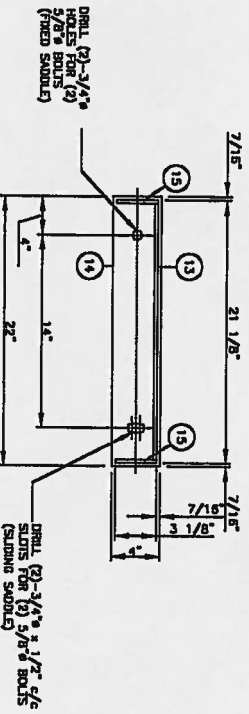
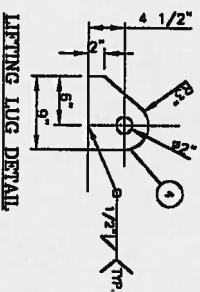


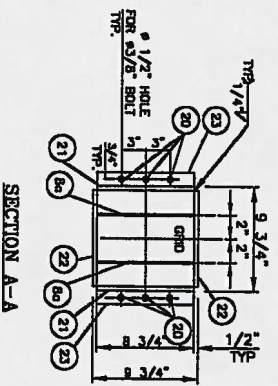
ITEM #13 DETAIL



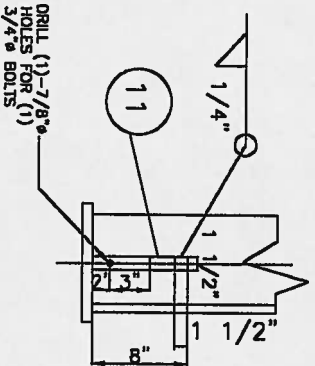
BASE PLATE DETAIL



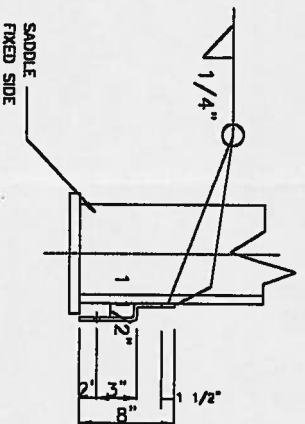
LIFTING LUG DETAIL



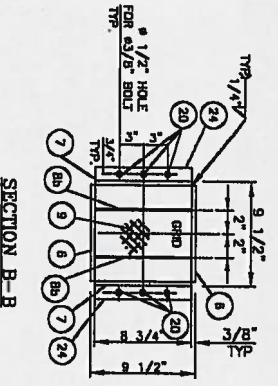
SECTION A-A



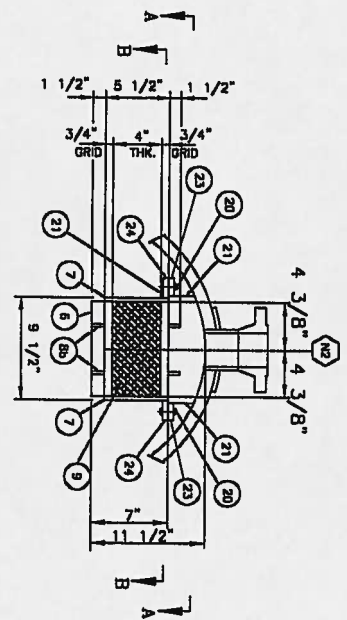
GROUND LUG DETAIL



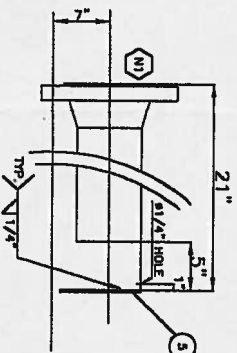
SADDLE FIXED SIDE



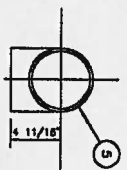
SECTION B-B



MISTEX SUPPORT DETAIL



INLET DIVERTER DETAIL



INSPECTION NOTES

REQUIREMENTS FOR WELDS:

1. MINIMUM PREHEATING 200 F (95C)
2. ALL VESSEL PRESSURE ENVELOPE WELDS AFTER WELD ROOT BACK GOUGING EXAMINED BY MT METHOD.
3. EXAMINATION PROCEDURE AND RESULTS INTERPRETATION AS PER ASME BPV CODE SECTION VIII DIVISION 1 REQUIREMENTS.
4. PWHT: 1 HOUR AT 1150 F ± 25 F
5. WELD PRODUCTION HARDNESS SURVEY TEST:
 - ONE HARDNESS TESTING READING PER LONGITUDINAL WELD PER SHELL COURSE
 - ONE HARDNESS READING PER NOZZLE

VESSEL EXTERNAL SURFACE PREPARATION AND THE CORROSION PROTECTION:

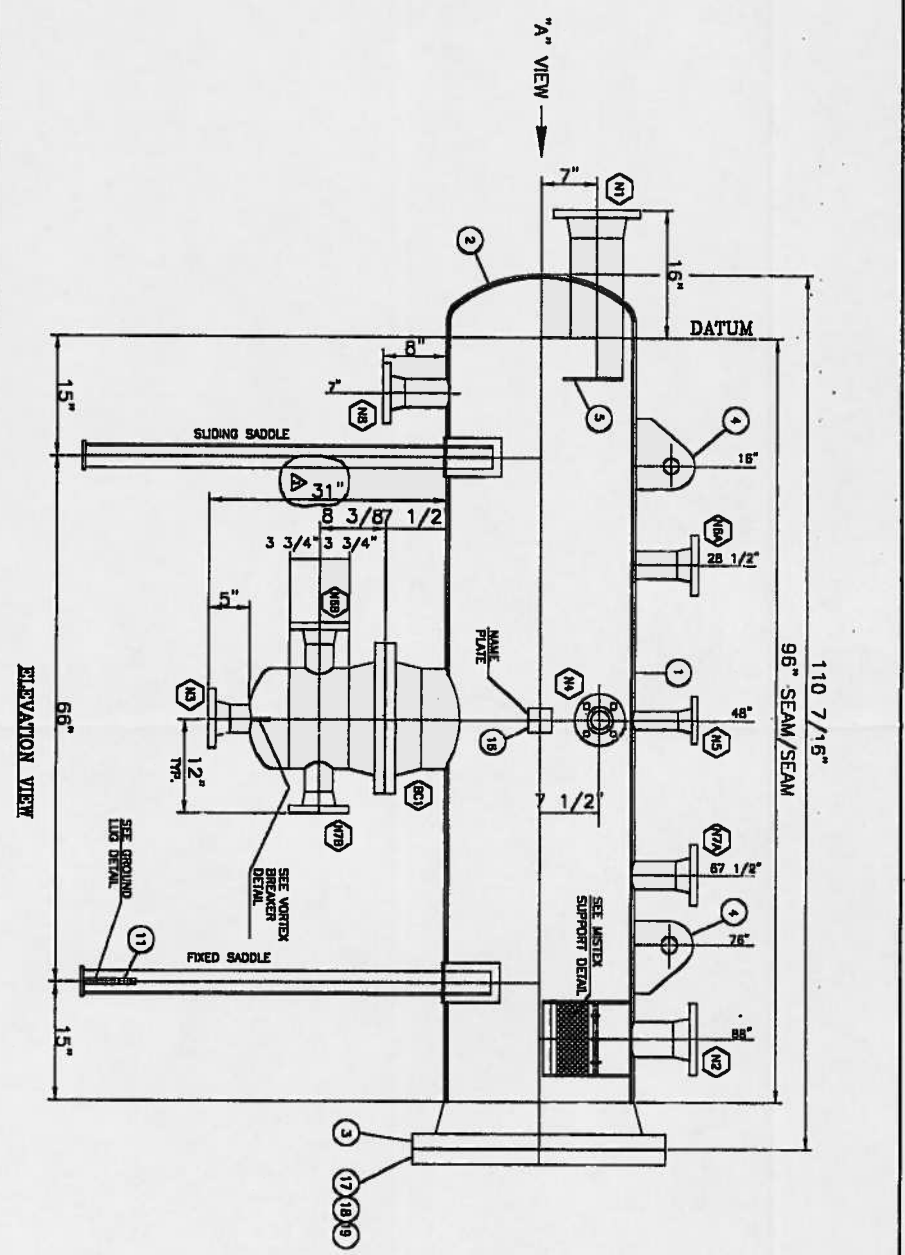
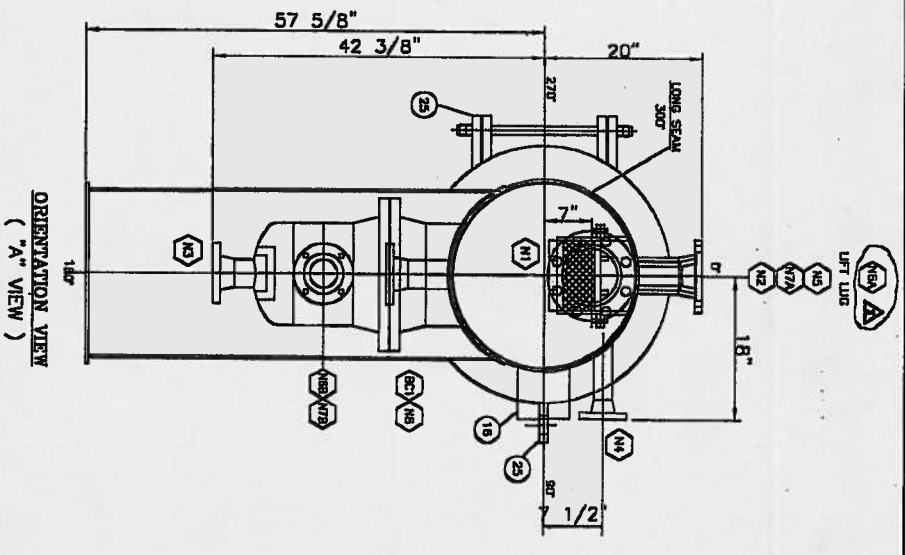
1. PAINTING OF UN-INSULATED VESSEL SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SYSTEM AL REQUIREMENTS. REFER APPENDIX II OF CURL SPECIFICATION 13.02
- SURFACE PREPARATION :
 - SSPC-SP#6, COMMERCIAL BLAST
- COATINGS :
 - COAT 1 - DEVRAN 224 (POLYAMIDE EPOXY), DRY FILM THICKNESS 5.0-6.0 MILS
 - COAT 2 - DEVRAN 229 (ACRYLIC EPOXY), DRY FILM THICKNESS 1.5-2.0 MILS

