

V-300
FUEL GAS SCRUBBER
 MFR:
 SIZE: ϕ 8.625" x 23" S/S
 MAWP: 285 PSIG @ 100°F
 MDMT: -50°F @ 285 PSI
 RADIOGRAPHY: AS PER CODE
 PWHT: NO CA: 1/8"
 CRN: OH09319.213

ISSUED FOR APPROVAL

- 1. APPROVED PROCEED WITH CONSTRUCTION.
- 2. APPROVED AS NOTED PROCEED WITH CONSTRUCTION.
- 3. NOT APPROVED REVISE AND RESUBMIT.

[Signature] DATE: *Dec 9/14*



P.O. BOX 6280, INNISFAIL, AB T4G 1S9
 PH: (403) 227-4100 FAX: (403) 227-4102

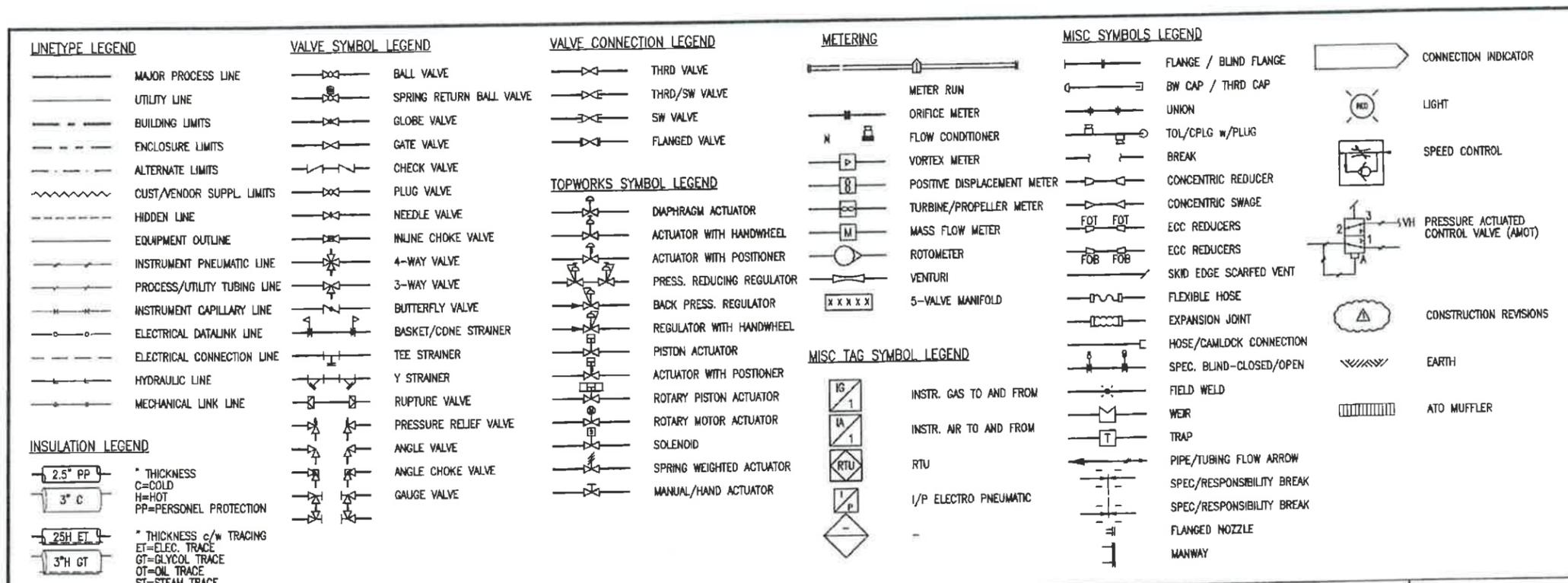
EVOLUTION PRODUCTION EQUIPMENT
 SWEET EMULSION TREATER PACKAGE
 120" I.D. x 480" S/S 75 PSIG @ 300°F

PIPING AND INSTRUMENTATION DIAGRAM

DWN: SY CHK: APP: DATE: NOV 21/14 DATE: DATE:

SCALE: N.T.S. SHEET: 1 OF 3 DWG: 09284-001-P-000 REV: A

REV	DATE	BY	CHK	APP	DESCRIPTION
A	NOV 21/14	SY			ISSUED FOR APPROVAL
DRAWING REVISIONS					
DRAWING NUMBER: 09284-001-G-001					
REFERENCE DRAWING DESCRIPTION: GENERAL ARRANGEMENT					



NOTES

- SHOP INSTALL ADDITIONAL PIPE SUPPORTS WHERE REQ'D.
- SHIP LOOSE ITEMS TO BE BOXED AND SEALED PRIOR TO SHIPMENT.
- PLUG AND PROTECT ALL OUTLETS PRIOR TO SHIPMENT.
- ROUTE PIPING TO ENSURE NO LIQUID TRAPS.
- ALL PIPING MATERIAL TO BE STANDARD TEMP U.N.O.
- HYDROTEST WELDED PIPING TO 1.5 x M.A.W.P.
- WELDED PIPING BUTT WELDS TO BE 100% X-RAYED. U.N.O.
- ALL PIPING AND PROCESS TUBING LINES TO BE TESTED PER 831.3
- INSTRUMENT SUPPLY LINES TO BE TESTER PER ABSA AB-522.
- VESSLS TO BE FABRICATED TO THE LATEST EDITION OF THE ASME SECTION VIII DIVISION 1.
- SURFACE PREP: SSPC-SP7-B3
- PRIMER: 1s/c CLOVERDALE UNIVERSAL PHENOLIC PRIMER B3, 1.5-2mils DFT WARM GREY; VESSEL, PIPING & SKID
- PAINT: UNINSULATED AREAS: 1 s/c CLOVERDALE 835 SERIES DTM POLYURETHANE ENAMEL 2-3 mils DFT - WARM GREY;
- 2" FOAM INSULATION UNDER BUILDING FLOOR.
- ELECTRICAL BY NWP.

INSTRUMENTATION SYMBOLS AND IDENTIFICATION

LETTER	FIRST LETTER	PRIMARY ELEMENT	INDICATOR	RECORDER	CONTROLLER			TRANS-MITTER	CONTROL		CONTROL VALVE	REGULATOR	SELF ACTIVATED VALVE	RELAY OR CONVERTOR
					BLIND	INDICATING	RECORDING		SWITCH	ALARM				
A	ANALYSIS	AE	AI	AR	AC	AIC	ARC	AT	AS(*)	AA(*)	AV			AY
B	BURNER COMBUSTION	BE	BI	BR	BC			BT	BS(*)	BA(*)	BV			BY
BP	BACK PRESSURE										BPV	BPCV		
C	CONDUCTIVITY	CE	CI	CR	CC	CIC	CRC	CT	CS(*)	CA(*)	CV			CY
D	DENSITY OR MASS	DE	DI	DR	DC	DIC	DRC	DT	DS(*)	DA(*)	DV			DY
E	VOLTAGE	EE	EI	ER	EC	EC	ERC	ET	ES(*)	EA(*)	EV			EY
F	FLOW, FLOW RATE	FE	FI	FR	FC	FIC	FRC	FT	FS(*)	FA(*)	FV	FCV		FY
G	GAUGING	GE	GI	GR	GC	GIC	GRC	GT	GS(*)	GA(*)	GV			
H	HAND				HC	HIC	HRC	HT	HS(*)		HV	HCV		HY
I	CURRENT	IE	II	IR	IC	IIC	IRC	IT	IS(*)	IA(*)				IY
J	POWER	JE	JI	JR	JC	JIC	JRC	JT	JS(*)	JA(*)				JY
K	TIME SCHEDULE		KI	KR	KC	KIC	KRC	KT	KS(*)	KA(*)				KY
L	LEVEL	LE	LI	LR	LC	LIC	LRC	LT	LS(*)	LA(*)	LV	LCV		LY
M	MOISTURE, HUMIDITY	ME	MI	MR	MC	MIC	MRC	MT	MS(*)	MA(*)	MV			MY
N	USER'S CHOICE													
O	USER'S CHOICE													
P	PRESSURE	PE	PI	PR	PC	PIC	PRC	PT	PS(*)	PA(*)	PV	PRV	PCV	PY
Q	QUANTITY	QE	QI	QR	QC	QIC	QRC	QT	QS(*)	QA(*)	QV			QY
R	RADIATION	RE	RI	RR	RC	RIC	RRC	RT	RS(*)	RA(*)				RY
S	SPEED, FREQUENCY		SI	SR	SC	SIC	SRC	ST	SS(*)	SA(*)	SV	SCV		SY
T	TEMPERATURE	TE	TI	TR	TC	TIC	TRC	TT	TS(*)	TA(*)	TV	TCV		TY
U	MULTI-VARIABLE		UI	UR	UC	UIC	URC				UV			UY
V	VIBRATION, MECH. ANAL.	VE	VI	VR	VC	VIC	VRC	VT	VS(*)	VA(*)	W			WY
W	WEIGHT, FORCE	WE	WI	WR	WC	WIC	WRC	WT	WS(*)	WA(*)	WV			WY
X	UNCLASSIFIED	XE	XI	XR	XC	XIC	XRC	XI	XS(*)	XA(*)	XV			XY
Y	EVENT, STATE, PRESENCE													YY
Z	POSITION, DIMENSION	ZE	ZI	ZR	ZC	ZIC	ZRC	ZT	ZS(*)	ZA(*)				ZY

