



Data Book

Ovintiv

SO# 100001253

Customer PO# PO84203

48in x 15ft, 1440#

SN# F-8932

F8932



1. DESIGN IN ACCORDANCE WITH ASME CODE SECTION VIII, DIV.1 (2019)
2. ASME STAMP: REQUIRED
3. NATIONAL BOARD REGISTRATION: REQ'D
4. DESIGN PRESSURE(INTERNAL): 1440 PSIG @ 130 °F
5. DESIGN PRESSURE(EXTERNAL): ATMOSPHERIC PSIG @130 °F
6. MAX. ALLOWABLE WORKING PRESSURE: 1440 PSIG @ 130 °F
7. HYDROSTATIC TEST PRESSURE: 1872 PSIG
8. CORROSION ALLOWANCE: HEADS: 0.125" SHELL: 0.125" NOZZLES: 0.125" INTERNALS: 0.00" BOLT ON: 0.00"
9. JOINT EFFICIENCY: RIGHT/TOP HEAD: 100%, LEFT/BTM HEAD: 100%.
SHELL CIRC.: 100%, SHELL LONG: 100%.
10. RADIOGRAPHY: RT-1
11. POST WELD HEAT TREATMENT: REQUIRED
12. HEATING RATE: 800F PER HOUR
13. COOLING RATE: 1000F PER HOUR
14. WIND CODE: ----
15. SEISMIC CODE: ----
16. CHARYP IMPACT TEST: REQUIRED @ -20° F 15/12 FT/LBS

DESIGN DATA

1. REINFORCING PADS SHALL BE PNEUMATIC TESTED TO 15 PSI AND INSPECTED WITH SOAP /WATER SOLUTION
2. SERVICE BOLTS SHALL NOT BE USED IN TESTING. SERVICE BOLTS WILL BE SHIPPED IN PLACE
3. MATERIAL IDENTIFICATION MARKING MUST BE TRANSFERRED TO ALL PRESSURE PARTS
4. WELDERS STENCILS ARE REQUIRED ON ALL WELDS AND/OR RECORDED
5. WHERE WELD METAL BUILD-UP IS USED IN JOINTS REQUIRING RADIOGRAPHY, THE WELD METAL BUILD - UP SHALL BE INCLUDED IN THE RADIOGRAPHIC EXAMINATION
6. HYDROTEST PRESSURE SHALL BE HELD FOR A MINIMUM OF ONE HOUR USING WATER. VESSEL TO BE IMMEDIATELY DRAINED AFTER HYDROTEST.
7. ONLY LEAD SCREENS AND FINE GRAIN KODAK AA FILM OR EQUAL SHALL BE USED FOR RADIOGRAPHY
8. ARC STRIKES SHALL BE GROUND SMOOTH AND VISUALLY EXAMINED
9. MRT'S REQUIRED PER ASME VIII CODE
10. EACH NOZZLE OR MANWAY REINFORCING PAD OR SEGMENT THERE OF SHALL HAVE ONE ¼" NPT TEST HOLE LOCATED NEAR LOW POINT OF PAD IN OPERATION POSITION. FILL TEST HOLES WITH HEAVY GREASE PRIOR TO SHIPMENT

TESTING, INSPECTION, AND IDENTIFICATION

1. HEADS: SA-516 GR 70 N
2. SHELL: SA-516 GR 70 N
3. FLANGES: N/A
4. COUPLINGS: SA-105 N
5. NOZZLE NECK (PIPE): N/A
6. NOZZLE NECKS (FORGED): SA-105 N
7. REINFORCING PADS: N/A
8. SKIRT: N/A
9. BASE PLATE: N/A
10. SADDLES: SA-36
11. WEAR PLATES: SA-36
12. BOLTING: SA-193 Gr2 SA-194 Gr2H
13. GASKETS: FLEXITALLIC STYLE "CG"
14. ALL MATERIALS SHALL COMPLY WITH PERMIANLIDE STANDARDS AND CODE SPECIFICATIONS.

MATERIAL SPECIFICATIONS

1. FLANGE BOLT HOLES TO STRADDLE VESSEL CENTERLINES UNLESS OTHERWISE SPECIFIED
2. PERMISSIBLE OUT OF ROUNDNESS OF CYLINDRICAL OR CONICAL SHELLS SHALL NOT EXCEED 1% OF THE NOMINAL DIAMETER. TOLERANCE SHALL BE INCREASED TO 2% WHEN THE CROSS-SECTION PASSES THROUGH OR WITHIN ONE ID OF AN OPENING OR PER UG-80
3. ALL OFFSETS OF BUTT WELDED JOINTS SHALL BE BLENDED, OR IF NECESSARY A WELD METAL BUILD UP, WITH A 3:1 TAPER
4. CHECK APPLICABLE WELD PROCEDURE FOR PREHEAT REQUIREMENTS
5. NONWELDED EDGES OF PENETRATIONS INSIDE THE VESSEL SHALL BE ROUNDED OR CHAMFERED
6. BUTT JOINT EDGES ARE TO BE SMOOTH AND UNIFORM AND BE FREE OF LOOSE SCALE AND SLAG
7. TACK WELDS ARE TO BE REMOVED OR THEIR ENDS GRIND SMOOTH WHEN INCORPORATED INTO THE FINAL WELD
8. FLANGE RAISED FACE TO HAVE 125 RA. MIN. - 250 RA. MAX SURFACE FINISH
9. INTERNAL AND EXTERNAL WELDED ATTACHMENTS SHALL BE CONTINUOUSLY WELDED TO THE VESSEL WALL UNLESS NOTED
10. HEAD TOLERANCE PER UG-81
11. ANCHOR BOLT TEMPLATE: NOT REQ'D

FABRICATION NOTES

MAXIMUM ALLOWABLE MISALIGNED OF BUTT JOINTS IS LIMITED TO

SECTION THICKNESS	JOINT CATEGORY	
	JOINTS: A	JOINTS: B,C & D
UP TO & INCLUDING 1/2"	1/4" OF THICKNESS	1/4" OF THICKNESS
OVER 1/2" TO 3/4", INCLUDING	1/8" OF THICKNESS	1/4" OF THICKNESS
OVER 3/4" TO 1 1/2", INCLUDING	1/8" OF THICKNESS	3/16"
OVER 1 1/2" TO 2", INCLUDING	1/8" OF THICKNESS	1/8" OF THICKNESS
OVER 2"	LESSER OF 1/16" OF THICKNESS OR 3/8"	LESSER OF 1/8" OF THICKNESS OR 3/4"

**ISSUED FOR
PRODUCTION
3/3/2020**

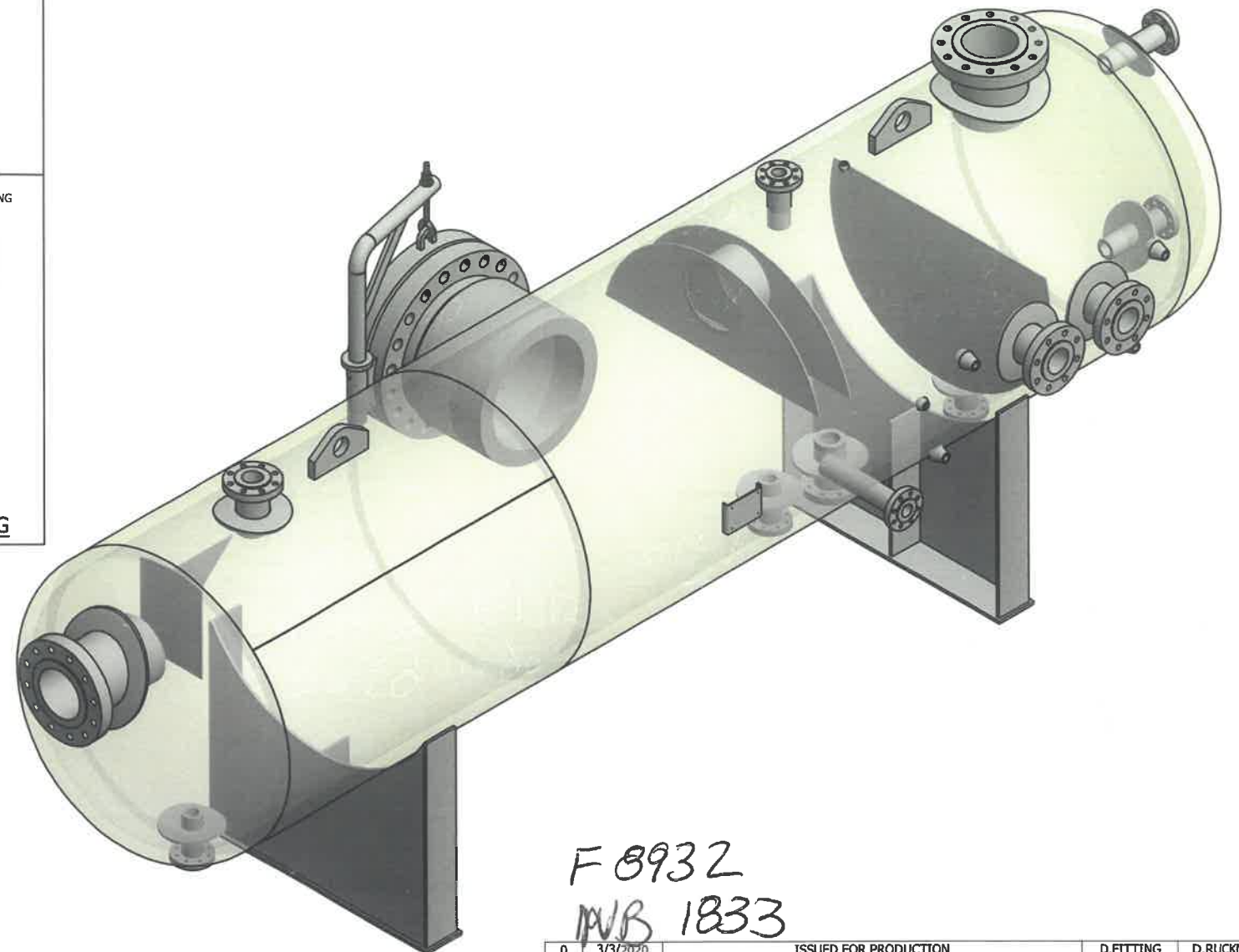
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1. INSIDE PROJECTIONS ARE MEASURED FROM SHORT SIDE, UNLESS OTHERWISE SPECIFIED
2. WORKLINE SHALL BE MARKED BY CENTER PUNCH ON THE VESSEL 12" FROM VESSEL SEAM
3. VESSEL SHALL BE CLEANED INSIDE AND OUTSIDE, FREE OF DIRECT, GREASE, DEBRIS, LOOSE MILL SCALE, WELD SPATTER, ETC.
4. SHOP RECORDS REQUIRED:
REQUIRED - P.W.H.T. CHART
REQUIRED - NAME PLATE DUPLICATE REQUIRED - HYDRO CHART
5. TOLERANCES, UNLESS OTHERWISE SPECIFIED: $\pm 1/8"$ ALL DIMENSIONS $\pm 0.5^\circ$ ALL DEGREES

CONSTRUCTION NOTES

1. PROTECT NAMEPLATE AND ALL FLANGE FACES BEFORE BLASTING AND PAINTING. FLANGE BOLT HOLES AND EXTERNAL SURFACES NOT MACHINED FOR GASKET SEALING TO RECEIVE SPECIFIED SURFACE PREPARATION AND PAINT
2. PAINT SHALL CONFORM TO ALL MANUFACTURES RECOMMENDATIONS REGARDING THINNING, MIXING CURING, STORAGE AND APPLICATION METHOD.
3. INSULATION: NOT REQ'D TYPE: N/A THICKNESS: N/A
4. FIREPROOFING: NOT REQ'D THICKNESS: N/A

SURFACE PREPARATION & PAINTING



F 8932
NVR 1833

0	3/3/2020	ISSUED FOR PRODUCTION	D.FITTING	D.RUCKMAN
REV	DATE	DESCRIPTION	DESIGNER	CHECKED BY
REVISION HISTORY				

ASME
U
W
RT-1
HT

CERTIFIED BY
PERMIAN TANK & MFG.
ODESSA, TX

1440 PSI AT 130 °F
MAXIMUM ALLOWABLE WORKING PRESSURE

MINIMUM DESIGN METAL TEMPERATURE

MFG. SER. NO.	XXXX	YEAR BUILT	2020
NOM. DIAMETER	48"	NOM. LENGTH	15'
TEST PRESSURE	1872	EMPTY WEIGHT	23600

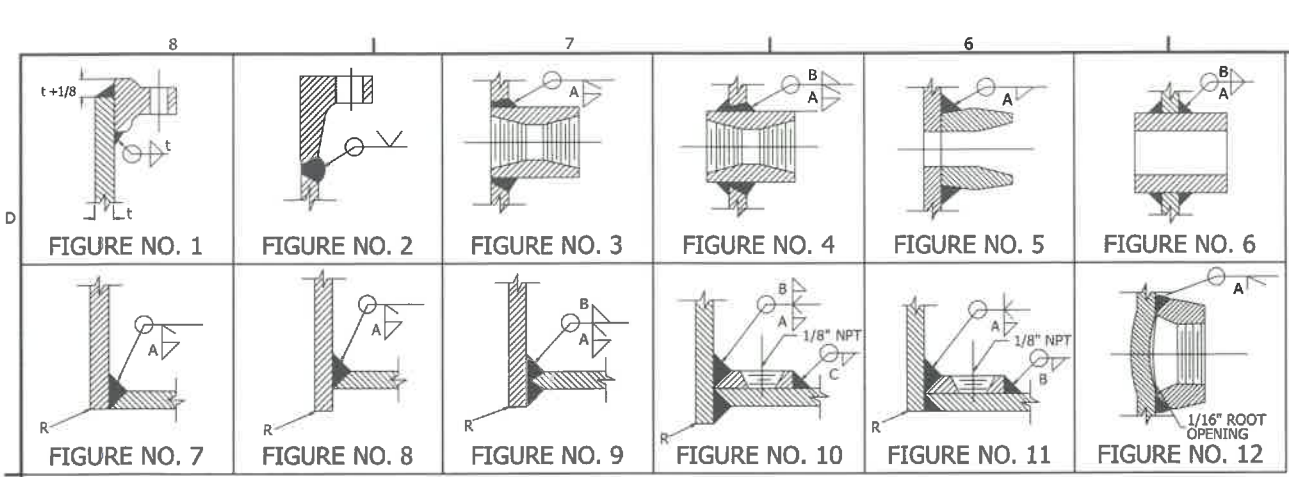


PERMIAN LIDE
TANK AND VESSEL MANUFACTURING
2701 INTERSTATE 20 SERVICE RD.
ODESSA TEXAS
(432) 580-1050

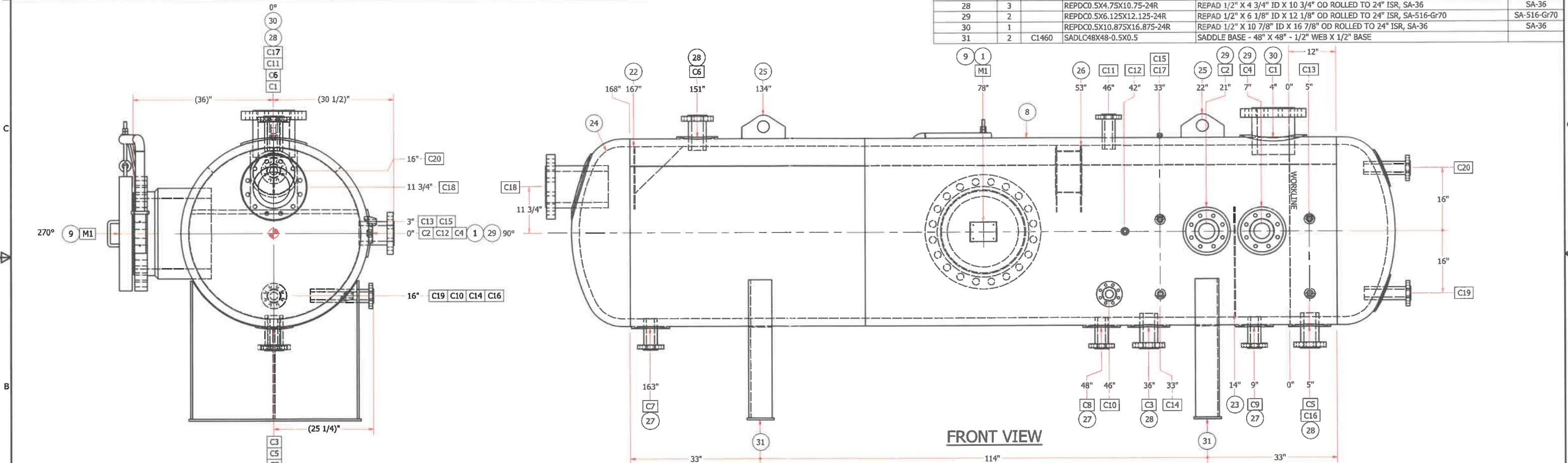
TITLE
OVINTIV
SEPARATOR - 48" X 15' 1440# HORZ. 3PH - ASME

