

## BDO-08-LVD-100

<div style="text-align: center;"> <b>TEST SPECIFICATIONS</b>  <b>Black Diamond Gathering, LLC - Pressure Test</b>  <b>MTD - OIL - 8" and 4"</b> </div>						Rev3																																																													
						Date: 20-Jan-2020		Select Routing:																																																											
						Test Number: 1 of 1																																																													
Project Name: MTD - 8" Mainline and 4" Lateral			Project I.D. / AFE Number: 5000530		Facility Name or Number: MTD - BDO-08-LVD-100																																																														
Contractor / Testing Company: Northwinds of Wyoming Construction			Technician:																																																																
Installation Location (M.P. or S.S.): 0+00 to 64+51		State: CO	County/Parish: Weld	Class Location Designation: N/A	Selected Design Pressure: 1480	Planned MAOP: 1480																																																													
Lat: 40.54587 to Lat: 40.55454		Long: -104.76381 to Long: -104.75263																																																																	
<b>Project Description:</b> MTD - 8" Mainline and 4" Lateral  Hydrostatic pressure test of 6,361' of 8" Carbon Steel and 90' of 4" Carbon Steel Testing at 1.25*MAOP = 1850 psig minimum test pressure. <b>2033 psig Target Test Pressure at Chart Location</b> Max Test Pressure for ANSI 600 Valves and Fittings is 2660 psig where they are located.																																																																			
LEAK ONLY TEST <input type="checkbox"/> STRENGTH TEST <input type="checkbox"/> FABRICATION <input type="checkbox"/> NEW CONSTRUCTION <input checked="" type="checkbox"/> REPLACEMENT <input type="checkbox"/> RETEST <input type="checkbox"/> REFERENCE DRAWINGS ATTACHED <input type="checkbox"/>																																																																			
POST-INSTALLATION TEST <input type="checkbox"/> PRE-INSTALLATION TEST <input type="checkbox"/>																																																																			
<b>Minimum Component Characteristics</b> <b>Pipe Information</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>O.D.</td><td>8.625</td></tr> <tr><td>Wall Thickness</td><td>0.219</td></tr> <tr><td>SMYS</td><td>52,000</td></tr> <tr><td>Grade</td><td>X52</td></tr> </table> <b>Valve/Flange ANSI Class Rating</b> 600# Valves/Fittings		O.D.	8.625	Wall Thickness	0.219	SMYS	52,000	Grade	X52	<b>Test Design Criteria</b> <b>Test Pressure Calculations</b> <input type="checkbox"/> Input minimum and maximum pressure of test <input type="checkbox"/> Input minimum and maximum %SMYS of test  <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Pressure (psig)</th> <th>% PIPE SMYS</th> </tr> </thead> <tbody> <tr> <td>Max. Test Pressure (Pipe)</td> <td>2220</td> <td>84.1%</td> </tr> <tr> <td>Max. Test Pressure (Valves and Fittings)</td> <td>2220</td> <td>84.1%</td> </tr> <tr> <td>Min.</td> <td>1850</td> <td>70.1%</td> </tr> </tbody> </table>				Pressure (psig)	% PIPE SMYS	Max. Test Pressure (Pipe)	2220	84.1%	Max. Test Pressure (Valves and Fittings)	2220	84.1%	Min.	1850	70.1%	<b>Test Section - Reference Data</b>  <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Test Medium</th> <th>Water</th> <th>Hours (min)</th> </tr> </thead> <tbody> <tr> <td>Test Duration</td> <td>8 hour</td> <td></td> </tr> <tr> <td>Section Length</td> <td>6,451</td> <td>Ft.</td> </tr> <tr> <td>Section Fill Volume</td> <td>19,578</td> <td>Gal</td> </tr> <tr> <td>Max. Elevation Change</td> <td>23</td> <td>Ft.</td> </tr> </tbody> </table> <b>Station Equations:</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>Back</td> <td>0+00</td> <td>0+00</td> <td>0+00</td> </tr> <tr> <td>Ahead</td> <td>0+00</td> <td>0+00</td> <td>0+00</td> </tr> </tbody> </table>			Test Medium	Water	Hours (min)	Test Duration	8 hour		Section Length	6,451	Ft.	Section Fill Volume	19,578	Gal	Max. Elevation Change	23	Ft.		1	2	3	Back	0+00	0+00	0+00	Ahead	0+00	0+00	0+00													
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<b>REMARKS:</b>  ASME B16.5 2.6 System Hydrostatic Testing 2003: Flanged joints and flanged fittings may be subjected to system hydrostatic tests at a pressure of 1.5 times the 38°C (100°F) rating rounded off to the next higher 1 bar (25 psi) increment. Testing at any higher pressure is the responsibility of the user, taking into account the requirements of the applicable code or regulation.																																																																			
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# Pipeline Pressure Test Documentation

## Pressure Test Report

Form :

Revision

3

Revision Date

Project Name : MTD - OIL - 8" and 4"

AFE No. : 5000530

Contractor / Testing Company : Northwinds of Wyoming Construction

Technician : Phil Mahey

Test Section No. : 0

From Station No. : 0+00

Test Description : MTD - OIL - 8" and 4", 6361' of 8", 90' of 4"

To Station No. : 64+51

Test Type : Subpart E Test

Start of Test Period :

Date : 2-11-2020

Time : 4:30 AM

Min. Test Duration : 8 hour

End of Test Period :

Date : 2-11-2020

Time : 3:36 PM

Class Location : Not Applicable (Liquids)

Low Strength Pipe : O.D. : 8.625

W.T. : 0.219

SMYS : 52,000

Grade : X52

Station Piping : Yes

Test Medium : Water

Source of Medium :

N/A

Corrosion Inhibitor : No

Inhibitor Type :

N/A

Rate :

N/A

Leak Detection : No

Material Type :

N/A

Rate :

N/A

Deadweight Tester : Mfg Crystal Eng.