ABBREVIATIONS

A/G	ABOVE GROUND	GS	GAS SUPPLY	PD	POSITIVE DISPLACEMENT
APP	APPROVED	GT	GLYCOL TRACE	PFS	PROCESS FLOW SHEET
AS	AIR SUPPLY	HC	HOSE CONNECTION	P/I	PNEUMATIC TO CURRENT
ASSY	ASSEMBLY	HLL	HIGH LIQUID LEVEL	P/L	PIPELINE
ATM	ATMOSPHERE	HP	HIGH POINT	PLC	PROGRAMMABLE LOGIC CONTR.
BBE	BEVEL BOTH ENDS	HP	HORSE POWER	PP	PLOT PLAN
BBL	BARREL	HPV	HIGH POINT VENT	PO	PUMP OUT
BCD	BOLT CIRCLE DIAMETER	HS	HYDRAULIC SUPPLY	PF	PROGRAMMABLE LOGIC CONTR.
BD	BLOWDOWN	HT	HEAT TRACE	PO	PUMP OUT
BLD	BLIND	IA	INTERNAL AIR	RP	REDUCED PORT
BTL	BRITISH THERMAL UNITS	IC	INTERNAL COMBUSTION	RTU	REMOTE TRANSMITTING UNIT
CC	CORROSION COUPON	ID	INSIDE DIAMETER	SC	SAMPLE CONNECTION
CP	CORROSION PROBE	IG	INSTRUMENT GAS	s/c	SHOP COAT
CS	CARBON STEEL	INJ. PT.	INJECTION POINT	S/D	SHUTDOWN
CSC	CAR SEAL CLOSED	I/P	CURRENT TO PNEUMATIC	SG	SPECIFIC GRAVITY
CSD	CAR SEAL OPEN	I/S	INSIDE	SMLS	SEAMLESS
c/w	COMPLETE WITH	LLL	LOW LIQUID LEVEL	SO	STEAM OUT
DBB	DOUBLE BLOCK & BLEED	LP	LOW POINT	SP	SET POINT
DP	DESIGN PRESSURE	LPD	LOW POINT DRAIN	SS	STEAM SUPPLY
DT	DESIGN TEMPERATURE	LS	LEGAL SUBDIVISION	SS	STAINLESS STEEL
ES	ELECTRIC SUPPLY	MAMP	MAX. ALLOW. WORK PRES.	S/S	SEAM TO SEAM
ESD	EMERGENCY SHUTDOWN	MDMT	MIN. DESIGN METAL TEMP.	ST	SOUR TRIM
ET	ELECTRICAL TRACE	MCC	MOTOR CONTROL CENTER	TK	TANK
FC	FAIL CLOSE	MFS	MECHANICAL FLOW SHEET	TSO	TIGHT SHUT-OFF
FFSD	FLAME FAILURE SHUTDOWN	NC	NORMALLY CLOSED	T/T	TANGENT TO TANGENT
FI	FAIL INTERMEDIATE	NLL	NORMAL LIQUID LEVEL	TW	THERMO WELL
FL	FAIL LOCKED	NO	NORMALLY OPEN	UA	UNIT ALARM
FLG	FLANGE	NS	NITROGEN SUPPLY	U/G	UNDER GROUND
FO	FAIL OPEN	NSPC	NON-SLAM PISTON CHECK	UNO	UNLESS NOTED OTHERWISE
FP	FULL PORT	NTS	NOT TO SCALE	VH	VENT HEADER
FS	FORGED STEEL	OD	OUTSIDE DIAMETER	WS	WATER SUPPLY
FW	FIELD WELD	O/S	OUTSIDE		
GO	GEAR OPERATED	PC	PURGE CONNECTION		

VALVE TAGGING

XX XXX XX

BALL VALVE (FULL PORT)	BF	025	1/4"	G - GAS SERVICE
BALL VALVE (REG. PORT)	BR	038	3/8"	H - HIGH PRESSURE
BUTTERFLY VALVE	BU	050	1/2"	L - LOW TEMP.
CHECK VALVE (BALL)	CB	075	3/4"	N - NACE
CHECK VALVE (PISTON)	CP	100	1"	P - 0-799#
CHECK VALVE (SWING)	CS	200	2"	Q - 800#
CHECK VALVE (WAFER)	CW	201	2"	R - 900#
GATE VALVE	GA	303	3"	S - 901# - 1500#
GLOBE VALVE	GL	406	4"	T - 2000#
RAISED FACE	RF	608	6"	U - 2001# - 2499#
RESTRICTION ORIFICE	RO	815	8"	V - 2500#
REDUCED PORT	RP	1025	10"	W - 3000#
REMOTE TRANSMITTING UNIT	RTU			X - 6000#
SAMPLE CONNECTION	SC			Y - 6001# - 10000#
SHOP COAT	s/c			Z - UNCLASSIFIED
SHUTDOWN	S/D			1 - BOW CLARIFIER
SPECIFIC GRAVITY	SG			
SEAMLESS	SMLS			
STEAM OUT	SO			
SET POINT	SP			
STEAM SUPPLY	SS			
STAINLESS STEEL	SS			
SEAM TO SEAM	S/S			
SOUR TRIM	ST			
TANK	TK			
TIGHT SHUT-OFF	TSO			
TANGENT TO TANGENT	T/T			
THERMO WELL	TW			
UNIT ALARM	UA			
UNDER GROUND	U/G			
UNLESS NOTED OTHERWISE	UNO			
VENT HEADER	VH			
WATER SUPPLY	WS			

LINE TAGGING

XX-X"-X-XXXX-XXX

DRAIN	D	0100-0199	PROCESS FLUID
EMULSION	E	0200-0299	PROCESS GAS
FUEL GAS	FG	0300-0399	EMULSION
GLYCOL	G	0400-0499	HYDROCARBONS
HYDROCARBONS - HC	HC	0500-0599	GLYCOL
INSTRUMENT AIR	IA	0600-0699	WATER
PROCESS FLUID	PF	0700-0799	DRAIN
PROCESS GAS	PG	0800-0899	FUEL GAS
PRESSURE RELIEF	PR	0900-0999	PRESSURE RELIEF
VENT (ATMOS)	V	1000-1099	INSTR. AIR
WATER	W	1100-1199	VENT (NO TESTING)

PIPE SCHEDULE

150 ANSI FLANGED	A
300 ANSI FLANGED	B
600 ANSI FLANGED	C
900 ANSI FLANGED	D
1500 ANSI FLANGED	E
2500 ANSI FLANGED	F
CLASS 2000 THRD/SW	T
CLASS 3000 THRD/SW	W
CLASS 6000 THRD/SW	X

A - GALVANIZED TUBING w/ CS FITTINGS
 B - 304W SS TUBING w/ CS FITTINGS
 C - 304W SS TUBING w/ 316 SS FITTINGS
 D - 316 SS TUBING w/ 316 SS FITTINGS
 E - 316 SS TUBING w/ CS FITTINGS
 F - NOT APPLICABLE

TAG LEGEND

	LOCALLY MOUNTED	PRIMARY LOC. OR PANEL NORMALLY ACCESS. TO OPER.	AUXILIARY LOC. OR PANEL NORMALLY ACCESS. TO OPER.	PRIMARY LOC. OR PANEL MOUNTED ON BACK OF PANEL	AUXILIARY LOC. OR PANEL MOUNTED ON BACK OF PANEL
DISCRETE					
SHARED DISPLAY, SHARED CONTROL, DISTRIBUTION, CONTROL VIDEO DISPLAY					
COMPUTER FUNCTION, SOFTWARE FUNCTION					
PROGRAMMABLE LOGIC CONTROL					

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[Signature] *[Date: Dec 8/14]*

DRAWING REVISIONS

REV	DATE	BY	CHK	APP	DESCRIPTION
A	NOV 21/14	SY			ISSUED FOR APPROVAL

ISSUED FOR APPROVAL

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
 PH: (403) 227-4100 FAX: (403) 227-4102

SCALE: N.T.S.
 WEIGHT: (SUPPLY LINE)

