAIN SHALL BE SUPPLIED FOR EVERY 10 M² OF DECK DECK AREA FOR THE LABORATORIES.
- NO MORE THAN TWO TOILET AND SHOWER MODULES SHALL BE CONNECTED TO A SINGLE VACUUM INTERFACE VALVE.
- ALL BLACK WATER VACUUM LINES SIZES ARE TO BE 50MM.
- REFORMING POCKETS SHALL BE INSTALLED IN ACCORDANCE WITH EVAC RECOMMENDATIONS.
- USE GRAVITY DRAIN PIPE SIZE DATA CHART TO DETERMINE GREY WATER HEADER SIZES.
- A 32mm THREADED HALF COUPLING WITH PLUG & CHAN SHALL BE INSTALLED IN THE BULKHEAD OF THE CO2 RM & HAZ. MAT/PAIN LXR. AS CLOSE TO THE DECK AS POSSIBLE.
- INCORPORATED ECP 56, THAW ECP 56 LAYER TO VIEW CHANGES.
- M279 DEPARTMENT OF PUBLIC HEALTH APPROVAL 5/12/02.

GENERAL NOTES CONTD

- ROUTE GALLEY AND MESS MISC. DRAINS W/AIR GAP TO NEAREST DECK DRAIN IF POSSIBLE.

MATERIAL SCHEDULE											
PIPING SYSTEM	PIPE	TAKEDOWN JOINTS 4			VALVES 3,1		FITTINGS 2		MAXIMUM WORKING CONDITIONS		
		SIZE	MATERIAL	BOLTING	TYPE	BODY	TRIM	TYPE & MATERIAL	SYSTEM	PRESSURE	TEMP
SANITARY AND WASTE DRAINS (CLASS 2 PIPING)	50 & BELOW	STAINLESS STEEL, AISI 304, ELECTRICALLY SEAM WELDED PIPE, COLDFIT UNI X CNI 1810 "STECKORAIN" OR CARBON STEEL, ASTM A53, GR B SCHEDULE 40 TYPE S OR E, SCHEDULE 80 TYPE S OR E IN TANKS	UNION, SWLGD OR THD STEEL, ASTM A105 SOCKET WELD ANSI B16.11 3000#	BOLTS AND STUDS STEEL ASTM A307 GR B ANSI B18.2.1 NUTS STEEL ASTM A563 GR A ANSI B18.2.2	GATE, GLOBE, ANGLE, CHECK, BALL	SWLGD AND THREADED, 150# STEEL, ASTM A105 OR A216 BRONZE ASTM B61 OR B62	STEEL VALVES STEM, WEDGE/DISC OR SEAT RING CRES, ASTM A 182 GR F6A, HARD FACED SEATS OPTIONAL	SOCKET SEALING GASKETED STAINLESS STEEL, AISI 304 ELECTRICALLY SEAM WELDED	SANITARY DRAINS WASTE DRAINS TRANSFER VACUUM DRAINS	AMBIENT 2.8 bar 49°C	49°C
	65 & ABOVE	FLANGE, SLIP-ON, 150# STEEL, ASTM A105 ANSI B16.5	SOCKET SEALING GASKETED STAINLESS STEEL, AISI 304 ELECTRICALLY SEAM WELDED	CRES TO BE USED WHEN EXPOSED TO WEATHER OR SALTWATER	FLANGED DUCTILE IRON, ASTM A395, ANSI B16.34 OR STEEL, ASTM A216, GR WC OR A105 OR BRONZE, ASTM B61 OR B62 ALL 125# MIN.	IRON OR BRONZE VALVES STEM, WEDGE/DISC OR SEAT RING BRONZE, ASTM B61 OR B62	INTEGRAL SEATS SAME AS BODY MATERIAL	BTWLD, STEEL, ASTM A234, GR WPB, ANSI B16.9	AMBIENT 2.8 bar 49°C	49°C	

MATERIAL NOTES:

- GAUGE STOP VALVES SHALL BE 2 PIECE BRONZE CATEGORY A.
- FOR 50 AND BELOW FITTINGS MAY BE ELASTIC STRAIN PRELOAD (ESP) CARBON STEEL 207 BAR RATING, WITH ABS TYPE APPROVAL AND USCG ACCEPTANCE.
- ALL RESILIENT SEATED VALVES TO BE USCG CATEGORY A.
- GASKETED, MECHANICALLY ATTACHED FITTING WITH 301 TOOL STEEL ANCHOR RINGS, 316Ti STAINLESS STEEL HOUSING AND LOCKING BAR, 316 ALLEN HEX HEAD BOLTS, "C" SHAPED PRESSURE RESPONSIVE EPODE GASKET, WITH ABS AND USCG APPROVAL.

