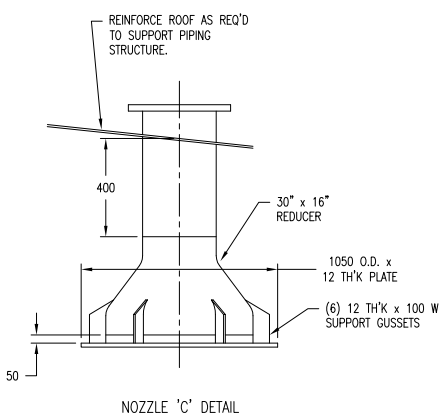
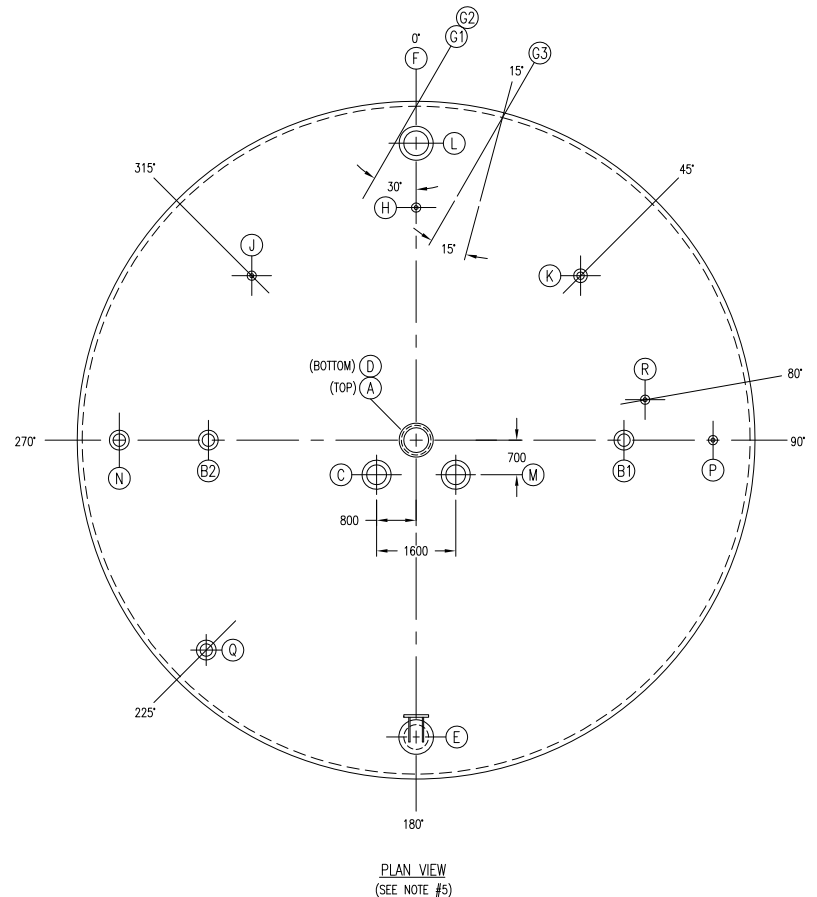
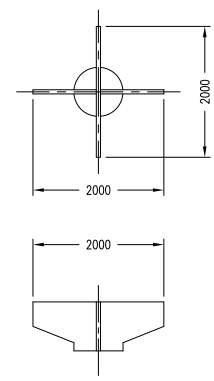


ELEVATION
APPROXIMATE WORKING CAPACITY =
450,000 GALLONS (1.71 MILLION LITERS)