EVOLUTION PRODUCTION EQUIPMENT

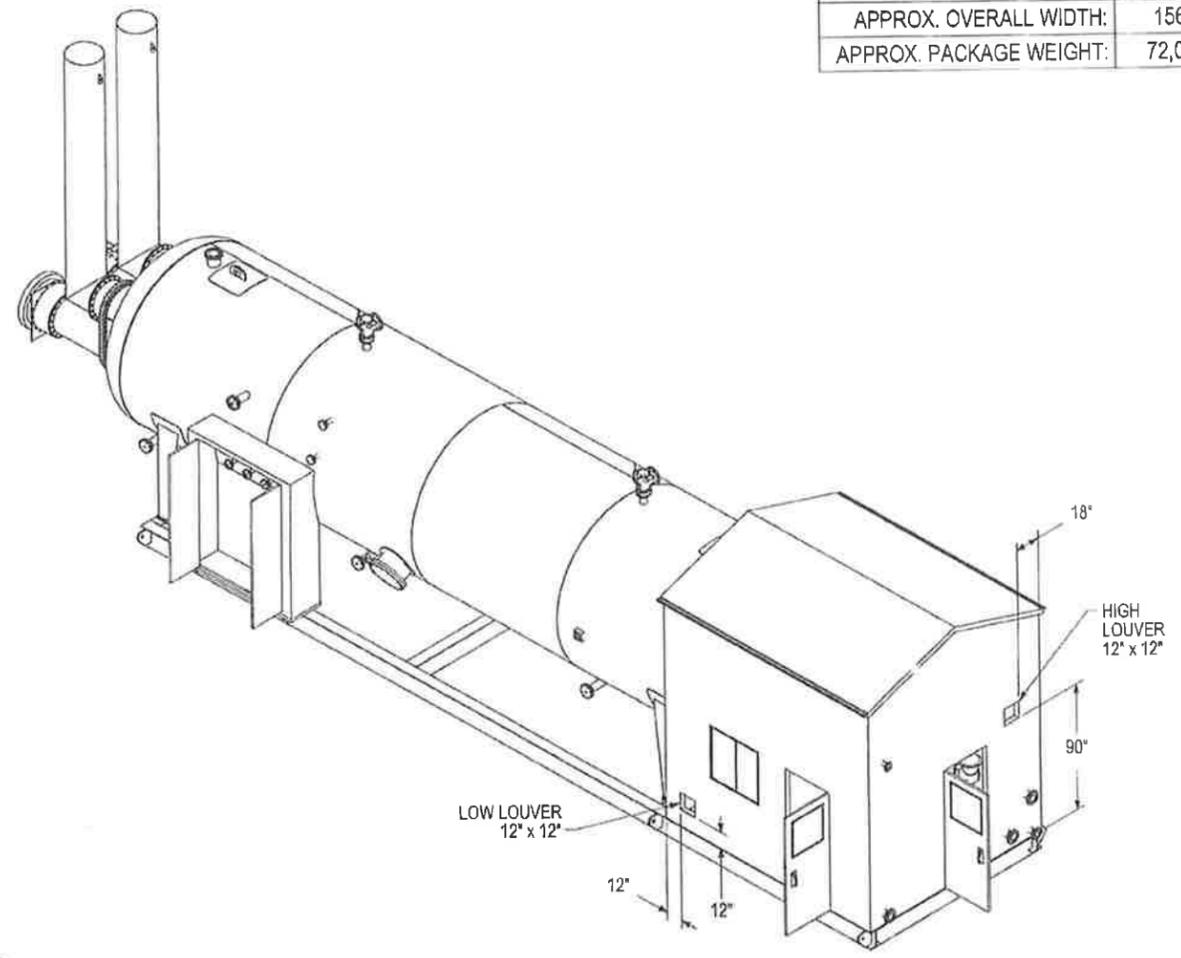
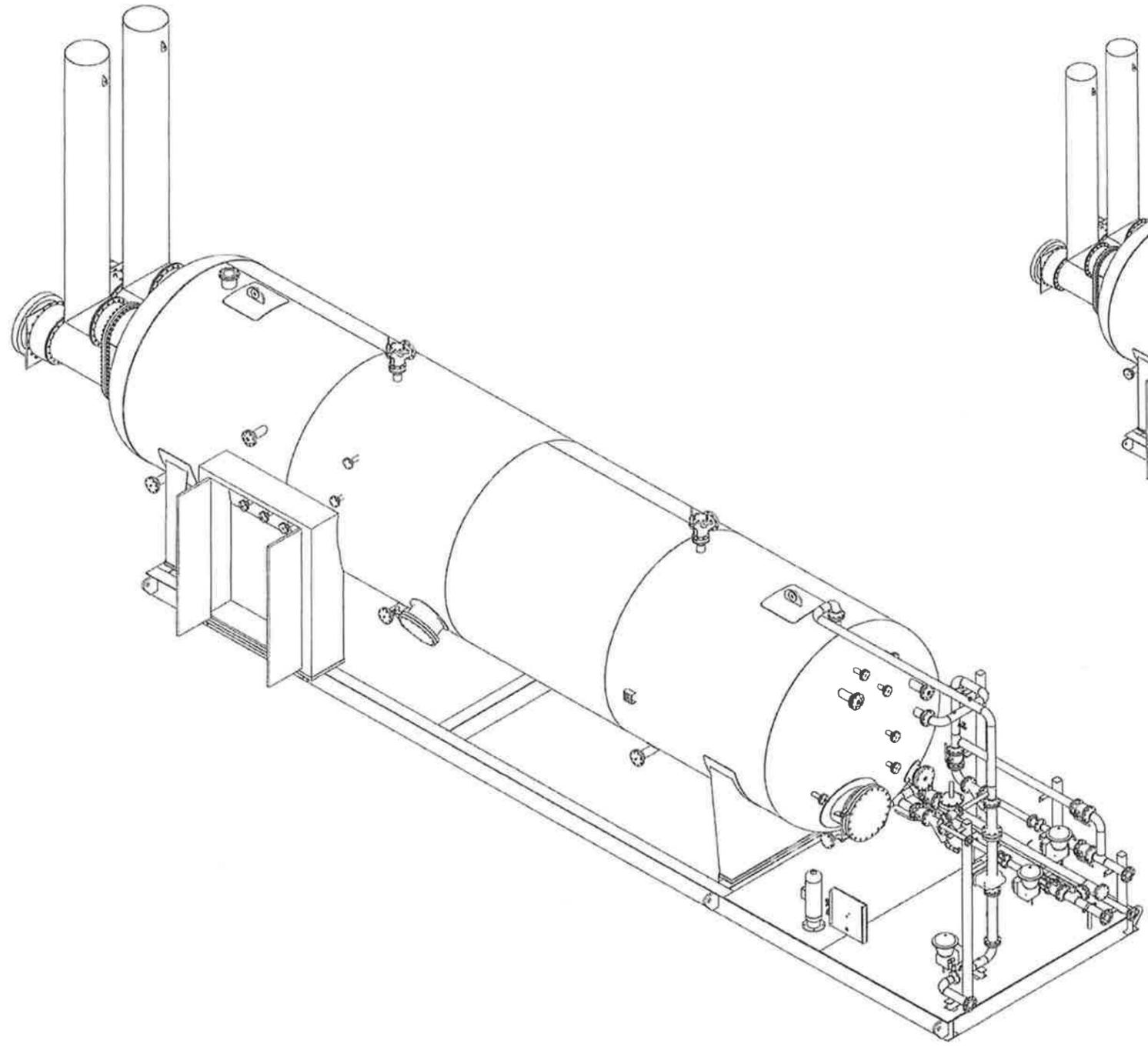
SWEET EMULSION TREATER PACKAGE

120" I.D. x 480" S/S 75 PSIG @ 300°F

PIPING AND INSTRUMENTATION DIAGRAM LEGEND

DWN: SY	CHK:	APP:
DATE: NOV 21/14	DATE:	DATE:
SHEET: 3 OF 3	DWG: 09284-001-P-000	REV: A

SHIPPING DATA	
APPROX. OVERALL HEIGHT:	196 1/8"
APPROX. OVERALL LENGTH:	668 1/2"
APPROX. OVERALL WIDTH:	156 13/16"
APPROX. PACKAGE WEIGHT:	72,000 LBS.



REV.	DATE	BY:	CHK:	APP:	DESCRIPTION
A	NOV 21/14	PA			ISSUED FOR APPROVAL

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PA *Dec 8/14*
 SIGNATURE DATE

