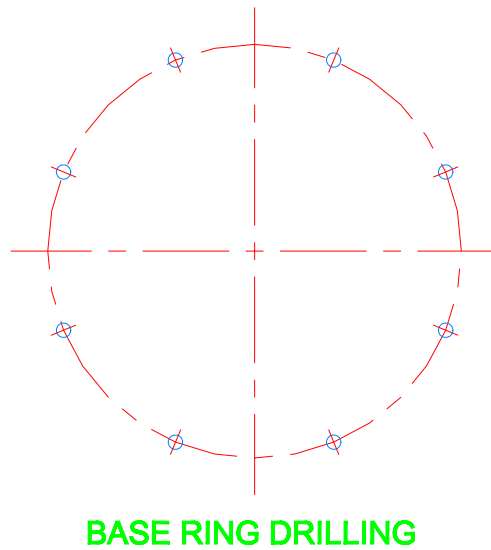
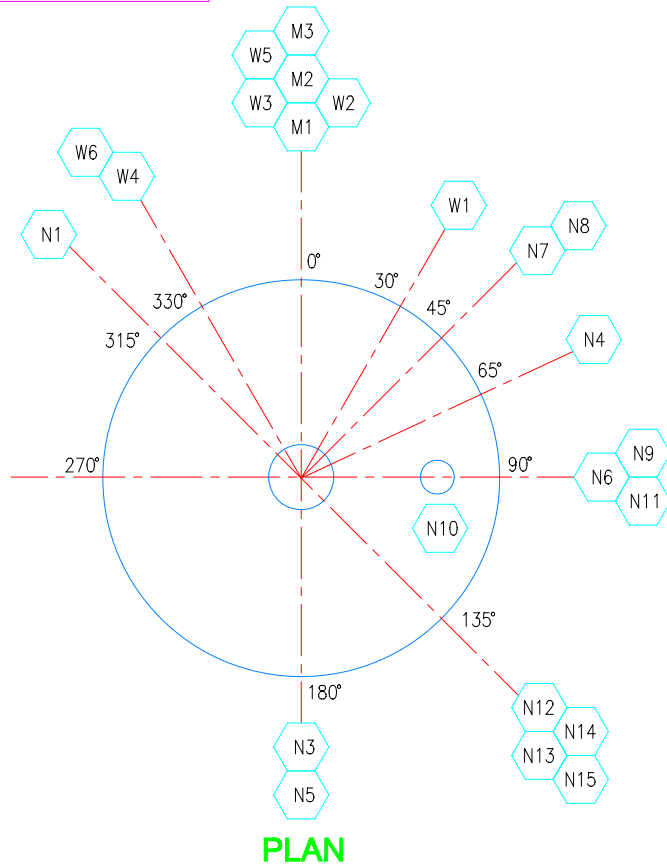


