Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-762.901(9)
Form Title: Storage Tank Equipment Registration Form
Effective Date: July 2019
Incorporated in Rule 62-762.851, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: Pritchard Brown, LLC
Contact Name: Alan Reed
Company Address: 6501 Erdman Ave
City, State: Baltimore, MD Zip: 21205
E-mail: areed@pritchardbrown.com
Contact Number: 410.483.5875
Product Name: Pritchard Brown Fuel Tank Base
Model Number(s): na
Product Type: Aboveground Storage Tank
Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), F.A.C.:

Write a brief description of equipment registration request including product limitations:

We are requesting an FDEP EQ number for our UL 142 listed above-ground storage tank. Our tanks are manufactured in Maryland, primarily used for storage of diesel fuel, and shipped to the site for field installation.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

		Yes	No	N/A
1.	Third-party Certification by a Nationally Recognized Testing Laboratory? (Required)	✔		
2.	Documentation of third-party evaluation that the equipment meets DEP Rules?	✔		
3.	Documents included about the qualifications of the Nationally Recognized Testing Laboratory?			✔
4.	Technical information and drawings included?	✔		
5.	Installation instructions included?	✔		
6.	Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)?			✔
7.	Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)?			✔
8.	Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	✔		
9.	Has the product been approved or registered in other countries or states? (If so provide list)		✔	
10.	Any requirements for company-certified installers or trainers?		✔	
11.	Was this product(s) previously approved or registered by the Department? If yes, EQ- 894	✔		
12.	Any changes or modifications to the equipment since the last submittal to DEP?		✔	

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

Pritchard Brown manufactures UL listed storage tanks under file numbers MH15232 and MH17719. We have manufactured over one thousand fuel tanks under these designs.

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Alan Reed
Printed Name and Title

Alan Reed
Digitally signed by Alan Reed
Date: 2023.05.31 10:24:07 -04'00'
Signature (right click to sign)

05/31/2023
Date

For Department Use Only:

Date Application Received: 05/31/2023
Application complete: Yes: ✔ No:

EQ- 894
Date of complete or incomplete letter sent: 06/08/2023
Date Equipment Requires Renewal: 06/08/2028

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-762.851(2), F.A.C.

Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-762.901(9)
Form Title: Storage Tank Equipment Registration Form
Effective Date: January 2017
Incorporated in Rule 62-762.851, F.A.C.

Storage Tank Equipment Registration Form

Fill out completely

General Information

Company Name: Pritchard Brown, LLC
Contact Name: Alan Reed
Company Address: 6501 Erdman Avenue
City: Baltimore MD
Zip: 21205
E-mail: areed@pritchardbrown.com
Contact Number: 410-483-5875
Product Name: Pritchard Brown Fuel Tank Base
Model Number(s): N/A
Product Type: AST
Rule(s) citation within Chapter 62-761, or 62-762, F.A.C. that registration is being requested: 62-762.501

Write a brief description of equipment registration request including product limitations:

We are requesting an FDEP EQ number for our U.L. 142 listed abouve-ground diesel fuel storage tank. Our tanks are manufactured i

Information Checklist

		Yes	No	N/A
1.	Third-party Certification by a Nationally Recognized Testing Laboratory?	✔		
2.	Documentation of third-party evaluation that the equipment meets DEP Rules?	✔		
3.	Documents included about the qualifications of the Nationally Recognized Testing Laboratory?			✔
4.	Installation instructions included?	✔		
5.	Technical information and drawings included?	✔		
6.	Annual Operability Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702 F.A.C.)?			✔
7.	Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	✔		
8.	Has the product been approved or registered in other countries or states? (If so provide list)		✔	
9.	Any requirements for company-certified installers or trainers?		✔	
10.	Was this product(s) previously approved or registered by the Department?		✔	
	If yes, please specify the Equipment Number: **EQ-_____**			✔
11.	Any changes or modifications to the equipment since the last submittal to DEP?			✔

