1	CIRCS. & LONG SEAMS	5	NOZZLE (CF OR SF)	8	TACK WELD	9A	STRAIGHT BORE NOZZLE	14	EXPOSED INTERNAL EDGES	18D	ALL EXTERNAL ATTACHMENTS	18E	ALL ATTACHMENTS (INTERNAL + EXTERNAL)
TRANSITION AS REQUIRED 5:1 MINIMUM AS PER UW-13													
OPS-WP4-CVN-AW		OPS-WP1-AW OPS-WP6-AW		OPS-WP1-AW OPS-WP6-AW		OPS-WP1-AW OPS-WP6-AW		PREPARE ALL INSIDE EDGES OF SQUARE CUT HOLES, NOZZLES & CPLGS. AS SHOWN		OPS-WP1-AW OPS-WP6-AW		OPS-WP1-AW OPS-WP6-AW (SEAL WELD)	

410	10 SETS	7/8" ø				SA-193-B7M SA-194-2HM	8 STUDS X 6"LG & 16 NUTS	12
411	16 SETS	5/8" ø				SA-193-B7M SA-194-2HM	8 STUDS X 4 1/2"LG & 16 NUTS	5
412	1	8"	PIPE		STD	SA-333-GR6	PIPE 100 mm LG ACCESS SLEEVES	7
413	1	16"	PIPE		40	SA-333-GR6	PIPE 130 mm LG ACCESS SLEEVES	28
414	4	4"	RF GASKET	CL600		316SS	GASKET, RF SPWND FLEXITALLIC	
								52

GENERAL NOTES:

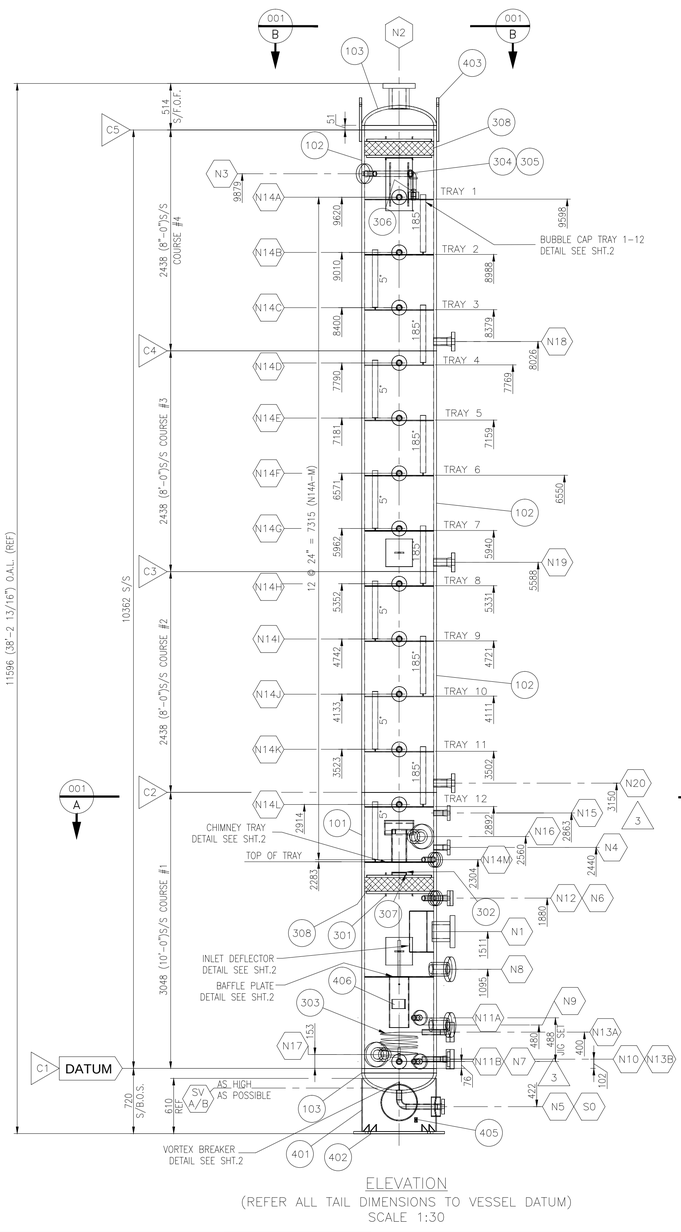
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.
2. ALL BOLT HOLES TO STRADDLE NATURAL VESSEL CENTER LINES UNLESS OTHERWISE NOTED.
3. FULL PENETRATION WELDS TO BE GOUGED BEFORE FILLING.
4. CORNER RADIUS 1/8" MINIMUM FOR NOZZLES AND 1/8" MINIMUM FOR MANWAYS.
5. ALL REPADS TO HAVE A 1/4" NPT WEEP HOLE ON DOWN-HILL SIDE OF NOZZLE OR MANWAY.
6. 1/4" NPT WEEP HOLES REQUIRED ON ALL REPADS,WEAR PADS AND POISON PADS. AIR/SOAP TEST @ 15 PSIG REQUIRED.
7. TWO WEEP HOLES REQUIRED WHEN REPAD IS SPLIT (ONE EACH).
8. CHASE THREADS ON COUPLINGS BEFORE HYDRO.
9. IF PSV IS NOT SHOWN IN NOZZLE SCHEDULE, IT IS THE USER'S RESPONSIBILITY TO LOCATE THE PSV IN ADJACENT PIPING PER ASME UG-125.
10. ITEM 201,202 & 204 REQUIRE 3/8" RADIUS ON I.D. OF NOZZLES.