GRAVITY DRAIN PIPE SIZE DESIGN DATA			
FIXTURE	NUMBER OF FIXTURES	UNITS	PIPE SIZE (IPS)
LAVATORY	1	1	32mm
SHOWER	1	2	40mm
SINK (GALLEY)	1	8	50mm
SINK (SERVACE)	1	6	65mm
EYEWASH	1	1	75mm
DRINKING FOUNTAIN	1	1	90mm
DECK DRAIN	1	1	100mm
WASHING MACHINE	1	8	125mm
DISHWASHER	1	4	150mm

CONVERSION TABLE

STANDARD ENGLISH NOM. PIPE SIZE UNITS (IN)	METRIC NOM. PIPE SIZE UNITS (MM)
1/2 IN	15 MM
3/4 IN	20 MM
1 IN	25 MM
1 1/4 IN	32 MM
1 1/2 IN	40 MM
2 IN	50 MM
2 1/2 IN	65 MM
3 IN	80 MM
4 IN	100 MM
5 IN	125 MM
6 IN	150 MM
8 IN	200 MM
10 IN	250 MM
12 IN	300 MM
14 IN	350 MM
16 IN	400 MM

CONVERSION TABLE

STANDARD ENGLISH PRESSURE UNITS (PSI)	METRIC PRESSURE UNITS (BAR)
50 PSI	3.44 BAR
100 PSI	6.89 BAR
150 PSI	10.34 BAR
200 PSI	13.79 BAR
300 PSI	20.68 BAR
400 PSI	27.58 BAR
500 PSI	34.47 BAR
1000 PSI	68.95 BAR
2000 PSI	137.70 BAR
3000 PSI	206.86 BAR