Serial # : 916670

Calibration Date : 1-3-2020

Deadweight Tester Location : Station No. (ESN) :

0+00

Elevation (ft) :

4,896

Pressure Recorder : Mfg Barton

Serial # : 242 120500

Calibration Date : 1-13-2020

Pipe Temp. Recorder : Mfg Barton

Serial # : 265A-3511

Calibration Date : 1-2-2020

Pre-approved Target Test Pressure : 2,033.0 psig

Max Elevation Change : 23

Target Test Pressure Range

Maximum Test Pressure : 2,220.0 psig

Minimum Test Pressure : 1,850.0 psig

Time	Pressure (psig)	Pipe Temp.	Amb. Temp.	Weather	Visual Inspection	Comments
2-11-2020 4:30 AM	0	34	14			
4:45	0	34	14		OK	Build to 50%
4:55	1016	34	13			Hold 15 min
5:10	1016	34	13		OK	Build to 80%
5:21	1626	34	13			Hold 15 min
5:36	1626	34	12		OK	Build to 100%
6:05	2035	34	12			check for leaks
6:15	2035	34	11		OK	BEGIN TEST
6:30	2035	34	10	Sunny, still		Above ground pipe
6:45	2035	34	10			is well covered
7:00	2035	34	10			with heat available
7:15	2035	34	10		OK	to prevent freezing
7:30	2035	34	10			
8:00	2035	34	13			
8:30	2035	34	16	Sunny	OK	
9:00	2035	34	20			
9:30	2036	34	23		OK	
10:00	2036	34	24			
10:30	2037	34	25		OK	
11:00	2038	34	27			
11:30	2039	34	29		OK	
12:00 PM	2041	34	31	Sunny		

Test Section No. :	0
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[illegible]

### Comments

Recorded Maximum Test Pressure at Chart:

2046 psig

Recorded Minimum Test Pressure at Chart:

2035 psig

Pressure Test is : **Accepted**

Recorded by :

Paul Mackay / [Signature]  
(Contractor Representative) Print/Sign

2-11-20  
(Date)

Witnessed by:

Charles Wallace / Charles Waller  
(Inspector/Integrity Representative) Print/Sign

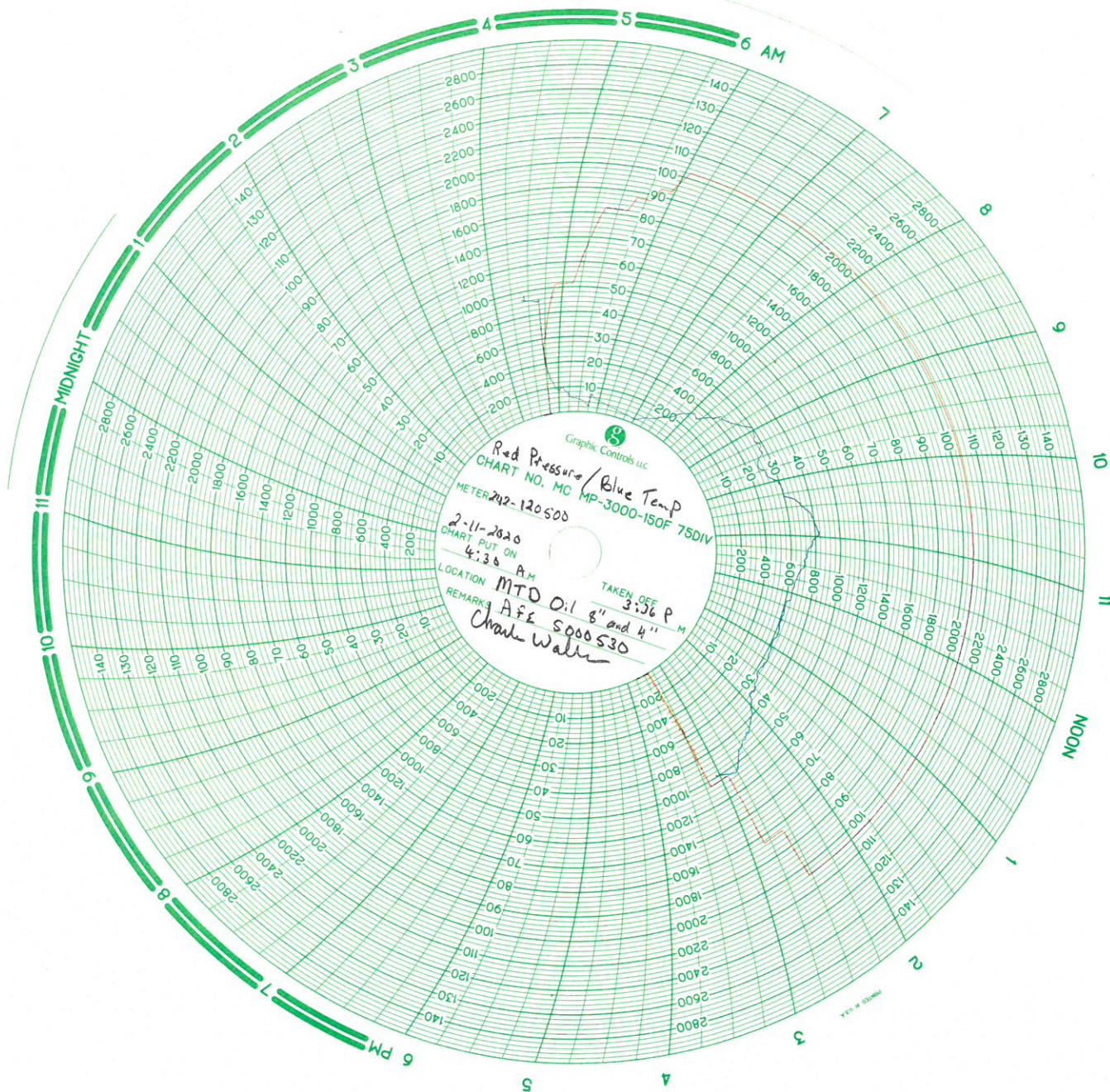
2-11-2020  
(Date)