APPROVED FOR CONSTRUCTION
 P.P. 5/30/06
REVISED DRAWING

ISSUED FOR CONSTRUCTION

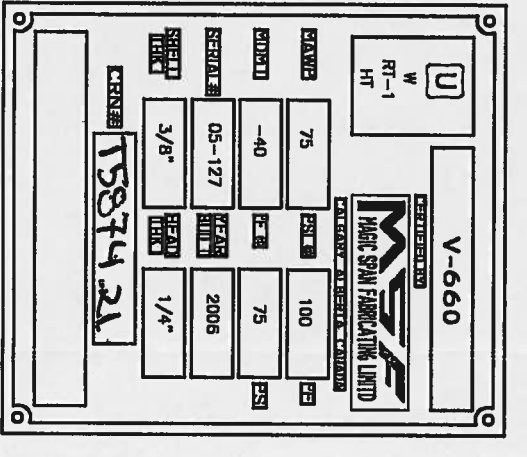


CUSTOMER		CANADIAN NATURAL RESOURCES LIMITED	
PROJECT	SLUGCATCHER DEBIT	TAG#	V-580
TITLE	24" OD X 96" S/S	SCALE	AS SHOWN
DATE	2005-12-1	REVISED	2/2



NOZZLE SCHEDULE

MARK	QTY	SIZE	TYPE	RATING	DETAIL	BORE	SERVICE	PKL	PKL IN.	F	A	B	C	D	E
M1	1	6"	RFWN	CL180	4.5	SCH40	ONS INLET	SEE DWG.	SEE DWG.	3/8"	1/4"	-	-	-	-
M2	1	4"	RFWN	CL180	4.5	SCH40	ONS OUTLET	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M3	1	3"	RFWN	CL180	4.5	SCH40	WATER OUTLET	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M4	1	2"	RFWN	CL180	4.5	SCH40	TI	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M5	1	2"	RFWN	CL180	4.5	SCH40	PA	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M6	1	3"	RFWN	CL180	4.5	SCH40	BROLE	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M7	1	3"	RFWN	CL180	4.5	SCH40	BROLE	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M8	1	3"	RFWN	CL180	4.5	SCH40	BROLE	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M9	1	3"	RFWN	CL180	4.5	SCH40	TRUCKOUT	SEE DWG.	SEE DWG.	1/4"	-	-	-	-	-
M10	1	12"	RFWN	CL180	4.5	SCH40	BOOT CONNECTION	SEE DWG.	SEE DWG.	3/8"	-	-	-	-	-



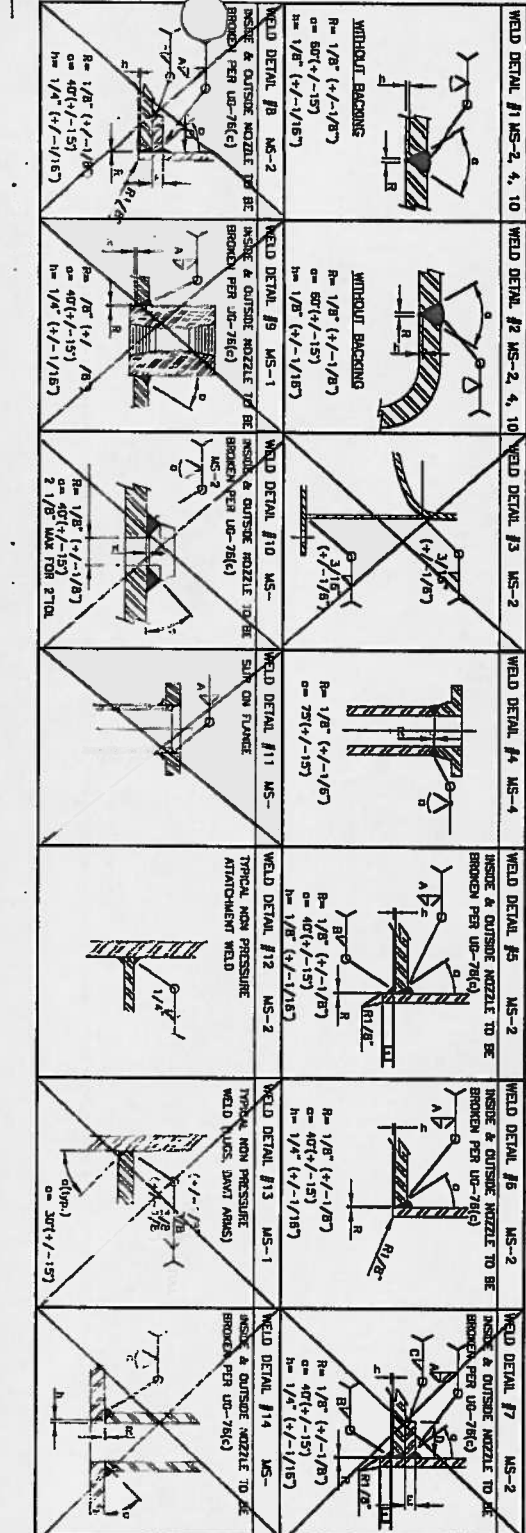
- NOTES**
1. NOZZLE SCHEDULE INTERNAL PROJECTIONS SHOWN AS A MINIMUM
 2. INTERNAL WELDS TO BE 1/4" FILET ALL AROUND U.N.O.
 3. NO WELDING PERMITTED AFTER PWHT

GENERAL NOTES

1. DIM. ARE IN INCHES.
2. ALL TAIL DIM. ARE FROM DATUM LINE.
3. FOR CIRC. & LONG SEAMS, SEE WELD DETAIL 1, 2 & 4.
4. NON PRESSURE PARTS & TACK WELDS USE WELD-MS-4.
5. ALL REPAIR PLATES TO BE C/W ONE (1) 1/4" WP TELL TAIL HOLE PER SECTION

6. NOZZLE EXTERNAL PROJ. ARE FROM OUTSIDE OF VESSEL TO FACE OF FLANGE UNLESS NOTED OTHERWISE.
7. ALL FLANGE BOLT HOLES TO SHIMMEL VESSEL CENTERLINE.
8. WHPN ON FILET WELDS AFTER PWHT.