REVISIONS

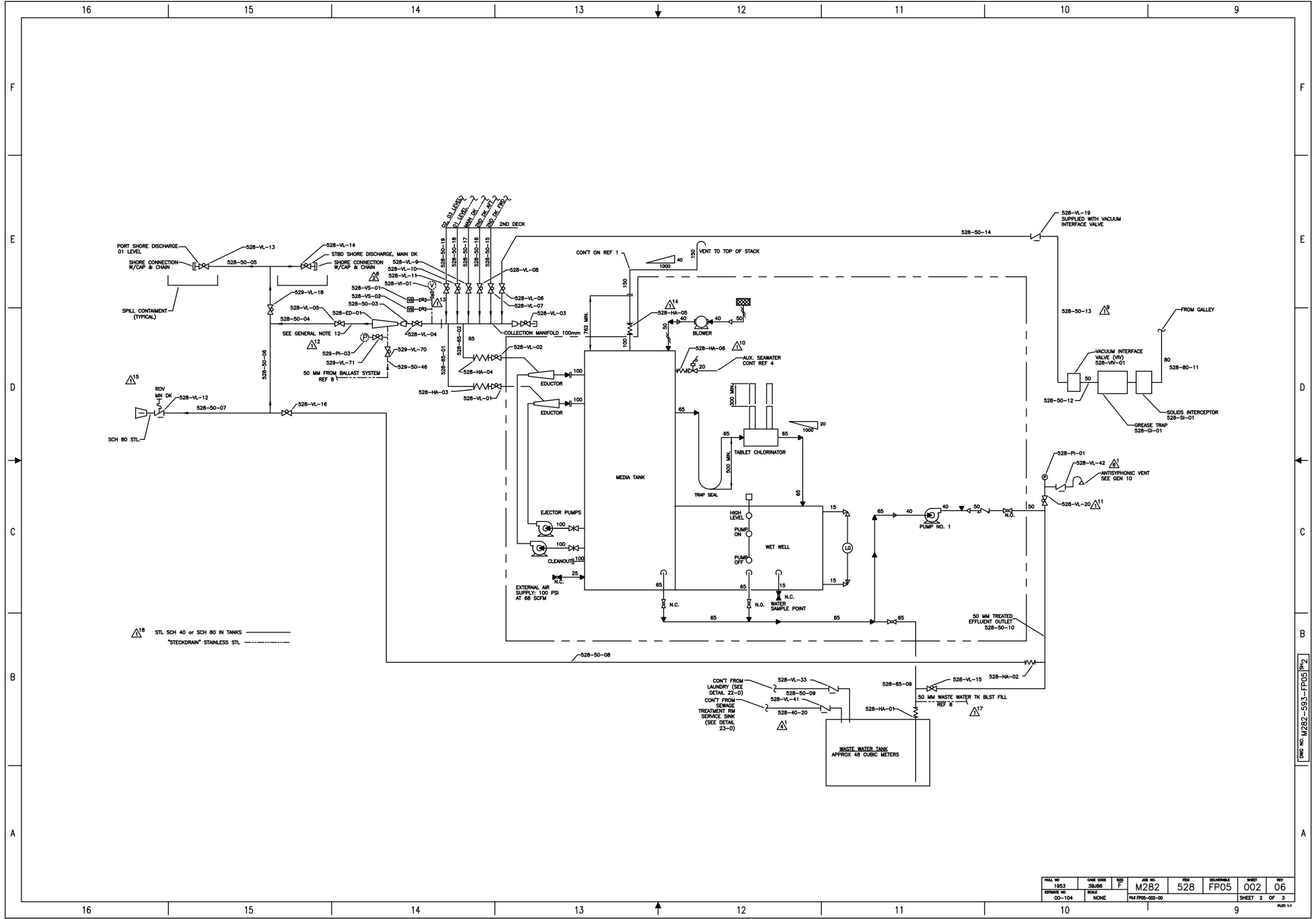
REV	ZONE	DESCRIPTION	DATE	APPROVED
1		1. REVISED HOSPITAL COMPARTMENT NUMBER "WAS" 02-50-1 "TS" 02-50-01 2. REVISED EYE/FACE WASH/DELUGE DRAIN IN 02-50-01 TO EYE/FACE WASH ONLY. 3. REVISED GALLEY (1-19-1) REFERENCE DETAIL. 4. DRAIN FOR HYDROGRAPHIC LAB(1-38-1) & FISH/WET LAB(1-38-0) DELUGE SHOWER TO BE REMOVED FROM THE GREY WATER SYSTEM AND TO BE TREATED AS AN EXTERIOR DECK DRAIN SEE REF 10. 5. ADDED A DECK DRAIN TO CG LOCKER (1-47-1). 6. LABELED VENDOR SUPPLIED VACUUM GAGES & SWITCHES ON THE DIAGRAM & ADDED CALLOUT TO THE COMPONENT LIST. 7. ADDED PRESSURE GAGE 528-P1-01 TO THE COMPONENT LIST. 8. REVISED DETAIL 22-A & 22-D. <u>ITEMS 1-8 PER DRN_A044_FPO5 SUBMISSION 889 REV 1</u> 9. REVISED GENERAL NOTE 20. 10. ADDED DRAINS FROM GALLEY HOODS TO DRAIN LOCATION LIST. 11. REVISED DETAILS 19-C, 19-E, & 20-C. 12. REVISED COMPONET LIST 1-58-0 (WAS) 3 (IS) 2 & DET 17-F. 13. ADDED DECK DRAIN AND DELETED LAB SINK DRAIN SCIENTIST'S READY ROOM (1-56-0). 