PART NO	USEP48X15H1440#3PHC-D5078
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DWG NO	D5078	EST. WEIGHT	23600 LBS	SHEET 1 OF 5	REV 0
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PARTS LIST					
ITEM	QTY	DWG NO.	PART NUMBER	DESCRIPTION	MATERIAL
1	1	C1334	BRACK-003	BRACKET NAME PLATE CODE 5" x 7" W/ 1" LEGS	SA-36
2	1		COUPC0.5#6000-001	1/2" 6000# THREAD-O-LET, SA-105	SA-105
3	1		COUPC0.75#6000-004	3/4" 6000# THREAD-O-LET, SA-105	SA-105
4, 5, 6, 7	4		COUPC0.75#6000-005	3/4" 6000# Carbon Elbow-O-Let SA-105	SA-105
8	1	D5078	CYDR2X48X15-D5078	CYLINDER 2" X 48" X 15'	
9	1	C1462	DAVITARM18-005	DAVIT ARM 18" 600# RF BLIND	
10, 11, 12, 13	4		FLNGC02#600RF-014N	FLANGE 2" 600# RFLWN - 9" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
14	1		FLNGC02#600RF-016N	FLANGE 2" 600# RFLWN - 16" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
15, 16, 17	3		FLNGC03#600RF-001N	FLANGE 3" 600# RFLWN - 9" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
18, 19	2		FLNGC04#600RF-011N	FLANGE 4" 600# RFLWN - 9" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
20	1		FLNGC08#600RF-002N	FLANGE 8" 600# RFLWN - 12" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
21	1		FLNGC18#600HBRF-001N	FLANGE 18" 600# RFHB - 20" LONG, SA-105 N, FINE GRAIN PRACTICE, CHARPY REQ'D	SA-105
22	1	C1132	FWKOINLETDRIVE-48	FWKO INLET DIVERTER - 48"	
23	1	C1448	HBAFLC0.25-48X2-6X21.875	BAFFLE - 1/4" X 27 7/8" X 43 3/4" (R21 7/8")	SA-36
24	1	D5078	HEADC2X48-D5078-LH	2" X 48" 2:1 LEFT HEAD ASSEMBLY	
25	2	C1149	LUGSLIFT1.25	LIFT LUG 1 1/4" X 6" X 11" W/ 3" CENTER HOLE	SA-516-Gr70
26	1	C1426	MISTC48X2V-001	MIST EXTRACTOR - 27 1/2" ID VESSEL W/ 6" WIRE MESH	
27	3		REPCD0.5X3.5X9.5-24R	REPAD 1/2" X 3 1/2" ID X 9 1/2" OD ROLLED TO 24" ISR, SA-36	SA-36
28	3		REPCD0.5X4.75X10.75-24R	REPAD 1/2" X 4 3/4" ID X 10 3/4" OD ROLLED TO 24" ISR, SA-36	SA-36
29	2		REPCD0.5X6.125X12.125-24R	REPAD 1/2" X 6 1/8" ID X 12 1/8" OD ROLLED TO 24" ISR, SA-516-Gr70	SA-516-Gr70
30	1		REPCD0.5X10.875X16.875-24R	REPAD 1/2" X 10 7/8" ID X 16 7/8" OD ROLLED TO 24" ISR, SA-36	SA-36
31	2	C1460	SADLC48X48-0.5X0.5	SADDLE BASE - 48" X 48" - 1/2" WEB X 1/2" BASE	



MARK	SERVICE	SIZE	RATING	TYPE CONN.	TYPE MATERIAL	SCH.	PROJECTION I.S. MINIMUM	PROJECTION O.S.	WELD FIG. NO.	WELD A	WELD B	WELD C	ITEM NO.
C20	TOP OIL LEVEL BRIDLE	2"	600#	RFLWN	SA-105 N	---	1 1/2"	6"	10	3/4"	3/4"	3/8"	21
C19	BTM OIL LEVEL BRIDLE	2"	600#	RFLWN	SA-105 N	---	1 1/2"	6"	10	3/4"	3/4"	3/8"	2
C18	INLET	8"	600#	RFLWN	SA-105 N	---	2"	7"	10	3/4"	3/4"	3/8"	7
M1	MANWAY	18"	600#	RFHB	SA-105 N	---	2 1/4"	10"	4	1"	1"	---	6
C17	PI	1/2"	6000#	T.O.L.	SA-105 N	---	N/A	SET ON	12	1/2"	---	---	5
C16	GAUGE GLASS	3/4"	6000#	E.O.L.	SA-105 N	---	N/A	SET ON	12	1/2"	---	---	4
C15	GAUGE GLASS	3/4"	6000#	E.O.L.	SA-105 N	---	N/A	SET ON	12	1/2"	---	---	3
C14	GAUGE GLASS	3/4"	6000#	E.O.L.	SA-105 N	---	N/A	SET ON	12	1/2"	---	---	13
C13	GAUGE GLASS	3/4"	6000#	E.O.L.	SA-105 N	---	N/A	SET ON	12	1/2"	---	---	14
C12	TEMPERATURE	3/4"	6000#	T.O.L.	SA-105 N	---	N/A	SET ON	12	1/2"	---	---	12
C11	TOP WATER LEVEL BRIDLE	2"	600#	RFLWN	SA-105 N	---	1"	6"	4	7/8"	3/4"	---	11
C10	BTM WATER LEVEL BRIDLE	2"	600#	RFLWN	SA-105 N	---	5/8"	6"	4	1/2"	1/2"	---	10
C9	DRAIN	2"	600#	RFLWN	SA-105 N	---	FLUSH	MAX	11	1/2"	1/2"	---	17
C8	DRAIN	2"	600#	RFLWN	SA-105 N	---	FLUSH	MAX	11	1/2"	1/2"	---	16
C7	DRAIN	2"	600#	RFLWN	SA-105 N	---	FLUSH	MAX	11	1/2"	1/2"	---	19
C6	RELIEF	3"	600#	RFLWN	SA-105 N	---	5/8"	6"	10	1/2"	1/2"	1/2"	15
C5	OIL OUTLET	3"	600#	RFLWN	SA-105 N	---	5/8"	6"	10	1/2"	1/2"	1/2"	18
C4	OIL LLC	4"	600#	RFLWN	SA-105 N	---	FLUSH	6 1/2"	11	7/8"	1/2"	---	20
C3	WATER OUTLET	3"	600#	RFLWN	SA-105 N	---	5/8"	6"	10	1/2"	1/2"	1/2"	
C2	WATER LLC	4"	600#	RFLWN	SA-105 N	---	FLUSH	6 1/2"	11	7/8"	1/2"	---	
C1	GAS OUTLET	8"	600#	RFLWN	SA-105 N	---	1 1/2"	7 1/2"	10	1/2"	1/2"	1/2"	

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3/3/2020



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TITLE
OVINTIV
SEPARATOR - 48" X 15' 1440# HORZ. 3PH - ASME

PART NO
USEP48X15H1440#3PHC-D5078

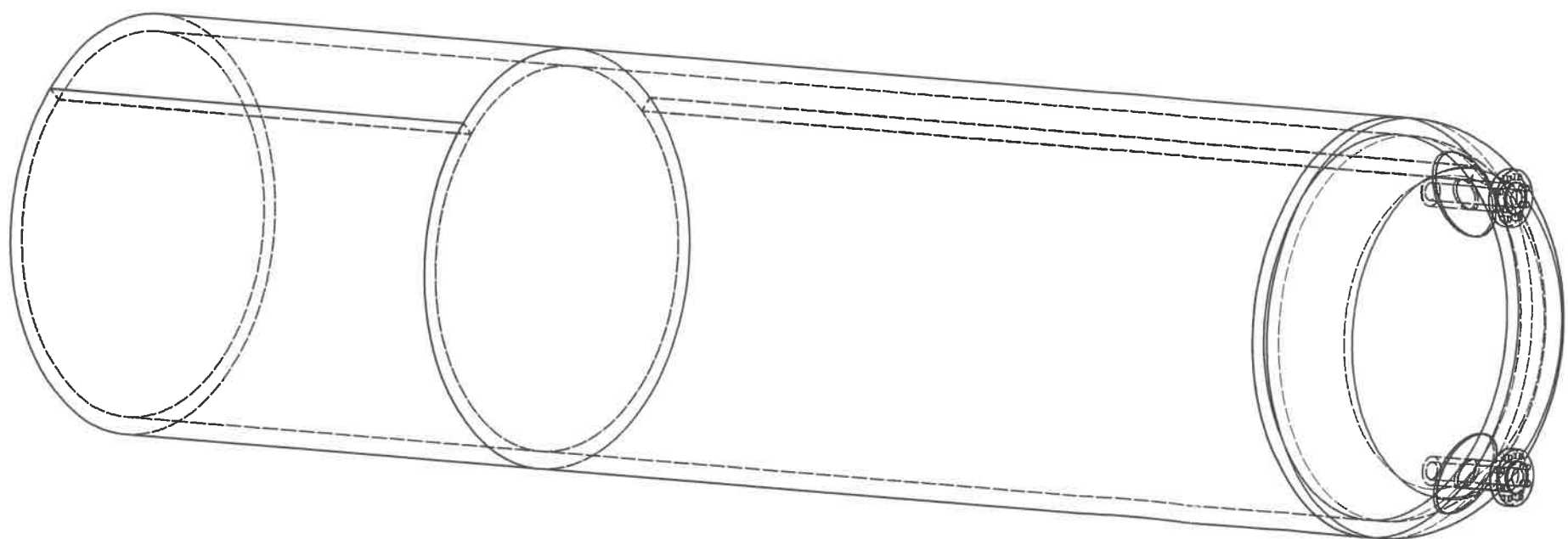
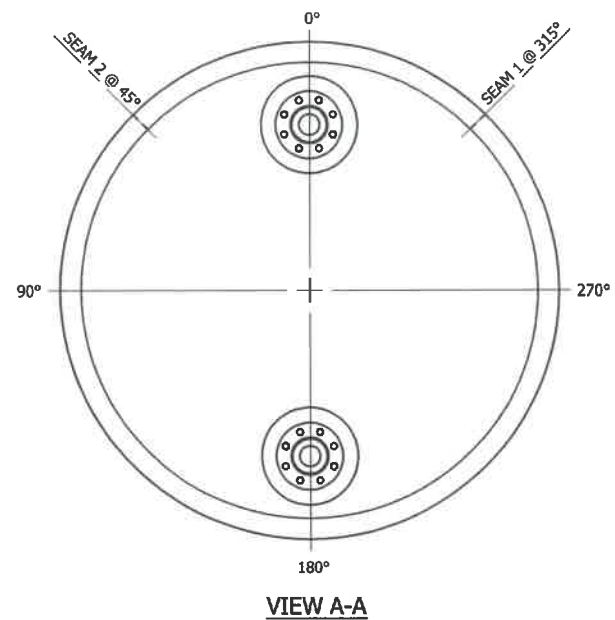
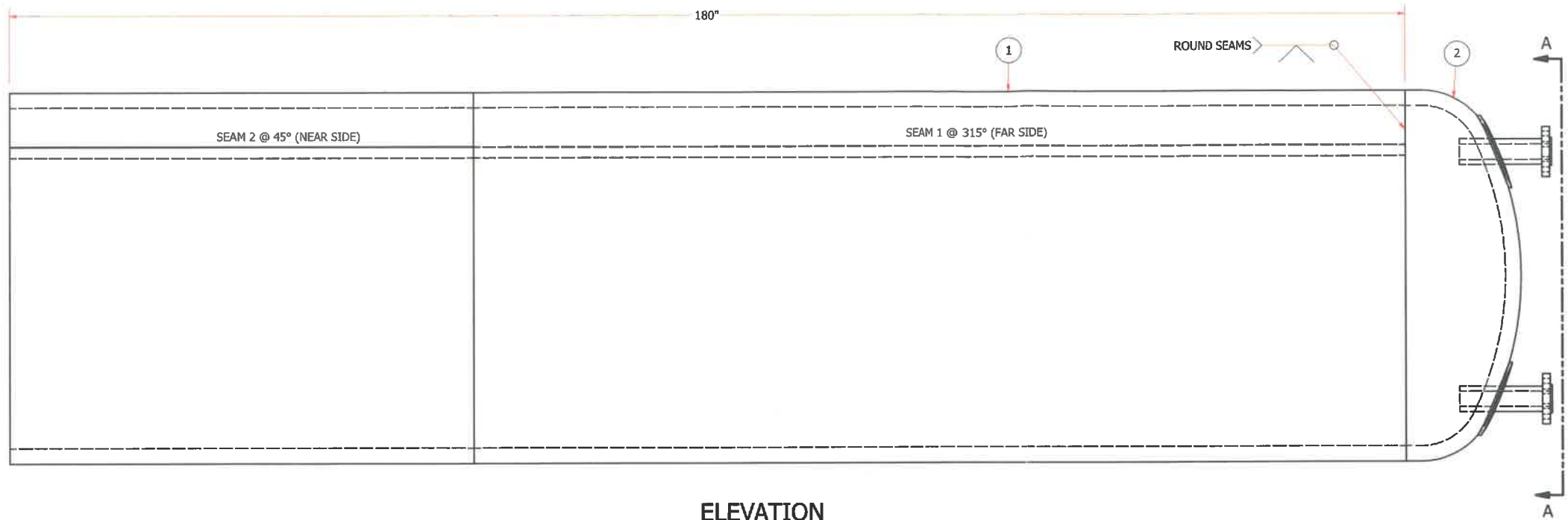
DWG NO
D5078

EST. WEIGHT
23600 LBS

SHEET 2 OF 5

REV
0

PARTS LIST			DESCRIPTION	MATERIAL
ITEM	QTY	DWG NO.	PART NUMBER	
1	1	D5078P	CYDR2X48X15-D5078-P	2"x48"x15' SA 516 GR 70 Normalized, 2" Nom, 1.807" Min, 100% Welded, Partial U2-A, RT-1, Charpy
2	1	D5078	HEADC2X48-D5078-RH	2" X 48" 2:1 RIGHT HEAD ASSEMBLY



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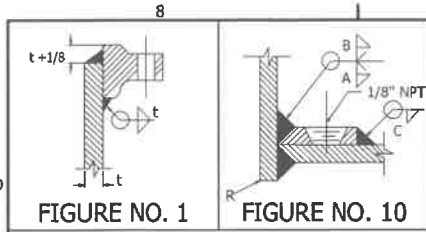