DO NOT SCALE THIS DRAWING



**BASE RING DRILLING**

NOZZLE SCHEDULE							DESIGN DATA		
MK	SIZE	RATING	FACING	PROJ.	SERVICE	REMARKS	CODE: ASME VIII DIV 1 STAMPED AND REGISTERED		
N1	20"		BUTT WELD	6"	VAPOR IN (REBOILER)	FR TP-4104	TOP	BOTTOM	
N2	30"		BUTT WELD	6"	VAPOR OUT	TO ET-4201	SPECIFIC GRAVITY/CONTENTS:	0.746	1.09
N3	10"	150 LB	LJ FLG	6"	STILLAGE OUT	TO PC-4101	OPERATING PRESS.:	10.17 (psia)	12.26 (psia)
N4	10"	150 LB	LJ FLG	6"	BEER FEED	FR PC-4105	OPERATING TEMP.:	176.7 (°F)	203 (°F)
N5	20"		BUTT WELD	6"	VAPOR INLET	FR TP-4103	DESIGN PRESS.: 25/FV (psig)	DESIGN TEMP.: 250 (°F)	
N6	3"	150 LB	LJ FLG	6"	HIGH LEVEL ALARM	LS-004	MDMT: -20°F		
N7	3"	150 LB	WELD PAD	N/A	COL LEVEL CONTROL	LT-001	CORROSION ALLOWANCE: NONE		
N8	3"	150 LB	WELD PAD	N/A	COL LEVEL CONTROL	LT-001	No. & TYPE OF TRAYS: 25 TRAYS REQ'D, SULZER MVG		
N9	3"	150 LB	WELD PAD	N/A	TOP COL. PRESS	PT-010	STRESS RELIEF:		
N10	3"	150 LB	LJ FLG	6"	PRESS. REL. VALVE	PSV-009	TESTS: (gal)		
N11	3"	150 LB	WELD PAD	N/A	BOTTOM COL. PRESS	PT-005	WIND: BASIC WIND SPEED: 80 MPH	SEISMIC: A <sub>y</sub> = 0.05	
N12	2"	150 LB	LJ FLG	6"	R/C FROM CIRC. PUMP	FR PC-4101	WIND IMPORTANCE FACTOR: 1.0	A <sub>o</sub> = 0.05	
N13	1.5"	150 LB	WELD PAD	N/A	TRAY 19 TEMP	TE-006	WEIGHT EMPTY: (lbs)		
N14	1.5"	150 LB	WELD PAD	N/A	TRAY 9 TEMP	TE-007	WEIGHT FLOODED: (lbs)		
N15	1.5"	150 LB	WELD PAD	N/A	TRAY 2 TEMP	TE-008	VOLUME: (gal)		
							WEIGHT INSULATION:		
M1	24"				MANWAY W/HINGE OR DAVIT				
M2	24"				MANWAY W/HINGE OR DAVIT				
M3	24"				MANWAY W/HINGE OR DAVIT				
A1	24"	ATMO.	PLAIN	3"	SKIRT PENETRATION FOR N3				
A2	24"	ATMO.	PLAIN	3"	SKIRT ACCESS				
A3	3"	ATMO.	PLAIN	3"	FIRE PROTECTION				
W1			WELD PAD	N/A	SIGHT GLASS WITH 4" VIEW				
W2			WELD PAD	N/A	SIGHT GLASS WITH 4" VIEW				
W3			WELD PAD	N/A	SIGHT GLASS WITH 4" VIEW				
W4			WELD PAD	N/A	SIGHT GLASS WITH 4" VIEW				
W5			WELD PAD	N/A	SIGHT GLASS WITH 4" VIEW				
W6			WELD PAD	N/A	SIGHT GLASS WITH 4" VIEW				

NOZZLE LOADS					
MK	Fr (lbs)	Mr (ft/lbs)	MK	Fr (lbs)	Mr (ft/lbs)
N1	5200	8779	N4	3900	5607
N2	8700	17169	N5	5800	11033
N3	3900	5607			

MATERIALS OF CONSTRUCTION		
ITEM	MATERIAL	COMMENTS
SHELL	304L SS	
HEADS	304L SS	2:1 ELLIPTICAL
JACKET	N/A	
CLADING/LINER	N/A	
INTERNAL SUPPORTS	304L SS	TRAY SUPPORTS/DOWNCOMERS
GASKETS	IFG5500	
BOLTING	SA-193-B7/ S14-194-2H	CAD PLATED
LADDER	CS	CLIPS ONLY
PLATFORMS	CS	CLIPS ONLY
VESSEL SUPPORTS	CS	SKIRT
PIPING SUPPORTS	CS	CLIPS ONLY
PAINT:	SEE SPEC GF-1-73338 CL-1	
SURFACE PREP:	SEE SPEC GF-1-73338 CL-1	
INSULATION:	2" FG-TOP HEAD Ca Si	PURCHASER TO PROVIDE