14. ADDED REFERENCE 10. 15. REVISED OVID ROV TO MAIN DECK. 16. REVISED DET 20-A TO INCLUDE DRY & PRESERVATION ALCOVE SINKS. PER ECP 56 17. ADDED CONNECTION FOR WASTE WATER TK FILL. <u>ITEMS 9 THRU 17 PER ENGINEERING DEVELOPMENT</u>	8/18/04	DMR
2		1. EXTENDED HULL APPLICABILITY TO INCLUDE HULL 1956. 2. REVISED DECK DRAINS IN THE CHEM AND PRESERVATION ALCOVE LABS TO BE VALVED TYPE. <u>ITEM 2 PER NOAA</u>	3/24/05	DMR
3		1. EXTENDED HULL APPLICABILITY TO INCLUDE HULL 1957. 2. INCORPORATED ECP 056B.	6/7/06	DMR
4		1. REVISED SEWAGE TREATMENT RM SVCE SINK TO DRAIN INTO WASTE WATER HOLDING TANK. <u>ITEM 1 PER AS-BUILT</u>	6/29/06	DMR
5		1. THIS REVISION REFLECTS THE AS-BUILT CONDITION FOR HULL 1953.	7/25/06	DMR
6		1. ADDED VACUUM VENT TO MSD PUMP DISCHARGE PIPING. ADDED 528-VL-42. <u>ITEM 1 PER M282 AS-BUILT</u>	7/2/07	DMR
7		1. REVISED COMPONETS LIST TO SUIT LAB CHANGES. 2. THIS REVISION REFLECTS THE AS-BUILT CONDITION FOR HULL 1956. <u>ITEM 1 PER ECP 056C</u>		

