

**VESSEL DESIGN DATA**

IN ACCORDANCE WITH ASME CODE - SEC. VIII, DIV. 1, 2001 EDITION; N/A ADDENDA.  
CODE STAMP REQ'D: YES NATL. BD. NO. REQ'D: YES OUTSIDE INSP REQ'D: NO

ADD'L SPECS: NONE

DESIGN PRESS: 50 PSI AT DESIGN TEMP: 800° F  
MAWP (INT): 53 PSI AT MAX TEMP: 800° F  
MAWP (EXT): - AT MAX TEMP: -

LIMITED BY: DESIGN  
MDMT: -20° F AT: 53 PSI

JOINT EFFICIENCY (HEAD): 70% JOINT EFFICIENCY (SHELL): 70%  
RADIOGRAPHY: NONE STRESS RELIEVE: NONE

HYDRO TEST PRESS: 113 PSI BASED ON: 1.3 X DP\*16.7K/9.6K  
CORROSION ALLOWANCE: NONE LETHAL SERVICE: NO

ADD'L NDE/NDT: NONE

**MATERIAL:** (DOMESTIC OR FOREIGN) MILL TEST REPORTS REQ'D: PRESS. RETAIN'G MTL  
SHELL: SA240-316L FLG/CPL: SA182-F316L  
HEADS: SA240-316L PIPE: SA312-TP-316L  
HEAD TYPE: 2:1 ELLIP EXT ATTACH.: SA240-316L  
FITTINGS: SA403-WP316L INT ATTACH.: SA240-316L  
STUDS/NUTS: SA193-BBM/SA194-BM INSULATION: CALCIUM SILICATE  
GASKETS: SPIR WD 316SS/GRAPHITE FILL. SUPPORTS: SA240-316L

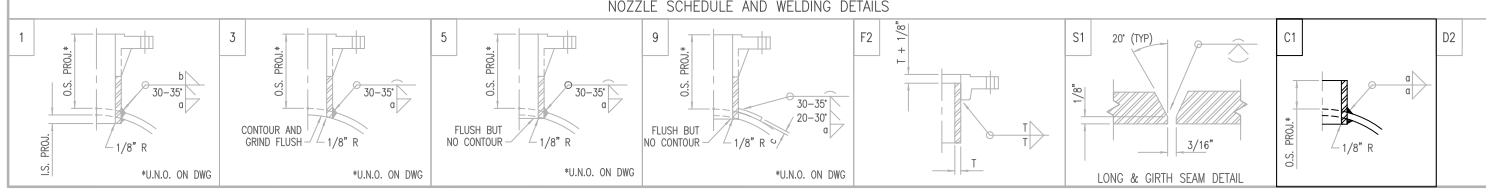
**PAINTING:**  
EXTERNAL: ON HOLD!  
SURFACE PREP: PER SSPC-SP10  
COAT 1:  
COAT 2:  
COAT 3:  
INTERNAL: NONE

SHIPPING WT: 11,600 LBS WT FULL OF WATER: 37,900 LBS

- NOTES (UNLESS OTHERWISE NOTED):**
- WELD PER ASSIGNED PROJECT WELDING LIST-1695.
  - GRIND ALL ROUGH EDGES & CORNERS. RADIUS ALL NOZZLES 1/8" MINIMUM RADIUS.
  - FLANGED BOLT HOLES TO STRADDLE NORMAL CENTER LINES.
  - ALL REINFORCING PLATES TO HAVE 1/4" NPT TELL-TALE HOLE, TO BE FILLED WITH GREASE AFTER PRESSURE TESTING.
  - ALL NABG GASKETS INDICATED ON BOM TO BE USED FOR VESSEL HYDROTEST ONLY.
  - SPECIAL CONSIDERATION TO BE TAKEN ON GENERAL NOTES OF ACS' INTERNAL ATTACHMENTS.
  - SPECIAL CARE TO BE TAKEN IN FABRICATION TO ELIMINATE CONTAMINATION OF STAINLESS STEEL COMPONENTS BY CARBON STEEL MATERIALS.
  - MTR'S REQUIRED ON ALL PRESSURE BOUNDARY COMPONENTS.

- SHIPPING NOTES:**
- ALL EXPOSED NOZZLE FACES TO BE FITTED W/ APPROPRIATE PLASTIC NOZZLE PROTECTORS.