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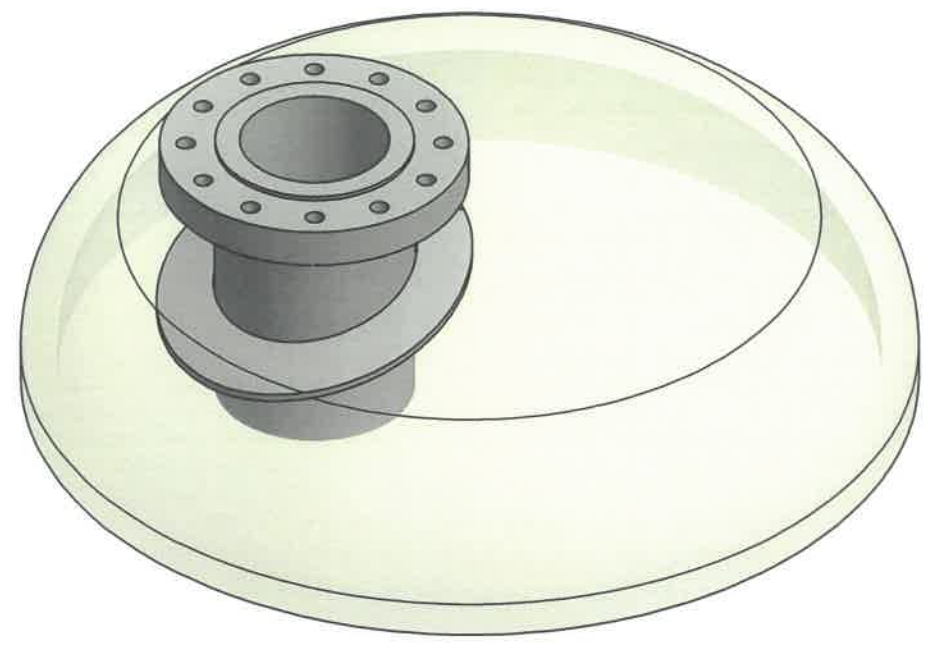
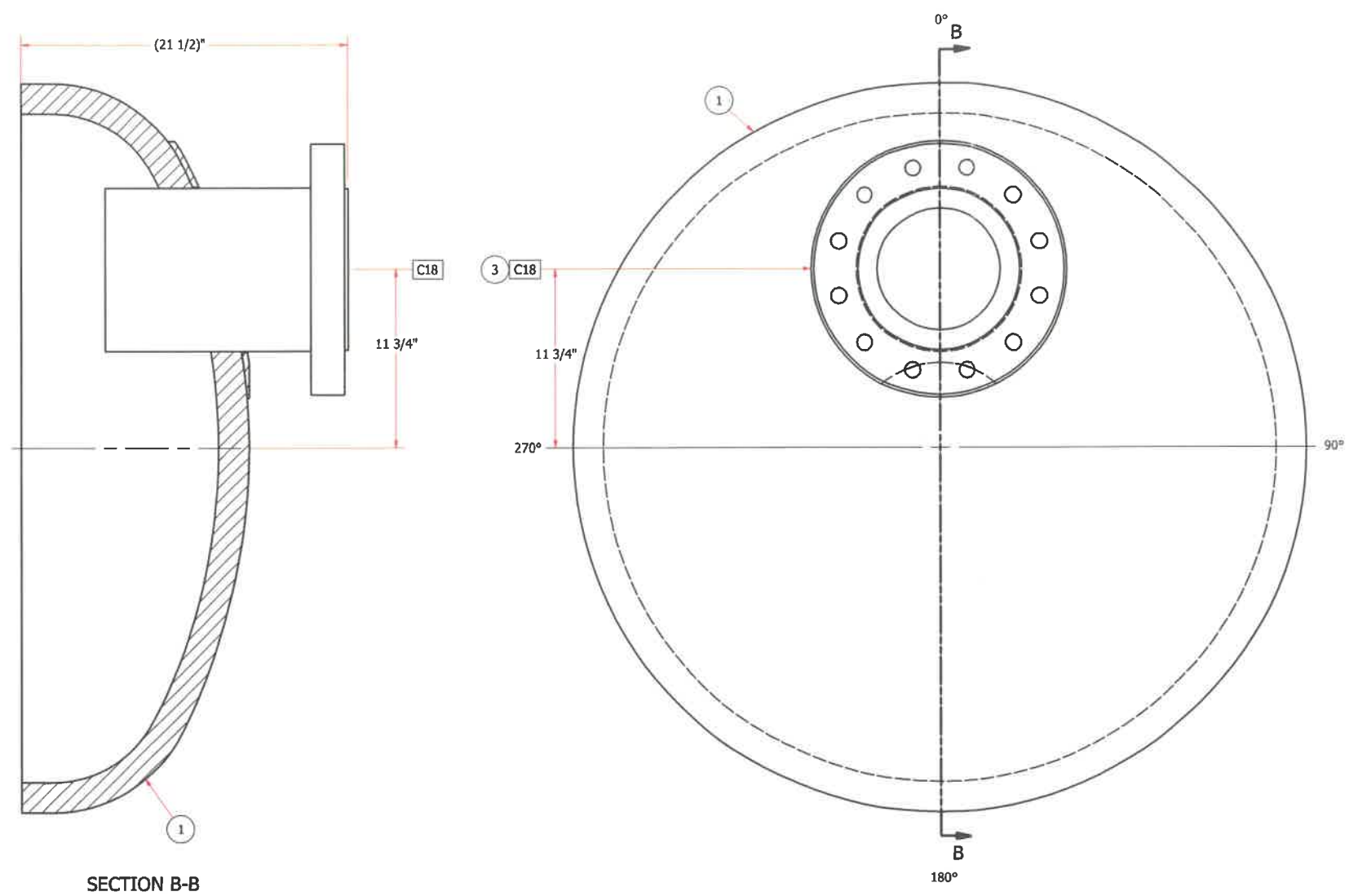
TITLE
OVINTIV
CYLINDER 2" X 48" X 15'

PART NO
CYDR2X48X15-D5078

DWG NO D5078	EST. WEIGHT 12348 LBS	SHEET 3 OF 5	REV 0
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		PARTS LIST			
ITEM	QTY	DWG NO.	PART NUMBER	DESCRIPTION	MATERIAL
1	1		HEADC2X48-2_1-N	HEAD 2" x 48" 2:1 ELLIPTICAL SA-516 GR70 NORMALIZED , 1.875" MIN.	SA-516-Gr70 N
2	1		FLNGC08#600RF-003N	FLANGE 8" 600# RFLWN - 16" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
3	1		REPDC0.375X10.875X16.875-24R	REPAD 3/8" X 10 7/8" ID X 16 7/8" OD - ROLLED TO 24" ISR	SA-36



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TITLE

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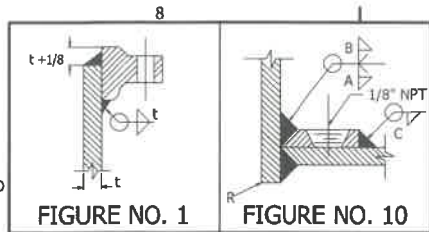
2" X 48" 2:1 LEFT HEAD ASSEMBLY

PART NO

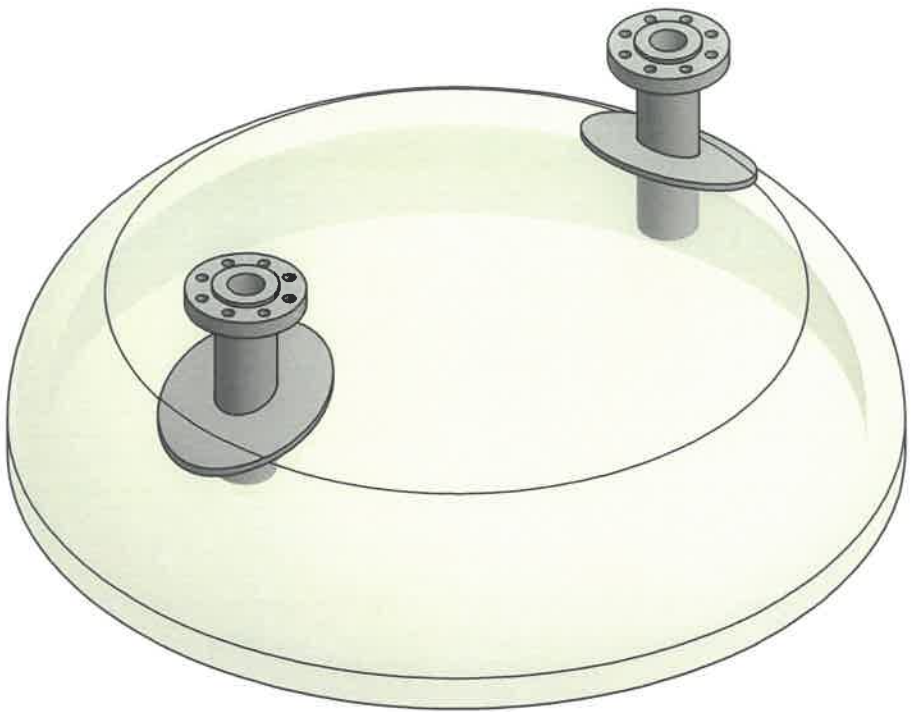
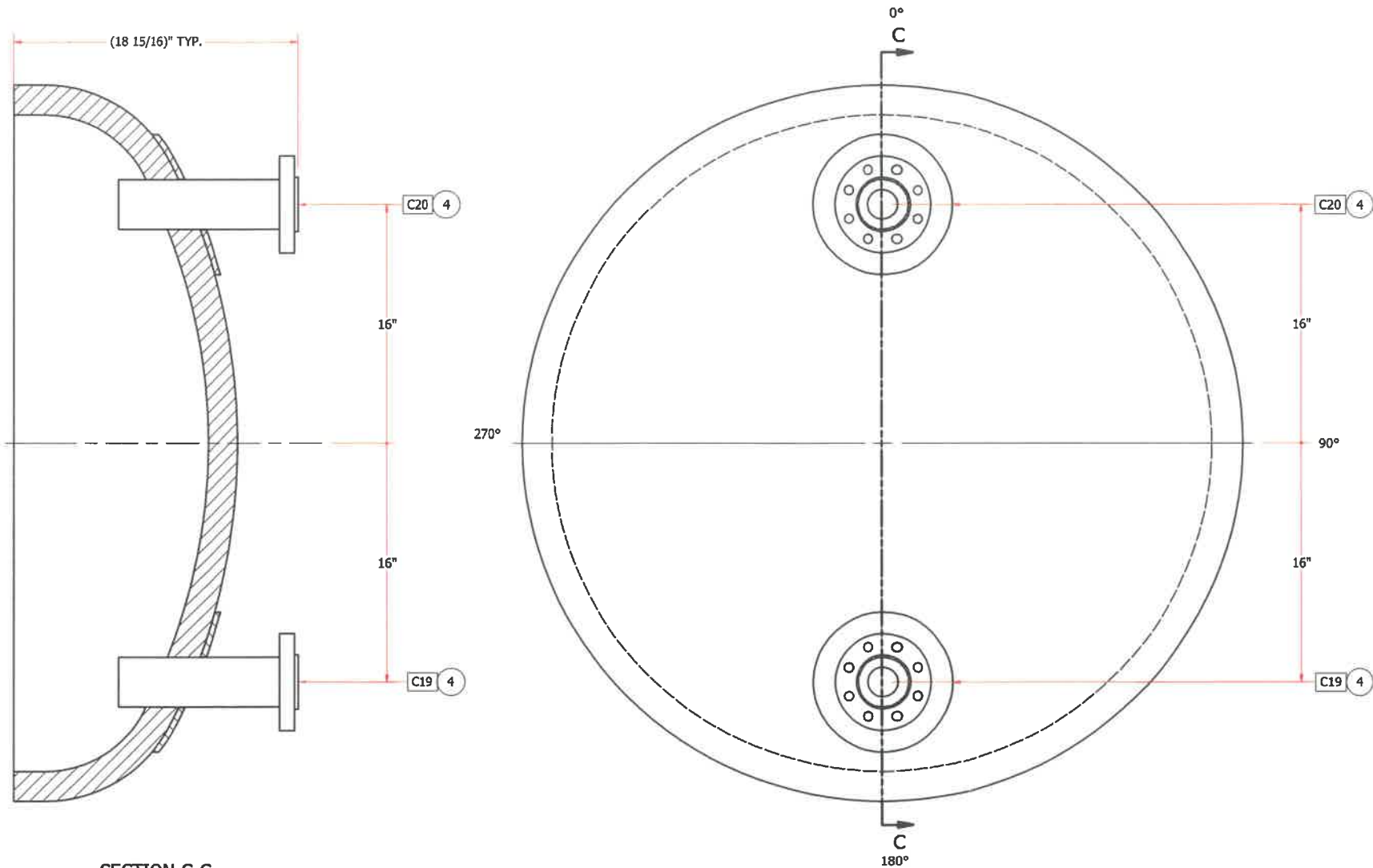
HEADC2X48-D5078-LH

DWG NO **D5078** EST. WEIGHT **433 LBS** SHEET 4 OF 5 REV 0

MARK	SERVICE	SIZE	RATING	TYPE CONN.	TYPE MATERIAL	SCH.	PROJECTION I.S. MINIMUM	PROJECTION O.S.	WELD FIG. NO.	WELD A	WELD B	WELD C	ITEM NO.
C18	INLET	8"	600#	RFLWN	SA-105 N	---	2"	7"	10	3/4"	3/4"	3/8"	2



		PARTS LIST			
ITEM	QTY	DWG NO.	PART NUMBER	DESCRIPTION	MATERIAL
1, 2	2		FLNGC02#600RF-015N	FLANGE 2" 600# RFLWN - 12" LONG, SA-105 N, FINE GRAIN PRACTICE	SA-105 N
3	1		HEADC2X48-2_1-N	HEAD 2" x 48" 2:1 ELLIPTICAL SA-516 GR70 NORMALIZED , 1.875" MIN.	SA-516-Gr70 N
4	2		REPCD0.375X3.375X9.375-24R	REPAD 3/8" X 3 3/8" ID X 9 3/8" OD - ROLLED TO 24" ISR	SA-516-Gr70



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TITLE
OVINTIV
2" X 48" 2:1 RIGHT HEAD ASSEMBLY