COMPONENT LIST

ITEM NUMBER	SIZE	SERVICE	DESCRIPTION/TYPE	REMARKS
528-ED-01	50	GREY & BLACK WATER	EDUCTOR, VITA MOTOR 925	32x50x50, 5.5M VACUUM, 12M DISCHARGE HEAD
528-HA-01	65	GREY & BLACK WATER	ASSEMBLY, HOSE, DOG LEG	DOUBLE ARCHED, NON-METALIC, FLEX CONNECTION
528-HA-02	50	GREY & BLACK WATER	ASSEMBLY, HOSE, DOG LEG	NAVSEA-S6430-AE-TED-010
528-HA-03	65	GREY & BLACK WATER	ASSEMBLY, HOSE, DOG LEG	DOUBLE ARCHED, NON-METALIC, FLEX CONNECTION
528-HA-04	65	GREY & BLACK WATER	ASSEMBLY, HOSE, DOG LEG	DOUBLE ARCHED, NON-METALIC, FLEX CONNECTION
528-HA-05	100	GREY & BLACK WATER MSD	ASSEMBLY, HOSE, DOG LEG	DOUBLE ARCHED, NON-METALIC, FLEX CONNECTION
528-HA-06	20	GREY & BLACK WATER MSD AUX SW SUPPLY	ASSEMBLY, HOSE, DOG LEG	DOUBLE ARCHED, NON-METALIC, FLEX CONNECTION
528-PM-24		GREY & BLACK WATER	10M ³ /H, TDH=20M 1750 RPM 2-KW 800V	SUPPLIED WITH MSD
528-SD-25		GREY & BLACK WATER	MSD, SCIENCE/FAST MIXSS	
528-VL-01	65	GREY & BLACK WATER	VALVE, BALL	
528-VL-02	65	GREY & BLACK WATER	VALVE, BALL	
528-VL-03	40	GREY & BLACK WATER	VALVE, BALL	
528-VL-04	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-05	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-06	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-07	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-08	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-09	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-10	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-11	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-12	50	GREY & BLACK WATER	VALVE, GAG SCUPPER	ROV 2ND DECK
528-VL-13	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-14	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-15	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-16	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-17	40	GREY & BLACK WATER	VALVE, BALL	WET LAB LOCKABLE
528-VL-18	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-19	50	GREY & BLACK WATER	VALVE, CHECK	ENVIROVAC VACUUM ACTIVATED
528-VL-20	15	GREY & BLACK WATER	VALVE, BALL	GAUGE ISOLATION
528-VL-21	80	GREY & BLACK WATER	VALVE, BALL	
528-VL-22	80	GREY & BLACK WATER	VALVE, BALL	
528-VL-23	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-24	50	GREY & BLACK WATER	VALVE, BALL	
528-VL-25	50	GREY & BLACK WATER	VALVE, BALL	NOT USED
528-VL-26	80	GREY & BLACK WATER	VALVE, GAG SCUPPER	ROV GALLEY OVID SEE DET 19-E
528-VL-27	40	GREY & BLACK WATER	VALVE, BALL	WET (M283) CER(M284) LOCKABLE
528-VL-28	40	GREY & BLACK WATER	VALVE, BALL	WET LAB
528-VL-29	40	GREY & BLACK WATER	VALVE, BALL	WET LAB (M283) CER (M284)
528-VL-30	40	GREY & BLACK WATER	VALVE, BALL	CHEM LAB
528-VL-31	40	GREY & BLACK WATER	VALVE, BALL	CHEM LAB
528-VL-32	40	GREY & BLACK WATER	VALVE, BALL	
528-VL-33	50	GREY & BLACK WATER	VALVE, SWING CHECK	
528-VL-34	40	GREY & BLACK WATER	VALVE, BALL	CHILL/REFR DRN OVID
528-VL-35	40	GREY & BLACK WATER	VALVE, GAG SCUPPER	ROV MN DECK
528-VL-36	40	GREY & BLACK WATER	VALVE, BALL	CHEM LAB
528-VL-37	40	GREY & BLACK WATER	VALVE, BALL	CHEM LAB
528-VL-38	50	GREY & BLACK WATER	VALVE, SWING CHECK	
528-VL-39	40	GREY & BLACK WATER	VALVE, BALL	PRESV LAB
528-VL-40	40	GREY & BLACK WATER	VALVE, BALL	PRESV LAB
528-VL-41	40	GREY & BLACK WATER	VALVE, SWING CHECK	
528-VL-42	15	GREY & BLACK WATER	VALVE, SWING CHECK	
528-GI-01	80	GREY & BLACK WATER	GREASE INTERCEPTOR	ZURN Z-1170, SIZE 500
528-GI-01	80	GREY & BLACK WATER	SOLIDS INTERCEPTOR	ZURN Z-1183, SIZE 500
528-IV-01	50	GREY & BLACK WATER	VACUUM INTERFACE VALVE (IV)	(SUPPLIED WITH MSD PACKAGE)
528-IV-02 THROUGH 17	50	GREY & BLACK WATER	VACUUM INTERFACE VALVE (IV)	
528-VS-01		GREY & BLACK WATER	VACUUM SWITCH	(SUPPLIED WITH MSD PACKAGE)
528-VS-02		GREY & BLACK WATER	VACUUM SWITCH	(SUPPLIED WITH MSD PACKAGE)
528-VI-02		GREY & BLACK WATER	VACUUM INDICATOR	(SUPPLIED WITH MSD PACKAGE)
528-PH-01		GREY & BLACK WATER	PRESSURE INDICATOR	RANGE 0-6 BAR SEE REF 9