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@dep.state.fl.us, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

We have manufactured over one thousand fuel tanks under this design and UL-142 listing MH15232

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Michael R. Witkowski
Printed Name and Title

Michael R Witkowski Digitally signed by Michael R Witkowski Date: 2018.05.04 10:29:10 -04'00'
Signature

05/04/2018
Date

For Department Use Only:

Date Application Received: 5/4/2018
Application complete: Yes: ✔ No:

EQ- 894
Date of complete or incomplete letter sent: 5/4/2018
Date of entry to the DEP Equipment Registration List: 5/4/2018

MORRISON OVERFILL PREVENTION VALVE • SPECIFICATION SHEET • FIG.9095A SERIES

DESCRIPTION

The 9095A AST Overfill Prevention Valve is installed at the fill port of an aboveground storage tank. Used in a tight fill application, the valve terminates flow of product when the liquid level reaches a preset warning level (90-95% full). The valve is installed on a standard N.P.T. male connection when used with the quick disconnect or female adaptor. The 2" valve can be used in conjunction with the Morrison Fig. 518 line of AST Spill Containers for added spill protection. When installed to manufacturers requirements the Morrison Fig. 9095A Overfill Prevention Valve can eliminate environmentally hazardous spills. All models are supplied with an adaptor to mount to Morrison Fig. 419 aluminum drop tubes. ULC Listed.

SHOWN WITH STANDARD ADAPTOR
9095A-0200 AV or 9095A-0300 AV

SHOWN WITH QUICK DISCONNECT ADAPTOR
9095A-0500 AV or 9095A-0600 AV

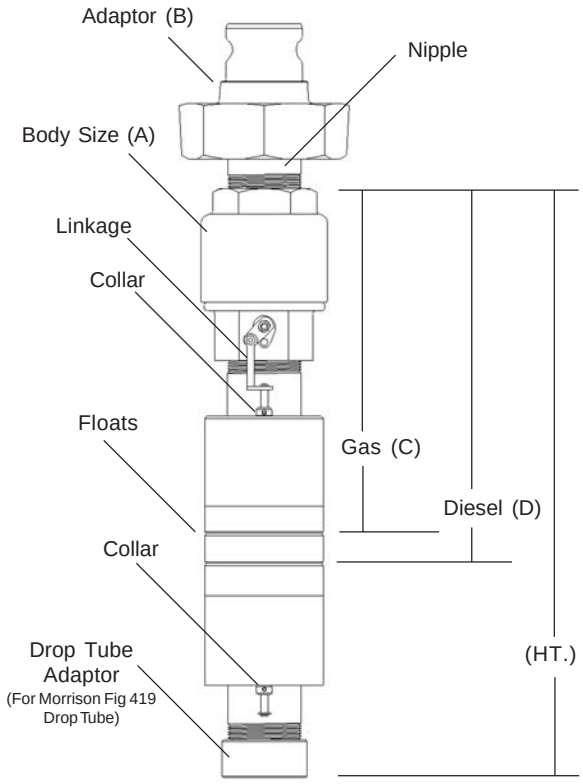
SHOWN WITH FEMALE ADAPTOR
9095A-3200 AV or 9095A-3300 AV

This valve complies with the following codes:
NFPA 30, 30A, UFC, BOCA, SBCCI/SFC, and PEI RP2000

Product Warnings and Cautions

- 5 PSI & 5 GPM is the *minimum* flow requirement for valve operation at the following *maximum* viscosities (in centistokes): 2" Valve—150 3" Valve—60.
- A tight fill is required for the valve to operate. Do not substitute any other fill adaptors for the special adaptor supplied.
- The valve should be properly inspected before installation to insure the unit was not damaged during the delivery process.
- Use caution during installation to protect float devices and their linkage.
- Damage to the parts may cause the valve to function improperly.
- The valve must be used with clean product. Debris from products such as contaminated waste oil may cause the valve to function improperly.
- Consult Morrison Bros. Co. for product compatibility with the valve.
- The 3" valve can be used w/6" Sch. 40 or 80 pipe.
- The 2" valve can be only be used with Sch. 40 pipe.
- These valves are rated for a maximum pressure of 100 PSI.