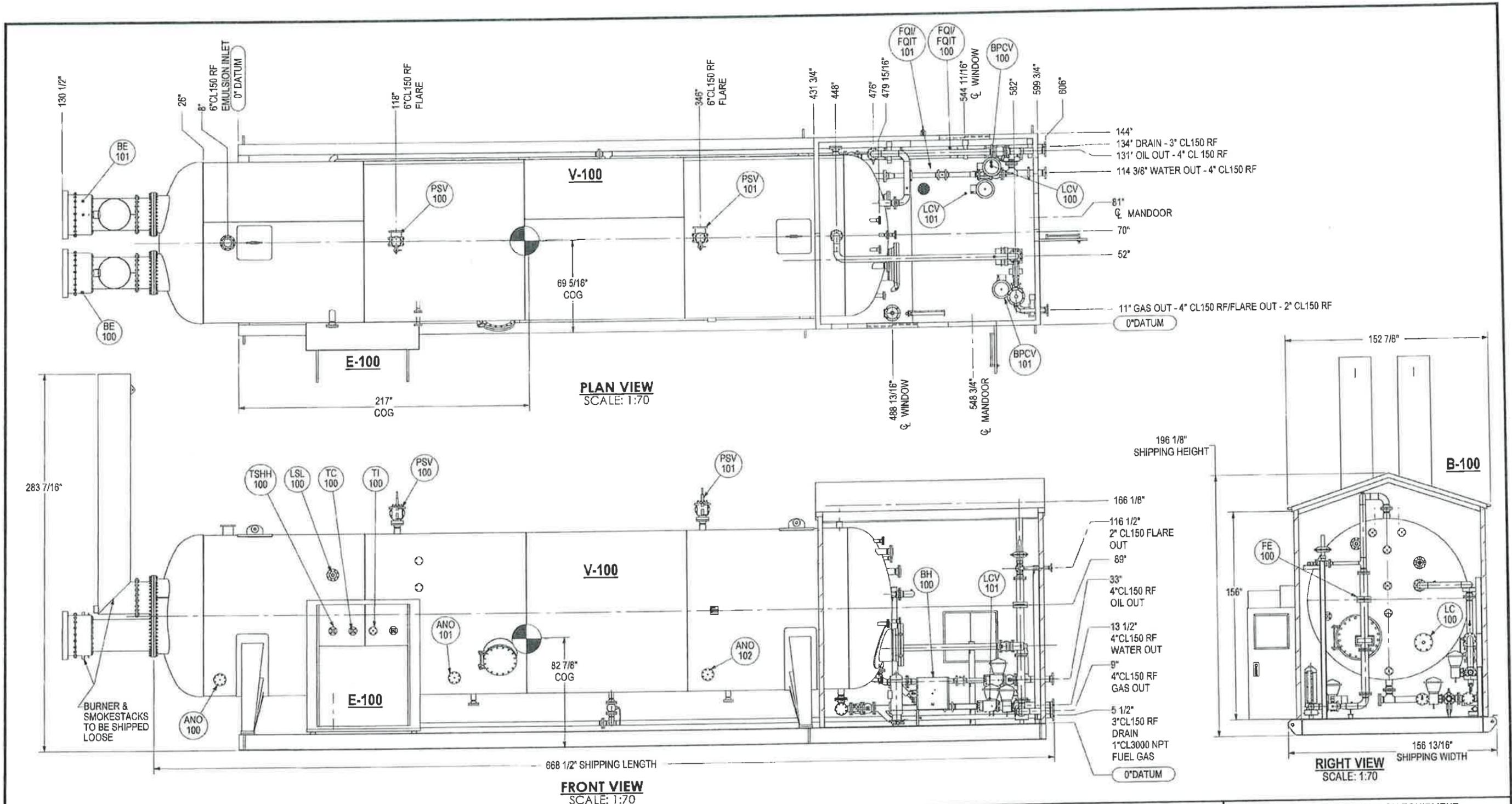
ALL DIMENSIONS IN INCHES

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
 PH: (403) 227-4100 FAX: (403) 227-4102

PROJECTION: SCALE: AS NOTED
 WEIGHT: (APPROX LBS)

EVOLUTION PRODUCTION EQUIPMENT SWEET EMULSION TREATER PACKAGE 120" I.D. x 480" S/S 75 PSIG @ 300 °F					
GENERAL ARRANGEMENT - ISOMETRIC VIEW					
DWN:	PA	CHK:		APP:	
DATE:	NOV 21/14	DATE:		DATE:	
SHEET:	1 OF 2	DWG:	09284-001-G-000	REV:	A



REV.	DATE	BY:	CHK:	APP:	DESCRIPTION
A	NOV 21/14	PA			ISSUED FOR APPROVAL
DRAWING REVISIONS					

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lum *Dec 8/14*

SIGNATURE DATE

ALL DIMENSIONS IN INCHES

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
PH: (403) 227-4100 FAX: (403) 227-4102

PROJECTION: SCALE: AS NOTED

WEIGHT: APPROX. LBS.

EVOLUTION PRODUCTION EQUIPMENT
SWEET EMULSION TREATER PACKAGE
120" I.D. x 480" S/S 75 PSIG @ 300 °F

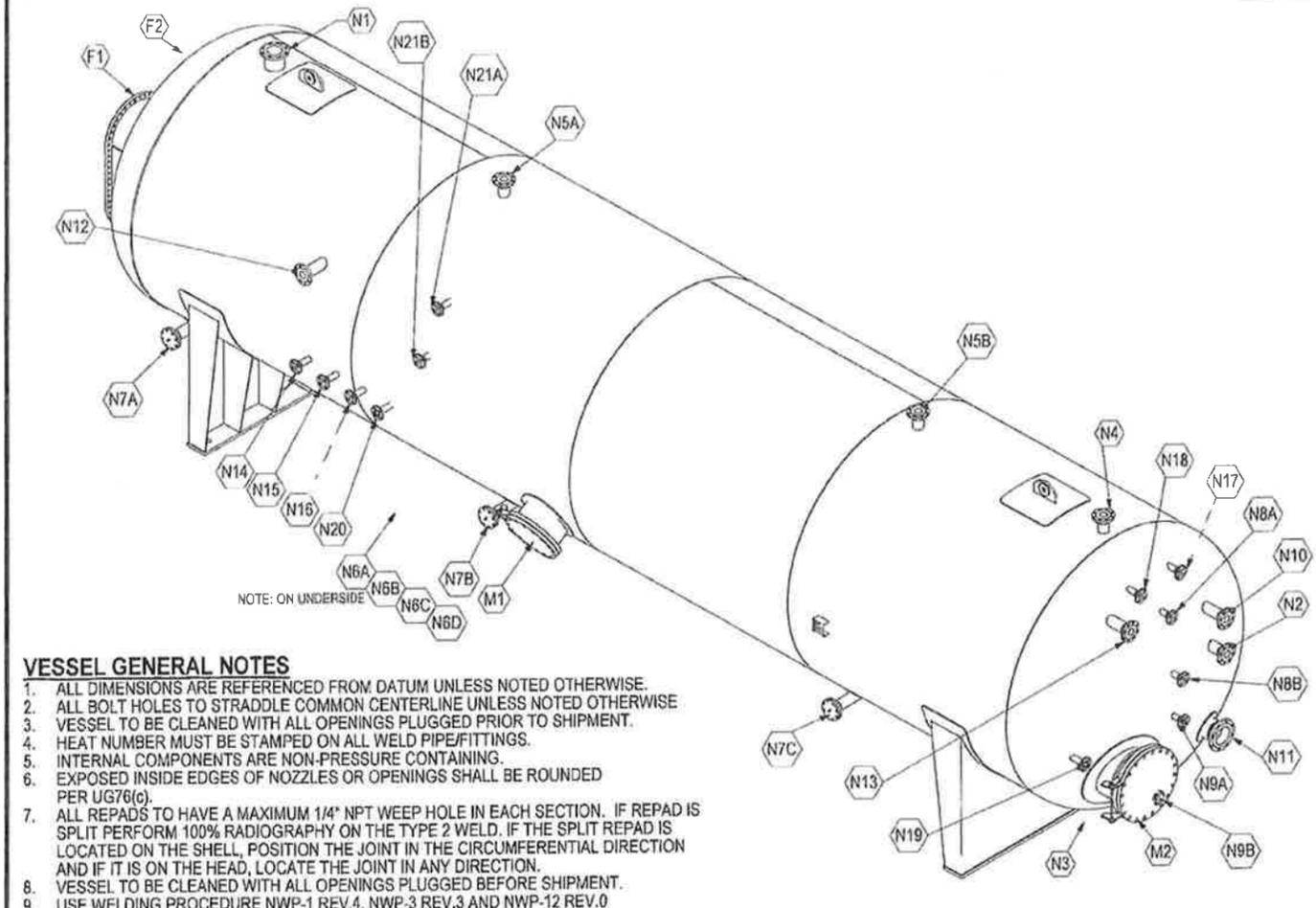
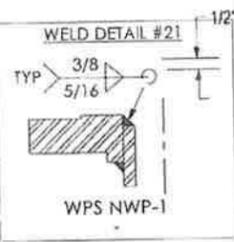
GENERAL ARRANGEMENT - PLAN & ELEVATION VIEWS

