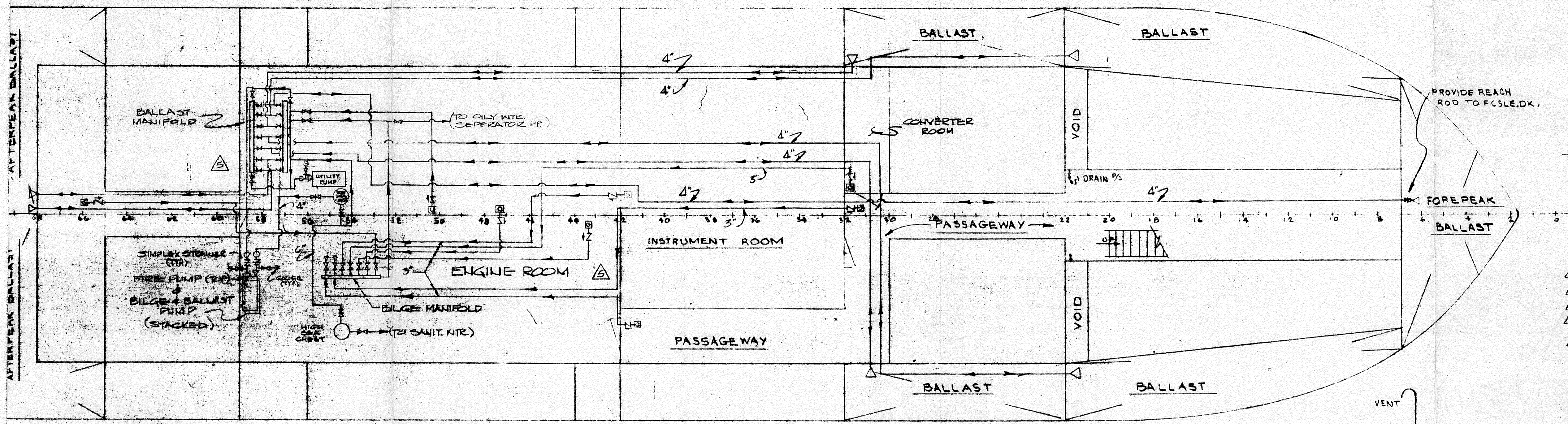
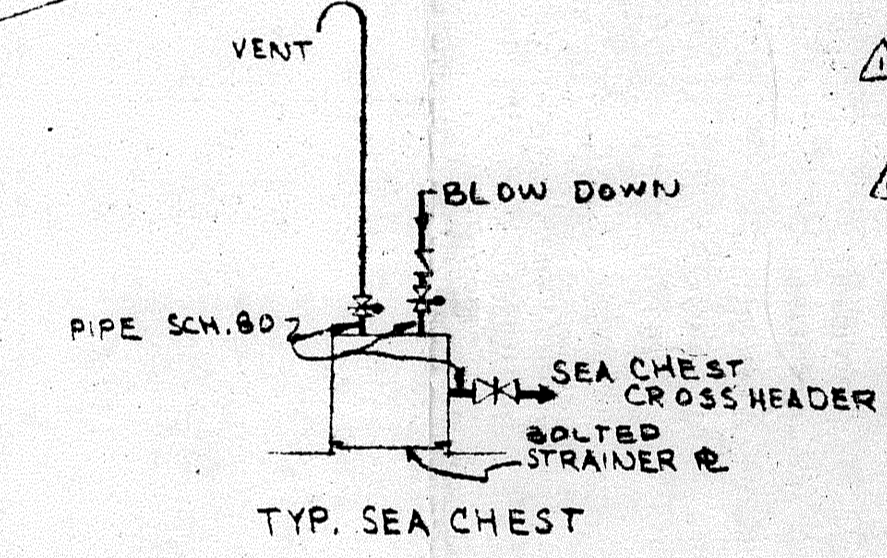


REV.	DATE	DESCRIPTION	BY	CHKD.
1		ADDED MATH. EXP. REVISIONS TO MAIN & ADDED NOTES PER D.A.I.		
2		ADDED NOTE TO BILGE BALLAST & FIRE EX. SCHED. PIPING ON MAIN DECK		
3		REV. DRAWING PER DALS GIBBER'S MARKED UP PRINT		
4		ADDED PUMP CAPACITIES. SEE BILGE BALLAST PUMP SPEC.		
5		REVISED PIP. PER AS-BUILT INSTALLATION.		
6		ADDED DETAIL & NOTE FOR NEW FIRE STATION ON PORT EXH. STACK		



BILGE, BALLAST & FIRE SUCTION PIPING

- SYMBOLS**
- △ GATE VALVE 150° FLG'D. CAST ST. 0.54 V. ASTM A216
  - △ SWING CHECK 150° FLG'D. CAST ST. ASTM A216, ANSI B16.34
  - △ SWING CHECK 12.5° FLG'D. IRON ASTM A126, ANSI B16.34
  - △ BUTTERFLY VALVE 150° IRON ASTM A126, ANSI B16.34
  - △ PRESSURE GAUGE & GAUGE COCK
  - △ SIMPLEX STRAINER 12.5° FLG'D. IRON ASTM A126, ANSI B16.34
  - △ GATE VALVE 12.5° FLG'D. IRON ASTM A126, ANSI B16.34
  - △ ROSE BOX STRAINER - OPEN AREA OF NOT LESS THAN 3-TIMES THAT OF THE SUCT. PIPE
  - △ CONCENTRIC REDUCER 6" x 4"
  - △ HOSE VALVE BRZ. SCR'D. ASTM B62 UNS 501
  - △ ORIFICE
  - △ REDUCER
  - △ GATE VALVE 150° SCR'D BRZ. ASTM B62 UNS 501