Approved by :

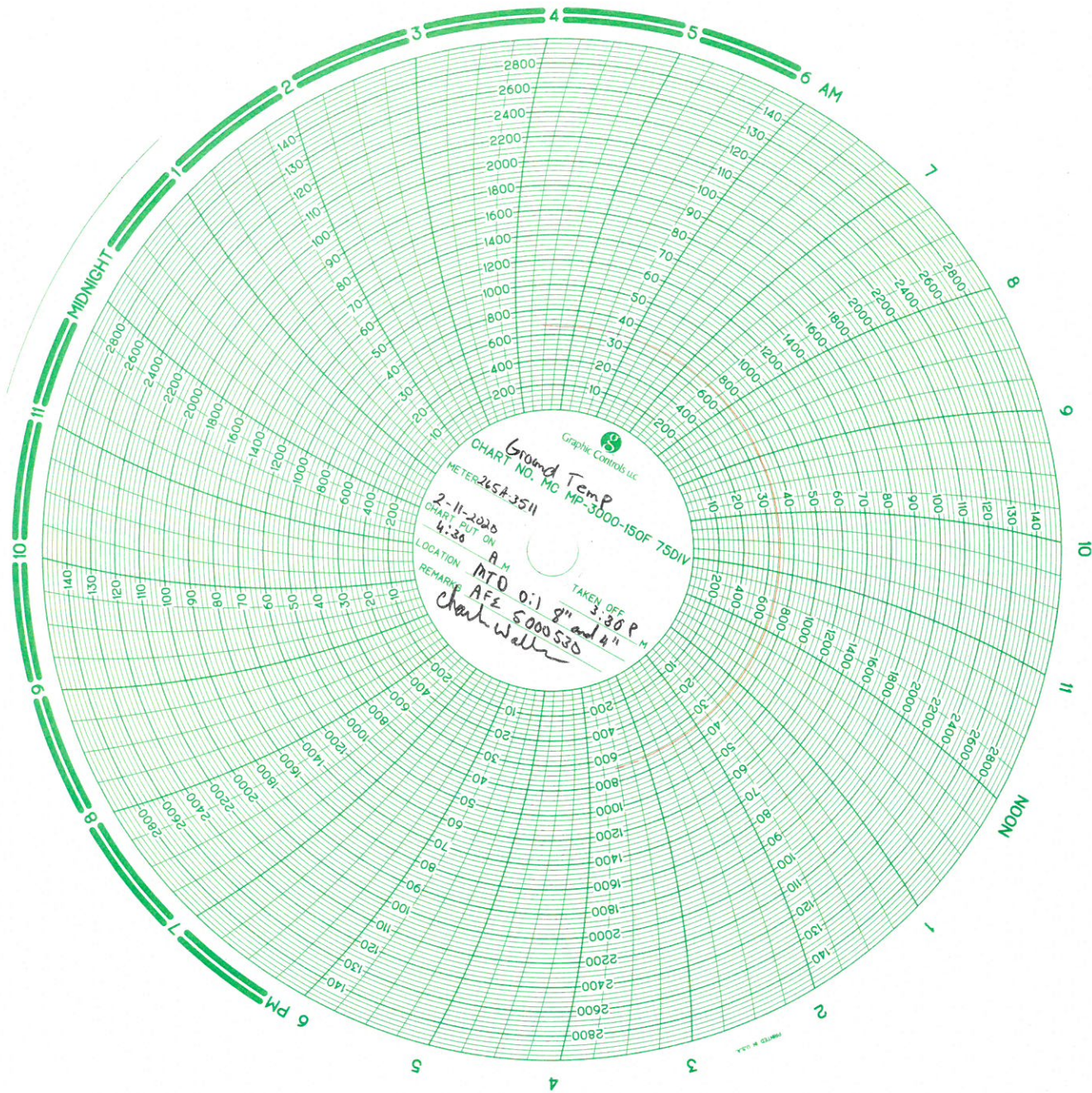
(Inspector/Integrity Representative) Print/Sign  
Ralph Cook  
(Project Mgr./Construction Mgr.) Print/Sign

2-11-2020  
(Date)











# Cross Country Pipeline Supply CO. Inc

Sales and Service

2251 Rifle Street - Aurora, Colorado 80011

Phone 303.361.6797 Fax 303.361.6836

C-7

## NIST CALIBRATION DATA

Model Number	Serial Number	Customer	Range	Accuracy
PRECISION	265A-3511	North Winds	3000# - 150F	1/2%
Work Performed:		Calibration: Output/Reading	Results: Pressure	
Calibrate to Mfg. Spec.		0 PSI	0 PSI	
		600 PSI	600 PSI	
		1200 PSI	1200 PSI	
		1800 PSI	1800 PSI	
		2400 PSI	2400 PSI	
		3000 PSI	3000 PSI	
		33 Deg	32 DEG	
		58 DEG	58 DEG	
		105 DEG	105 DEG	
		150 DEG	150 DEG	
PO Number		Sales Order Number	Date of Test	
Recalibrated		Recerted	1/2/2020 9:05:05 AM	