GREY AND BLACK WATER DRAIN LOCATION LIST

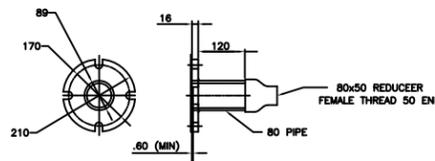
DK	SPACE	SOURCE	QTY	SIZE	TYPE	REMARKS
03LV	03-340	DECK DRAIN	3	40	Q/V	SEE DETAILS 17-C AND 17-E
03LV	03-340	DR FOUNT	1	40	Q/V	SEE DETAIL 23-B
02LV	02-35-1	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
02LV	02-35-1	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-35-2	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
02LV	02-35-2	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-35-3	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-38-0	DECK DRAIN	2	50	Q/V	SEE DETAILS 17-C AND 17-E
02LV	02-38-0	DR FOUNT	1	40	Q/V	SEE DETAIL 23-B
02LV	02-43-1	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
02LV	02-43-1	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-44-4	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
02LV	02-44-4	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-44-6	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-45-1	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-45-1	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
02LV	02-48-0	SERVICE SINK	1	40	Q/V	SEE DETAIL 23-A
02LV	02-48-0	DECK DRAIN	1	40	Q/V	SEE DETAILS 17-C AND 17-E
02LV	02-50-0	LAVATORY	1	40	Q/V	SEE DETAIL 23-A
02LV	02-50-0	TOILET	1	50	B/V	SEE DETAIL 19-B
02LV	02-50-0	DECK DRAIN	1	40	Q/V	SEE DETAILS 17-C AND 17-E
02LV	02-50-1	EYE/FACE WASH	1	40	B/V	SEE DETAIL 17-A
02LV	02-50-1	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
02LV	02-50-1	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
01LV	01-10-0	DECK DRAIN	1	40	Q/V	SEE DETAILS 17-C AND 17-E
01LV	01-10-2	DECK DRAIN	1	40	Q/V	SEE DETAILS 17-C AND 17-E
01LV	01-10-2	DECK DRAIN	1	40	Q/V	SEE DETAIL 17-D
01LV	01-12-4	BHD COUPLING	1	25	Q/V	SEE DETAILS 18-B
01LV	01-15-2	DECK DRAIN	1	40	Q/V	SEE DETAILS 17-C AND 17-E
01LV	01-19-0	DECK DRAIN	2	40	Q/V	SEE DETAILS 17-C AND 17-E
01LV	01-19-0	DR FOUNT	1	40	Q/V	SEE DETAIL 23-B
01LV	01-21-2	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
01LV	01-24-2	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
01LV	01-24-2	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
01LV	01-27-1	DECK DRAIN	1	40	Q/V	SEE DETAILS 17-C AND 17-E
01LV	01-27-1	SERVICE SINK	1	40	Q/V	SEE DETAIL 23-A
01LV	01-30-2	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B
01LV	01-30-2	TOILET & S-O'NR	1	50	Q/V	SEE DETAIL 23-B
01LV	01-33-2	TOILET & S-O'NR	1	50	B/V	SEE DETAIL 23-B



▲¹⁸ STL SCH 40 or SCH 80 IN TANKS
 "STECKDRAIN" STAINLESS STL

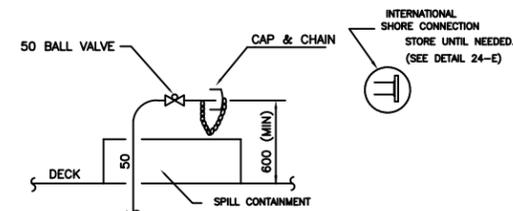
TRIAL NO 1953	CAGE CODE 3BJ86	SIZE F	JOB NO. M282	ITEM 528	DELIVERABLE FP05	SHEET 002	REV 06
ESTIMATE NO 00-104	SCALE NONE	FILE FP05-002-00	SHEET 2 OF 3				

DWG NO. M282-593-FP05 B12

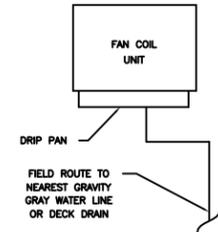


- OUTSIDE DIAMETER.....210
- INSIDE DIAMETER.....89
- BOLT CIRCLE DIAMETER.....170
- BOLT HOLES.....4, EACH OF 18 DIA. EQUALLY SPACED SLOTTED TO THE FLANGE PERIPHERY. SLOT WIDTH TO BE 18.
- FLANGE THICKNESS.....16
- FLANGE SURFACE.....FLAT FACE
- FLANGE MATERIAL.....STEEL
- BOLTS.....4, EACH OF 16 DIA. & OF SUITABLE LENGTH
- NUT.....4, EACH TO FIT BOLTS, SST
- WASHER.....8, EACH TO FIT BOLTS, SST
- GASKET.....OILPROOF, AND SUITED TO 5.88 BAR SERVICE