MARK	RECD	DESCRIPTION	SERVICE	OD	SCH	OS	IS	REINFORCING PAD SIZE	WELDING DETAIL NO.	WELD SIZE	REMARKS	BOM ITEMS
A3	1	14" PIPE	ACCESS OPENING	14"	10	6"	-	-	C1	3/16"	PIPE CUT LG. = 12"	40
A2	4	2" PIPE	SKIRT VENT	2 3/8"	STD	6"	-	-	C1	3/16"	PIPE CUT LG. = 11"	80
A1	2	24" PIPE	SKIRT ACCESS	24"	10	6"	-	-	C1	3/16"	PIPE CUT LG. = 14"	26
M3	1	18"-150# RF SO FLG	BOTTOM MANWAY W/ BLIND & DAVIT	18"	10S	1'-2"	0"	1/4" THK X 22" OD	9, F2	3/8"	0" 1/4"	13,24,18,38,55,46,47,82
M2	1	18"-150# RF SO FLG	MIDDLE MANWAY W/ BLIND & DAVIT	18"	10S	1'-2"	0"	-	3, F2	1/4"	0"	13, 24, 18, 38, 55, 46, 47
M1	1	18"-150# RF SO FLG	TOP MANWAY W/ BLIND NOZZLE (N8)	18"	10S	SEE DWG	0"	-	5, F2	1/4"	0"	13, 18, 38,
C2	1	3/4"-600# NPT CPLG	TOP SECTION PIT-4006 CONN	1 3/4"	-	1 3/4"	0"	-	5	1/4"	0"	35
C1A-C	3	2"-150# RF SO FLG	TOP SECTION TE-4004/5/6 CONNS	2 3/8"	STD	9"	0"	-	5, F2	1/4"	0"	22, 32
N17A/B	2	2"-150# RF SO FLG	TOP SECTION LG-4006 CONNS	2 3/8"	STD	9"	0"	-	5, F2	1/4"	0"	22, 32
N16A/B	2	2"-150# RF SO FLG	MIDDLE SECTION LG-4004 CONNS	2 3/8"	STD	10"	0"	-	5, F2	1/4"	0"	22, 32
N15C	1	2"-150# RF SO FLG	MIDDLE SECTION TE-4003 CONN	2 3/8"	STD	10"	0"	-	5, F2	1/4"	0"	22, 32
N15A/B	2	2"-150# RF SO FLG	BOTTOM SECTION TE-4001/2 CONNS	2 3/8"	STD	10"	0"	-	5, F2	1/4"	0"	22, 32
N14A/B	2	2"-150# RF SO FLG	BOTTOM SECTION LG-4002 CONNS	2 3/8"	STD	10"	0"	-	5, F2	1/4"	0"	22, 32
N12	1	12"-150# RF SO FLG	CLEAN-OUT W/ BOTTOM OUTLET (N2)	12 3/4"	STD	SEE DTL	SEE DTL	-	5, F2	3/8"	0"	15, 27
N11A/B	2	3"-150# RF SO FLG	TOP SECTION LIT-4005 CONNS	3 1/2"	10S	9"	0"	-	5, 52	1/4"	0"	21, 4
N10A/B	2	3"-150# RF SO FLG	MIDDLE SECTION LIT-4003 CONNS	3 1/2"	10S	10"	0"	-	5, F2	1/4"	0"	21, 4
N9A/B	2	3"-150# RF SO FLG	BOTTOM SECTION LIT-4001 CONNS	3 1/2"	STD	10"	0"	-	5, F2	1/4"	0"	21, 31,
N8	1	8"-150# RF SO FLG	VAPOR OUTLET	8 5/8"	10S	SEE DTL	SEE DTL	-	SHT 2, F2	-	-	17, 29, 24, 38, 46, 47
N7	1	3"-150# RF SO FLG	TOP RECIRC INLET W/ HEADER	3 1/2"	10S	SEE DTL	SEE DTL	-	D2, F2	1/4"	1/4"	21, 4
N6	1	4"-150# RF SO FLG	TOP OUTLET	4 1/2"	10S	9"	0"	-	3, F2	1/4"	0"	19, 30
N5	1	2"-150# RF SO FLG	MIDDLE RECIRC INLET W/ HEADER	2 3/8"	STD	SEE DTL	SEE DTL	-	D2, F2	1/4"	1/4"	22, 32
N4	1	4"-150# RF SO FLG	MIDDLE OUTLET	4 1/2"	40S	1'-0"	0"	-	3, F2	3/8"	0"	19, 14
N3	1	3"-300# RF SO FLG	BTM RECIRC INLET W/ HEADER	3 1/2"	STD	SEE DTL	SEE DTL	-	D2, F2	1/4"	1/4"	20, 21, 31
N2	1	4"-150# RF SO FLG	BTM OUTLET	4 1/2"	10S	SEE DTL	SEE DTL	-	SHT 2, F2	-	-	SEE DTL, SHT 2
N1	1	8"-300# RF SO FLG	QUENCHED FEED INLET	8 5/8"	STD	1'-0"	1"	-	1, F2	3/8"	1/4"	16, 28



NATL. BD. NO. (LATER)

**ITS** CERTIFIED BY: ITS Engineered Systems, Inc.

53 PSI @ 800° F MAWP  
66" ID/36" ID X 34'-2" S/S SIZE

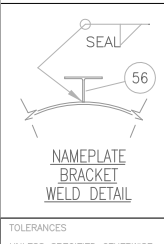
-20° F @ 53 PSI MDMT  
50 PSI DESIGN PRESS

1695 JOB#  
1695-1 SERIAL#  
2003 YEAR BUILT

BUILT FOR: ITS ENSYN, INC.

FRACTIONATION COLUMN, C-400

P.O. NO. 114026-003P



**TOLERANCES UNLESS SPECIFIED OTHERWISE**

PIPING AND STRUCTURAL DIMENSIONS ± 1/4"  
MACHINING ± .010"  
CONCENTRICITY .010" TIR  
FINISH Z50

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APP. BY: 1695 ACCT. No. 800,801 DATE: 12/16/02 DRAWING No. 800,801 SCALE: 1:32 SHT. 1 OF 5 REV. 0