NOZZLE 'C' DETAIL



VORTEX BREAKER

SPECIFICATION - VESSEL			
GENERAL			
ITEM NO.: TK-501	SERVICE: BEERWELL		
CODE: ASME SECTION VIII	STAMP: NONE		
RADIOGRAPH: SPOT	STRESS RELIEVING: NONE		
DESIGN PRESSURE-PSIG (kPa): (SEE NOTE #1)	TEMP - F (C): 200 (93)		
EST. WT. EMPTY-LB (kg): BY FABRICATOR	FULL WATER: BY FABRICATOR/OPERATING: BY FABRICATOR		
WIND VEL-MPH (km/hr): (SEE NOTE #11)	EARTHQUAKE ZONE: BY OWNER		
PROCESS DATA			
FLUID: BEER	DESIGN DENSITY-LB/FT ³ (kg/m ³): 66.8 (1070)		
OPERATING PRESS.-PSIG (kPa): ATMOSPHERIC	TEMP - F (C): 90 (32)		
HOLD-UP TIME: -	APPROX. CAPACITY-GAL (L): 500,000 (1,890,000)		
INLET RATE-GPM (m ³ /HR): -	FLASH: -		
NON-CONDENSIBLES: -			
MATERIAL & THICKNESS-IN (mm)			
SHELL: A516 GR. 60 CARBON STEEL (SEE NOTE #6)			
TOP HEAD: A516 GR. 60 CARBON STEEL (SEE NOTE #6)			
BOT. HEAD: A516 GR. 60 CARBON STEEL (SEE NOTE #6)			
SUPPORTS: CARBON STEEL			
BOLTS: A193 B7 WITH A194 2H HEX NUTS GASKETS: 1/16" (2mm) NON-ASBESTOS			
NOZZLES: IN (mm)-COUPLINGS FOR 1" (25) & UNDER CONNECTIONS (UNLESS NOTED)			
NECK: A106 GR. B CARBON STEEL PIPE			
FLANGE: A105 FORGED STEEL 150# SLIP-ON			
COUPLING: A105 FORGED STEEL 3000# THREADED FULL			
CORROSION ALLOWANCE: 3/16" (5mm) (SEE NOTE #7)			
NOZZLES			
MARK	SERVICE	IN (mm)	NOTE
A	CO2 VENT	20"	FLANGED
B1,B2	CLEANER	10"	FLANGED W/BLIND
C	INLET	16"	FLANGED - W/INTERNAL PIPE (SCH. 80)
D	OUTLET	24"	WELDED PIPE CONNECTION
E	MANWAY	20"	FLANGED WITH HINGED COVER
F	MANWAY	30" x 24"	QUICK OPENING - (YOKES & BOLT TYPE)
G1-G3	RECIRCULATION	16"	FLANGED - (3) REQ'D. (SCH. 80 PIPE)
H	INLET	3"	G2, G3 W/BLIND
J	INLET	3"	FLANGED W/BLIND
K	INLET	6"	FLANGED
L	INLET	20"	FLANGED
M	INLET	16"	FLANGED
N	EMERGENCY VENT	10"	SEE PSE-501
P	INLET	3"	FLANGED
Q	BREATHING VENT	10"	SEE PSV-501
R	INLET	3"	FLANGED
MISCELLANEOUS			
PAINT: ALL EXTERNAL CARBON STEEL SURFACES TO BE CLEANED AND OTHERWISE PROPERLY PREPARED PRIOR TO APPLICATION OF ONE COAT OF CORROSION PROTECTION PRIMER PER SHOP STANDARD.			
NOTES:			
1. DESIGN PRESSURE: 1 PSIG (7 kPa) PLUS FULL STATIC HEAD OF LIQUID (S.G.=1.07). DESIGN VACUUM: -0.5 PSIG (-3.5 kPa) WHEN TANK IS EMPTY.			
2. ALL INTERNAL WELDS TO BE GRIND FREE OF RIDGES, CREVICES AND SLAG WITH NO GREATER SURFACE ROUGHNESS THAN THE BASE METAL PLATES.			
3. VESSEL SUPPORTS BY FABRICATOR.			
4. VESSEL INTERIOR TO BE FREE OF STRUCTURES, SUPPORTS, AND PROTRUSIONS EXCEPT AS SPECIFIED.			
5. FINAL ORIENTATION TO BE DETERMINED UPON FINAL PIPING DESIGN.			
6. VENDOR MAY EVALUATE ALTERNATIVE GRADES OF CARBON STEEL IN ACCORDANCE WITH CODES/REGULATIONS.			
7. CORROSION ALLOWANCE TO BE MADE IN ADDITION TO ALL CALCULATED THICKNESSES.			
8. FINAL LOCATION AND SIZING OF VACUUM SUPPORT RINGS BY FABRICATOR.			
9. FABRICATOR TO PROVIDE PIPE SUPPORT PADS.			
10. FABRICATOR TO PROVIDE STAIRS AND PLATFORMS FOR ACCESS TO MANWAYS 'E' AND 'F'.			
11. 160 Km/h PER URUGUAYAN NORMATIVES: UNIT 50-84.			

NOZZLE SIZE	NOZZLE ** EXTENSION
1 1/4"-6"	150
8"-24"	200

** - UNLESS OTHERWISE SPECIFIED

1. **NOTICE:** The process design and other information contained on this drawing is the confidential property of KATZEN INTERNATIONAL, INC. and is protected by confidentiality agreement, copyright law, and trade secret law, and may not be used, reproduced, discussed with, or disclosed to, any unauthorized persons or organizations in any manner or for any purpose, without prior written approval by an authorized representative of KATZEN INTERNATIONAL, INC.

2. KATZEN INTERNATIONAL, INC. is authorized to practice engineering in the state of Ohio, U.S.A. All code requirements shall be reviewed by a person or persons licensed to practice engineering in the applicable jurisdiction, unless stipulated otherwise.

Rev.	Date	Description	Drawn By	Ckd By	Appd By	Origin:
0	12/19/12	REV. 0 ISSUE	RLM	JDC	JDC	JDC

	BIOETANOL PAYSANDÚ	
	UTE ABENER TEYMA PAYSANDÚ	KATZEN INTERNATIONAL, INC. TECHNOLOGY • ENGINEERING CINCINNATI, OHIO, U.S.A.
Scale: NONE	211,200 LITERS/DAY MOTOR FUEL GRADE ETHANOL PLANT EQUIPMENT SPECIFICATION	NF P/enc: 0003-PLN-KAT-05-62-0201 Sheets: 1 Sheet N°: 1
ITEM: TK-501	BEERWELL	Client N°: 1132-01 Dwg N°: 05-201