PART NO
HEADC2X48-D5078-RH

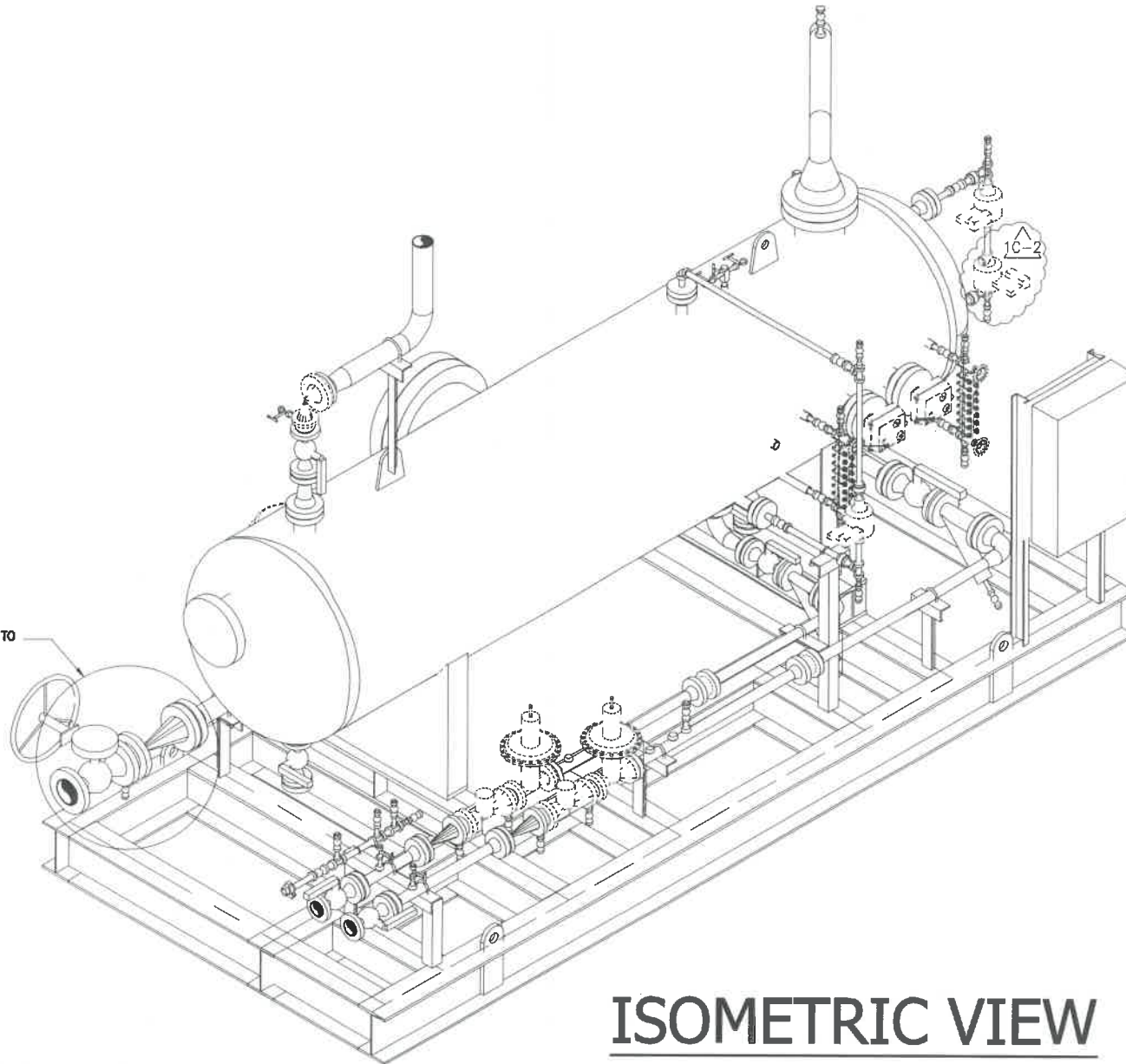
DWG NO **D5078** EST. WEIGHT **LBS** SHEET 5 OF 5 REV **0**

MARK	SERVICE	SIZE	RATING	TYPE CONN.	TYPE MATERIAL	SCH.	PROJECTION I.S. MINIMUM	PROJECTION O.S.	WELD FIG. NO.	WELD A	WELD B	WELD C	ITEM NO.
C20	TOP OIL LEVEL BRIDLE	2"	600#	RFLWN	SA-105 N	----	1 1/2"	6"	10	3/4"	3/4"	3/8"	2
C19	BTM OIL LEVEL BRIDLE	2"	600#	RFLWN	SA-105 N	----	1 1/2"	6"	10	3/4"	3/4"	3/8"	1

SCHEDULE OF OPENINGS AND WELDING DETAILS

REFERENCE
ONLY
4/23/2020

SHOP TO SHIP LOOSE OR TO
ADD CRIBBING AS REQ'D

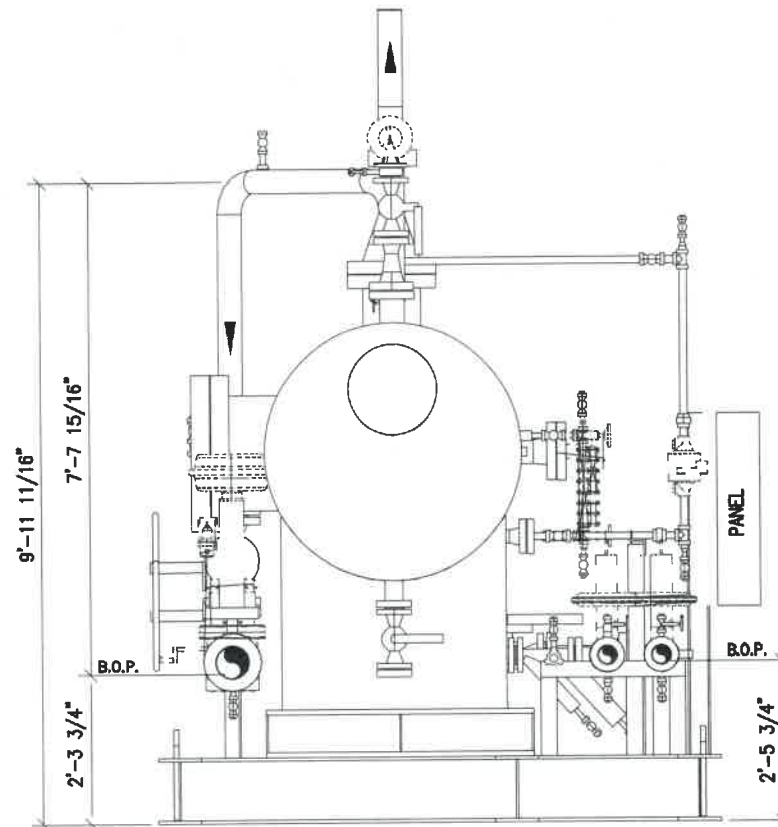


ISOMETRIC VIEW

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REFERENCE ONLY		
PART NO. FSKIDA-SEP48X15H1440#3PHC-001		
DWG NO. D5093	DATE	REV

REFERENCE
ONLY
4/23/2020

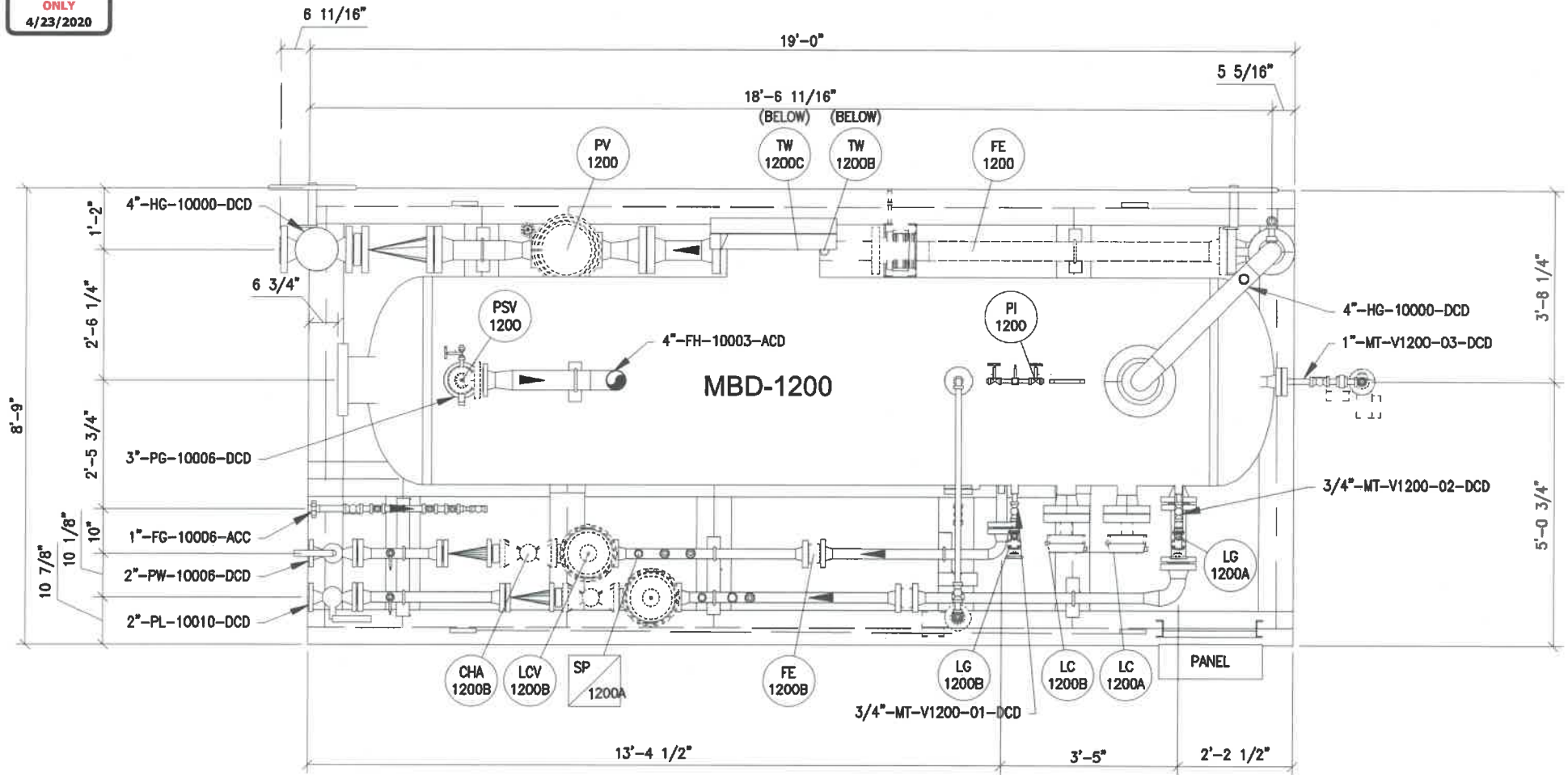


SIDE VIEW

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TITLE OVINTIV		
REFERENCE ONLY		
PART NO. FSKIDA-SEP48X15H1440#3PHC-001		
DWG NO. D5093	DATE	REV

REFERENCE
ONLY
4/23/2020

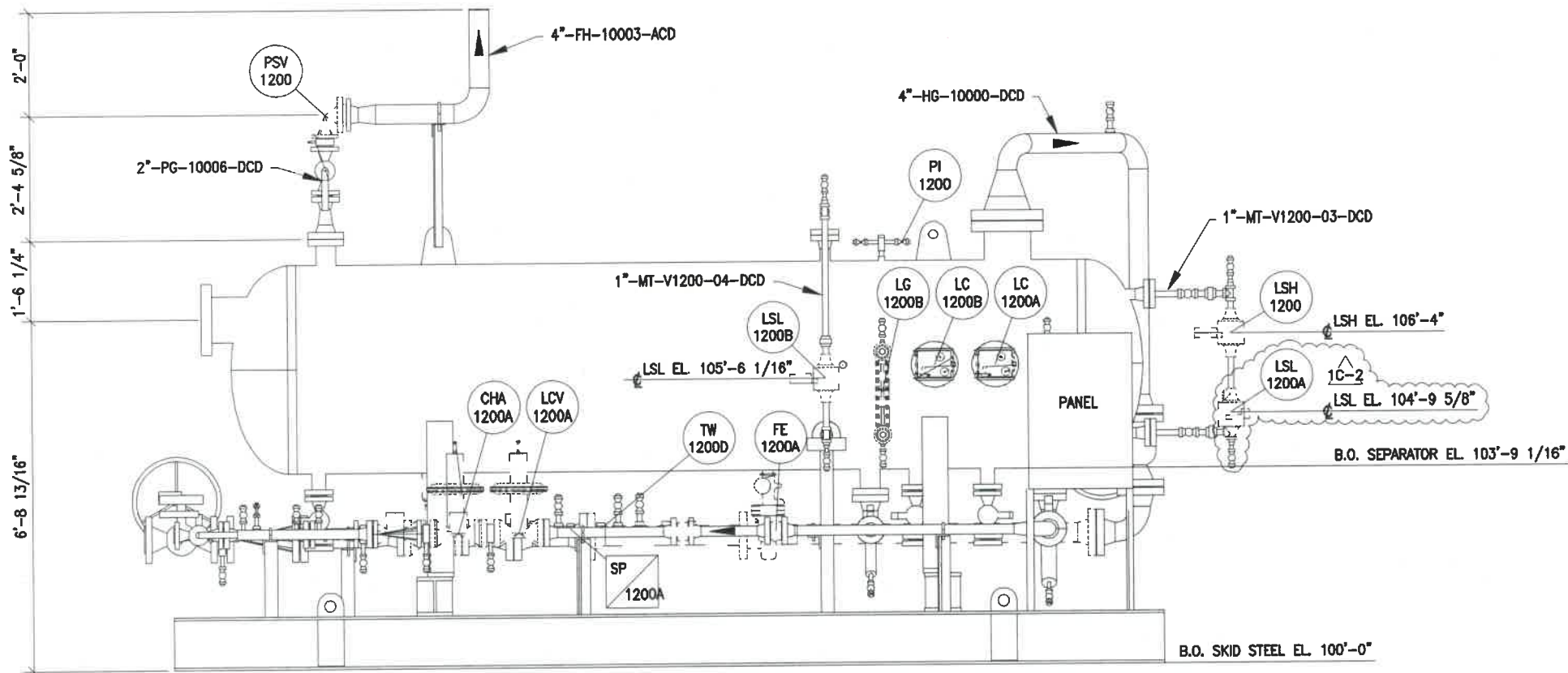


TOP VIEW

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ENGR. NO. D5093	DATE REV

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FRONT VIEW

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OVINTIV *REFERENCE ONLY*	
PART NO FSKIDA-SEP48X15H1440#3PHC-001	
Dwg No D5093	DATE
REV	

ISSUED FOR
PRODUCTION
4/23/2020

IF
1200
GAS FLOW METER
TRANSMITTER
ABB XMTR286J 800

RTD
1200
RTD PROBE ASSEMBLY
10" SS, 4-WIRE
ABB 2011905-026

TI
1200
3/4" NPT
THERMOWELL
ABB TW-(2" U)-75

TI
1200
3/4" NPT
THERMOWELL
ABB TW-(2" U)-75

RE
1200
4" METER TUBE
600# RF NACE
DANIEL AGAS

PC
1200
PRESSURE CONTROL
NACE DIRECT ACTING
FISHER CIP

PV
1200
3" POV
600# RF NACE
3" ET / 687-45

FT
1200
MOM FLOW
TOTALIZING TRANSMITTER
NU-FLO

FT
1200
MOM FLOW
TOTALIZING TRANSMITTER
NU-FLO

RE
1200
2" CZ-IN
FLOW METER
9A-100005085

RE
1200
2" CZ-IN
FLOW METER
9A-100005085

MBD-1200
HORIZONTAL 3-PHASE SEPARATOR
48" OD x 15'-0" L
MAMP: 1440 PSIG @ -20 F/130 F

DA
1200
2" FGV
600# RF NACE
MERLA

DA
1200
2" FGV
600# RF NACE
MERLA

TI
1200
3/4" NPT
WKA 10-1/2" U
75-TH2T-105-SS

TI
1200
1/2" NPT
WKA 0-200F
5" DIAL

PSV
1200
2" 600# RF X 3" 150# RF
SET @ 1385 PSIG
ANDERSON GREENWOOD
OR EQUAL

PT
1200
318L SST CONN
ROSEMOUNT 2086
NACE 0-4000 PSI

PI
1200
1/2" NPT
233.34 SERIES
SG 0-1500 PSIG
NACE 4-1/2" FACE

PI
1200
1/2" NPT
233.34 SERIES
SG 0-1500 PSIG
NACE 4-1/2" FACE

POV
1200
1/4" NPT
SET @ 20#
FISHER 67CPR

POV
1200
1/4" NPT
SET @ 20#
FISHER 67CPR

POV
1200
1/4" NPT
SET @ 20#
FISHER 67CPR

LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

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NACE FISHER L2

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2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