Remarks: ALL CALIBRATIONS ARE GOOD FOR ONE YEAR FROM DATE OF TEST

### Standard Used:

Manufacturer	Model	Instrument	Calibration Date	Certification #
Perma-Cal	101FTM15B21	Pressure Gauge	03/01/2019	17-043
Tech Instrumentation	TM99A	Thermometer	03/01/2019	59448

Kolton.H

Signature

Kolton Hughton

1-2-2020



9829 E. Easter Ave. • Centennial, CO 80112  
303.794.8833 • Fax 303.730.1220  
Toll Free 1.800.327.7257  
www.jmcinstruments.com

C.L-7

### CERTIFIED CALIBRATION

CUSTOMER Cross Country ORDER NO. \_\_\_\_\_

ITEM Digital Gauge RANGE 0-5000PSIG ITEM NO. 5039-4

TRUE VALUE PSIG	INDICATED VALUE	
	INCREASING READINGS	DECREASING READINGS
0.00	0	0
500.00	499.0	499.1
1000.00	998.1	998.5
1500.00	1497.9	1498.2
2000.00	1997.4	1997.4
2500.00	2496.4	2496.7
3000.00	2996.4	2995.8
3500.00	3494.5	3494.7
4000.00	3995.3	3995.0
4500.00	4494.4	4494.4
5000.00	4992.0	4992.0

Tested On: \_\_\_\_\_ Deadweight Tester S/N# 1GA4474

Traceable to National Institute of Standards and Technology certificate  
# 17-043

Tested By: BML Date 3 January 2020

Remarks:

Crystal	mod. X P2i	SN 916670
Accuracy is +/-	25	% of Full Scale or Better
Test Conditions	67 °F; 611	mmHg Atm. Pressure



# PSS-COMPANIES



9700 E. 104<sup>TH</sup> AVE, UNIT F- HENDERSON, CO 80640 - Phone (303)857-7986 - Fax (303)389-4945

## CALIBRATION CERTIFICATE

CERTIFICATE NUMBER: CO

Details +/-: 1.0% ACCURACY

DATE CALIBRATED: 01/13/2020

DUE DATE: 01/13/2021

INDICATED TEMPERATURE RANGE: # 0 – 150°F

INDICATED PRESSURE RANGE: #0 – 3000 PSI

SERIAL NO: 242-120500 ID No: 004255

MANUFACTURER: BARTON/ 12" RECORDER

TYPE OF INSTRUMENT CALIBRATED: TEMPERATURE / PRESSURE RECORDER

INSTRUMENT FINDINGS/STATUS: UNIT IS IN TOLERANCE/ INSTRUMENT MEETS OR EXCEEDS SPECIFICATIONS.

BASED ON INTERNATIONAL STANDARDS OF GRAVITY: (980.665 cm./sq.).

TYPE OF STANDARD USED TO CALIBRATE: REFINERY DEADWEIGHT TEST UNIT SPT. (35225-3) SERIAL No. 5268: KESSLER TEST THERMOMETERS; SERIAL NO. CALIBRATION

ALL STANDARD DIRECTLY TRACEABLE TO NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGIES TEST NO: (N.I.S.T.) 2.6/172490 & 6.6/139577.

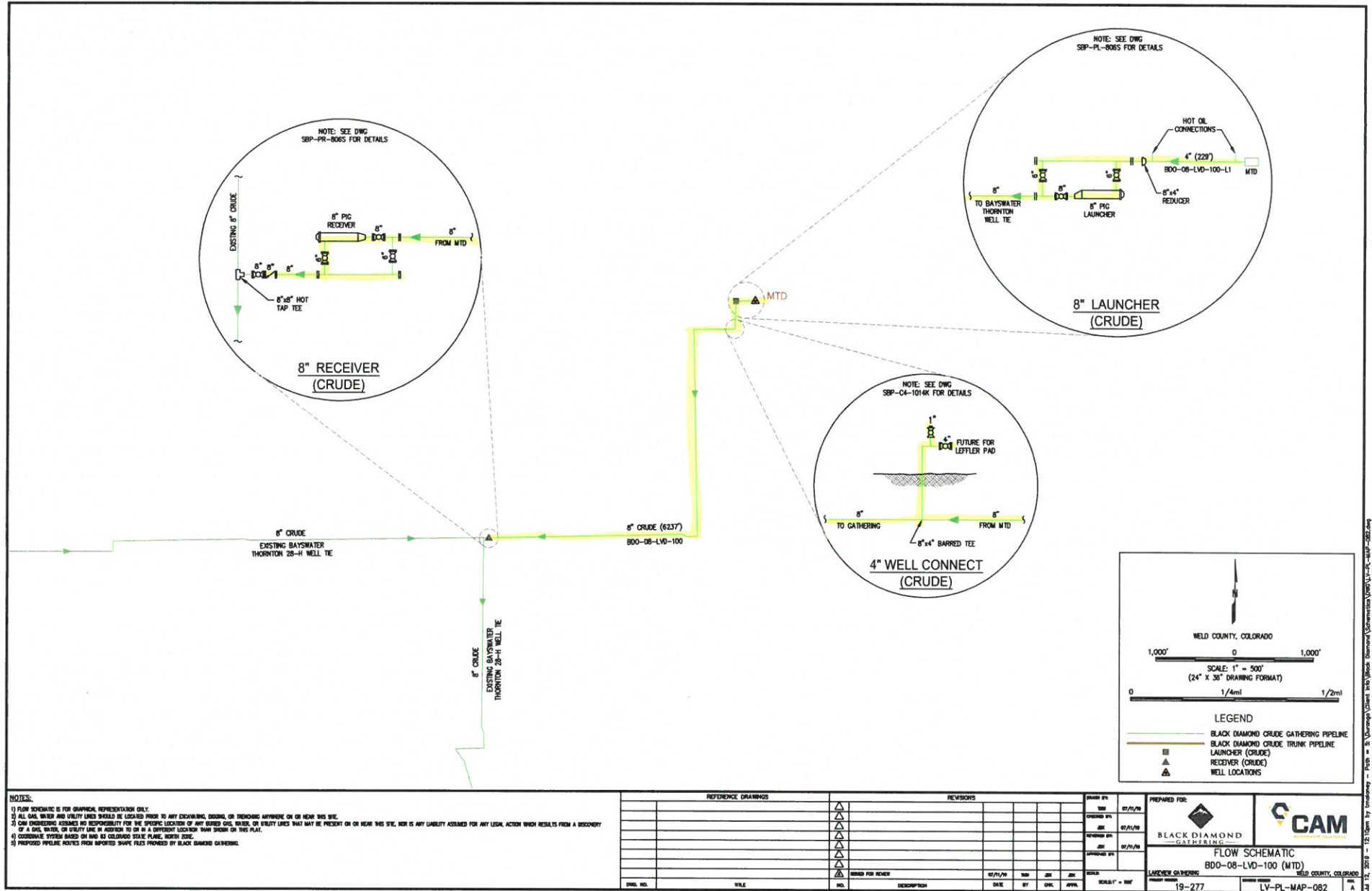
CALCULATED USING MASS VALUES, AREA, AO, AND STATED GRAVITY.  
ROOM TEMPERATURE/HUMIDITY (AT TIME OF TEST): 73°F / 31%.