INSPECTION NOTES:

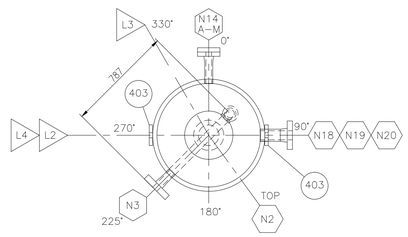
1. 100% FULL ON CIRC SEAMS, LONG SEAMS NOZZLES, SEE NOTE.
2. TRAY LOCATIONS MUST BE SIGNED OFF BY QC., SHOP, SHOP MAN. PRIOR TO WELDING.

FABRICATION NOTES:

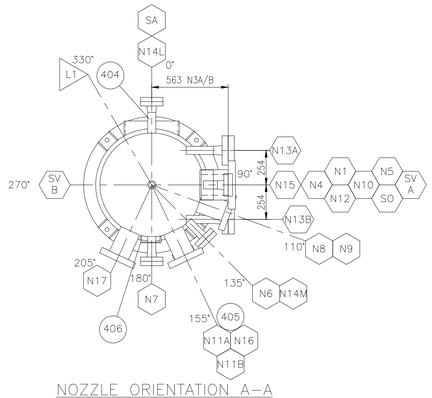
1. FOR FABRICATION TOLERANCES REFER TO "STANDARD FABRICATION TOLERANCES FOR UNFIRED PRESSURE VESSELS. (REV. 0)"
2. **PREHEAT TO 200° F PRIOR TO WELDING.**
3. SURFACE PREP: SANDBLASTED TO SSPC-SP-6
4. PRIMED: ONE (1) COAT ZINC PHOSPHATE
5. PAINTED: ONE (1) COAT INDUSTRIAL ENAMEL (WARM GREY)
6. MATERIAL SUBSTITUTION FOR:
   SA-105N USE SA-350-LF2 CL.1
   SA-106B USE SA-333-GR.6
   SA-234-WPB USE SA-420-WPL6
7. RETURN DWG. TO QC AFTER FABRICATION
8. **GMAW ROOTS LONG & CIRC'S ONLY EXCEPTED IF U.T. 100% HANDSCAN COMPLETED OR REMOVE GMAW**