Failure to follow any or all of the above warnings may render the valve non-functional and could result in a hazardous product spill, which may result in personal injury, property damage, fire, explosion, or environmental contamination.



SPECIFICATION/DETAIL OPTIONS

A—Body Size: 2" N.P.T. (2"), 3" N.P.T. (3")
B—Adaptor :
- 2" x 4" Standard 2" Male Disconnect x 4" Female—(2S)
- 2" Quick Disconnect Adaptor—(2X)
- 2" x 2" x 4" Female Ductile Iron Adaptor—(2D)
- 3" x 4" Standard 3" Male Disconnect x 4" Female—(3S4)
- 3" x 4" Standard 3" Female x 4" Female With Line Purge—(3F)
- 3" x 6" Standard 3" Male Disconnect x 6" Female—(3S)
- 3" Quick Disconnect Adaptor—(3X)
- 3" x 3" x 6" Female Ductile Iron Adaptor—(3D)

C—Gasoline Shutoff Height From Top of Valve (Inches)
D—Diesel Shutoff Height From Top of Valve (Inches)
HT.—Height: Dimension from base to top of valve (Inches)
WT.—Shipping Weight (lbs.)

I.D. NUMBER	A	B	C	D	HT.	WT.
9095A-0200 AV	2"	2S	11	12	19.25	14.1
9095A-3200 AV	2"	2D	11	12	19.25	14.1
9095A-0500 AV	2"	2X	11	12	19.25	12.6
9095A-0300 AV	3"	3S	13.56	13.75	19.56	29
9095A-0600 AV	3"	3X	13.56	13.75	19.56	26
9095A-3300 AV	3"	3D	13.56	13.75	19.56	38
9095A-4000 AV	2"	3S4	11.67	12.67	19.9	
9095A-4200 AV	2"	3F	11.67	12.67	19.9	

Body: Anodized Aluminum
Linkage: Stainless Steel
Internal Components: Brass/Stainless Steel
Floats: Closed Cell Buna-N

Series 9095A Overfill Prevention Valves are ULC Listed and Approved by the NYC Fire Department (Certificate of Approval #5028)

Morrison Bros. Co.
Established 1855
325 East 24th Street
Dubuque, Iowa 52001
Ph: 800.553.4840
Fax: 563.583.5028
MEMBER PEI

MODEL PAXP - 1/8 DIN PROCESS INPUT PANEL METER

- *OPTIONAL CUSTOM UNITS OVERLAY W/ BACKLIGHT*
- *DUAL RANGE INPUT (20 mA or 10 VDC)*
- *24 VDC TRANSMITTER POWER*
- *-19,999 to 99,999 DISPLAY RANGE*
- *16 POINT SCALING FOR NON-LINEAR PROCESSES*
- *MAX AND MIN READING MEMORY*
- *PROGRAMMABLE INPUT AND OUTPUT RESPONSE TIMES*
- *TIME-INPUT INTEGRATOR*
- *PROGRAMMABLE FUNCTION KEYS*
- *THREE PROGRAMMABLE DIGITAL CONTROL INPUTS*
- *FOUR SETPOINT ALARM OUTPUTS (W/Plug-in card)*
- *COMMUNICATION AND BUS CAPABILITIES (W/Plug-in card)*
- *ANALOG OUTPUT SIGNAL (W/Plug-in card)*
- *PC SOFTWARE AVAILABLE FOR METER CONFIGURATION*
- *NEMA 4X/IP65 SEALED FRONT BEZEL*

UL Recognized Component, File # E179259

D

GENERAL DESCRIPTION

The PAXP (PAX Process Input Meter) offers many features and performance capabilities to suit a wide range of industrial applications. The meter employs advanced technology for stable, drift free readout, while incorporating features that provide flexibility now and in the future with plug-in option cards. The plug-in card options allow the opportunity to configure the meter for present applications, while providing easy upgrades for future needs.