DWN: PA	CHK:	APP:
DATE: NOV 21/14	DATE:	DATE:
SHEET: 2 OF 2	DWG: 09284-001-G-000	REV: A

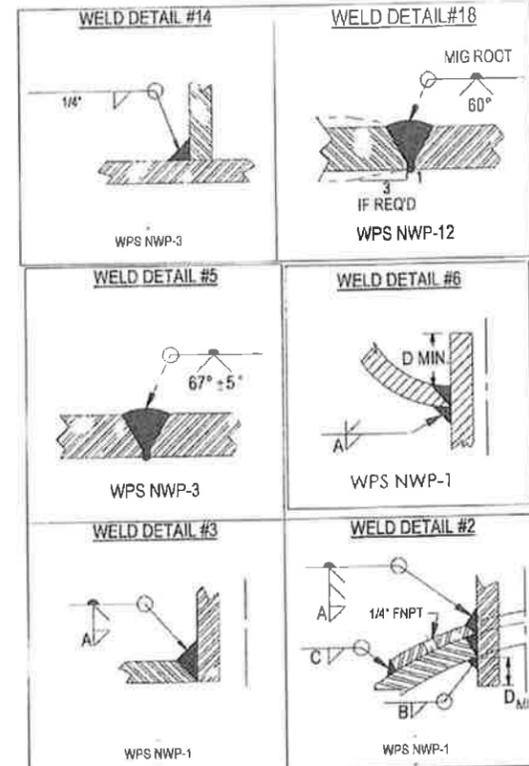
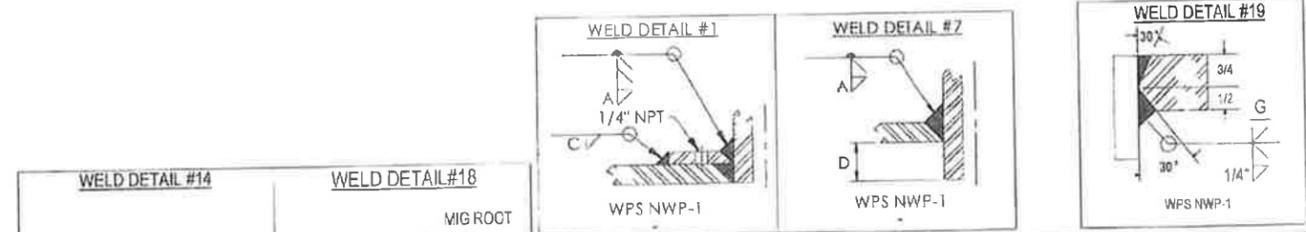
NOZZLE SCHEDULE												
MARK	SCH	SIZE	CLASS	TYPE	SERVICE	WELD	WELD SIZE			PROJECTION		REPAD THK
							A	B	C	D (I/S)	O/S	
M1	1"	18"	CL 150	RFLWN	MANWAY (IN SHELL)INSPECT	2	3/8"	-	5/16"	3/4"	9 5/8"	5/8"
M2	XS	24"	CL 150	RFWN	MANWAY (IN HEAD)INSPECT	2,5	3/8"	-	5/16"	MIN.	SPEC.	5/8"
F1	3/4"	28"	FAB.	FAB.	NOZZLE	6,19,18	3/8"	-	-	1"	SPEC.	-
F2	3/4"	28"	FAB.	FAB.	NOZZLE	6,19,18	3/8"	-	-	1"	SPEC.	-
N1	.86	6"	CL 150	RFLWN	INLET	7	3/8"	-	-	5/8"	7 5/8"	-
N2	XXS	4"	CL 150	RFWN	OIL OUT	5,7	3/8"	-	-	3/8"	SPEC.	-
N3	XXS	4"	CL 150	RFWN	WATER OUT	5,7	3/8"	-	-	3/8"	7 5/8"	-
N4	XXS	4"	CL 150	RFWN	GAS OUT	5,7	3/8"	-	-	3/8"	7 5/8"	-
N5 A/B	XXS	4"	CL 150	RFWN	PSV	5,7	3/8"	-	-	3/8"	7 5/8"	-
N6 A/B/C/D	XXS	3"	CL 150	RFWN	DRAIN	3,5	7/16"	-	-	GR. FL.	7 5/8"	-
N7 A/B/C	120	4"	CL 150	RFWN	ANODE	1,5	3/8"	-	5/16"	MIN.	14 3/8"	3/8"
N8 A	XXS	2"	CL 150	RFWN	LG (OIL)	3,5	3/8"	-	-	MIN.	SPEC.	-
N8 B	XXS	2"	CL 150	RFWN	LG (OIL)	3,5	3/8"	-	-	MIN.	SPEC.	-

NOZZLE SCHEDULE												
MARK	SCH	SIZE	CLASS	TYPE	SERVICE	WELD	WELD SIZE			PROJECTION		REPAD THK
							A	B	C	D (I/S)	O/S	
N9 A	XXS	2"	CL 150	RFWN	LG (WATER)	3,5	3/8"	-	-	MIN.	SPEC.	-
N9 B	XXS	2"	CL 150	RFWN	LG (WATER)	3,5	3/8"	-	-	MIN.	SPEC.	-
N10	XXS	4"	CL 150	RFWN	LC (OIL)	5,7	3/8"	-	-	3/8"	SPEC.	-
N11	XS	8"	CL 150	RFWN	LC (WATER)	1,5	3/8"	-	5/16"	MIN.	SPEC.	3/8"
N12	XXS	4"	CL 150	RFWN	LSL	5,7	3/8"	-	-	3/8"	SPEC.	-
N13	XXS	4"	CL 150	RFWN	LSH	5,7	3/8"	-	-	3/8"	SPEC.	-
N14	XXS	2"	CL 150	RFWN	TC	3,5	3/8"	-	-	MIN.	7 5/8"	-
N15	XXS	2"	CL 150	RFWN	TI	3,5	3/8"	-	-	MIN.	7 5/8"	-
N16	XXS	2"	CL 150	RFWN	TSHH	3,5	3/8"	-	-	MIN.	7 5/8"	-
N17	XXS	2"	CL 150	RFWN	PI	3,5	3/8"	-	-	MIN.	SPEC.	-
N18	XXS	2"	CL 150	RFWN	PSHH	3,5	3/8"	-	-	MIN.	SPEC.	-
N19	XXS	2"	CL 150	RFSO	PREHEAT IN	3,21	3/8"	-	-	SPEC.	SPEC.	-
N20	XXS	2"	CL 150	RFSO	PREHEAT OUT	3,21	3/8"	-	-	SPEC.	7 5/8"	-
N21A	XXS	2"	CL 150	RFWN	LG (LSL)	3,5	3/8"	-	-	MIN.	8 3/16"	-
N21B	XXS	2"	CL 150	RFWN	LG (LSL)	3,5	3/8"	-	-	MIN.	6 3/8"	-

STANDARD TOLERANCES
 FABRICATION:
 GENERAL DEVIATION: ±1/8"
 OVERALL LENGTH: ±1/4"
 ANGULAR: ±1°
 WELD PREPARATION:
 LAND: 1/16" ±1/32"
 ROOT GAP: 1/8" ±1/16"
 ANGULAR: ±15°



- VESSEL GENERAL NOTES**
- ALL DIMENSIONS ARE REFERENCED FROM DATUM UNLESS NOTED OTHERWISE.
 - ALL BOLT HOLES TO STRADDLE COMMON CENTERLINE UNLESS NOTED OTHERWISE
 - VESSEL TO BE CLEANED WITH ALL OPENINGS PLUGGED PRIOR TO SHIPMENT.
 - HEAT NUMBER MUST BE STAMPED ON ALL WELD PIPE/FITTINGS.
 - INTERNAL COMPONENTS ARE NON-PRESSURE CONTAINING.
 - EXPOSED INSIDE EDGES OF NOZZLES OR OPENINGS SHALL BE ROUNDED PER UG76(c).
 - ALL REPADS TO HAVE A MAXIMUM 1/4" NPT WEEP HOLE IN EACH SECTION. IF REPAD IS SPLIT PERFORM 100% RADIOGRAPHY ON THE TYPE 2 WELD. IF THE SPLIT REPAD IS LOCATED ON THE SHELL, POSITION THE JOINT IN THE CIRCUMFERENTIAL DIRECTION AND IF IT IS ON THE HEAD, LOCATE THE JOINT IN ANY DIRECTION.
 - VESSEL TO BE CLEANED WITH ALL OPENINGS PLUGGED BEFORE SHIPMENT.
 - USE WELDING PROCEDURE NWP-1 REV.4, NWP-3 REV.3 AND NWP-12 REV.0 FOR ALL TACK WELDS.
 - SURFACE PREP: S5PC-SP6-63 COMMERCIAL BLAST
 - PRIMER: 1 s/c CLOVERDALE UNIVERSAL PHENOLIC PRIMER SERIES 83, 1.5-2 MILS DFT
 - PAINT: (UNINSULATED AREAS) 2s/c CLOVERDALE 835 SERIES DTM POLYURETHANE ENAMEL, 2-3 MILS DFT, WARM GRAY.
 - RADIUS ALL INTERNAL CORNERS TO 1/8" RAD FOR INTERNAL COATING.
 - INTERNAL COATING : FULL
 - INTERNAL COAT DEVOC 253 PER MFG SPEC, HOLIDAY & MILL TEST REQ.
 - STAMP VESSEL S/N IN EACH FIRETUBE FLANGE
 - CRN CALCULATIONS: 120-2-0075-4219-1-R1
 120-2-0075-4219-2-R1
 120-2-0075-4219-3-R1
 120-2-0075-4219-4-R1 (FIRETUBE)
 - INSIDE NOZZLE FULL PEN. WELDS RADIUS OR BACK WELDED FOR INTERNAL COATING PURPOSES.