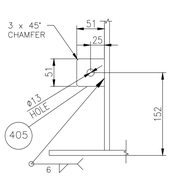
ELEVATION
(REFER ALL TAIL DIMENSIONS TO VESSEL DATUM)
SCALE 1:30



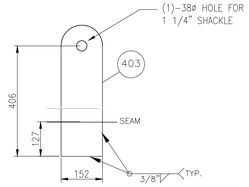
NOZZLE ORIENTATION B-B
SCALE 1:20



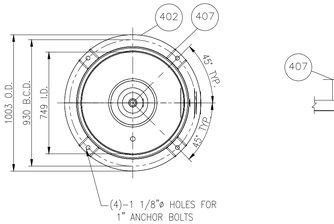
NOZZLE ORIENTATION A-A
SCALE 1:20



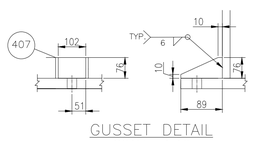
GROUND LUG DETAIL
SCALE: 1:5



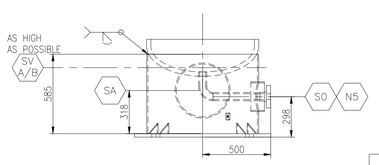
LIFTING LUG DETAIL
2 REQ'D
SCALE 1:10



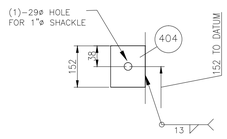
SKIRT BASE PLATE DETAIL
SCALE 1:20



GUSSET DETAIL
SCALE: 1:10



(N5) DRAIN AND SKIRT DETAIL
SCALE 1:20



TAIL LUG DETAIL
SCALE 1:10

BILL OF MATERIAL

ITEM	QTY.	SIZE	TYPE	RATING	SCH./ W.T.	MAT'L SPEC	DESCRIPTION	WEIGHT
100. VESSEL								
101	1	30" I.D.	ROLLED PLATE		1.25"	SA-516-70N	3048 LG. SHELL	1891
102	3	30" I.D.	ROLLED PLATE		1.25"	SA-516-70N	2438 LG. SHELL	4540
103	2	30" I.D.	FORMED PLATE		1.25"	SA-516-70N	ASME 2:1 S.E. HEAD (1.1875 FORMED MIN.) C/W 2" SF, HOT FORMED	424
200. CONNECTIONS								
201	3	2"	RFWN	CL900	160	SA-105N	ANSI FLANGE	33
202	2	2"	BLIND	CL900		SA-105N	RED. HUB BLIND 2" RF x 1" SW SCH. 160 BORE	23
203	2	6"	RFLWN	CL600	1.375"	350LF2 CL1	ANSI FLANGE x 10" LG	104
204	4	4"	RFLWN	CL600	1"	350LF2 CL1	ANSI FLANGE x 10" LG	121
205	25	2"	RFWN	CL600	160	SA-105N	ANSI FLANGE	113
206	16	2"	BLIND	CL600		SA-105N	BLIND FLANGE ANSI	59
207	3	2"	RFLWN	CL600		SA-105N	ANSI FLANGE 10"LG	59
208	1	2"	ELBOW		160	SA-234-WPB	90° ELBOW LR	2
209	AS REQ'D	1"	PIPE		XXH	SA-106B	PIPE SMLS	68
210	1	2"x3/4"	BLIND	CL600		SA-105N	RED. BLIND 2" RF x 3/4" SW	30
211	4	4"	BLIND	CL600		SA-105N	RED. BLIND 4" RF x 2" NPT	
300. INTERNAL ASSEMBLIES								2
301	8	3/8" THK	PLATE			SA-516-70N	DEMISTER HOLD DOWN BAR 38 x 762 LG	
302	1	3/8" THK	PLATE			SA-516-70N	DEFLECTOR PLATE 165 OD	
303	AS REQ'D	1"	PIPE		XXH	SA-106-B	PIPE COIL, HN# 01289	
304	AS REQ'D	2"	PIPE		XH	SA-106-B	SMLS PIPE	17
305	1	2"	ELBOW S.W.		XH	SA-234-WPB	ELBOW, SW 90° SR	2
306	1	4"	PIPE		STD	SA-106-B	SMLS PIPE 76 LG.	
307	2	3/8" THK	PLATE			SA-516-70N	DEFLECTOR HOLD DOWN BAR 38 x 165 LG	2
308	2	30" ID	DEMISTER			316LSS	DEMISTER, JONELL STYLE 115-62 MESH PAD, 6" THK, 12 lb/Ft3 DENSITY	2
400. EXTERNAL ASSEMBLIES								
401	1	32 1/2" OD	FORMED PLATE		3/8"	SA-516-70N	SKIRT SHELL 585 LG	113
402	1	1" THK	PLATE			SA-516-70N	SKIRT BASE PLATE 1003 OD X 749 ID	70
403	2	1" THK	PLATE			SA-516-70N	LIFTING LUGS 152 X 482	51
404	1	1" THK	PLATE			SA-516-70N	TAIL LUG 127 X 152	7
405	1	2"X1/4" THK	FLAT BAR			SA-240-316L	GROUND LUG SPECTRUM STANDARD 51 LG	1
406	1	6" x 4"	PLATE			SA-516-70N	NAMEPLATE BRACKET	1
407	8	3/8" THK.	PLATE			SA-36	BASEPLATE GUSSETS 76mm x 89mm	5
408	6	2"	RF GASKET	CL900		316SS	GASKET, RF SPWND FLEXITALLIC	1
409	16	2"	RF GASKET	CL600		316SS	GASKET, RF SPWND FLEXITALLIC	1
								7742