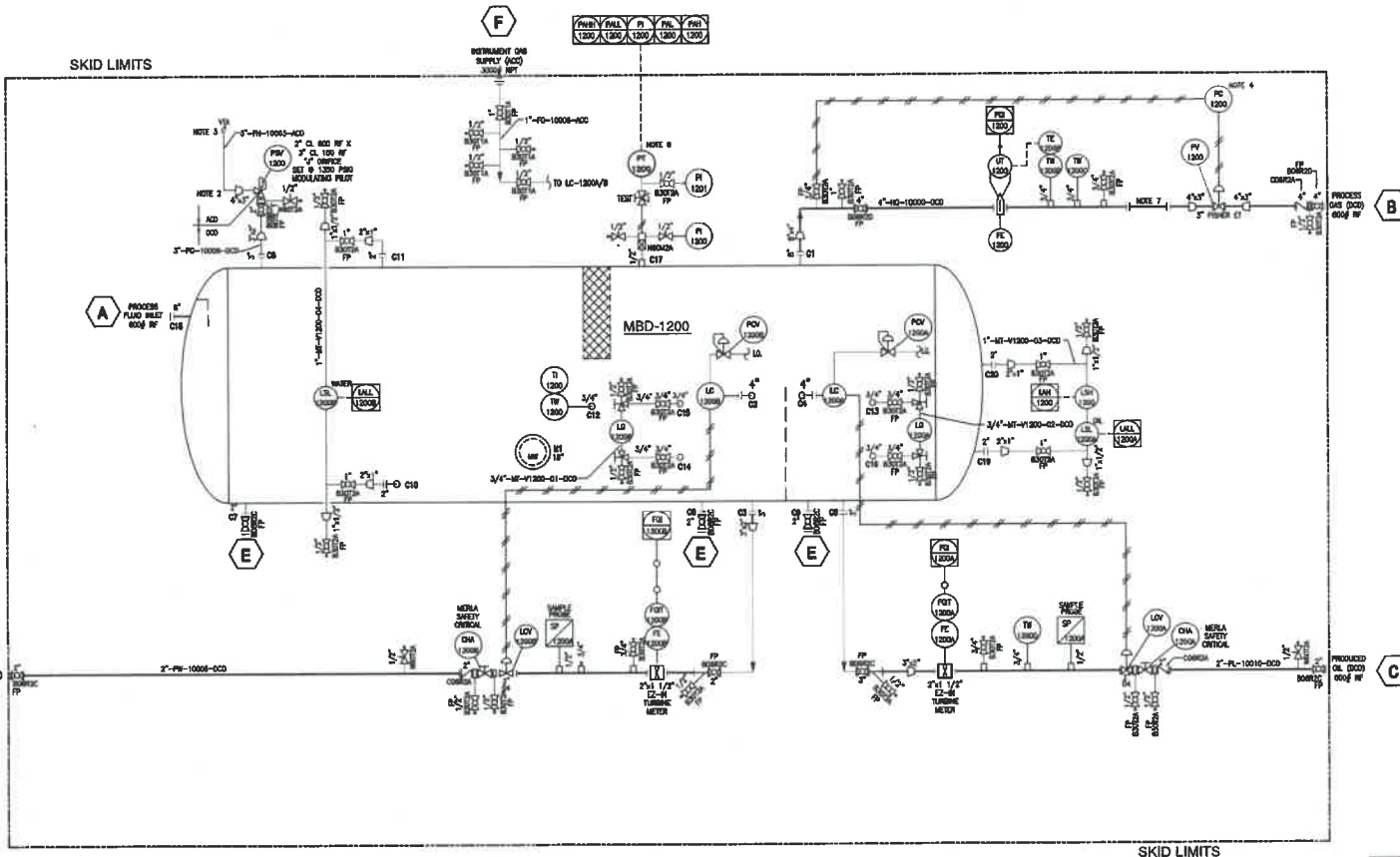
LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2

LC
1200
2" 600# RF
SST DISP 1-7/8"x12"
NACE FISHER L2



NOTES:

1. MUST BE FULL PORT.
2. 1/4" NPT HOLE.
3. VALVES TO BE SQUARE OUT.
4. PRESSURE CONTROLLER MOUNTED TO PV-1200.
5. ALL INSTRUMENTS TO BE RATED FOR 200F AND BE NACE COMPLIANT.
6. TRANSMITTER REMOTE MOUNTED VIA 1/2" S.S. TUBING ON SKID AT 4'-0" ABOVE CHASE.
7. SPOOL TO SHIP OUT WITH FLANGED TEE IF REQ'D.

MARK	SERVICE	SIZE	RATING	TYPE
F	INSTRUMENT GAS	1"	3000#	NPT
E	DRAIN	2"	600#	RF
D	WATER OUTLET	2"	600#	RF
C	OIL OUTLET	2"	600#	RF
B	GAS OUTLET	4"	600#	RF
A	INLET	8"	600#	RF

CUSTOMER CONNECTION SCHEDULE

REV	DATE	ISSUED FOR PRODUCTION	DESCRIPTION	DESIGNER	CHECKED BY	DATE	REV
0	4/23/2020	ISSUED FOR PRODUCTION	DESCRIPTION	DESIGNER	CHECKED BY	DATE	REV

PERMIANLIDE
TANK AND VESSEL MANUFACTURING
2701 INTERSTATE 20 SERVICE RD.
ODESSA TEXAS
(432) 580-1050

OVINTIV
HORIZONTAL CODE SEPARATOR P&ID
PART NO
FSKIDA-SEP48X15H1440#3PHC-001
PDS093
DATE 2/13/2020
REV 0

(Alternative Form for Single Chamber, Completely Shop or Field Fabricated Vessels Only)

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1 Page 1 of 2

1. Manufactured and certified by **Permian Tank & Mfg., Inc., 2701 West Interstate 20, Odessa, Texas, 79766**

(Name and address of Manufacturer)

2. Manufactured for **OVINTIV, 370 17th Street Suite 1700, DENVER, Colorado, 80202**

(Name and address of Purchaser)

3. Location of Installation **UNKNOWN**

(Name and address)

4. Type **Horizontal**

(Horizontal or vertical, tank)

F-8932

(Manufacturer's serial number)

N/A

(CRN)

D-5078R0

(Drawing number)

1833

(National Board number)

2020

(Year built)

5. ASME Code, Section VIII, Division 1

2017/ N/A

[Edition and Addenda, if applicable (date)]

N/A

(Code Case numbers)

N/A

[Special service per UG-120(d)]

6. Shell: **SA-516-70**

(Material spec. number, grade)

2"

(Nominal thickness)

.125 in

(Corr. allow.)

4' (OD)

(Inner diameter)

SEE REMARKS

[Length (overall)]

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

7. Seams: **WELDED**

[Long. (welded, dbl., singl., lap, butt)]

FULL

[R.T. (spot or full)]

100%

(Eff., %)

1100 °F

(H.T. temp)

2

(Time, hr)

WELDED

[Girth. (welded, dbl., singl., lap, butt)]

FULL

[R.T. (spot or full)]

100%

(Eff., %)

2

(No. of courses)

8. Heads: (a) Material

SA-516-70

(Spec. no., grade)

(b) Material

SA-516-70

(Spec. no., grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	ENDS	1.875	.125	N/A	N/A	2:1	N/A	N/A	N/A	CONCAVE
(b)	ENDS	1.875	.125	N/A	N/A	2:1	N/A	N/A	N/A	CONCAVE

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A

9. MAWP **1440 psi**

(Internal)

N/A

(External)

at max. temp.

130 °F

(Internal)

N/A

(External)

Min. design metal temp. **-20 °F**

at

1440 psi

Hydro, pneu., or comb. test pressure

HYDRO at 1872 psi

Proof test

N/A

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
OIL LEVEL/WATER LEVEL/DRAIN	5	2"	RFLWN	SA-105N	N/A	.655"	.125	SA-516-70	WELDED	N/A	SHELL/HEAD
RELIEF/OIL OUT/WATER OUT	3	3"	RFLWN	SA-105N	N/A	.810"	.125	SA-516-70	WELDED	N/A	SHELL
INLET/GAS OUTLET	2	8"	RFLWN	SA-105N	N/A	1.375"	.125	SA-516-70	WELDED	N/A	SHELL/HEAD
OIL LLC/WATER LLC	2	4"	RFLWN	SA-105N	N/A	1"	.125	INHERENT	WELDED	N/A	SHELL
GAUGE GLASS/TEMPERATURE	5	3/4"	O-LET	SA-105N	N/A	6000#	.125	INHERENT	WELDED	N/A	SHELL
MANWAY	1	18"	RFHB	SA-105N	N/A	2.10"	.125	INHERENT	WELDED	N/A	SHELL

Additional Nozzles - See Attached U-4...

11. Supports: Skirt **NO** Lugs **2** Legs **2** Other **N/A** Attached **BOTTOM/WELDED**

(Yes or no)

(Number)

(Number)

(Describe)

(Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors, have been furnished for the following items of the report:

N/A

(Name of part, item number, Manufacturer's name and identifying stamp)

15' SEAM TO SEAM**NO RELIEF PROTECTION PROVIDED****MATERIAL IMPACT EXEMPT PER UCS-66****TEXAS STEEL PROCESSING, INC.****SN#86180-01****HEADS/SHELL IMPACT TESTED TO -20DEG MDWT**

Manufactured by **Permian Tank & Mfg., Inc., 2701 West Interstate 20, Odessa, Texas, 79766**Manufacturer's Serial No. **F-8932**CRN **N/A**National Board No. **1833****CERTIFICATE OF SHOP/FIELD COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. "U" Certificate of Authorization Number **21502**

expires **September 22, 2022**Date **08/13/2020**

Co. name

Permian Tank & Mfg., Inc.
(Manufacturer)

Signed


(Representative)**CERTIFICATE OF SHOP/FIELD INSPECTION**Vessel constructed by **Permian Tank & Mfg., Inc.** at **2701 West Interstate 20, Odessa, Texas, 79766**

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and employed by

TUV Rheinland AIA Services, LLC, of Houston, TX

have inspected the component described in this Manufacturer's Data Report on **June 2, 2020**, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date **08/13/2020**

Signed


(Authorized Inspector)

Commissions

13286, TX1815

(National Board Authorized Inspector Commission number)

F8932
Serial #

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Permian Tank & Mfg., Inc., 2701 West Interstate 20, Odessa, Texas, 79766
(Name and address of Manufacturer)

2. Manufactured for OVINTIV, 370 17th Street Suite 1700, DENVER, Colorado, 80202
(Name and address of Purchaser)

3. Location of installation UNKNOWN
(Name and address)

4. Type Horizontal N/A F-8932
(Horizontal, vertical, or sphere) (Tank, separator, heat exch., etc.) (Manufacturer's serial number)

N/A D-5078R0 1833 2020
(CRN) (Drawing number) (National Board number) (Year built)

Data Report Item Number Remarks

Additional nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
PI	1	1/2"	O-LET	SA-105N	N/A	6000#	.125	INHERENT	WELDED	N/A	SHELL
TOP WLB/ BOTTOM WLB	2	2"	RFLWN	SA-105N	N/A	1"	.125	INHERENT	WELDED	N/A	SHELL

Certificate of Authorization: Type "U"

No. 21502

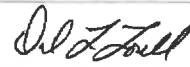
Expires September 22, 2022

Date 08/13/2020

Name

Permian Tank & Mfg., Inc.
(Manufacturer)

Signed


(Representative)

Date 08/13/2020

Signed


(Authorized Inspector)

Commissions

13286, TX1815

(National Board Authorized Inspector Commission number)

NB 1833

MT064564

430-00

Permian Tank & Manufacturing
Paint - MT064560

CODE

Vessel Shop Traveler



Serial #: F8932	DWG#: D-5078 R0	Code See:
Description: 48"x15' H3PH Sep 1440	Customer: Orintiv	
Weld Procedures:	Heat Treatment:	X-Ray:

Hold Point	AL JOB REVIEW	Qust.	INS.	QC	AL	Paint Material Grade/Heat#
Check Drawings	4-21-20	JD	JSV	JSV	JSV	Head/WL Heat: 5450 Material: 516-70 Chk By: JSV 4-21-20
Check MTR's						Head/WL Heat: 5450 Material: 516-70 Chk By: JSV 4-21-20
Check Material	4-21-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Shell Forming						Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Weld Groove Prep	4-21-20			JSV		Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
2 Face Weld Prep (Back Gouge or Grinding)	5-16-20					Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Shell Fitting						Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Nozzle-Inspect	5-19-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Shell Layout	4-21-20			JSV		Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Head Layout	4-21-20			JSV		Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Nozzle Fit up	4-23-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
First head fit	5-6-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Internal Check	5-6-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Nozzle Weld Appearance	5-19-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Final Head Fit Up	5-19-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Long Seams Check	5-19-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Weld Appearance Comp	5-19-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Final Dimensions Check	5-19-20	JD	JSV	JSV	JSV	Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Final Inspection - Post Hydro						Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
RT1	RT2	RT3	NONE			Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Hydro-Test Complete: Pressure						Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Name Plate:						Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20
Manufactures Data Report: U1A						Shell Heat: 812H35980 Material: 516-70 Chk By: JSV 4-21-20

Welder:	Ruben Arreola	Stamp:	B	WPS#	P2, MRFC 001
Welder:	Efrain Jurado	Stamp:	B	WPS#	P2, MRFC 001
Welder:	Ismael Flores	Stamp:	I	WPS#	SAW-012
Welder:		Stamp:		WPS#	



U
W
RT-1
HT

1833

CERTIFIED BY
PERMIAN TANK & MFG., INC.
ODESSA, TX

1440 PSI AT 130 °F
MAXIMUM ALLOWABLE WORKING PRESSURE

20 °F AT 1440 PSI
MIN. DESIGN METAL TEMPERATURE

MFG. SER. NO. F-8932 YR. BUILT 2020

NOM. DIA. 48" NOM. LENGTH 15'

TEST PRESSURE 1872 PSI EMPTY WEIGHT 23600 LBS

6975 East Commerce St
Odessa, TX 79768
432-362-2247

DATE 2020-05-20
AFE/PROJECT MTO64564
PO/RC# na
APPROVER

CUSTOMER: permian tank LOCATION: odessa texas REPORT No: RT2304529

No.	X-RAY No.	MATL SIZE	ACPT	REJT	DISC TYPE	REMARKS	PROCEDURE No. PRO-NDT-RT-4 Rev 2
1	R1	48"					WORK ORDER No. MTO64564
2	0-1		X		NI		☒ 100% ☐ SPOT ☐ RANDOM
3	1-2		X		NI		CODE: ASME SEC VIII, DIV 1
4	2-3		X		NI		SOURCE TYPE: IR-192
5	3-4		X		NI		FOCAL SPOT SIZE: .1x.1
6	4-5		X		NI		ISOTOPE SIZE: .125
7	5-6		X		NI		FILM SIZE: 4 1/2" X 17"
8	6-7		X		NI		FILM TYPE: AGFA CLASS I D5
9	7-8		X		NI		FILM PER CASSETTE: 1
10	8-9		X		NI		MATERIAL TYPE: STAINLESS STEEL
11	9-10		X		NI		DIAMETER: 48"
12	11-12		X		NI		THICKNESS: 2"
13	12-0		X		NI		WELD THICKNESS: 2.5"
14							REINFORCEMENT THICKNESS: .500
15	R2	48"					IQI: b-pack
16	0-1		X		NI		SHIM: n/a
17	1-2		X		NI		EXPOSURE TIME: 44:30
18	2-3		X		NI		MIN. SOURCE TO OBJECT DIST. 24"
19	3-4		X		NI		MAX. SOURCE SIDE OBJECT TO FILM DIST. 24"
20	4-5		X				☒ SINGLE WALL EXPOSURE
21	5-6		X				☐ DOUBLE WALL EXPOSURE
22	6-7		X		NI		☒ SINGLE WALL VIEW
23	7-8		X		NI		☐ DOUBLE WALL VIEW
24	8-9		X		NI		
25	9-10		X		NI		TOTAL WELDS 2
26	10-11		X		NI		HOURLY CHARGE as Bid
27	11-12		X		NI		MILES 25
28	12-0		X		NI		PER DIEM ☐ YES ☒ NO
29							UNIT No. 9
30							OFFICE ODESSA
31							DISCONTINUITY TERMS AND CODES
32							IP INCOMPLETE PENETRATION CR CRACK
33							IF INCOMPLETE FUSION IU INTERNAL UNDERCUT
34							BT BURN THROUGH EU EXTERNAL UNDERCUT
35							SI SLAG INCLUSION LC LOW CROWN
36							SL SLAG LINE WT WAGON TRACKS
37							P POROSITY NI NO INDICATION
38							SB SUCK BACK (CONCAVE ROOT)
39							NOTES
40							
41							
42							
43							
44							
45							

PRINT NAME

SIGNATURE

PRO INSPECTOR / LEVEL H. Otwell Lvl2
PRO ASSISTANT(S) I. Steen Lvl1, J. Mendoza
CUSTOMER REP.

