

NOTE:  
ALL CIRCUMFERENTIAL DIMENSIONS ARE  
MEASURED ON OUTSIDE OF DRUM SHELL  
AFTER ROLLING  
CIRCUMFERENCE = - - - - - 141.37"  
QUADREANT = - - - - - 35.34"

CONTRACT

BETHLEHEM STEEL CORP

FWB-644-5 B-635-6

DESIGN PRESSURE(STEAM) 450<sup>PSI</sup>

HYDROSTATIC TEST PRESS. 675<sup>PSI</sup>

FINAL " " " (SHOP) 900<sup>PSI</sup>

REFERENCE DRAWINGS

LOWER DRUM DET. NY.

TUGSET TEMPLT " 363-137

DRUM HEAD DET " 363-145

MANHOLE COVER PLATE: STEEL IMPROVMENT &  
FENCE Co CLEVELAND OHIO DWG. 1804-  
APPROVED BY B.M.I. & N.T. FOR 1000' W-3P.

INTERNAL ARM. NY-370-625

## MATERIAL SPECIFICATIONS

THE DRUMS ON THIS CONTRACT ARE  
OF FUSION WELDED CONSTRUCTION  
AND ARE TO BE BUILT INSPECTED

AND ARE TO BE USED, INSPECTED  
& TESTED IN ACCORDANCE WITH  
THE RULES OF THE U.S. DEPT. OF  
COMMERCE BUREAU OF NAVIGATION

& STEAM BOAT INSPECT SERVICE  
 AMENDMENTS RULES I & II OF GENERAL  
 RULES & REGULATIONS DATED JAN  
 1ST 1935 AND ALL SUBSEQUENT RE-  
 VISIONS THEREOF. ALSO AMER. BU.  
 SHIPPING & LLOYDS REG. OF SHIPPING  
 & MARITIME INSURANCE CO. FUSION  
 WELDING TECHNIQUE TO BE  
 IN ACCORDANCE WITH THE ABOVE  
 NAMED RULES OF DEPT. OF COM-  
 MENCE, LLOYDS & AMER. BU. OF SHIPPING  
 FCU CLASS I PRESSURE VESSELS  
 SHELL PLATES TO BE MARINE BOILER  
 STEEL TESTED MATERIAL CLASS "A"  
 GRADE "A" 50000# MIN. T.S.

ELLIPSOIDAL DRUM HEADS TO BE MARINE BOILER STEEL TESTED MATERIAL CLASS "A" GRADE "B" 55,000 MIN.TS. BOTH SHELLS AND HEADS TO MEET ALL REQUIREMENTS OF SECT. M-2-1 TO M-2-6 INCL. OF ABOVE RULES OF DEPT. OF COMMERCE. ALL PEG. OF ABS. & LLOYDS CARBON CONTENT NOT TO EXCEED .30% FORGED STEEL TAPOR NOZZLES TO MEET STD. OF DEPT. OF COMMERCE. M-1-1 TO M-15-11 INCL. (AMENDED) ALL REG. OF A.B.S. & LLOYDS CERTIFIED MATERIAL CLASS "B" GRADE "A" ALL NOZZLES 600" A.S.A. STD. GASKET CONTACT FACE TO HAVE SMOOTH FINISH.

ALL WELDING SHOWN INCLUDING CASING ATTACHMENTS MUST BE STRESS-RELIEVED IN PLACE WITH THE DRUM. THE INSIDE COVER BEAD ON ALL WELDED JOINTS MUST BE REMOVED. CASING ATTACHMENTS, MEDIUM OR HIGH STRENGTH STEEL A.S.T.M. SPEC. A-233 CARBON CONTENT NOT TO EXCEED .30

**DRAWN CALCULATIONS**

1 1/4 TUBES, 1% HOLES 2 1/4" LONG PITCH  
LONGT. EFF. =  $\frac{5}{5} - \frac{2}{5} = 48.7\%$

CIRC. PITCH ON MEAN OF SHELL PLATE: 2.97%

CIRC. EFF. =  $\frac{2.97}{3.287} = 43.7\%$

2 TUBES, 2% HOLES 4 1/4" LONG PITCH  
LONGT. EFF. =  $\frac{4\% - 2\%}{4\%} = 50.4\%$

CIRC. PITCH ON MEAN OF SHELL PLATE: 3.036%

DIAGONAL " " " " " " \* 3.379%


DIAGONAL EFF. = 51.4%

1 1/2" DIAGONAL PITCH EFF. = 10.145%

PLAIN HEAD ELLIPS. W =  $\frac{55,000 \times 1.15625}{21 \times 5} = 605^*$   
1 1/32 THK.

LETTER	DATE	DESCRIPTION
REVISIONS		

UPPER DRUM DETAILS  
FOR  
FOSTER WHEELER BOILER  
TYPE "D"

 This Drawing is the Property of the  
**FOSTER WHEELER CORPORATION**  
165 BROADWAY, NEW YORK

AND IS LENT WITHOUT CONSIDERATION OTHER THAN THE  
BROWDER'S AGREEMENT THAT IT SHALL NOT BE RE-  
PRODUCED, COPIED, LENT OR DISPOSED OF DIRECTLY OR  
INDIRECTLY NOR USED FOR ANY PURPOSE OTHER THAN  
THAT FOR WHICH IT IS SPECIFICALLY FURNISHED. THE  
APPARATUS SHOWN IN THE DRAWING IS COVERED BY

PATENTS.		FILED	
DRAWN BY:	EAS 11/16/57	SCALE:	6-3 21" N.Y.O.
CHECKED BY:	Rhr 11/16/57	NY-370-618	
APPROVED:			

ORDER NO.  
B-635-6

W160-0224 Lloyd's R Foundat