APPROVED FOR CONSTRUCTION



DESIGN DATA

ASME CODE DESIGN AND CONSTRUCTION
SECT. VIII, DIV. 1, 2004 EDITION, 2005 ADDENDA

DESIGN PRESSURE: 75 PSIG
DESIGN TEMP.: 100° F

M.A.M.T.: -40° F @ 75 PSIG
OPER. TEMP.: -

CORROSION ALLOWANCE: 1/8"
LIMITED BY: DESIGN

STRESS RELIEF: YES FOR 80 MINUTES @ 1150° F ± 25° F
IMPACT TEST: CHEMPT PER UCS 66(b) & (g)

APPROX. VOLUME: 26 cu ft
HYDROTEST: 98 PSIG

REGISTER: ALBERTA AND BRIT. C
WELDING PROJECT: A, E, F, J, L, D
CLIENT: FIRE ACTION X
SUBMITTAL PREPARED: (NK), S/A
FINISH PLAN: SPFC, CA, ON

MSEF
MAGIC SPAN FABRICATING LIMITED

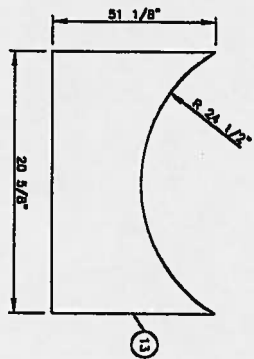
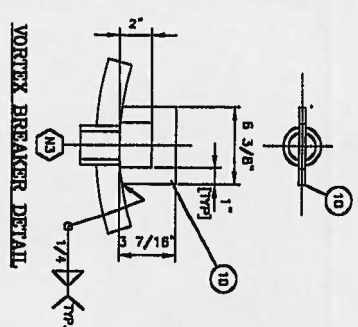
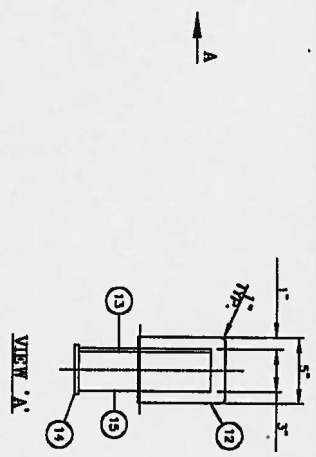
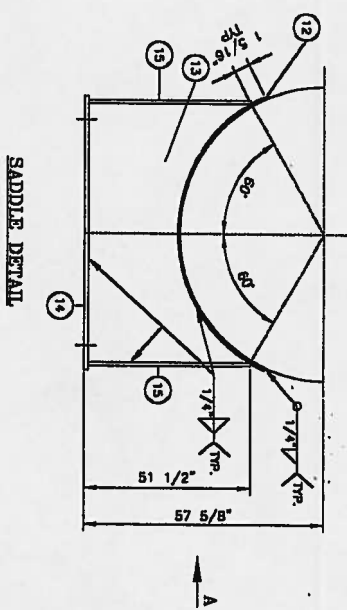
CUSTOMER: CANADIAN NATURAL RESOURCES LIMITED

PROJECT: EDMONTON DELLY
LSD 08-20-08-08 WEN

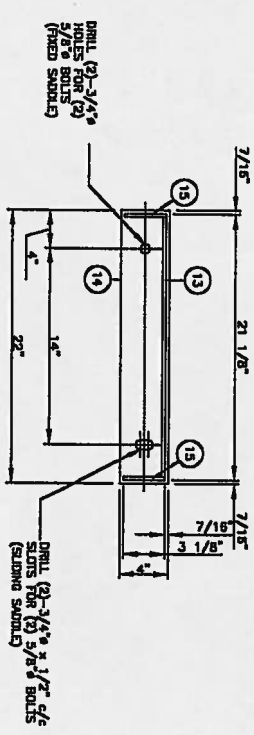
SCALE: 24" OD x 96" S/S
DRAWING NO.: 2005-127-A-1
REV: 3