CALIBRATED BY: NICK BEDFORD

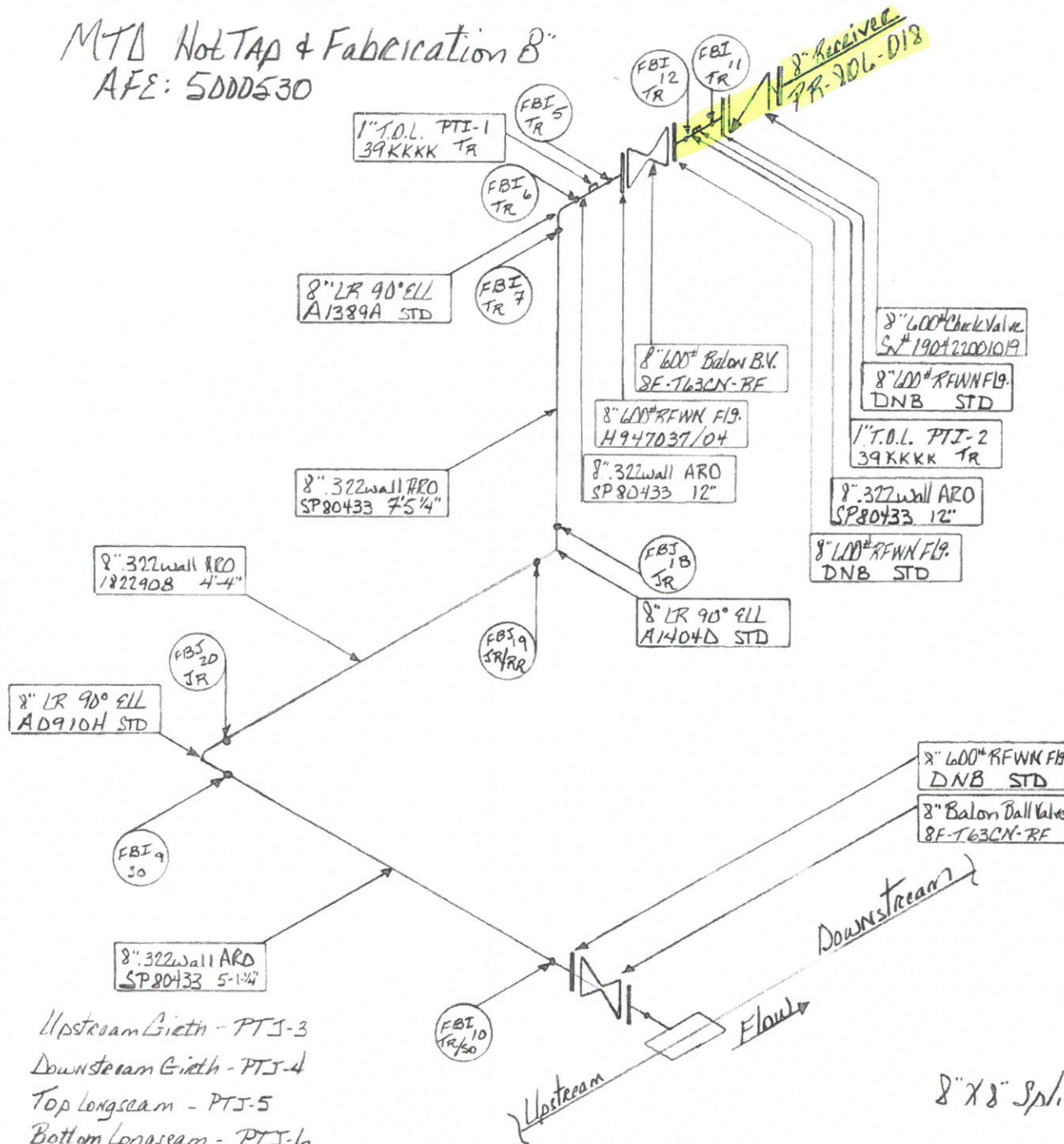
  
SIGNATURE



\* hydrotest included check valve + 8" receiver (PR 806-18), future to Leffler, 8" launcher (PL 806-19) and all piping (8"+4") between lact unit and 8" receiver