The Process Meter has two inputs: 0 to 20 mA DC or 0 to 10 VDC. A built-in 24 VDC supply powers remote transmitters. The meter incorporates a 16-point input scaling feature for compensation of non-linear processes.

The meter provides a Max and Min reading memory with programmable capture time. The capture time is used to prevent detection of false max and min readings which may occur during start-up or unusual process events.

The signal totalizer (integrator) can be used to compute a time-input product. This can be used to provide a readout of totalized flow, calculate service intervals of motors and pumps, etc. The totalizer can also accumulate batch weighing operations.

The meter has four setpoint outputs, implemented on Plug-in cards. The Plug-in cards provide dual FORM-C relays (5 A), quad FORM-A relays (3 A) or either sinking or sourcing quad open collector logic outputs. The setpoint alarms can be configured in modes to suit a variety of control and alarm requirements.

- High and low absolute, high and low deviation and band acting
- Balanced or unbalanced hysteresis
- On and off delay timers
- Auto reset or latching modes
- Reverse phase output and/or panel indicator
- Selection of alternate list of setpoint values

Plug-in cards also facilitate bus communications. These include RS232, RS485 and DeviceNet. Readout values and setpoint alarm values can be controlled through the bus. Additionally, the meter has features that allow a remote computer to directly control the outputs of the meter. This is useful during commissioning phases and diagnostic use. With a communication card installed, set-up software allows configuration from a PC. The configuration data can be saved to a file for later recall.

A linear DC output signal is available as a plug-in card. The card provides either 20 mA or 10 V signals. The output can be scaled independent of the input range.

The features of the linear output cards are:

- Output tracks either input, totalizer, max or min readings
- Programmable output update times

Once the meter has been initially configured, the parameter list may be locked out from further modification in it's entirety or only the setpoint values can be made accessible.

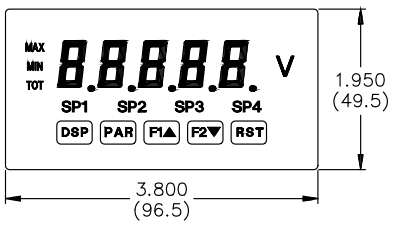
The meter has been specifically designed for harsh industrial environments. With NEMA4 X/IP65 sealed bezel and extensive testing of noise effects to CE requirements, the meter provides a tough yet reliable application solution.

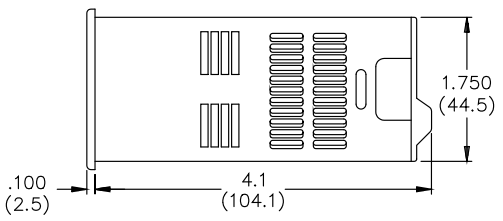
CAUTION: Read complete instructions prior to installation and operation of the unit.

CAUTION: Risk of electric shock.

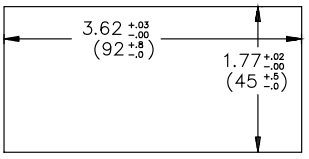
DIMENSIONS "In inches (mm)"

Note: Recommended minimum clearance (behind the panel) for mounting clip installation is 2.1" (53.4) H x 5.5" (140) W.