VESSEL DESIGN DATA	
DESIGN AND FABRICATE TO:	ASME SECTION VIII, DIVISION 1 2013 EDITION
MAX. ALLOWABLE WORKING PRESSURE (MAWP):	INTERNAL: 75 PSIG
DESIGN TEMPERATURE:	300 °F
MIN. DESIGN METAL TEMPERATURE (MDMT):	-20 °F @ 75 PSIG
IMPACT TEST:	EXEMPT PER UG-20f (1-5), UCS-66a, UCS-66b (FIG UCS-66.1), UCS-66g, FLANGES PER UCS-66c
RADIOGRAPHY:	CIRC. SEAMS: SPOT PER UW-11(a)(5)(b) LONG SEAMS: FULL PER UW-11(a)
POST WELD HEAT TREATMENT:	NONE
HYDROSTATIC TEST PRESSURE:	98 PSIG
CORROSION ALLOWANCE:	0.0625"
PRE-HEAT:	50 °F
HEAD THICKNESS MIN.:	.625" MIN / 0.410" MIN.
WEIGHT EMPTY:	34,580 LBS
WEIGHT FULL:	108,710 LBS
CAPACITY:	1189 Cu.Ft.
QUALITY CONTROL PROGRAM:	AQP-1253
WELDING PROCEDURE REGISTRATION NO.:	1604.2
WELD PROCEDURES:	NWP-1 REV 4, NWP-3 REV 3, NWP-5 REV 2, NWP-14 REV 0
SERVICE:	HYDROCARBONS
CRN NO.:	W3075.213
DESIGN REGISTRATION DRAWINGS:	4219-1, REV2 - 4219-2-3-4 REV1
REFERENCE CALCULATIONS:	SEE NOTE 16

ISSUED FOR APPROVAL

APPROVED PROCEED WITH CONSTRUCTION
 2. APPROVED, REVISE AS NOTED, PROCEED WITH CONSTRUCTION
 3. NOT APPROVED REVISE AND RESUBMIT

SIGNATURE DATE: Dec 8/14

REV.	DATE	BY:	CHK:	APP:	DESCRIPTION
A	NOV 21/14	PA			ISSUED FOR APPROVAL

DRAWING REVISIONS

ALL DIMENSIONS IN INCHES

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
 PH: (403) 227-4100 FAX: (403) 227-4102

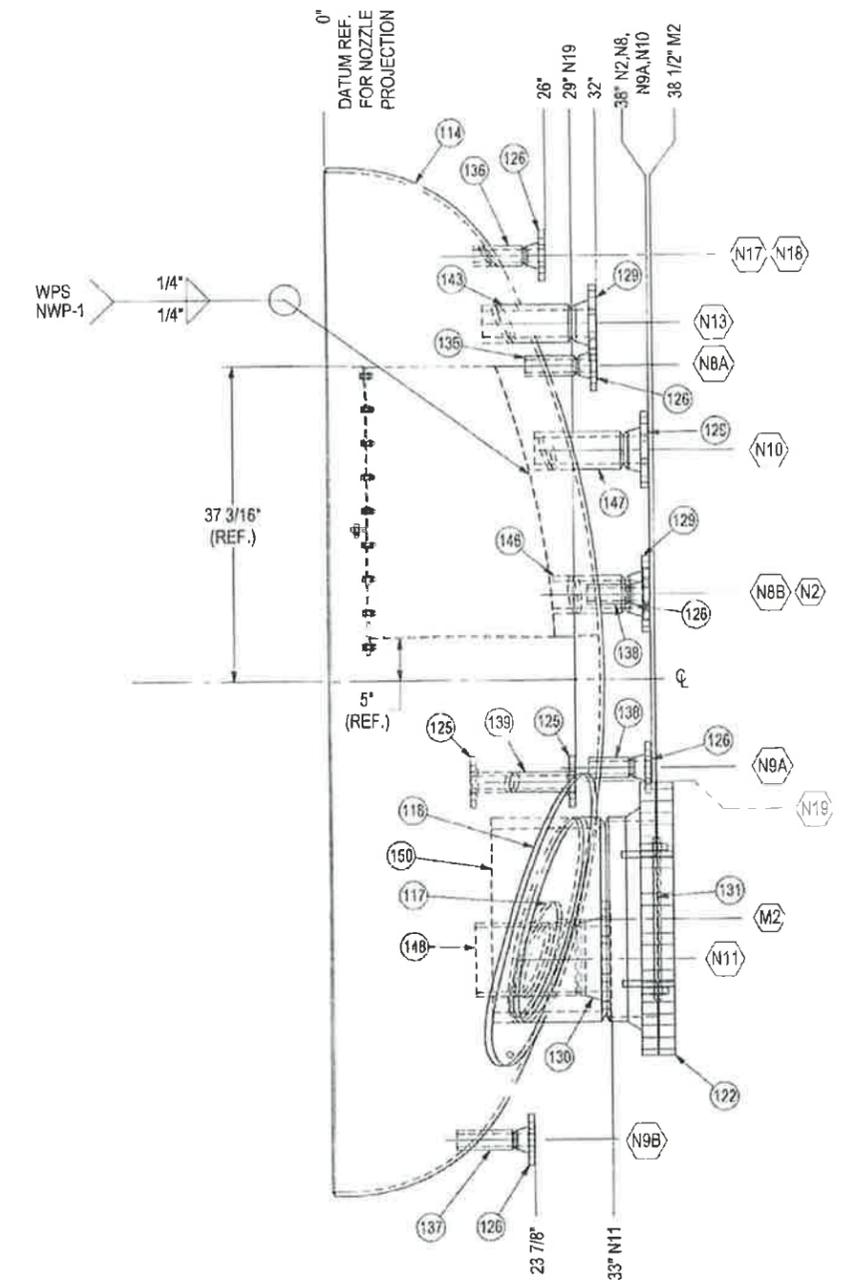
EVOLUTION PRODUCTION EQUIPMENT
 SWEET EMULSION TREATER PACKAGE
 120" I.D. x 480" S/S 75 PSIG @ 300 °F