PRO INSPECTOR
PRO ASSISTANTS
CUSTOMER REP.

[Handwritten signatures]



WILLBANKS
METALS

Consignment Packing List

Packing List
Shipment Dt

78583-2
3/16/2020



Ship-To
Permian Tank & Mfg Inc
2701 W. I-20
Odessa, TX 79766

(432)333-4591

Issued From

Willbanks Metals Inc. - 28th Street
1155 NE 28th St
Fort Worth, TX 76106

Sold-To

Permian Tank & Mfg Inc
Po Box 4456

Divy Mthd
Carrier
Divy Hours
Item

Our Truck

08:00-17:00

Product
Your PO

To
Ref

OS009968

Vehicle No 1528
Trailer No

Our Order

164362

Delivery

Freight included in material cost

**EVERY PLATE MUST BE STENCILED WITH GRADE, THICKNESS, AND HEAT NUMBER
OPEN UNTIL 3PM ON FRIDAYS**

1-1 Carbon Plate SA516-70

1/2" x 120" x 480"

Ven Tag ID

A12
A12
A12

Heat

W0B678
W0B678
W0B678

Tag

75093A
75093B
75093C

Pcs

1
1
1

LBS

8,168
8,168
8,168

Total 3 24,504

Shp MI Certificate
1 1 Mill Test Certificate

5-1 Carbon Plate SA516-70

3/8" x 120" x 480"

Ven Tag ID

E22
E22
E22

Heat

M0B189
M0B189
M0B189

Tag

75154A
75154B
75154C

Pcs

1
1
1

LBS

6,124
6,124
6,124

Total 3 18,372

Shp MI Certificate
1 1 Mill Test Certificate

Total for the Shipment 42,876 LBS

DUE

Inside Slip Suzy Williams
Taken-by Slip Suzy Williams

(817) 6256-161 Ext 329
(817) 6256-161 Ext 329

(817) 625-8487
(817) 625-8487



RECEIVED

JRH
3-16-2020

SCANNED



12400 Highway 43 North, Axis, Alabama 36505, US

Test Certificate

 **WARNING:** This product can expose you to chemicals including nickel and nickel compounds, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Form TC1: Revision 4: Date 6 Feb 2019

Customer: WILLBANKS METALS INC. 1155 NE 28TH ST. FORT WORTH TX 76106				Customer P.O.No.: 6922				Mill Order No. 41-595372-03				Shipping Manifest: AT304900									
Product Description: ASTM A516-70(17)/ASME SA516-70(19)								Ship Date: 29 Feb 20 Cert Date: 29 Feb 20				Cert No: 081763316 (Page 1 of 1)									
Size: 0.500 X 120.0 X 480.0 (IN)																					
Tested Pieces:				Tensiles:				Charpy Impact Tests													
Heat Id	Piece Id	Piece Dimensions	Tst Loc	YS (KSI)	UTS (KSI)	%RA	Elong % 2In 8In	Tst Dir	Hardness	Abs. Energy(FTLB) 1 2 3 Avg				% Shear 1 2 3 Avg				Tst Tmp	Tst Dir	Tst Siz (mm)	BDWTT Tmp %Shr
W0B678	A12	0.501 (DISCRT)	L	70	90		24	T													
Chemical Analysis																					
Heat Id	C	Mn	P	S	Si	Tot Al	Sol Al	Cu	Ni	Cr	Mo	Cb	V	Ti	B	IIW	ORGN				
W0B678	.18	1.21	.009	<.001	.35	.031	.030	.15	.08	.20	.06	.018	.003	.008	.0004	.45	USA				
KILLED STEEL MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT. KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE CEV (IIW) = C + MN/6 + (CR+MO+V)/5 + (NI+CU)/15 MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT 100% MELTED AND MANUFACTURED IN THE USA NO WELD REPAIR HAS BEEN PERFORMED ON THIS MATERIAL. PRODUCTS SHIPPED: W0B678 A12 PCES: 5, LBS: 40840 JRH 3-16-2020																					
(P) Cust Part #:										WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION											
										<u>Justin Ward</u> SENIOR METALLURGIST - PRODUCT											

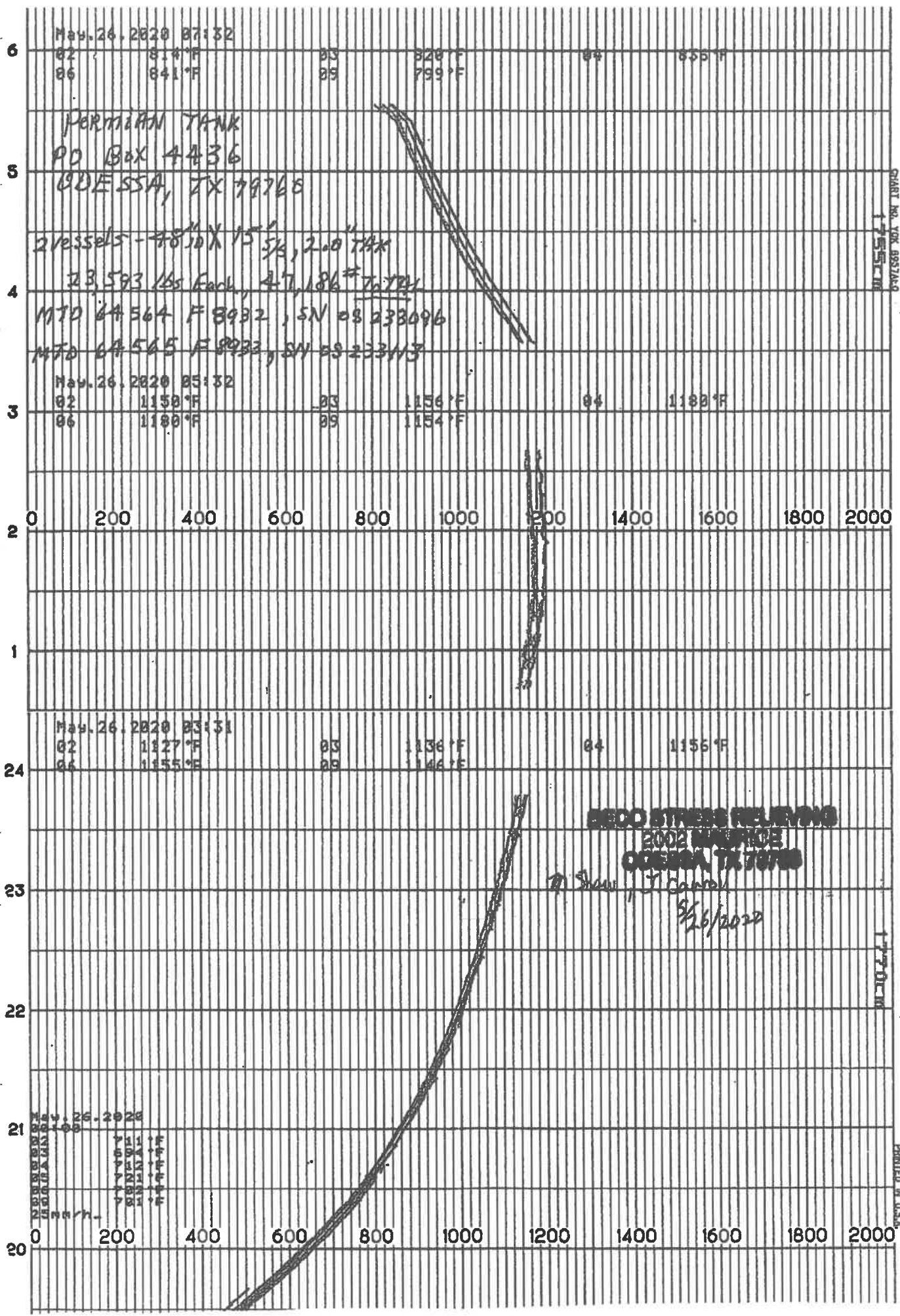


CHART NO. YOK 9937460
1755 CM

1770 CM

PRINTED IN U.S.A.

Beco Stress Relieving

P.O. Box 11335
Odessa, Tx 79760

Invoice

DATE	INVOICE #
5/27/2020	17674

BILL TO
PERMIAN TANK P.O. BOX 4456 ODESSA, TX 79760

P.O. NO.	TERMS
	Net 30

DESCRIPTION	QUANTITY	RATE	AMOUNT
STRESS RELIEVE (2) VESSELS 48" ID X 15' S/S X 2.0" THICK MTO64564-F8932 SERIAL NO# 05233096 MTO64565-F8933 SERIAL NO# 05233113 WEIGHT PER VESSEL: 23,593 LBS TOTAL WEIGHT: 47,186 LBS	47,186	0.08498	4,010.00
Total			\$4,010.00



5480 WINDFERN ROAD ■ HOUSTON, TX 77041

TEL 281-822-3200 ■ FAX 281-822-3201

INFO@TXSTL.COM ■ TXSTL.COM

SOLD TO
PERMIANLIDE - TANK & MFG INC
PO BOX 4456
Odessa, TX 79760

Phone: (432) 333-4591

SHIP TO
PERMIANLIDE - TANK & MFG INC
2701 W INTERSTATE 20
ODESSA, TX 79766

SHIPPER	NUMBER	PAGE	DATE
SALES REP COURTNEY LIGGETT	86180	1 of 2	03/04/2020
SHIP VIA O/T	TERRITORY	ROUTE ID	CUST ID PERL ID
YOUR P.O.# 05009691			ORDERED 01/28/2020

LTN	QUANTITY TO SHIP	SHIPPED TO DATE	QTY THIS SHIPMENT	QTY ON BACKORDER	ITEM ID	WIDTH	LENGTH	WEIGHT
-----	---------------------	--------------------	----------------------	---------------------	---------	-------	--------	--------

1	3 PCS	0	3	0	MTRs required with shipment. PLABOR ComjoinCyl. SA516-70N 2" x 48"OD x 15' Ship Date: 03/26/2020 R&W, ASME Section VIII Div 1, XRAY RT-1, PDR:Yes. *Seam Location (PER DRAWING): LG Seam# 1 @ 45° (60" Long) LG Seam# 2 @ 315° (120" Long) End Bevel: 30° outside bevel with 1/16" Land			
2	3 PCS	0	3	0	D516N2000 Cyl SA516-70N 2" x 48"OD x 120"LONG Ship Date: 03/26/2020 R&W, ASME Section VIII Div 1, AW, PDR:Yes, Xray:RT-1 LS: Offset Double Bevel 70XIS at 25°/ 30° OS at 30°-No Land- 1/8" Gap End Bevel 1: 30° outside with 1/16" Land End Bevel 2: Offset Double Bevel 70XIS at 25°/ 30° OS at 30°- No Land-1/8" Gap - HT# 812435980 2pcs SL# L931601, 1pc SL# L931	156.25300"	120.00000"	31,905.613

① 812435980 L931600

② 813H62880 L931602

③ 812435980 L931600

 **RECEIVED**
TRH
2-24-2020
SCANNED

3 VESSELS ONLY

TOTAL WT

44,767 LBS

TERMS: NET 30

RECEIVED

DATE:

DRIVER TEL #:

DRIVER SIG:

TRUCK LINE:

832 308 1999

03



Member of Steel
Service Center Institute

SHIPPING COPY

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLERS PUBLISHED TERMS AND CONDITIONS PRINTED ON THE FRONT AND REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS, UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM DELIVERY DATE, INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.



5480 WINDFERN ROAD ■ HOUSTON, TX 77041

TEL 281-822-3200 ■ FAX 281-822-3201

INFO@TXSTL.COM ■ TXSTL.COM

SOLD TO
PERMIANLIDE - TANK & MFG INC
PO BOX 4456
Odessa, TX 79760

Phone: (432) 333-4591

SHIP TO
PERMIANLIDE - TANK & MFG INC
2701 W INTERSTATE 20
ODESSA, TX 79766

SHIPPER	NUMBER	PAGE	DATE
SALES REP COURTNEY LIGGETT	86180	2 of 2	03/04/2020
SHIP VIA O/T	TERRITORY	ROUTE ID	CUST ID PERL ID
YOUR P.O.# 05009691			ORDERED 01/28/2020

LIN	QUANTITY TO SHIP	SHIPPED TO DATE	QTY THIS SHIPMENT	QTY ON BACKORDER	ITEM ID	WIDTH	LENGTH	WEIGHT
3	3 PCS	0	3	0	D516N2000 Cyl SA516-70N 2" 48"OD, 60" Long Ship Date: 03/26/2020 R&W, ASME Section VIII Div 1, AW, PDR:Yes, Xray:RT-1 LS: Offset Double Bevel 70%IS at 25°/ 30% OS at 30°-No Land- 1/8" Gap - End Bevel 1:Offset Double Bevel 70%IS @25°/ 30% OS @ -No Land- 1/8" Gap End Bevel 2: 30° outside with 1/16" Land HT# 812H35980 SL# L931600 1pc; HT# 813H62880 SL# L931602 2pcs	156.25300"	60.00000"	15,952.80G
4	1 PC	0	1	0	TEST Charpy Coupon 2" 6"x6": -20°F Required Ship Date: 03/26/2020			
5	2 PCS	0	2	0	TEST Production Impacts -20°F per UG-84 Ship Date: 03/26/2020 (2) 6" x 12" PCS			

SENT TO LAD

TOTAL WT

TERMS: NET 30

RECEIVED

DATE:

DRIVER TEL #:

DRIVER SIG:

TRUCK LINE:



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Service Center Institute

SHIPPING COPY

CUSTOMER AGREES THAT HE IS FAMILIAR WITH SELLERS PUBLISHED TERMS AND CONDITIONS PRINTED ON THE FRONT AND REVERSE SIDE OF THE ORIGINAL OF THIS INVOICE AND THAT THE MATERIAL SPECIFIED HEREIN WAS SOLD AND DELIVERED SUBJECT TO THESE TERMS AND CONDITIONS, UNLESS OTHERWISE SPECIFIED, ALL INVOICES ARE DUE AND PAYABLE ON A NET BASIS 30 DAYS FROM DELIVERY DATE. INTEREST IS CHARGED ON ALL PAST-DUE AMOUNTS.