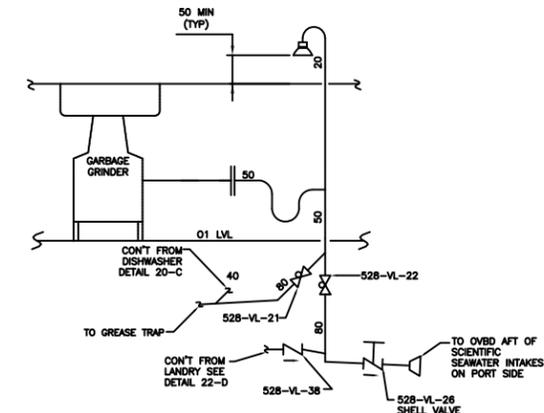
DETAIL 24-E
SEWAGE DISCH CONN



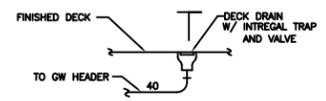
DETAIL 22-E
TYP SEWAGE DK DISCH STA



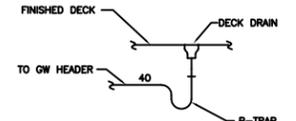
DETAIL 20-E
DRIP PAN DRAIN



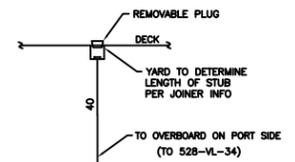
DETAIL 19-E
GARBAGE GRINDER SINK



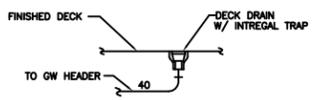
DETAIL 17-F
DECK DRAIN WITH INTEGRAL TRAP & VALVE CONFIGURATION



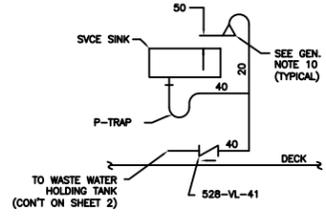
DETAIL 17-E
P-TRAP CONFIGURATION



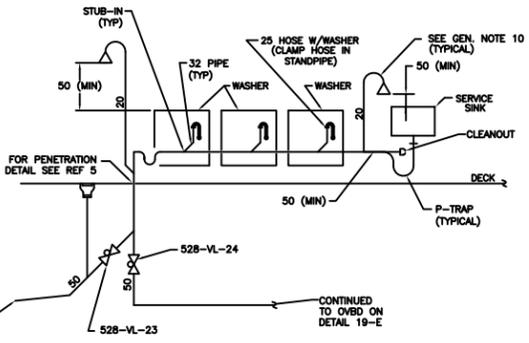
DETAIL 17-D
REFREEZER AND FREEZER DRAINS



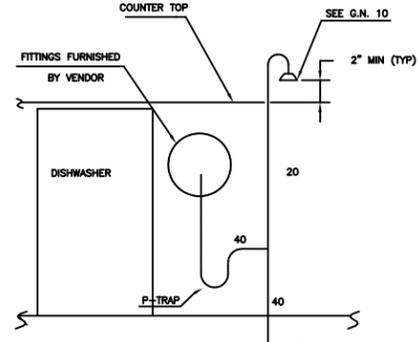
DETAIL 17-C
DECK DRAIN WITH INTEGRAL TRAP CONFIGURATION



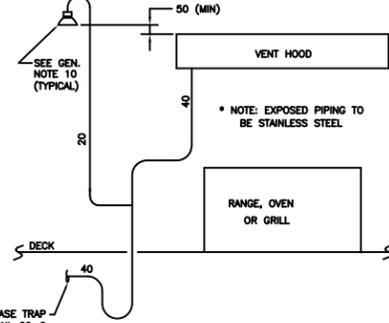
DETAIL 23-D
SERVICE SINK SEWAGE TREATMENT ROOM



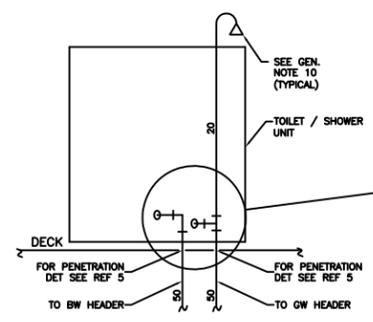
DETAIL 22-D
WASHER DRAIN CONN



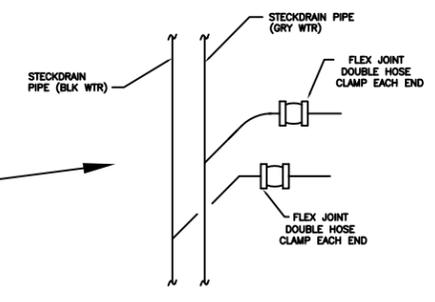
DETAIL 20-C
DISHWASHER DRAIN



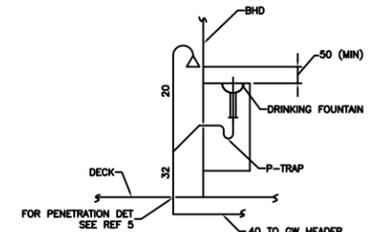
DETAIL 19-C
TYP VENT HOOD DRAIN (3 PLACES)