NOZZLE SCHEDULE, ISO VIEW, DESIGN NOTES

DWN: PA	CHK:	APP:
DATE: NOV 21/14	DATE:	DATE:
SHEET: 1 OF 7	DWG: 09284-001-A-100	REV: A

PROJECTION: SCALE: AS NOTED WEIGHT: APPROX LBS

ITEM	PART #	DRAWING #	DESCRIPTION	MATERIAL	SIZE	QTY	MTR #
101			1/8" THICK FIRETUBE GASKET	DURLON 8500		2	
102		09284-001-A-101	TREATER SHELL WELDMENT			1	
103		09284-001-A-102	INLET DIVERTER			1	
104		09284-001-A-103	LIFT LUG WELDMENT			2	
105		09284-001-A-104	SPILL OVER BOX ASSEMBLY			1	
106		09284-001-A-105	SADDLE WELDMENT (FIXED END)			1	
107		09284-001-A-105	SADDLE WELDMENT (SLIDING END)			1	
108		09284-001-A-106	OIL BOX WELDMENT			1	
109		NWPL-00004	VESSEL NAME PLATE c/w BRACKET FOR HORIZONTAL VESSEL	SA-516-70N		1	
110	ANG.25(2)S		2" x 2" x 1/4" THK ANGLE IRON (SEE DETAIL)	SA-36	7 5/8	3	
111	ANG.25(2)S		2" x 2" x 1/4" THK ANGLE IRON (SEE DETAIL)	SA-36	7 5/8	3	
112	ANG.25(2)S		2" x 2" x 1/4" THK ANGLE IRON (SEE DETAIL)	SA-36	15"	4	
113	BUY		1 1/4" THK x 33" x 61" FIRETUBE MATING FLANGE (1 3/16 MIN.)	SA-516-70N		2	
114	BUY		HEAD: 120" I.D. x 0.5" THK NOM (0.4375" MIN) 2:1 SE c/w 2" SF	SA-516-70N		1	
115	BUY		HEAD: 120" I.D. x 0.75" THK NOM (0.625" MIN) 2:1 SE c/w 2" SF	SA-516-70N		1	
116	BUY		J SHAPE: 3/4" THK x 18" LG x 28" OD x 28" CENTERS	SA-516-70N		4	
117	BUY		REPAD - FORMED FOR 121" OD 2:1 SEHEAD; 3/8" THK - 2 1/2" W FOR 8" PIPE	SA-516-70N		1	
118	BUY		REPAD - FORMED FOR 121" OD 2:1 SEHEAD; 5/8" THK - 5 1/8" W RING FOR 24" MANWAY	SA-516-70N		1	
119	BUY		REPAD - PLATE 3/8" THICK x 2" WIDE RING, ROLLED TO 120 3/4" ID	SA-516-70N		3	
120	BUY		REPAD - PLATE 5/8" THICK x 2 3/4" WIDE RING x 25 1/2" OD ROLLED TO 120 3/4" ID	SA-516-70N		1	
121	FRFBL18AA		BLIND FLANGE: 18"-CL150 RF	SA-105N		1	
122	FRFBL24AA		BLIND FLANGE: 24"-CL150 RF	SA-105N		1	
123	FRFLW6(10)AA		FLANGE: 6" CL150 RFLWN	SA-105N	10"	1	
124	FRFLW18(12)AA		FLANGE: 18" CL150 RFLWN	SA-105N	12"	1	
125	FRFSO2AA		FLANGE 2" 150 ANS1 RFSO	SA-105N		6	
126	FRFWN2AXXSA		FLANGE: 2" CL150 RFWN XXS WT BORE	SA-105N		11	
127	FRFWN3AXXSA		FLANGE: 3" CL150 RFWN XXS WT BORE	SA-105N		4	
128	FRFWN4A120A		FLANGE: 4" CL150 RFWN SCH 120 BORE	SA-105N		3	
129	FRFWN4AXXSA		FLANGE: 4" CL150 RFWN XXS WT BORE	SA-105N		8	
130	FRFWN8A80A		FLANGE: 8" CL150 RFWN SCH 80 BORE	SA-105N		1	
131	FRFWN24AXSA		FLANGE: 24" CL150 RFWN XS WT BORE	SA-105N		1	
132	NWPL-00057	NWPL-00057	ANODE ASSEMBLY			3	
133	NWPL-00059	NWPL-00059	STD MANWAY HINGE - 18" CL150 - SA-36			1	
134	NWPL-00061	NWPL-00061	STD MANWAY HINGE - 24" CL150 - SA-36			1	
135	PIP2XXSC		PIPE: 2" NOM SCH XXS BE x PE	SA-106-B SMLS	6 1/4"	3	
136	PIP2XXSC		PIPE: 2" NOM SCH XXS BE x PE	SA-106-B SMLS	6"	4	
137	PIP2XXSC		PIPE: 2" NOM SCH XXS BE x PE	SA-106-B SMLS	6 3/4"	1	
138	PIP2XXSC		PIPE: 2" NOM SCH XXS BE x PE	SA-106-B SMLS	5"	2	
139	PIP2XXSC		PIPE: 2" NOM SCH XXS BE x PE	SA-105N	12"	3	
140	PIP2XXSC		PIPE: 2" NOM SCH XXS BE x PE	SA-106-B SMLS	8"	1	
141	PIP3XXSC		PIPE: 3" NOM SCH XXS BE x PE	SA-106-B SMLS	5 1/4"	4	
142	PIP4XXSC		PIPE: 4" NOM SCH XXS BE x PE	SA-106-B SMLS	9 7/8"	1	
143	PIP4XXSC		PIPE: 4" NOM SCH XXS BE x PE	SA-106-B SMLS	10 1/2"	1	
144	PIP4XXSC		PIPE: 4" NOM SCH XXS BE x PE	SA-106-B SMLS	5 7/16"	3	
145	PIP4XXSC		PIPE: 4" NOM SCH XXS BE x PE	SA-106-B SMLS	6"	1	
146	PIP4XXSC		PIPE: 4" NOM SCH XXS BE x PE	SA-106-B SMLS	8 1/2"	1	
147	PIP4XXSC		PIPE: 4" NOM SCH XXS BE x PE	SA-106-B SMLS	10 1/2"	1	
148	PIP8XXSC		PIPE: 8" NOM SCH XS BE x PE	SA-106-B SMLS	12"	1	
149	PIP4120C		PIPE: 4" NOM SCH 120 BE x PE	SA-106-B SMLS	15 7/8"	3	
150	PIPBE24XSC		PIPE: 24" NOM SCH XH BBE	SA-106-B SMLS	13 1/2"	1	
151	PLA.25ST	NWPL-00058	PLATE: 1/4" THK x 4" - VB FOR 4" NPS NOZZLE	SA-36/G40.21-44W	8"	1	
152	PLA.375R		PLATE: 3/8" THK x 4 3/8"	SA-36	5 1/2"	6	
153	PLA.375R		PLATE: 3/8" THK x 4 3/8"	SA-36	5 1/2"	4	
154	PLA.375R		PLATE: 3/8" THK x 5"	SA-36	6"	4	
155	UBO2.375		U-BOLT 2" x 3/8" c/w 4 NUTS FIG. 137	STAINLESS STEEL 316		4	



DETAIL F
SCALE 1 : 20

1/4" NPT WEEP HOLE AT LOWEST POINT ON ITEM NUMBERS 116,117,118,119

A	NOV 21/14	PA		ISSUED FOR APPROVAL
REV.	DATE	BY:	CHK:	APP:
				DESCRIPTION
DRAWING REVISIONS				

ISSUED FOR APPROVAL

1. APPROVED PROCEED WITH CONSTRUCTION

2. APPROVED, REVISE AS NOTED, PROCEED WITH CONSTRUCTION

3. NOT APPROVED REVISE AND RESUBMIT

[Signature] **Dec 8/14**

SIGNATURE DATE

ALL DIMENSIONS IN INCHES

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
PH: (403) 227-4100 FAX: (403) 227-4102

PROJECTION:

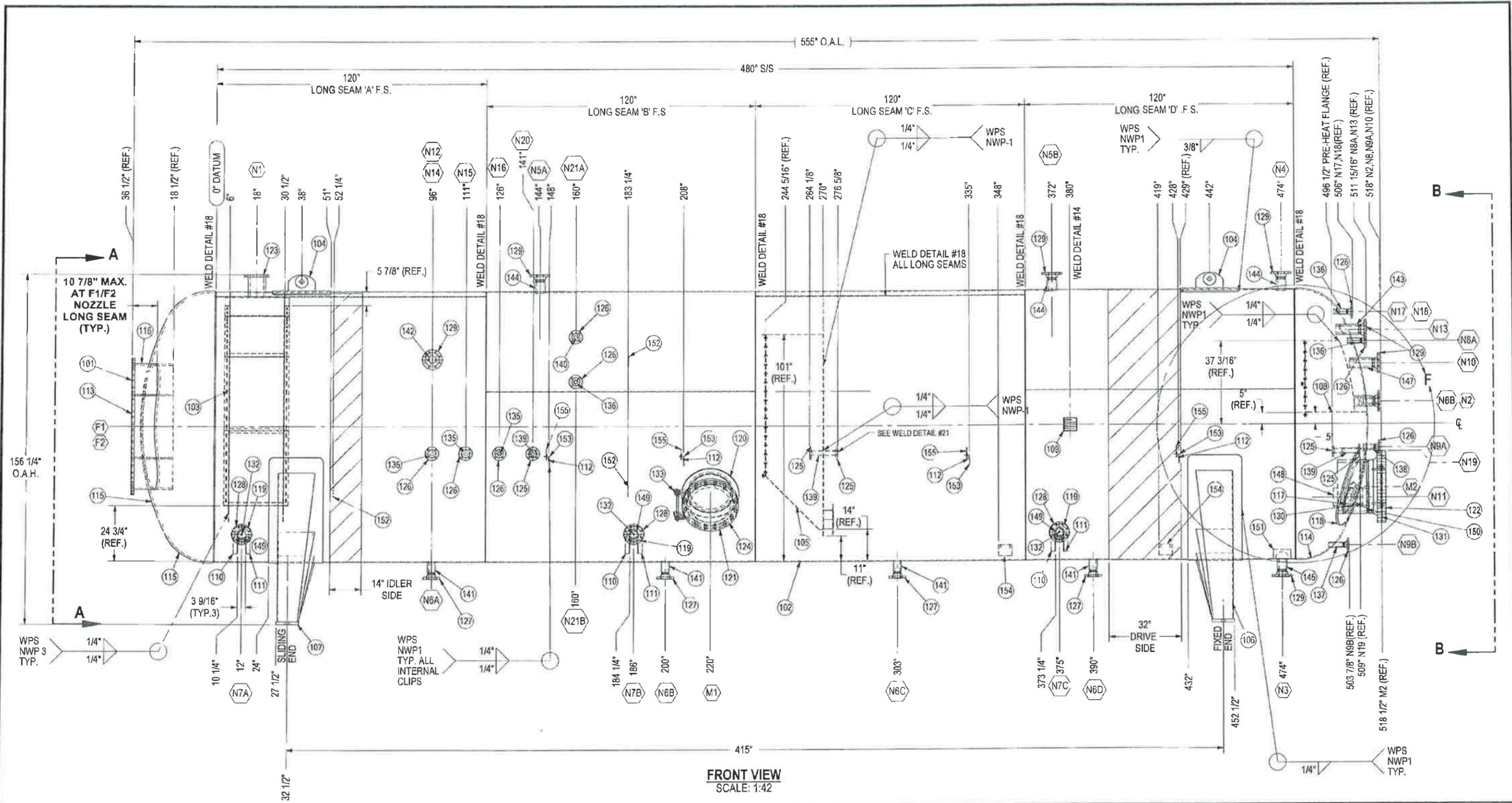
SCALE: AS NOTED

WEIGHT: APPROX 150

EVOLUTION PRODUCTION EQUIPMENT
SWEET EMULSION TREATER PACKAGE
120" I.D. x 480" S/S 75 PSIG @ 300 °F

BILL OF MATERIALS

DWN: PA	CHK:	APP:
DATE: NOV 21/14	DATE:	DATE:
SHEET: 2 OF 7	DWG: 09284-001-A-100	REV: A



FRONT VIEW
SCALE: 1:42

REV.	DATE	BY:	CHK:	APP:	DESCRIPTION
A	NOV 21/14	PA			ISSUED FOR APPROVAL
DRAWING REVISIONS					

ISSUED FOR APPROVAL

1. APPROVED, PROCEED WITH CONSTRUCTION

2. APPROVED, REVISE AS NOTED, PROCEED WITH CONSTRUCTION

3. NOT APPROVED, REVISE AND RESUBMIT

Jan *Dec 8/14*

SIGNATURE DATE

ALL DIMENSIONS IN INCHES

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
PH: (403) 227-4100 FAX: (403) 227-4102