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM) Page 1 of 2
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by Texas Steel Processing, Inc. 5480 Windfern Road Houston, Texas 77041

(Name and address of Manufacturer)

2. Manufactured for Permianlde Tank & Mfg Inc PO Box 4456 Odessa, TX 79760
 (Name and address of Purchaser)

3. Location of installation not known
 (Name and address)

4. Type shell 86180-01 thru 86180-03
 (Description of vessel part (shell, two-piece head, tube bundle)) (Manufacturer's serial number) (CRN)

(National Board number)

(Drawing number)

(Drawing prepared by)

2020
 (Year built)

5. ASME Code, Section VIII, Div. 1 2019 Edition
 (Edition and Addenda, if applicable (date)) (Code Case number) (Special service per UG-120(d))

6. Shell: (a) Number of course(s) 2 (b) Overall length 180"

Course(s)			Material		Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	48" OD	120"	SA516-70N		2"		1	Full		1	Full			
1	48" OD	60"	SA516-70N		2"		1	Full						

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material

7. Heads: (a) (Material spec. number, grade or type) (H.T. — time and temp.) (b) (Material spec. number, grade or type) (H.T. — time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemis. Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)														
(b)														

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)												
(b)												

8. MAWP at max. temp. Min. design metal temp. at
 (Internal) (External) (Internal) (External)

9. Impact test yes, production impact (weld, HAZ, base) at test temperature of -20° F
 (Indicate yes or no and the component(s) impact tested)

10. Hydro., pneu., or comb. test pressure none Proof test

11. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	

12. Identification of part(s)

Name of Part	Quantity	Line No.	Mfr's. Identification No.	Mfr's. Drawing No.	CRN	National Board No.	Year Built

13. Supports: Skirt no Lugs Legs Other Attached
 (Yes or no) (Number) (Number) (Describe) (Where and how)

14. Remarks

*** NO DESIGN FUNCTIONS PERFORMED BY TEXAS STEEL PROCESSING, INC.***

FORM U-2A

Page 2 of 2

Manufactured by TEXAS STEEL PROCESSING, INC
Manufacturer's Serial No. 86180-01 thru 86180-03 CRN _____ National Board No. _____

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U or PRT Certificate of Authorization no. 58344 Expires 12/3/2022

Date 2-21-20 Name TEXAS STEEL PROCESSING, INC Signed JMF
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by AUTHORIZED INSPECTION ASSOCIATES, LLC of HOUSTON, TEXAS

have inspected the pressure vessel part described in this Manufacturer's Data Report on 02-21-2020, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel part described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 02-21-2020 Signed Clayton Hamer Commissions NB16696R
(Authorized Inspector) (National Board Authorized Inspector Commission number)



Date: 2020-Feb-14
Job #: S/N 86180-01
Other: 86180-01
Plant Unit #:

[illegible]

IRISNDT-US-E-2504F

Material/Material Group: C/S

[illegible]

LF - Lack of Fusion
LC - Low Cover
MA - Misalignment
TI - Tungsten Inclusion

I am in full agreement
with report contents

usinfo@irisndt.com



905938.00-RPT

Accredited to ISO/IEC 17025:2005
Accredited to ISO 9001:2015

LLP P.O. Box 802404 ♦ Houston, TX 77280-2404 ♦ Telephone (713) 460-3655 ♦ FAX (713) 460-3695

Report Date: 11/25/2019

Report No: 905938.00

Rev: A

Cust Acct: TEX041

To: Texas Steel Processing, Inc.
5480 Windfern Road
Houston, TX 77041

Ordered By: Mallory Gutierrez

PO: 30731

Material: SA516-70N 2"Thick X 6"Wide X 6"Long Test Piece

Heat/ID: 813H62880 SL:L931602

Job Info: ASME VIII

Charpy Test Results

No.	Temp	Location	Foot Pounds	%Shear	Mils Lat Exp
1	-20°F	LCVN	86-79-73	65-60-60	77-69-63

Unless otherwise stated, Charpy Impact specimens are V-notch 10 x 10 mm. Tested with 8 mm striker.

Document
Reviewed By:Yvonne Arredondo
Yvonne Arredondo
Documentation Specialist

Our reports are for the exclusive use of our customer and our name may be used only with prior written approval. Our reports apply only to the sample tested or inspected and do not necessarily represent the quality of other apparently similar or identical materials. All test specimens and testing conforms to ASTM A-370 requirements unless otherwise stated. This test report shall not be reproduced, except in full, without the written approval of Accu-Test Labs LLP.



916513.00-RPT

Accredited to ISO/IEC 17025:2005
Accredited to ISO 9001:2015

LLP P.O. Box 802404 ♦ Houston, TX 77280-2404 ♦ Telephone (713) 460-3655 ♦ FAX (713) 460-3695

Report Date: 2/17/2020

Report No: 916513.00

Rev: A

Cust Acct: TEX041

To: Texas Steel Processing, Inc.
5480 Windfern Road
Houston, TX 77041

Ordered By: Joe Fraga

PO: 30887

Material: SA516-70N 2"Thick x 12"Wide x 12"Long Double Bevel Weld Coupon

Heat/ID: 812H62880 Slab:L931602 Procedure:GFS-P1-G1/2N-PW-1-20 Welder ID:P,R

Job Info: ASME Sec VII, Div.1, UG-84 & Table 84.6

Charpy Test Results

No.	Temp	Location	Foot Pounds	%Shear	Mils Lat Exp
1	-20°F	Weld Metal	17-22-24	30-40-40	21-25-26
2	-20°F	Weld Metal	41-70-60	45-60-55	43-65-57
3	-20°F	HAZ	98-73-116	60-55-70	88-64-94
4	-20°F	HAZ	67-99-86	50-60-55	63-88-76
5	-20°F	Base LCVN	95-87-91	55-50-55	87-78-83

Unless otherwise stated, Charpy Impact specimens are V-notch 10 x 10 mm. Tested with 8 mm striker.

Charpy Notes:

#1: 1/16" below side 1

#2: 1/4T from side 2

#3: 3/8T below side 1

#4: 3/8T from side 2

Heat Treatment

PWHT at 1,100°F for 2 hours and 15 minutes.

Heating and cooling rates as required by ASME Section VIII, Div.1.

Document
Reviewed By:
Yvonne Arredondo
Documentation Specialist

Our reports are for the exclusive use of our customer and our name may be used only with prior written approval. Our reports apply only to the sample tested or inspected and do not necessarily represent the quality of other apparently similar or identical materials. All test specimens and testing conforms to ASTM A-370 requirements unless otherwise stated. This test report shall not be reproduced, except in full, without the written approval of Accu-Test Labs LLP

ArcelorMittal Burns Harbor Plate

US HWY 12 Burns Harbor, Indiana

SHIPMENT NO. 802-34064		DATE SHIPPED 07-08-19	CAR OR VEHICLE NO. CN-CHGO-BNSF	BCOL 864061	PAGE 2
----------------------------------	--	---------------------------------	---	--------------------	---------------

S O L D T O TEXAS STEEL PROCESSING INC 5480 WINDFERN RD HOUSTON TX 77041-7512	S H I P T O TEXAS STEEL PROCESSING INC C/O FML WAREHOUSING & LOGISTICS THEIR SIDING 404 N WITTER PASADENA TX 77506
---	--

NOTES	SERIAL NUMBER	PAT NO.	HEAT NUMBER	NO. PCS.	SIZE AND QUANTITY				WEIGHT	YIELD POINT	TENSILE STRENGTH	AFRAC. ELONG.	RED.
					THICKNESS	WIDTH OR DIA.	LENGTH						

QUALITY STEEL MELTED & MANUFACTURED IN THE U. S. A.

PLATES - ASTM A516-10 GR 70 PVQ KLD FINE

GRAIN PRAC, ASME SA516 GR 70 PVQ

2017 EDITION --- GAS CUT 4 SIDES

PLT NORMALIZED & COOLED IN STILL

AIR --- TEST CERTS ARE PREPARED IN

ACCORD WITH PROCEDURES OUTLINED IN

EN 10204:2004 TYPE 3.1

NO WELD REPAIR WAS PERFORMED ON BELOW PLATE(S)

MFST - MFST MILL SERIAL# MFST PPI 0081145- 0001 MFST

TEST CERTS ARE PREPARED IN ACCORD WITH

PROCEDURES OUTLINED IN EN MFST 10204:2004 TYPE

3.1

- LIFT MAX WT IMM FOR ULTIMATE DELV TO:

TEXAS STEEL PROCESSING INC 5480 WINDFERN RD

HOUSTON TX 77041

CO# 30440 GH 408-1632A

PLATES HEAT TREATED - TEST SPECIMENS ATTACHED & YIELD STRENGTH @ .5% EUL

L931602 813H62880 1 2 121 340 23335 47900 73000 2 33

N 1650 DEG F - 96 MIN

(M55)MFST REF#:D516N2000

Q-QUENCH TEMPERATURE

T-TEMPER TEMPERATURE

N-NORMALIZE TEMPERATURE

SERIAL NUMBER	PAT NO.	HEAT NUMBER	HARD BHN	BEND	THICKNESS INCHES	TYPE	SIZE	DIR	TEST TEMP F	CHARPY IMPACT								
										ENERGY FT LBS			SHEAR(%)			LAT. EXP MILS		
										1	2	3	1	2	3	1	2	3



MATERIAL WAS FORMED IN ACCORDANCE
TO ASME CODE SECTION VIII DIV.1, UG79.
NO HEAT TREATMENT PERFORMED

HEAT NUMBER	CHEMICAL ANALYSIS															MQAID GRAIN SIZE
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	B	Cb	N	
813H62880	.18	1.11	.011	.005	.341	.030	.01	.13	.084	.002	.002	.034	.0002	.002	.004	.005

DATE: 7-30-19
 THICKNESS: 2.030
 VERIFIED BY: VC



I certify that the above results are a true and correct copy of actual results contained in records maintained by ArcelorMittal Burns Harbor and are in full compliance with the requirements of the specification cited above. This test report cannot be altered and must be transmitted intact with any subsequent third party test reports, if required.

BHPLTRPT.TIF

SUPV. QUALITY ASSURANCE

ANDREW SMITH PER ELJ

Certified a true copy of the
original, retained in our file.
Texas Steel Processing

ArcelorMittal Burns Harbor Plate

US HWY 12 Burns Harbor, Indiana

SHIPMENT NO. 802-34066		DATE SHIPPED 07-08-19		CAR OR VEHICLE NO. CN-CHGO-BNSF		CN 622317		PAGE 4	
TEXAS STEEL PROCESSING INC 5480 WINDFERN RD HOUSTON TX 77041-7512				TEXAS STEEL PROCESSING INC C/O FML WAREHOUSING & LOGISTICS THEIR SIDING 404 N WITTER PASADENA TX 77506					

NOTE	SERIAL NUMBER	PAT NO.	HEAT NUMBER	NO. PCS.	SIZE AND QUANTITY				YIELD POINT	TENSILE STRENGTH	AF FRAC. ELONG.	RED.
					THICKNESS	WIDTH OR DIA.	LENGTH	WEIGHT				
					INCHES	INCHES	INCHES	POUNDS	PSI	PSI	IN	%

QUALITY STEEL MELTED & MANUFACTURED IN THE U. S. A.

PLATES - ASTM A516-10 GR 70 PVQ KLD FINE
GRAIN FRAC, ASME SA516 GR 70 PVQ
2017 EDITION --- GAS CUT 4 SIDES
PLT NORMALIZED & COOLED IN STILL
AIR --- TEST CERTS ARE PREPARED IN
ACCORD WITH PROCEDURES OUTLINED IN
EN 10204:2004 TYPE 3.1
NO WELD REPAIR WAS PERFORMED ON BELOW PLATE(S)
MFST - MFST MILL SERIAL# MFST PPI 0081145- 0001 MFST
TEST CERTS ARE PREPARED IN ACCORD WITH
PROCEDURES OUTLINED IN EN MFST 10204:2004 TYPE
3.1

- LIFT MAX WT IMM FOR ULTIMATE DELV TO:

TEXAS STEEL PROCESSING INC 5480 WINDFERN RD
HOUSTON TX 77041

CO# 30440 GH 408-1632A

PLATES HEAT TREATED - TEST SPECIMENS ATTACHED & YIELD STRENGTH @ .5% EUL

L931601 812H35980 1 2 121 340 23335 47400 72500 2 36
N 1650 DEG F - 96 MIN
(M55)MFST REF#:D516N2000

Q-QUENCH TEMPERATURE

T-TEMPERATURE

N-NORMALIZE TEMPERATURE



SERIAL NUMBER	PAT NO.	HEAT NUMBER	HARD BHN	BEND	THICKNESS INCHES	TYPE	SIZE	DIR	TEST TEMP F	CHARPY IMPACT								
										FT LBS			SHEAR(%)			LAT. EXP MILS		
										1	2	3	1	2	3	1	2	3



MATERIAL WAS FORMED IN ACCORDANCE
TO ASME CODE SECTION VIII DIV.1, UG79
NO HEAT TREATMENT PERFORMED

HEAT NUMBER	CHEMICAL ANALYSIS																MOULD GRAIN SIZE
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	B	Co	N	Sn	
812H35980	.17	1.07	.008	.003	.324	.017	.01	.11	.072	.001	.002	.031	.0002	.002	.006	.003	

DATE: 7-29-19
THICKNESS: 2.039
VERIFIED BY: [Signature]

I certify that the above results are a true and correct copy of actual results contained in records maintained by ArcelorMittal Burns Harbor and are in full compliance with the requirements of the specification cited above. This test report cannot be altered and must be transmitted intact with any subsequent third party test reports, if required.

BHPLTRPT.TIF

SUPV. QUALITY ASSURANCE

ANDREW SMITH PER ELJ

Certified a true copy of the
original, retained in our file.
Texas Steel Processing

ArcelorMittal Burns Harbor Plate

US HWY 12 Burns Harbor, Indiana

SHIPMENT NO. 802-34066		DATE SHIPPED 07-08-19		CAR OR VEHICLE NO. CN-CHGO-BNSF		CN 622317		PAGE 3	
S O L D T O	TEXAS STEEL PROCESSING INC 5480 WINDFERN RD HOUSTON TX 77041-7512			S H I P T O	TEXAS STEEL PROCESSING INC C/O FML WAREHOUSING & LOGISTICS THEIR SIDING 404 N WITTER PASADENA TX 77506				

N O T E	SERIAL NUMBER	PAT NO.	HEAT NUMBER	NO. PCS.	SIZE AND QUANTITY				YIELD POINT	TENSILE STRENGTH	AF FRAC. ELONG.	RED.
					THICKNESS	WIDTH OR DIA.	LENGTH	WEIGHT				
					INCHES	INCHES	INCHES	POUNDS	PSI	PSI	IN	%

QUALITY STEEL MELTED & MANUFACTURED IN THE U. S. A.

PLATES - ASTM A516-10 GR 70 PVQ KLD FINE
GRAIN PRAC, ASME SA516 GR 70 PVQ
2017 EDITION --- GAS CUT 4 SIDES
PLT NORMALIZED & COOLED IN STILL
AIR --- TEST CERTS ARE PREPARED IN
ACCORD WITH PROCEDURES OUTLINED IN
EN 10204:2004 TYPE 3.1

NO WELD REPAIR WAS PERFORMED ON BELOW PLATE(S)
MFST - MFST MILL SERIAL# MFST PPI 0081145- 0001 MFST
TEST CERTS ARE PREPARED IN ACCORD WITH
PROCEDURES OUTLINED IN EN MFST 10204:2004 TYPE
3.1

- LIFT MAX WT IMM FOR ULTIMATE DELV TO:

TEXAS STEEL PROCESSING INC 5480 WINDFERN RD
HOUSTON TX 77041

CO# 30440 GH 408-1632A

PLATES HEAT TREATED - TEST SPECIMENS ATTACHED & YIELD STRENGTH @ .5% EUL

L931600	812H35980	1	2	121	340	23335	46700	72200	2	35
		N		1650 DEG F -		96 MIN				

(M55)MFST REF#:D516N2000

Q-QUENCH TEMPERATURE	T-TEMPER TEMPERATURE	N-NORMALIZE TEMPERATURE
----------------------	----------------------	-------------------------

SERIAL NUMBER	PAT NO.	HEAT NUMBER	HARD BHN	BEND	THICKNESS INCHES	TYPE	SIZE	DIR	TEST TEMP F	ENERGY FT LBS			SHEAR(%)			LAT. EXP MILS		
										1	2	3	1	2	3	1	2	3



MATERIAL WAS FORMED IN ACCORDANCE
TO ASME CODE SECTION VIII DIV.1, UG79.
NO HEAT TREATMENT PERFORMED

HEAT NUMBER	CHEMICAL ANALYSIS																MQUAD GRAIN SIZE
	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Ti	Al	B	Co	N	Sn	
812H35980	.17	1.07	.008	.003	.324	.017	.01	.11	.072	.001	.002	.031	.0002	.002	.006	.003	

DATE: 7-27-19
THICKNESS: 2.032
VERIFIED BY: [Signature]

I certify that the above results are a true and correct copy of actual results contained in records maintained by ArcelorMittal Burns Harbor and are in full compliance with the requirements of the specification cited above. This test report cannot be altered and must be transmitted intact with any subsequent third party test reports, if required.