LAYOUT		NOZZLE SCHEDULE							FILLET WELD SIZE			PROJECTION		
Q.C.	SUPERVISOR	MARK	SIZE	RATING	NECK O.D.	TYPE	SERVICE	W.D.	W41	W42	W43	H (MIN.)	EXT. PROJ.	ITEM
		N1	6"	CL600	8.75"	RFLWN	GAS INLET	5, 14	3/8"	–	BW	SF	203	203
		N2	6"	CL600	8.75"	RFLWN	GAS OUTLET	5, 14	3/8"	–	BW	SF	AS	203
		N3	2"	CL900	2.375"	RFWN	LEAN GLYCOL INLET	5, 14 9A	3/8"	–	BW	AS	150	201, 209
		N4	2"	CL600	2.375"	RFWN	RICH GLYCOL OUTLET	5, 14 9A	3/8"	–	BW	SF	150	205, 209
		N5	2"	CL600	2.375"	RFWN	DRAIN	5, 14 9A	3/8"	–	BW	SF	150	205, 208, 209
		N6	2"	CL600	2.375"	RFWN	PI	5, 14 9A	3/8"	–	BW	SF	150	205, 209, 210 409, 411
		N7	2"	CL600	2.375"	RFWN	TI	5, 14 9A	3/8"	–	BW	SF	150	205, 209 409, 411
		N8	4"	CL600	6"	RFLWN	LSHH	5, 14	3/8"	–	BW	3/8"	203	204, 211 414, 410
		N9	4"	CL600	6"	RFLWN	LC	5, 14	3/8"	–	BW	3/8"	203	204, 211 414, 410
		N10	2"	CL600	2.375"	RFWN	LIQUID DUMP	5, 14 9A	3/8"	–	BW	SF	150	205, 209
		N11A/B	2"	CL600	2.375"	RFWN	LG CONNECTION	5, 14 9A	3/8"	–	BW	SF	150	205, 209
		N12	2"	CL600	2.375"	RFWN	FUTURE PSV/SPARE	5, 14 9A	3/8"	–	BW	SF	150	205, 206, 209 409, 411
		N13A/B	1"	CL900	1.315"	RFWN	COIL IN/OUT	5, 14 9A, 9K	3/8"	–	BW	SF	150	202, 209 408, 410
		N14A–L	2"	CL600	2.375"	RFWN	TRAY INSPECTION	5, 14 9A	3/8"	–	BW	SF	200	205, 209, 206 409, 411
		N14M	2"	CL600	2.375"	RFWN	INSPECTION/DRAIN	5, 14 9A	3/8"	–	BW	SF	200	205, 209, 206 409, 411
		N15	2"	CL600	2.375"	RFWN	CAGE EQUALIZATION	5, 14 9A	3/8"	–	BW	SF	150	205, 209
		N16	4"	CL600	6"	RFLWN	LSHH	5, 14	3/8"	–	BW	3/8"	203	204, 211 414, 410
		N17	4"	CL600	6"	RFLWN	LSLL/ISNPECTION	5, 14	3/8"	–	BW	3/8"	203	204, 211 414, 410
		N18	2"	CL600	3.31"	RFLWN	X-RAY ACCESS	5, 14	3/8"	–	BW	SF	203	207, 206
		N19	2"	CL600	3.31"	RFLWN	X-RAY ACCESS	5, 14	3/8"	–	BW	SF	203	207, 206
		N20	2"	CL600	3.31"	RFLWN	X-RAY ACCESS	5, 14	3/8"	–	BW	SF	203	207, 206
		S0	8"	STD	–	PIPE	SKIRT OPENING	18D	1/4"	–	–	2"	2"	412
		SA	16"	–	–	PIPE	SKIRT ACCESS	18D	1/4"	–	–	2"	2"	413
		SV A/B	2"	–	–	HOLE	SKIRT VENT	–	–	–	–	–	–	–