BILL OF MATERIAL

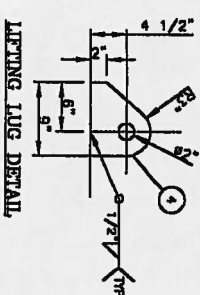
ITEM	QTY.	DESCRIPTION	MATL. SPEC.
1	1	SHIELD PLATE 3/8" THK x 96" LG. (DUAL TO 24" O/D)	SA-516-70N
2	1	HEAD PLATE 24" x 24" x 3/8" WELD (1/4" MIN) THK, 21 SE. W/2" ST.	SA-516-70N
3	1	FLANGE 24"-CL180 PERM SCH40 BORE	SA-350/L2 CL1
4	2	LIFT LUG PLATE 3/4" THK x 8" W x 7 1/2" WD	SA-516-70N
5	1	LIFT LUG PLATE 1/2" THK x 8 5/8" W x 8" L	SA-516-70N
6	2	PLATE 3/8" THK x 8 3/4" LG x 5 1/2" WD (ONS)	316L
7	2	PLATE 3/8" THK x 8 3/4" LG x 5 1/2" WD (ONS)	316L
8	2	PLATE 3/8" THK x 1" W x 8 3/4" LG. (WELDER SUPPORT TOP)	316L
9	2	PLATE 3/8" THK x 1" W x 8 3/4" LG. (WELDER SUPPORT BOTTOM)	316L
10	1	PLATE 3/8" THK x 3 7/8" W x 8 3/4" LG. (ONS) (WELDER BRACKET)	SA-516-70N
11	1	GROUND LUG PLATE 1/4" THK x 8 1/2" W x 1 1/2" WD	SA-516-70N
12	2	WELD PLATE 1/4" THK x 8" W x 28 1/2" LG. (DUAL TO 24" O/D)	SA-516-70N
13	2	WELD PLATE 1/4" THK x 8 1/2" W x 20 5/8" LG. (ONS)	SA-516-70N
14	2	WELD PLATE 1/4" THK x 4" W x 22" LG.	SA-516-70N
15	4	ROD PLATE 1/2" THK x 3 1/2" W x 31 1/2" LG.	SA-516-70N
16	1	WELD PLATE 1/4" THK x 8 3/4" LG. (ONS)	SA-516-70N
17	1	ROD PLATE 1/2" THK x 3 1/2" W x 31 1/2" LG.	SA-516-70N
18	1	ROD PLATE 1/2" THK x 3 1/2" W x 31 1/2" LG.	SA-516-70N
19	20	ROD PLATE 1/2" THK x 3 1/2" W x 31 1/2" LG.	SA-516-70N
20	8	WELDER BOLT 65/78" x 2" LG. (1) HWT. (2) WELDER BOLT	SS
21	2	PLATE 1/2" THK x 3 5/8" W x 8 3/4" LG.	SA-516-70N
22	2	PLATE 1/2" THK x 4 1/2" W x 8 3/4" LG.	SA-516-70N
23	2	PLATE 1/2" THK x 1 1/2" W x 8 3/4" LG.	SA-516-70N
24	2	PLATE 1/2" THK x 1 1/2" W x 8 3/4" LG.	316L
25	1	ROD 24"-CL180 HANWAY HINGE	316L



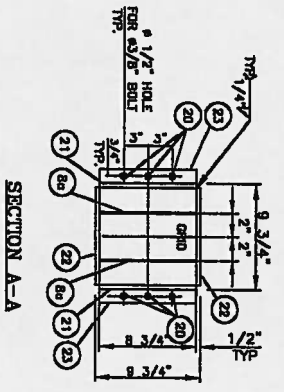
ITEM #13 DETAIL



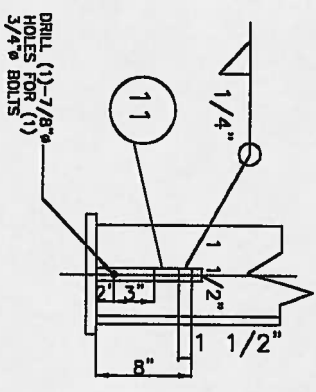
BASE PLATE DETAIL



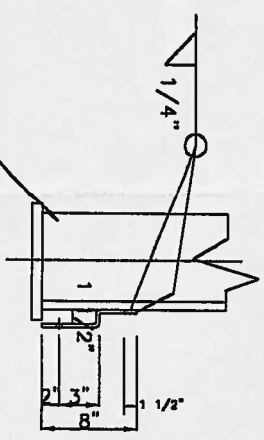
LIFTING LUG DETAIL



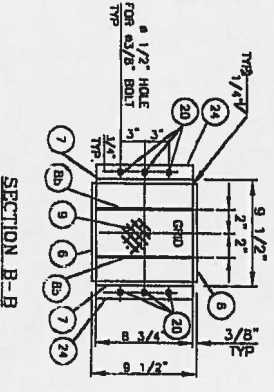
SECTION A-A



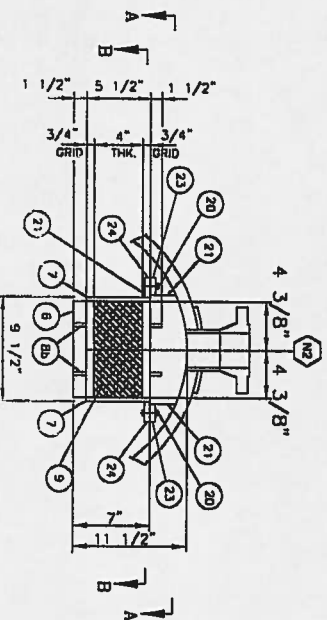
GROUND LUG DETAIL



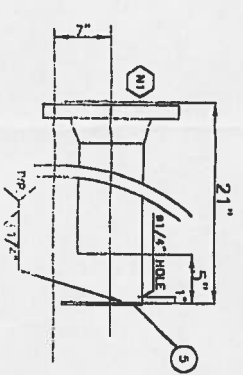
SADDLE FIXED SIDE



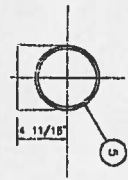
SECTION B-B



MISTEX SUPPORT DETAIL



INLET DIVERTER DETAIL



INSPECTION NOTES

REQUIREMENTS FOR WELDS:

1. MINIMUM PREHEATING 200 F (95C)
2. ALL VESSEL PRESSURE ENVELOPE WELDS AFTER WELD ROOT BACK GOUGING EXAMINED BY MT METHOD.
3. EXAMINATION PROCEDURE AND RESULTS INTERPRETATION AS PER ASME BPV CODE SECTION VIII DIVISION 1 REQUIREMENTS.
4. PWHT: 1 HOUR AT 1150 F ± 25° F
5. WELD PRODUCTION HARDNESS SURVEY TEST:
 - ONE HARDNESS TESTING READING PER LONGITUDINAL WELD PER SHELL COURSE
 - ONE HARDNESS READING PER NOZZLE

VESSEL EXTERNAL SURFACE PREPARATION AND THE CORROSION PROTECTION:

1. PAINTING OF UN-INSULATED VESSEL SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SYSTEM AL REQUIREMENTS. REFER APPENDIX II OF CNRL SPECIFICATION 15.02
- SURFACE PREPARATION : SSPC-SP#6, COMMERCIAL BLAST
- COATINGS :
 - COAT1 - DEVRAN 224 (POLYAMIDE EPOXY), DRY FILM THICKNESS 5.0-8.0 MILS
 - COAT2 - DEVRAN 229 (ACRYLIC EPOXY), DRY FILM THICKNESS 1.5-2.0 MILS

APPROVED FOR CONSTRUCTION

MSF 3124109



CUSTOMER	CANADIAN NATURAL RESOURCES LIMITED
PROJECT	150 00-50-000-008 DR BWA
TITLE	EXAMINATION DRAWING
SCALE	24" OD x 98" S/S
DRAWING NO.	2005-127-A-1
SHEET NO.	3

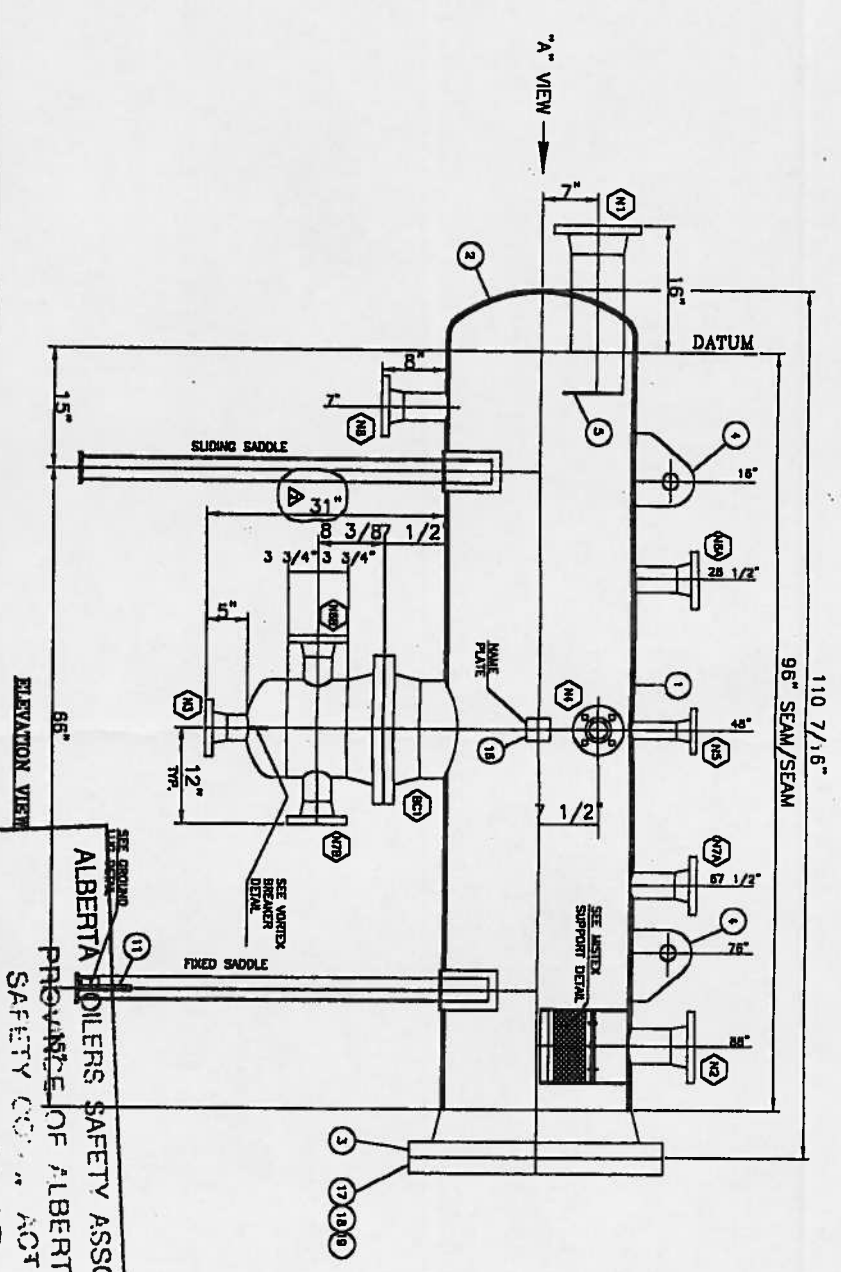
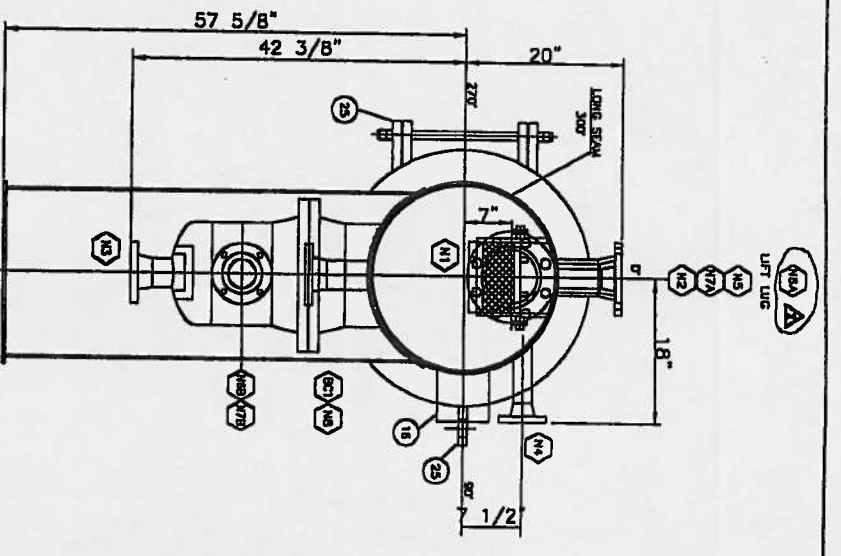
2005-127