MTD Hot Tap & Fabrication 8"  
 AFE: 5000530

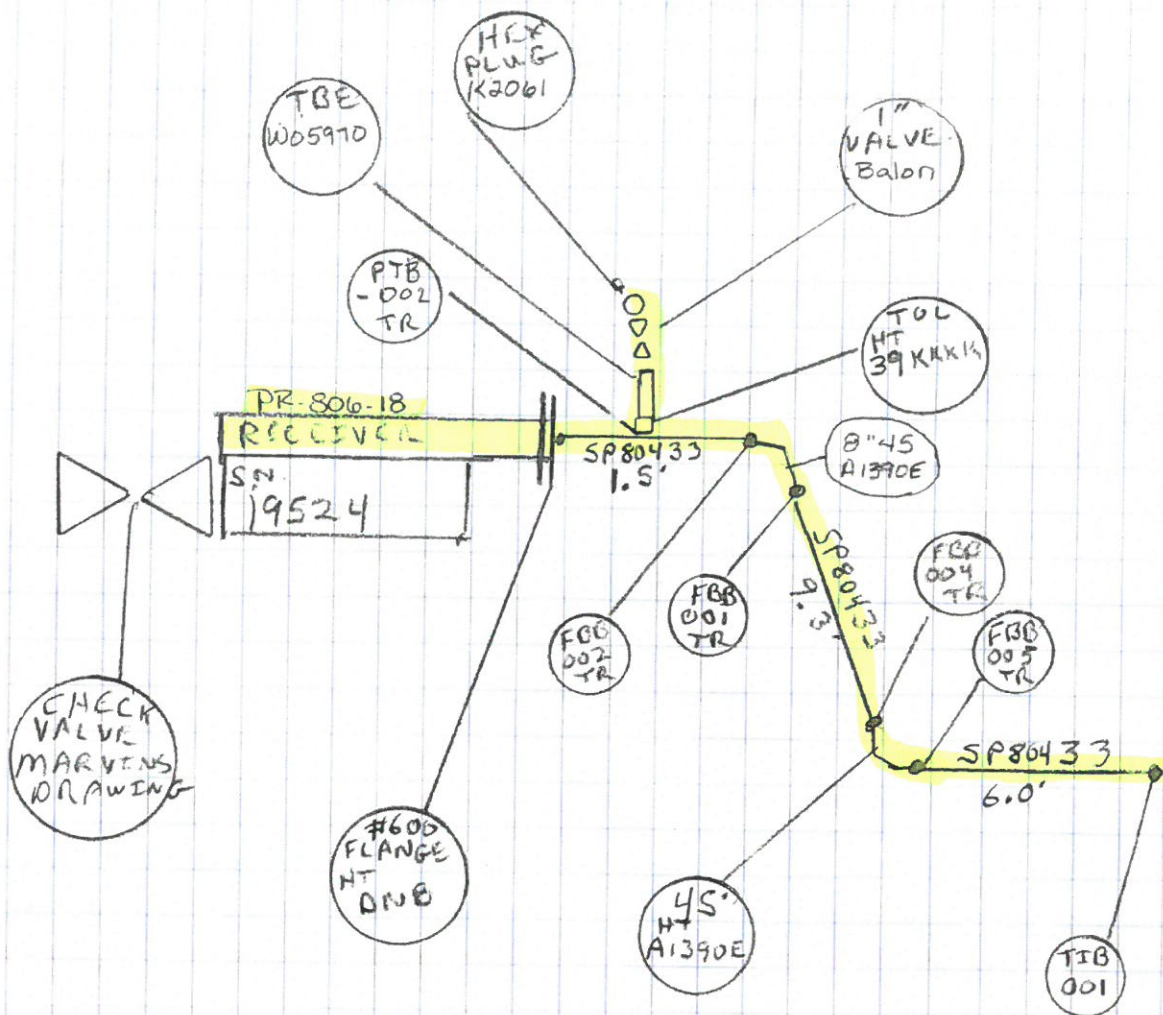


North

Inspected & Drawn by: MARVIN B. Staley  
 1-20-2020 CIS-Black Diamond





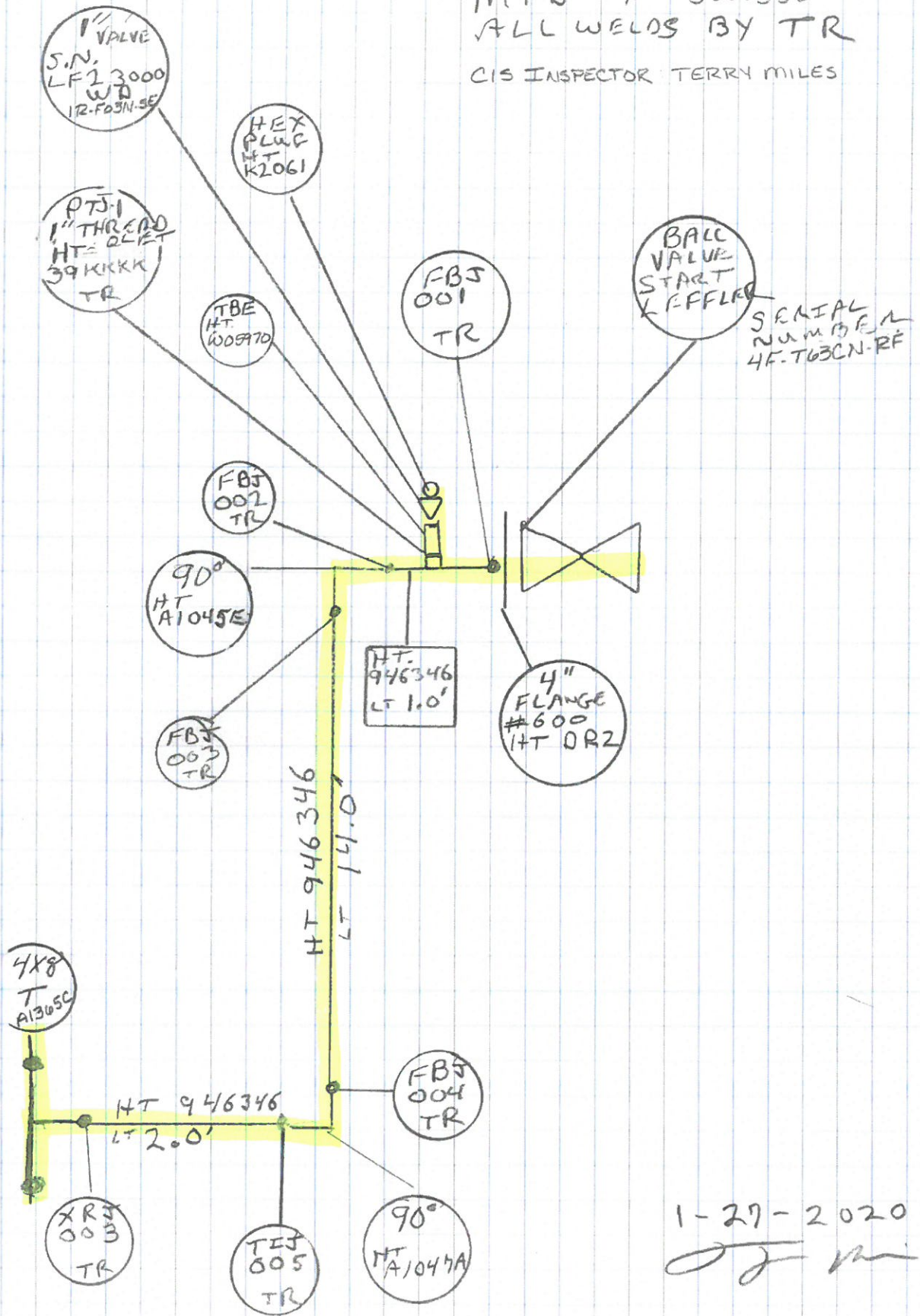


MTD  
5000530

1-31-2020

*Terry Miles*  
Terry Miles

MTD 4" 5000530  
ALL WELDS BY TR  
CIS INSPECTOR TERRY MILES

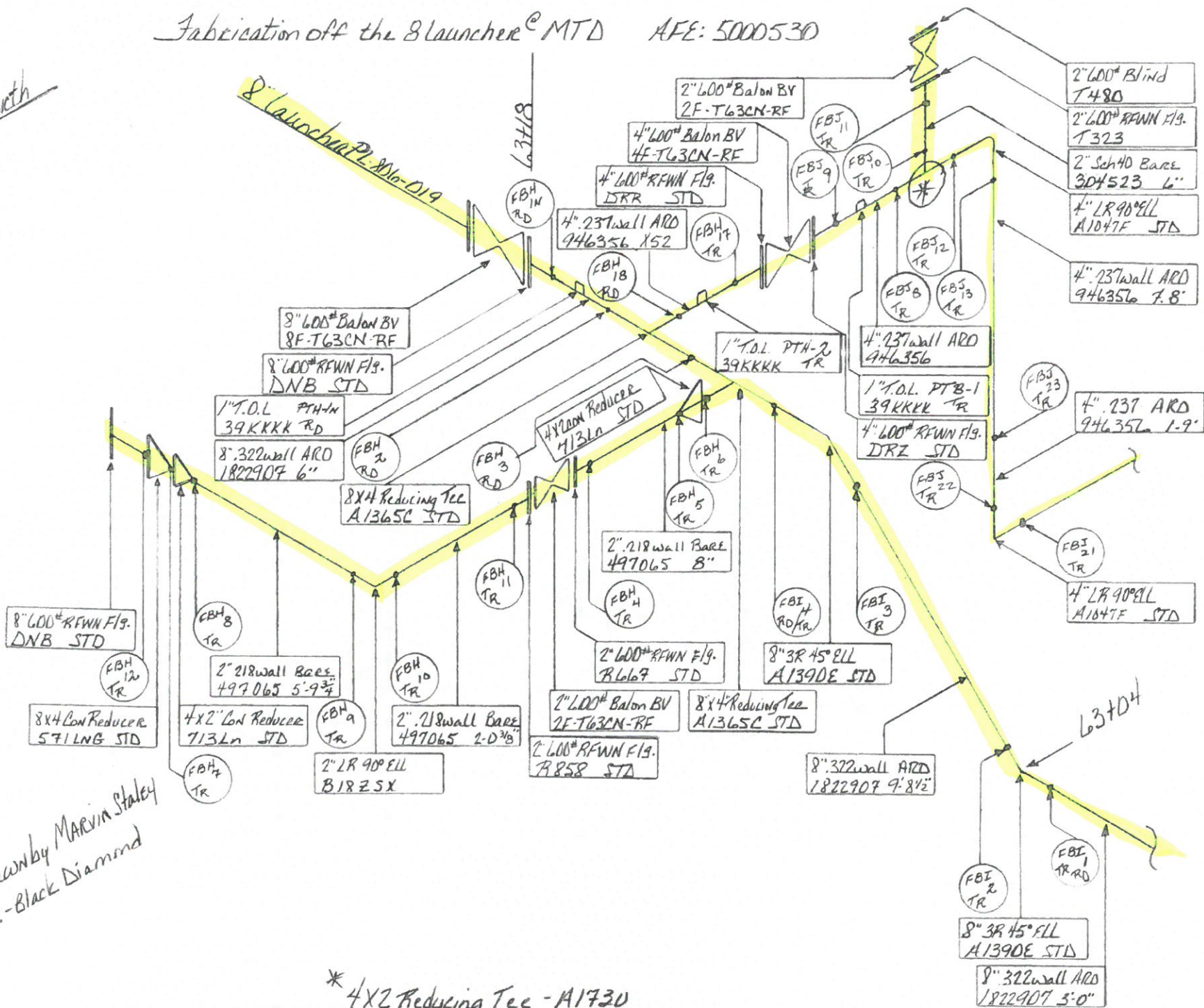