PROJECTION:

SCALE: AS NOTED

WEIGHT: (WPS) 1/4" K_{eff}

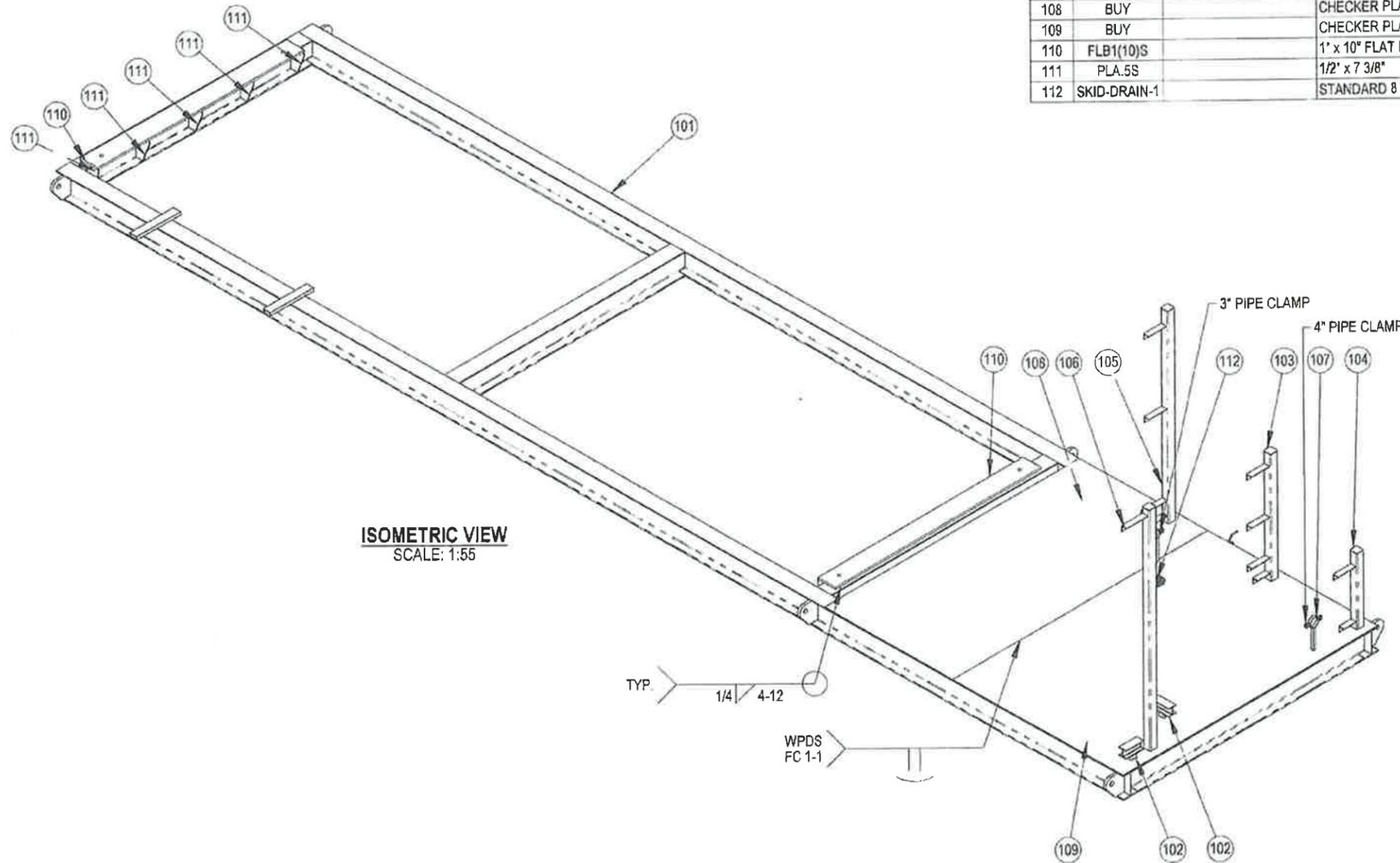
EVOLUTION PRODUCTION EQUIPMENT
SWEET EMULSION TREATER PACKAGE
120" I.D. x 480" S/S 75 PSIG @ 300 °F

TREATER SHELL WELDMENT (FRONT ELEVATION)

DWN: PA	CHK:	APP:
DATE: NOV 21/14	DATE:	DATE:
SHEET: 3 OF 7	DWG: 09284-001-A-100	REV: A

BILL OF MATERIAL

ITEM	PART #	DRAWING #	DESCRIPTION	MATERIAL	SIZE	QTY	MTR #
101		09284-001-C-101	SKID WELDMENT	SA-36		1	
102		09284-001-C-102	PIPE SUPPORT ASSEMBLY	SA-36		2	
103		09284-001-C-103	PIPE SUPPORT ASSEMBLY	SA-36		1	
104		09284-001-C-104	PIPE SUPPORT ASSEMBLY	SA-36		1	
105		09284-001-C-105	PIPE SUPPORT ASSEMBLY	SA-36		1	
106		09284-001-C-106	PIPE SUPPORT ASSEMBLY	SA-36		1	
107		09284-001-C-107	PIPE SUPPORT ASSEMBLY	SA-36		1	
108	BUY		CHECKER PLATE 1/4" x 72" x 143.5"	ASTM A786		1	
109	BUY		CHECKER PLATE 1/4" x 95.5" x 143.5"	ASTM A786		1	
110	FLB1(10)S		1" x 10" FLAT BAR	SA-36	116"	2	
111	PLA.5S		1/2" x 7 3/8"	SA-36	11 9/16"	10	
112	SKID-DRAIN-1		STANDARD 8 5/8" OD SKID DRAIN			1	



ISOMETRIC VIEW
SCALE: 1:55

NOTES

- FABRICATE TO CSA W47.1 AND W59.
- ALL DIMENSIONS SHALL HAVE A TOLERANCE OF $\pm 1/8"$ UNLESS OTHERWISE SPECIFIED.
- COPE STRUCTURAL MEMBERS AS REQUIRED.
- RADIUS ALL SHARP EDGES.
- SHOP TO VERIFY ALL CUT LENGTHS PRIOR TO SECTIONING MEMBERS.
- WELD PROCESS TO BE MCAW UNLESS OTHERWISE NOTED. WPDS FC1-10 AND WPDS FC1-15.
- CHECKER PLATE TO BE 1/4" SHORT ALL AROUND.
- WELD OUTSIDE PERIMETER OF CHECKER PLATE TO MAIN RAILS AND END CROSS MEMBERS, CHECKER PLATE TO ALL CROSS MEMBERS, UNDERSIDE OF CHECKER PLATE USING 2" IN 12" STITCH PATTERN.
- INSULATION: 2" URETHANE FOAM UNDER SKID.
- APPROXIMATE WEIGHT: 11550 LBS.
- ALL WELDS TO BE 1/4" CONTINUOUS FILLETS UNLESS OTHERWISE NOTED.
- BOLTS- ATMS A354 GRADE BD.
- SSPC-SP 7-63 BRUSH BLAST, CLOVERDALE UNIVERSAL PHENOLIC PRIMER SERIES 83, 1.5-2 MILS DFT.
- UNINSULATED AREAS (BUILDING END/SKID) PAINTED WITH CLOVERDALE 835 SERIES DTM POLYURETHANE ENAMEL 2-3 MILS DFT -WARM GREY.
- MPI INSPECTION ON LIFT LUG WELDMENT.

				ISSUED FOR APPROVAL				EVOLUTION PRODUCTION EQUIPMENT SWEET EMULSION TREATER PACKAGE 120" I.D. x 480" S/S 75 PSIG@300 °F				
				<input checked="" type="checkbox"/> 1. APPROVED PROCEED WITH CONSTRUCTION <input type="checkbox"/> 2. APPROVED, REVISE AS NOTED, PROCEED WITH CONSTRUCTION <input type="checkbox"/> 3. NOT APPROVED REVISE AND RESUBMIT		P.O. BOX 6280, INNISFAIL, AB T4G 1S9 PH: (403) 227-4100 FAX: (403) 227-4102		SKID ASSEMBLY				
A	NOV 21/14	PA		ISSUED FOR APPROVAL				DWN: PA	CHK:	APP:		
REV.	DATE	BY:	CHK:	APP:	DESCRIPTION	SIGNATURE	DATE	DATE: NOV 21/14	DATE:	DATE:		
				DRAWING REVISIONS				PROJECTION:	SCALE: AS NOTED	SHEET: 1 OF 4	DWG: 09284-001-C-000	REV: A
				ALL DIMENSIONS IN INCHES				WEIGHT:				