BW = BACKWELD
SF = SQUARE-CUT FLUSH
CF = CONTOUR-CUT FLUSH

WD = WELD DESIGN
AS = AS SHOWN
ARD = AS REC'D W/O CUTTING

DESIGN DATA

DESIGN & CONSTRUCTION	Vessel to be designed and constructed in accordance with ASME Boiler and Pressure Vessel Code Section VIII Div. 1 Code Year:2013 Addenda:			
MDMT	-20°F, Impact testing exempted as per UG-20(f)[1-5] & UCS-66(a).			
MAWP	1415 Psig	9756 kPa	SERIAL No.	14-05110-31
DESIGN TEMPERATURE	150°F	66°C	CRN	W6436-21
HYDROTEST PRESS.	1840 Psig	12686 kPa	TAG No.	V-601 C-322 AS PER P&ID
CORR. ALLOWANCE	0.0625"	1.6mm	YEAR BUILT	2014
VOLUME	172.58 Cu.Ft	4.9 Cu.m	INSPECTION By	A.B.S.A.
RADIOGRAPHY *	RT-1(100%)		APPROX. SHIPPING WT.	20,800Lbs./9,435 KG
CRN DRAWING No.	V-14-05110-31-001 R.3		FINAL JOINT EFF.	100%
STRESS RELIEVE	NO		MAEWP @ Deg.F	N/A

HYDROTEST WEIGHT 26,770 Lb

Note: * Full on circ. seams, long seams, and all butt welded nozzles greater than either ID" WPS or 1.125" WT per UW-11(a) & UW-51
Note: For fabrication tolerances refer to "Standard Fabrication Tolerances for Unfired Pressure Vessels. (Rev. 0)"

SPECIAL MATERIAL
CONSULT QC/SPECS
COLOUR CODE: GOLD

SWEET SERVICE

SPECTRUM NACE

DWG. RELEASE
FABRICATION COPY NO: __ OF __
DATE:_____
SIGNED:_____

HEAT EXCHANGE COIL DESIGN DATA

Coil designed and constructed in accordance with ASME Boiler and Pressure Vessel Code Section VIII Div. 1 Code Year:2013

MDMT	-20 °F	-29 °C
MAWP	1415 PSIG	9756 Kpa
DESIGN TEMPERATURE	200 °F	93 °C
HYDROTEST PRESS.	1840 PSIG	12686 Kpa
CORR. ALLOWANCE	0.125 Inch	3.2 mm

ENGINEERS RECORD		DATE
DRAWN BY	OLIVERA CEREKOVIC	AUG 07/2014
CHECKED BY	TAYLOR DIXON	AUG 13/2014
REVIEWED BY	EUGENIA HUDEA	AUG 13/2014
APPROVED BY	IONEL HUDEA	AUG 13/2014
PM APPD. BY	LANE ARIAS	AUG 13/2014
Q.C. APPD. BY	JOE LAING	AUG 13/2014

EXCELSIOR ORDER # 4178HUS-REQ-003

No.	DATE	REVISIONS	BY	CHK	REW	APP	PM	QC
0	AUG 14 2014	ISSUED FOR CONSTRUCTION	OC	TJD	EH	IH	LA	JL
1	AUG 19 2014	REVISED CAN LENGTHS, ROTATED NOZZLES	OC	TD	EH	IH	LA	JL
		N8, N9, N11A, N11B, N17 AND SKIRT ACCESS						
2	AUG 26 2014	NOTE 11 REMOVED, REV'D CORR. ALLOWANCE	OC	TMD	EH	IH	LA	JL
		ADDED ORDER NOTE						
3	JAN 09, 2015	REVISED N13a/b FROM 2" TO 1"	AK					
4	JAN. 016, 2015	AS-BUILT	JC					

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SPECTRUM Process Systems

P.O. #8400843246

CLIENT: HUSKY ENERGY c/o EXCELSIOR ENGINEERING

PROJECT: 30" ID x 34'-0" S/S GLYCOL DEHY PACKAGE RAVEN CREEK 02-20 COMPRESSOR STATION LSD: 02-20-050-18W5M

TITLE: 30" ID x 34'-0" S/S 12 TRAYS SWEET GLYCOL DEHY PACKAGE (V-601)

Scale	JOB No.	DWG. No.	REV.
AS SHOWN	SPS-14-05110	V-14-05110-31-001	4