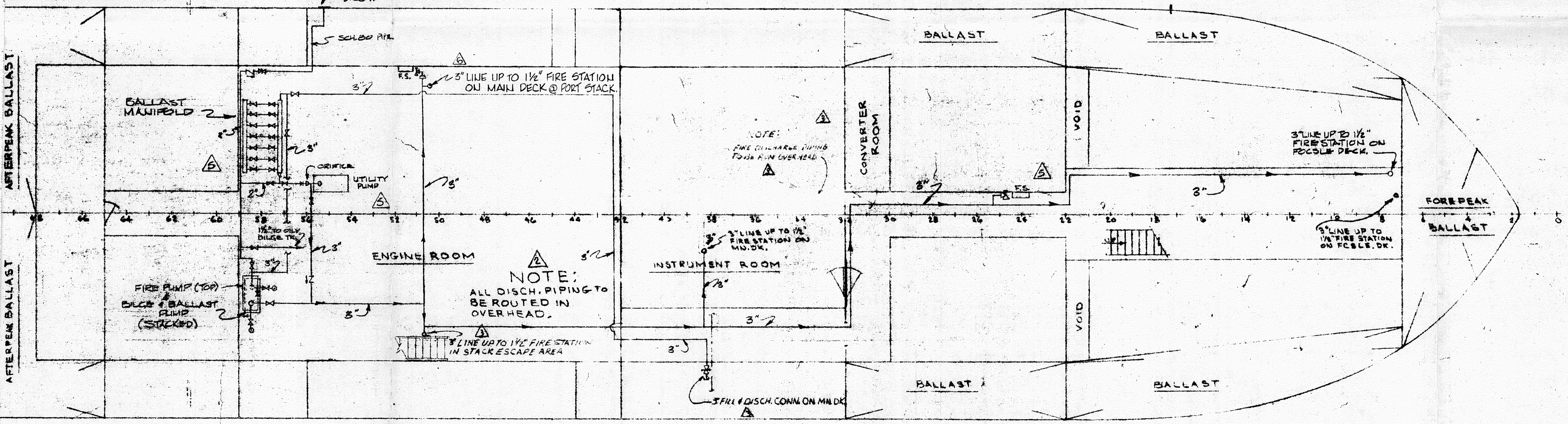


**NOTES**

1. PIPE TO BE STL. 50K. SCH. 80 ASTM A106, GR. B AND 60610
  2. FITTINGS & VALVES 2" & SMALLER SHALL BE SCR'D., FITTINGS 2 1/2" & ABOVE SHALL BE BUTT WELDED & VALVES SHALL BE FLANGED
  3. ALL FITTINGS, VALVES & FLANGES SHALL HAVE PRESSURE/TEMPERATURE RATINGS SUITABLE FOR THE OPERATING CONDITIONS OF THE SYSTEMS SERVED AND SHALL BE IN COMPLIANCE W/ REGULATORY BODY REQUIREMENTS.
  4. SEA CHEST STRAINER PLATE - OPEN AREA OF SEA CHEST STRAINER TO BE EQUAL TO 1/2 TIMES THE SEA CHEST VALVE
  5. FITTINGS 2" & SMALLER SHALL BE ASTM A126, ANSI B16.34
  6. FITTINGS 2 1/2" & ABOVE SHALL BE ASTM A126, ANSI B16.34
1. BILGE & BALLAST - GOULDS MOD. 3155 2 1/2" x 7" W/ 7 7/8" DIA. BRZ. IMPELLER, 5HP MOTOR 1750 RPM
  2. UTILITY PUMP - GOULDS MOD. 3155 2 1/2" x 7" W/ 1 3/8" DIA. BRZ. IMPELLER, 15 H.P. MOTOR 3600 RPM
  3. FIRE PUMP - GOULDS MOD. 3155 2 1/2" x 7" W/ 1 3/8" DIA. BRZ. IMPELLER, 15 H.P. MOTOR 3600 RPM

**PUMP CAPACITIES**

UTILITY PUMP	210 GPM @ 200 FT. HD.
BILGE & BALLAST	230 GPM @ 20 FT. HD.
FIRE PUMP	210 GPM @ 200 FT. HD.



BILGE, BALLAST & FIRE DISCHARGE PIPING

**DESIGN ASSOCIATES, INC.**  
 NAVAL ARCHITECTS MARINE ENGINEERS  
 NEW ORLEANS, LA.

TIDEWATER MARINE SERVICE  
 MISSISSIPPI MARINE TUGBOAT HULL #90  
 148' x 36' x 10' SEISMIC VESSEL

BILGE, BALLAST & FIRE PIPING DIAGRAM

Drawn: p.e.g.	Date: 11-21-90	Checked: A.V.G.
Traced:	Date:	Checked:
Apprd:	Date:	Scale:
Sheet: 01	Drawing No. 4-1062	