Longseam → L1 → 254680.
 Cincseam C1 → 255795.
 Cincseam C2 → 256273.

NOZZLE SCHEDULE

2005-127

MARK	QTY	SIZE	TYPE	RATING	DETAIL	BORE	SERVICE	EXT. PROJ.	INT. PROJ. F	A	B	C	D	E	NOZZLE REPORT #	DATE	W.F.M.P.
N1	1	6"	RFWN	CL150	4,5	SCH.40	GAS INLET	SEE DWG.	SEE DWG.	3/8"	1/4"	-	-	-	254532	2/9/06	11111111
N2	1	4"	RFWN	CL150	4,6	SCH.40	GAS OUTLET	SEE DWG.	FLUSH	1/4"	-	-	-	-	254532	2/9/06	11111111
N3	1	3"	RFWN	CL150	4,6	SCH.40	WATER OUTLET	SEE DWG.	FLUSH	1/4"	-	-	-	-	254680	2/13/06	11111111
N4	1	2"	RFWN	CL150	4,6	SCH.80	TI	SEE DWG.	FLUSH	1/4"	-	-	-	-	254680	2/13/06	11111111
N5	1	2"	RFWN	CL150	4,6	SCH.80	PG	SEE DWG.	FLUSH	1/4"	-	-	-	-	254680	2/13/06	11111111
N6A	1	3"	RFWN	CL150	4,6	SCH.40	BRIDLE	SEE DWG.	FLUSH	1/4"	-	-	-	-	254532	2/9/06	11111111
N6B	1	3"	RFWN	CL150	4,6	SCH.40	BRIDLE	SEE DWG.	FLUSH	1/4"	-	-	-	-	254532	2/9/06	11111111
N7A	1	3"	RFWN	CL150	4,6	SCH.40	BRIDLE	SEE DWG.	FLUSH	1/4"	-	-	-	-	254532	2/9/06	11111111
N7B	1	3"	RFWN	CL150	4,6	SCH.40	BRIDLE	SEE DWG.	FLUSH	1/4"	-	-	-	-	254532	2/9/06	11111111
N8	1	3"	RFWN	CL150	4,6	SCH.40	TRUCKOUT	SEE DWG.	FLUSH	1/4"	-	-	-	-	254532	2/9/06	11111111
BC1	1	12"	RFWN	CL150	4,6	SCH. STD	BOOT CONNECTION	SEE DWG.	FLUSH	3/8"	-	-	-	-	254532	2/9/06	11111111
BC2															254532	2/9/06	11111111
BC3															255036	2/16/06	11111111



NOZZLE SCHEDULE

MARK	QTY	SIZE	TYPE	PATTERN	DETAIL	BORE	SERVICE	FLAT	INCH	A	B	C	D	E
M1	1	6"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	3/8"	1/8"	-	-	-
M2	1	4"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M3	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M4	1	2"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M5	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M6	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M7	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M8	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M9	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M10	1	3"	SPWN	0.180	4.8	0.180	ONE INLET	SEE DETAIL	SEE DETAIL	1/4"	-	-	-	-
M11	1	1 1/2"	SPWN	0.180	4.8	0.180	ROOT CONNECTION	SEE DETAIL	SEE DETAIL	3/8"	-	-	-	-

WELDED FABRICATING LIMITED

V-6660

Welding Certificate

RT-1

HT

75 PSI

50-127

3/8"

1/4"

15847.2

Dwg 2005-127-A-1 Rev 3

APR 13 2006

Signed: *Yu. Miller*

TETAYANA ONSHCHENIKO

NOTES

1. NOZZLE SCHEDULE INTERNAL PROJECTIONS SHOWN AS A MINIMUM
2. INTERNAL WELDS TO BE 1/4" FILLET ALL AROUND U.N.O.
3. NO WELDING PERMITTED AFTER PWHT