1-27-2020  
*[Signature]*



AFE: 5000530

Worth



Inspected - Deacon by Marvin Stated  
12-17-19 C.I.S. - Black Diamond

\* 4X2 Reducing Tee - A1730

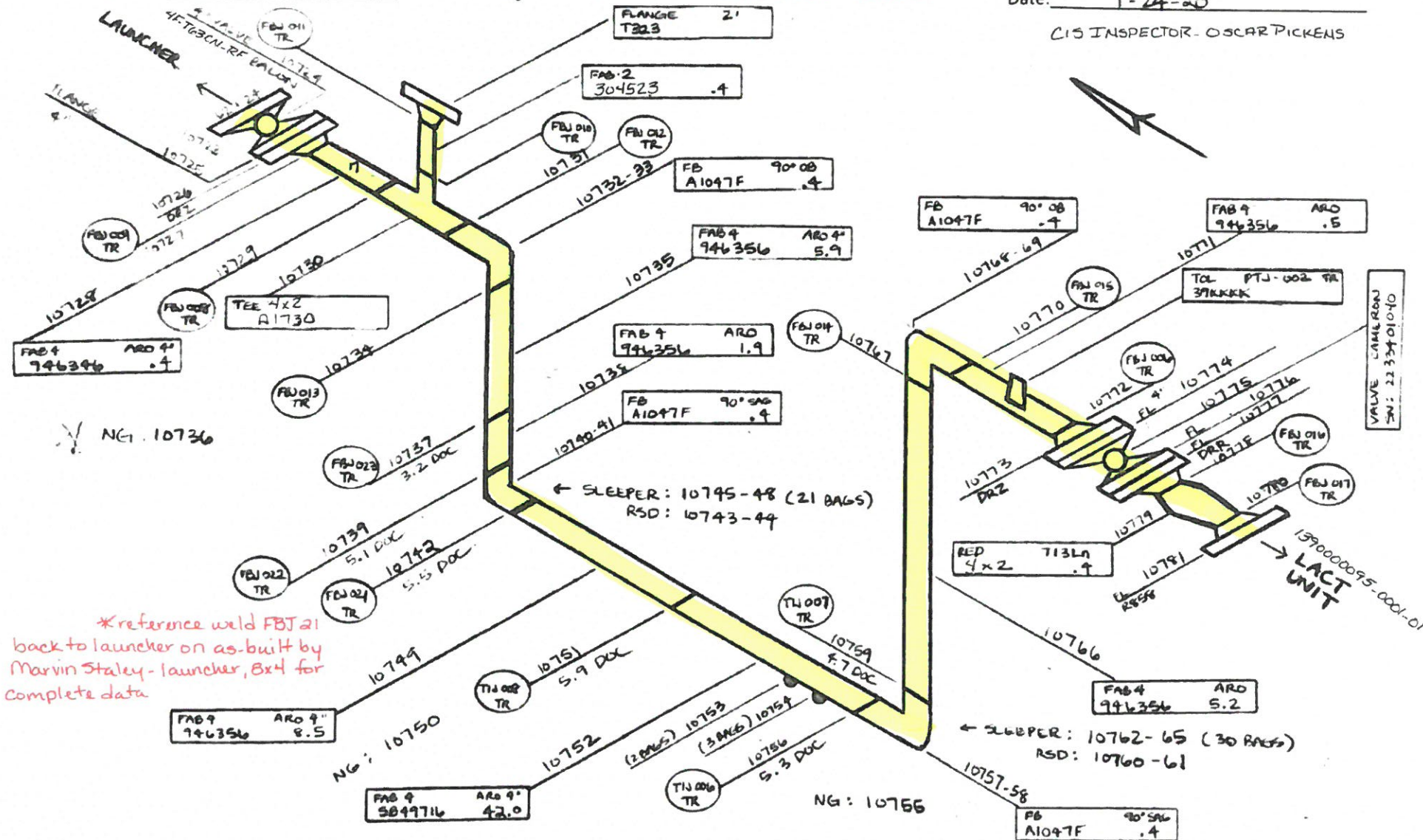
Client: NOBLE  
 Project: MTD 5000530  
 WO#: 127766  
 Comments: 20 LAUNCHER TIE IN  
 TO LACT UNIT



**TOPOGRAPHIC**  
 LOYALTY INNOVATION LEGACY

P.C.: L. DRAKE  
 I-MAN: S. MCKENIGHT  
 R-MAN:  
 Weather: 50°  
 Date: 1-24-20

CIS INSPECTOR: OSCAR PICKENS



\*Reference weld FB021  
 back to launcher on as-built by  
 Marvin Staley - launcher, 8x4 for  
 complete data

DC File LDA 012420 MTD

BOOK

LACT UNIT NO.:  
 1390000950001-01  
 20 x 10

Page 1

LACT UNIT  
 CORNERS: 10782-85

62 + 24 - 63 + 14