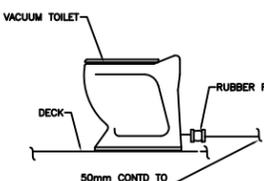
DETAIL 23-B
TOILET / SHOWER UNITS



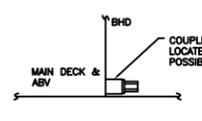
DETAIL 22-B
T&S MODULES TYPICAL BLACK & GREY WATER CONNS TYPICAL DETAIL



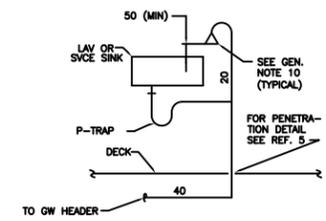
DETAIL 20-B
TYP DRINKING FOUNTAIN



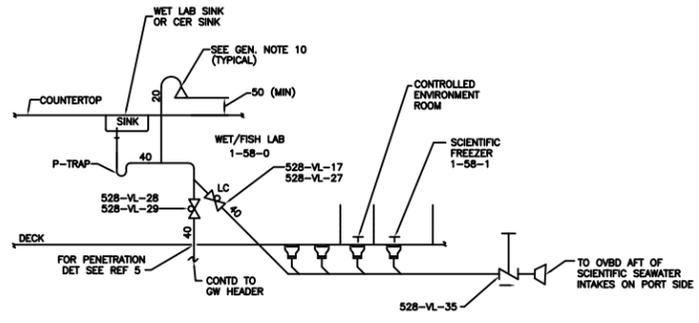
DETAIL 19-B
TYP STICK BUILT TOILET



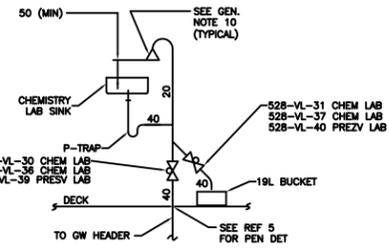
DETAIL 18-B
COMPT BHD DRAIN



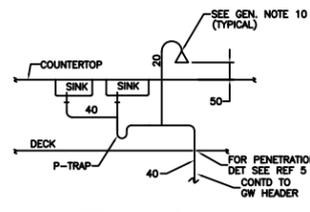
DETAIL 23-A
TYP LAV OR SINK DRAIN



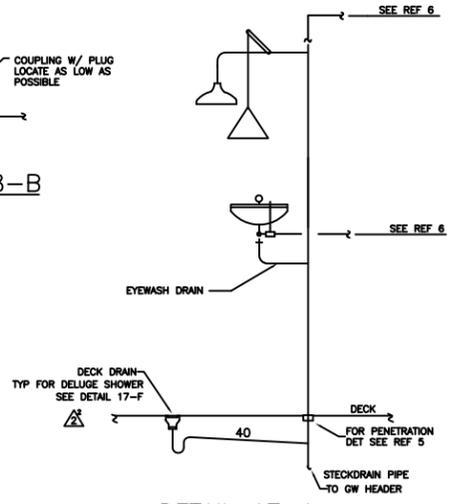
DETAIL 22-A
WET/FISH LAB & SCIENTIFIC FREEZER OVERBOARD HEADER



DETAIL 20-A
CHEM, DRY & PRESV LAB SINKS



DETAIL 19-A
TYP MULTIPLE SINK CONN



DETAIL 17-A
DELUGE SHOWER/EYEWASH DRAIN

REV	07	DATE	003	DELIVERABLE	FP05	ITEM	528	JOB NO.	M282	SIZE	F	CODE	3BJ86	NO	1953
DRAWING NO. M282-593-FF05 (REV 3)															
SHEET 3 OF 3															