DESIGN DATA

ASME CODE DESIGN AND CONSTRUCTION
 SECT VIII, DIV 1, 2004 EDITION, 2005 ADDENDA
 DESIGN PRESSURE: 75 PSIG
 DESIGN TEMP.: 100° F
 OPER. TEMP.: -
 LIMITED BY DESIGN
 CORROSION ALLOWANCE: 1/8"
 STRESS RELIEF: YES FOR 80 MINUTES @ 1150° F ± 25° F
 IMPACT TEST: EXEMPT PER UCS 66(e) & (g)
 WELDING PROCEDURE: W-110
 WELDING METHOD: SMAW
 WELDING POSITION: ALL POS.
 WELDING SPEED: 10-15 IPM
 WELDING CURRENT: 100-120 AMP
 WELDING VOLTAGE: 20-25 VDC
 WELDING ELECTRODE: E6010
 WELDING GAS: C2
 WELDING PREHEAT: 250° F
 WELDING INTERPASS TEMP.: 250° F
 WELDING POSTHEAT: 250° F
 WELDING PWHT: 250° F
 WELDING PWHT TIME: 2 HOURS
 WELDING PWHT RATE: 100° F/HOUR
 WELDING PWHT TOLERANCE: ± 5° F

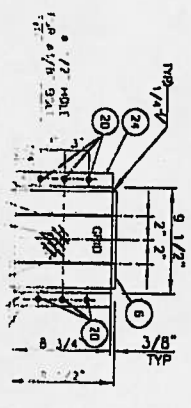
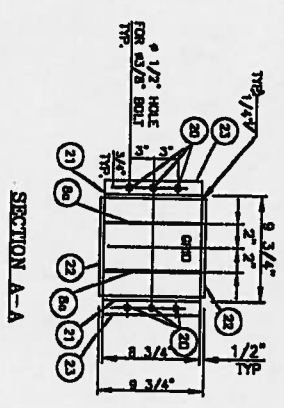
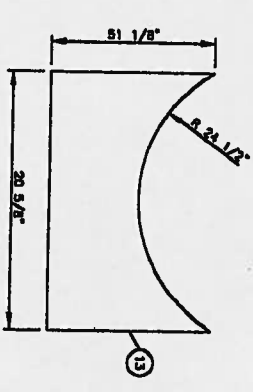
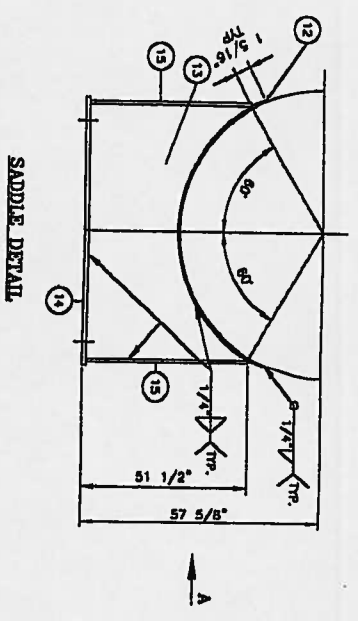
GENERAL NOTES

1. DIM. ARE IN INCHES
2. ALL TAIL DIM. ARE FROM DATUM LINE
3. FOR ORG. & LONG SEAMS SEE WELD DETAIL 1, 2 & 4
4. NON PRESSURE PARTS & TACK WELDS USE WP-MS-2
5. ALL REPAIR PLATES TO BE C/W ONE (1) 1/4" NPT TELL TAIL HOLE PER SECTION
6. NOZZLE EXTERNAL PROJ. ARE FROM OUTSIDE OF VESSEL TO FACE OF FLANGE UNLESS NOTED OTHERWISE.
7. ALL FLANGE BOLT HOLES TO STANDARD VESSEL CENTERLINE
8. WIPIN ON FLANGE WELDS AFTER PWHT

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	MAT'L SPEC.
1	1	SHLL PLATE 3/8" THK x 86" ID (DIAL TO 2P" O/D)	SA-516-70M
2	1	WELD PLATE 2P" x 3/8" HOLE (1/2" DIA) THK 21" SE 1/2" EA.	SA-516-70M
3	1	PLATE 2P" x 3/8" THK x 86" ID x 7 1/2" WD	SA-516-70M
4	1	1/4" DIA PLATE 3/4" THK x 8" DIA x 7" WD	SA-516-70M
5	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
6	2	PLATE 3/8" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
7	2	PLATE 3/8" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
8	2	PLATE 3/8" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
9	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
10	1	PLATE 3/8" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
11	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
12	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
13	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
14	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
15	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
16	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
17	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
18	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
19	20	STITCH 1/2" x 7" LD 6/8 (2) HITS EACH	SA-516-70M
20	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
21	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
22	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
23	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
24	2	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
25	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M
26	1	WELD PLATE 1/2" THK x 8" DIA x 3 1/2" WD (SEE DETAIL)	SA-516-70M





DR WELDS:

DR WELDS TO BE MADE AT 200 F (95C) WITH A MINIMUM OF 1/8\"/>

DURE AND RESULTS INTERPRETATION AS PER SECTION VII DIVISION 1 REQUIREMENTS.

150 F ± 25° F

ADDRESS SURVEY TEST:

STRING READING PER LONGITUDINAL WELD PER SHELL COURSE AND GROUNDING PER NOZZLE

SURFACE PREPARATION AND PROTECTION:

BLASTED VESSEL SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS. REFER APPENDIX II OF CNRL

NON :
SPECIAL BLAST

24 (POLYAMIDE EPOXY), DRY FILM THICKNESS 5.0-8.0 MILS
229 (ACRYLIC EPOXY), DRY FILM THICKNESS 1.5-2.0 MILS

T 5847.2

APR 13 2006



NO.	DESCRIPTION
1	FOUR SHEET CARTRIDGE