**NOTES:**

- 1.) THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN & STRUCTURAL INTEGRITY OF THE TANK.
- 2.) WIND AND SEISMIC LOAD PER BOCA 1996  
SNOW LOAD, P<sub>g</sub> = 20 PSF
- 3.) ALL NON CONTACT SURFACES TO BE CARBON STEEL.
- 4.) ALL EXPOSED CARBON STEEL TO BE SANDBLASTED TO NEAR WHITE METAL AND PRIMED WITH INORGANIC ZINC METAL PRIMER TO A 3-MIL DRY FILM THICKNESS.
- 5.) VESSEL TO BE CLEANED INSIDE AND OUTSIDE, FREE OF DIRT, GREASE, MILL SCALE AND WELD SPLATTER PER TKS STANDARD GF-1, SECTION 8 CLEANING AND PAINTING, CLASS III.
- 6.) VENDOR TO SUPPLY 12 BRACKETS FOR PLATFORMS AND 6 BRACKETS FOR LADDERS. LOCATIONS TO BE DETERMINED AT TIME OF VESSEL FABRICATION.
- 7.) ALL CARBON STEEL PARTS ATTACHED TO STAINLESS STEEL PARTS SHALL BE ATTACHED USING 304L STAINLESS STEEL. SCAB PLATES SHALL BE USED WITH ATTACHMENTS FOR VESSEL WALL THICKNESS OF 3/16" OR LESS. 304L STAINLESS STEEL PARTS MAY BE USED INSTEAD OF CARBON STEEL AT THE VENDORS OPTION.
- 8.) ALL NOZZELS SHALL BE SQUARE, PLUMB, AND ACCURATELY LOCATED TO THE FOLLOWING TOLERANCES:
  - A.) OVERALL DIAMETER AND HEIGHT: ± 1/2"
  - B.) FLATNESS: ± 1/4"
  - C.) NOZZLE LOCATION: ± 1/4" FROM CENTERLINES
  - D.) PROJECTION: ± 1/8" FROM OUTSIDE SHELL TO FACE OF NOZZLE
  - E.) FLANGE FACES: 1/2" IN ANY PLANE
- 9.) VESSEL INTERNALS SUPPLIED BY OTHERS FOR INSTALLATION BY THE SITE CONTRACTOR.
- 10.) DISTILLATION INTERNALS PROVIDER TO SUPPLY REQUIREMENTS FOR TRAY AND DOWNCOMER ATTACHMENTS.
- 11.) TRAYS PROVIDED WITH INLET BAFFLE ABOVE TOP TRAY AND SEAL PAN BELOW BOTTOM TRAY. ATTACHMENTS.
- 12.) FABRICATOR SHALL PROVIDE AND ORIENT (6) EA. 2" SCH. 40 SKIRT VENTS APPROX. EQUAL SPACING AND TO CLEAR ALL SKIRT OPENINGS, SEAMS, SUPPORT CLIPS, ETC.

**SPECIFICATIONS:**

GF-1: GENERAL FABRICATION STANDARDS FOR PRESSURE VESSELS & HEAT EXCHANGERS

**REF. DWG'S:**

- 6018-MQ-4114 Sht 2 of 2
- 6018-MD-4001

**CONFIDENTIAL**

**BEER COLUMN - PLAN**

667 Tiffitt Street Buffalo, NY 14220

EQUIPMENT No.:	TW-4101
PROJECT No.:	73338
PROJECT NAME:	CENTRAL ILLINOIS
SHEET No.:	1 of 2
DRAWING No.:	<b>6018-MQ-4114</b>
REV.:	<b>B</b>

THIS DRAWING IN DESIGN AND DETAIL IS THE PROPERTY OF THERMAL KINETICS AND MUST NOT BE USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS SPECIFICALLY FURNISHED. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. COPYRIGHT 2006

SPEC. No.: GF-1-73338 SCALE: NONE SIZE: B

DRAWN BY: JEM DATE: 5-23-06 CHECKED BY: DATE: REV.:

REV	REVISION	DATE ISSUED	ISSUED BY	CHK BY	CLIENT APPD
B	ISSUED FOR REVIEW & COMMENT	7-14-06	KAR	JL	-
A	ISSUED FOR BID	6-23-06	RJS	-	-

B-SIZE (11x17)