BHPLTRPT.TIF

SUPV. QUALITY ASSURANCE

Certified a true copy of the
original, retained in our file.
Texas Steel Processing

ANDREW SMITH
ELJ
TEXAS STEEL
PROCESSING



914614.00-RPT

Accredited to ISO/IEC 17025:2005
Accredited to ISO 9001:2015

P.O. Box 802404 ♦ Houston, TX 77280-2404 ♦ Telephone (713) 460-3655 ♦ FAX (713) 460-3695

Report Date: 2/3/2020
Report No: 914614.00
Rev: A
Cust Acct: TEX041To: Texas Steel Processing, Inc.
5480 Windfern Road
Houston, TX 77041

Ordered By: Mallory

PO: 30859

Material: SA516-70N 2"Thick x 6"Wide x 6"Long Test Piece

Heat/ID: 812H35980 PT:86180

Job Info: ASME Section VIII

Charpy Test Results

No.	Temp	Location	Foot Pounds	%Shear	Mils Lat Exp
1	-20°F	LCVN	94-84-99	55-50-55	82-74-86

Unless otherwise stated, Charpy Impact specimens are V-notch 10 x 10 mm. Tested with 8 mm striker.

Document
Reviewed By:Yvonne Arredondo
Yvonne Arredondo
Documentation Specialist

Our reports are for the exclusive use of our customer and our name may be used only with prior written approval. Our reports apply only to the sample tested or inspected and do not necessarily represent the quality of other apparently similar or identical materials. All test specimens and testing conforms to ASTM A-370 requirements unless otherwise stated. This test report shall not be reproduced, except in full, without the written approval of Accu-Test Labs LLP.



11765 HIGHWAY 6 SOUTH, NAVASOTA, TX 77868

FEBRUARY 14, 2020

PERMIAN TANK & MFG
8800 W LOOP 338
ODESSA, TX 79764

Attention:

Reference: Customer: OS009651
Trinity SO #: 135131

TAG:

GENTLEMEN:

Attached are copies of mill test reports for the following material provided on referenced purchase order, we certify the following:

6-SA516-70 ELLIP-2:1 HEAD 48.00 OD 2.00 NOM 1.875 MIN WITH 2.0" SF.

<u>CODE</u>	<u>QTY</u>	<u>THICKNESS</u>	<u>PRODUCER</u>	<u>MELT</u>	<u>SLAB</u>	<u>GRADE</u>
SUSO	6	2.00	NUCOR	7503137	02	SA516-70

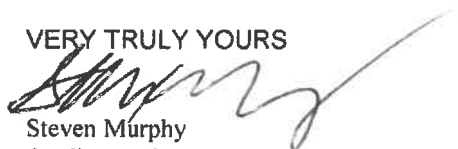
TRINITY HEADS, INC certifies that heads manufactured from material represented by this report were normalized during forming at 1650F (+/-25F) for 60 minutes and air cooled

The items listed above were formed in strict accordance with all applicable requirements of the ASME Boiler and Pressure Vessel Code Section VIII, Div. 1. All heads comply with UG-81, UCS-79 and UG-79.

Attached mill test reports are in compliance to ASME Code Section II current edition.

If you have further questions, please contact your customer service representative in Navasota, TX at 1-800-392-3594.

VERY TRULY YOURS


Steven Murphy
Quality Engineer

ad



Accredited
ISO 9001 / 17025

L.L.P. P.O. Box 802404 ♦ Houston, TX 77280-2404 ♦ Telephone (713) 460-3655 ♦ Fax (713) 460-3695

Report Date: 10/23/2017

Report No: 802057.00

Rev: A

Cust Acct: TRI868

To: Trinity Heads, Inc.
11765 Highway 6
Navasota, TX 77868

Ordered By: Anissa

PO: Credit Card

Material: SA516-70 2.00"Thick Test Piece

Heat/ID: 7503137 SL#02 SO#128171 Requisition#595322 HC:SUSO

Job Info: Customer:Forum Production

Charpy Test Results

No.	Temp	Location	Foot Pounds	%Shear	Mils Lat Exp
1	-20°F	LCVN	71-87-77	70-80-75	59-70-62

Unless otherwise stated, Charpy Impact specimens are V-notch 10 x 10 mm. Tested with 8 mm striker.

Heat Treatment

Normalize at 1,650°F for 60 minutes, Air Cool.

Document
Reviewed By:

Yvonne Arredondo
Yvonne Arredondo
Documentation Specialist

Our reports are for the exclusive use of our customer and our name may be used only with prior written approval. Our reports apply only to the sample tested or inspected and do not necessarily represent the quality of other apparently similar or identical materials. All test specimens and testing conforms to ASTM A-370 requirements unless otherwise stated. This test report shall not be reproduced, except in full, without the written approval of Accu-Test Labs LLP.

2.00" x 48 2:1 EL

SUSO

JKH
8-17-2020**NUCOR**
PLATE MILLP.O.Box 279
Winton, NC 27986
(252) 356-3700**Mill Test Report**

Page 1

1505 River Rd
Cofield, NC 27922
(252) 356-3700**NUCOR**
It's Our Nature

Issuing Date : 05/13/2017 B/L No. : 471906 Load No. : 481230 Our Order No. : 147180/6 Cust. Order No. : 403466
 Vehicle No: TTPX 80422 Sold To: TRINITY INDUSTRIES INC-HEADS Ship To: TRINITY INDUSTRIES INC
 Specification: 2.0000" x 120.500" x 241.000" DIVISION PLANT 56 HEADS DIVISION PLANT 56
 ASTM A516 70-10(2015)/ASME SA516 70 PVQ 2013/2015 Normalized 11765 HWY 6 S
 Test Coupons at 1650F Hold 30 Min per inch of thickness Air Cooled NAVASOTA, TX 77868 RATE AUTHORITY CSXT 19103
 NACE MR0175 Annex 2.1.2, MR0103(2010) Section 2.1.2 (2015) 13.1.1, NAVASOTA, TX 77868
 13.1.2) Compliant
 Marking : HP1491

Heat No	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al(tot)	V	Nb	Ti	N	Ca	B	Sn	Ceq	Pcm
7503137	0.22	1.10	0.007	0.002	0.19	0.16	0.06	0.08	0.01	0.033	0.007	0.001	0.002	0.0055	0.0020	0.0001	0.007	0.44	0.30
Tensile Test										Charpy Impacts									
Plate Serial No	Pieces	Tons	Dir.	(psi) Yield	(psi) Tensile	Elongation % in 2"	Elongation % in 8"	Dir.	1	(%) shear	2	(%) shear	3	(%) shear	Ave.	(%) shear	Size	Temp	Min Ave.
7503137-02	6	49.41	T	51,600	74,100		27.1												
			T	43,700	70,600		27.6	N											



Test coupons only, normalized 30 minutes per inch of thickness at 1650 F ± 25 F. Hold 30 minutes minimum. ;

Manufactured to fully killed fine grain practice by Electric Arc Furnace. Welding or weld repair was not performed on this material. Mercury has not been used in the direct manufacturing of this material. Produced as continuous cast discrete plate as-rolled, unless otherwise noted in Specification. For Mexico shipments: nhc-SalesMX@Nucor.com
 Yield by 0.5EUL method unless otherwise specified. $Ceq = C + (Mn/6) + ((Cr + Mo + V)/5) + ((Cu + Ni)/15)$
 $Pcm = C + (Si/30) + (Mn/20) + (Cu/20) + (Ni/60) + (Cr/20) + (Mo/15) + (V/10) + 5B$
 Melted and Manufactured in the USA. ISO 9001:2008 certified (#010940) by SRI Quality System Registrar (#0985-09). PED 97/23/EC 7/2 Annex 1, Para. 4.3 Compliant.
 DIN 50049 3.1.B/EN 10204 3.1B(2004). DIN EN 10204 3.1(2005) compliant. For ABS grades only, Quality Assurance certificate 14-MMPQA-723

We hereby certify that the contents of this report are accurate and correct. All test results and operations performed by the material manufacturer are in compliance with the applicable specifications, including customer specifications.

T. A. Depretis
T. A. Depretis, Metallurgist

5/13/2017 9:00:59 AM

Customer Number 940491 Date 2/14/20 Ship To Number 1 Load#
Bill of Lading # BN88451

Bill to Customer Ship To Customer
PERMIAN TANK & MFG PT - ODESSA
ODESSA FG 2701 W I 20
8800 W. LOOP 338
ODESSA ODESSA
TX 79766 USA TX 79766 USA
Contact ACCOUNTS PAYABLE
Phone -

Order Number 135131 Your Order Number OS009651 Order Date 1/22/20
Warehouse 56 Consolidation Request Date 2/12/20
Carrier Route Ship Date 2/14/20
Ship Via SAIA MOTOR FREIGHT Shipper
Customer Registration Number

Line	Item Number	Description	Ship Qty	Carton	Weight
1	39-00498	HEAD 48.0000 OD, 2.0000, ELIP	6.000		9553.48

NOTE;SHIP ALL TOGETHER

Weight 9553.480
Volume .000
Pallet .000


RECEIVED
JRH
2-17-2020

SCANNED



14527 Smith Rd.
Humble, Texas 77396
TEL: (281) 441-4088
FAX: (281) 441-8899

PAGE: 1 of 1
REPORT # 20-003393
DATE: 3/25/2020
FCI ORDER # 105149
IAW ASME 2019 ED.

CUSTOMER ORDER # C6234655271B0
SOLD / SHIPPED TO: MCJUNKIN RED MAN CORP

Item Quantity Description

2 3 2" X 600 X 12" LG RF LWN

GRAIN SIZE PER ASTM E112: # 9

Heat Number: B52787E

Material Type: SA105N/SA350LF2CL1

CHEMICAL ANALYSIS

PHYSICAL PROPERTIES

C .195
Mn 1.240
P .0140
S .0030
Si .221
Cr .079
Mo .050
V .001
Cu .010
Ni .011
Cb(Nb) .004

Yield PSI 45,400
Tensile PSI 78,400
Elongation 33.9
Reduction of Area 69.7
Hardness 163/163 HBW
CVN -50 °F FT LBS 59/57/28
% Shear 50/20/20
MLE .048/.026/.028

Ti .0010

B .0005

C E .429

MADE TO FINE GRAIN PRACTICE

Heat Treatment NORMALIZED
Temperature 1706 °F
Time at Temperature
Cooling Media AIR

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.

Prepared by:

Name: Cynthia Madrid

Title: QA Representative



14527 SMITH ROAD
HUMBLE, TEXAS 77396
PH : (281) 441-4088 FAX: (281) 441-8899

CERTIFICATE OF CONFORMANCE

Date: MARCH 25, 2020

Customer: MCJUNKIN REDMAN CORP.
P.O. BOX 513
CHARLESTON, WV 25322-0513

Purchase Order #: C6234655271B0

FCI SO# 105149

Material: SA105N/SA350LF2CL1

Heat/Item B52787E, ITEM 2, MTR # 20-003393

Per EN 10204:2004 – Type 3.1, the material test reports provided for the above order have been validated by FCI's authorized inspection representative, independent of the manufacturing department. Material was manufactured, sampled, tested and inspected in accordance with the grade and specification stated as well as the purchase order requirements, and was found to meet them.

Cynthia Madrid

CYNTHIA MADRID
Quality Assurance Representative

MRC Global PACKING LIST

If this order is placed under an existing written contract, the terms of such existing contract shall apply. Otherwise, this order is subject to and governed by MRC Global's General Terms and Conditions of Sale (found at www.mrcglobal.com/Terms-and-Conditions by following the instructions on this site and also available by request), which Terms and Conditions are hereby incorporated by reference.



4655271001

Sales Order

Number 4655271-001 Page 1

Printed 04/10/2014:43

Deliver To:	From:	Customer Purchase Order
PERMIAN TANK & MFG CO RECEIVING WAREHOUSE 2701 WEST I-20 ODESSA TX 79763	MIDLAND TX 3606 E HIGHWAY 158 MIDLAND TX 79706	OS010099 Customer Release/Requisition No. Ordered by: DESIREE DURAN

Promised -03/18/20 Salesman - LEROY HIDALGO
Shipped -04/10/20 Phone - (432) 570-0182

Ship VIA -CRANE GOOS
Freight Terms -PREPAID & CHARGE P Customer Ship No. -60115-0018

Terms -NET 30 DAYS

MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD

CPO Line	Customer Part/Item ID	Quantity			U/M	Description	Line No.
		Ordered	Backorder	Shipped			
	1712XXXX	8		✓	8 EA	2'' 600# RFLWN - 9'' LONG, SA-105 N FINE GRAIN PRACTICE MFG: FORGED COMP HLS: B53563A MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	001
	1712XXXX	3		✓	3 EA	2'' 600# RFLWN - 12'' LONG, SA-105 N FINE GRAIN PRACTICE MFG: FORGED COMP HLS: B52787E MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	002
	1712XXXX	2		✓	2 EA	2'' 600# RFLWN - 16'' LONG, SA-105 N, FINE GRAIN PRACTICE MFG: FORGED COMP HLS: G879 MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	003
	1712XXXX	6		✓	6 EA	3'' 600# RFLWN - 9'' LONG, SA-105 N FINE GRAIN PRACTICE MFG: FORGED COMP HLS: E76082 MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	004
	1712XXXX	4		✓	4 EA	4'' 600# RFLWN - 9'' LONG, SA-105 N FINE GRAIN PRACTICE MFG: FORGED COMP HLS: P39336C MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	005
	1712XXXX	2		✓	2 EA	8'' 600# RFLWN - 12'' LONG, SA-105 N FINE GRAIN PRACTICE	006



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JRH
4-13-2020

SCANNED

800-8-A

PACKING LIST

SO # 4655271001 Page 2

PO # OS010099

Printed 04/10/20 14:43

PO Box 513 Charleston WV 25322

CPO Line	Customer Part/Item ID	Quantity			U/M	Description	Line No.
		Ordered	Backorder	Shipped			
						MFG: FORGED COMP HLS: B52787AT MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	
	1712XXXX	2			2 EA	8'' 600# RFLWN - 16'' LONG, SA-105 N FINE GRAIN PRACTICE MFG: FORGED COMP HLS: W582 MTR'S REQUIRED CERTIFICATES OF COMPLIANCE REQD	007

800-8-A

RECEIVING INFO: Company:

Date:

Signed By:

Signature:

Tubes-	Box/Bag-	Crates-	Pallets-	2 Pieces-	Bundles-	Picked by-	CAR	Checked by-	CM	Staged-
Order Weight-	.00	Material Tot-		Freight- \$	.00	Other- \$	.00	Tax- \$	.00	Total- \$