PANEL CUT-OUT



SPECIFICATIONS

1. **DISPLAY**: 5 digit, 0.56" red LED, (-19999 to 99999)
2. **POWER**
   AC Versions (PAXP0000):
   AC Power: 85 to 250 VAC, 50/60 Hz, 15 VA
   Isolation: 2300 Vrms for 1 min. to all inputs and outputs.
   DC Versions (PAXP0010):
   DC Power: 11 to 36 VDC, 11 W
   (Derate operating temperature to 40° C if operating <15 VDC and three plug-in cards are installed)
   AC Power: 24 VAC, ±10%, 50/60 Hz, 15 VA
   Isolation: 500 Vrms for 1 min. to all inputs and outputs (50 V working).
3. **ANNUNCIATORS**:
   MAX - max readout selected
   MIN - min. readout selected
   TOT - totalizer readout selected, flashes when total overflows
   SP1 - setpoint alarm 1 is active
   SP2 - setpoint alarm 2 is active
   SP3 - setpoint alarm 3 is active
   SP4 - setpoint alarm 4 is active
   Units Label - software controlled units label backlight
4. **KEYPAD**: 3 programmable function keys, 5 keys total
5. **A/D CONVERTER**: 16 bit resolution
6. **UPDATE RATES**:
   A/D conversion rate: 20/readings sec
   Step response: 200 msec. max. to within 99% of final readout value (digital filter and internal zero correction disabled)**
   700 msec. max. (digital filter disabled, internal zero correction enabled)**
   Display update rate: 1 to 20 updates/sec
   Setpoint output on/off delay time: 0 to 3275 sec
   Analog output update rate: 0 to 10 sec
   Max./Min. capture delay time: 0 to 3275 sec
7. **RANGE OVERLOAD RESPONSE**:
   Display flashes [OLOL] at approximately 130% above range
   Display flashes [ULUL] at approximately -10% below range
8. **SENSOR INPUTS**:

Input (Range)	Accuracy* (18 to 28C)	Accuracy* (0 to 50C)	Impedance/ Compliance	Max Continuous Overload	Display Resolution ***
20 mA (-2 to 26 mA)	0.03% of reading +2 μA	0.12% of reading +3 μA	20 ohm	150 mA	1 μA
10 VDC (-1 to 13 VDC)	0.03% of reading +2 mV	0.12% of reading +3 mV	500 Kohm	300 V	1 mV

* After 20 minute warm-up. Accuracy is specified in two ways: Accuracy over an 18 to 28°C and 10 to 75% RH environment; and accuracy over a 0 to 50°C and 0 to 85%RH (non-condensing environment). Accuracy over the 0 to 50°C range includes the temperature coefficient effect of the meter.

** The meter periodically (every 12 seconds) imposes a 500 msec delay to compensate for internal zero drift. If the delay affects applications where step response is critical, it can be defeated. Set the display update to 20/sec to disable. In this case, add a zero error of 0.1% FS over the 0 to 50°C range.

*** Nominal Resolution. The internal resolution is the input range divided by 65,535.

9. **EXCITATION POWER**:
   Transmitter Power: 24 VDC, ±5%, regulated, 50 mA max.
10. **LOW FREQUENCY NOISE REJECTION**:
    Normal Mode: > 60 dB @ 50 or 60 Hz ±1%, digital filter off
    Common Mode: >100 dB, DC to 120 Hz
11. **USER INPUTS (Logic Level)**: Three software defined user inputs, jumper selectable for sink/source logic
    Max. Continuous Input: 30 VDC

INPUT STATE	SINKING INPUTS 22 KΩ pull-up to +5 V	SOURCING INPUTS 22 KΩ pull-down
Active	V_{IN} < 0.7 VDC	V_{IN} > 2.5 VDC
Inactive	V_{IN} > 2.5 VDC	V_{IN} < 0.7 VDC

    Isolation To Sensor Input Common: Not isolated. Do not tie commons together.
12. **TOTALIZER**:
    Time Base: second, minute, hour, or day
    Time Accuracy: 0.01% typical
    Decimal Point: 0 to 0.0000
    Scale Factor: 0.001 to 65.000
    Low Signal Cut-out: -19,999 to 99,999
    Total: 9 digits, display alternates between high order and low order readouts
13. **CUSTOM LINEARIZATION**:
    Data Point Pairs: Selectable from 2 to 16
    Display Range: -19,999 to 99,999
    Decimal Point: 0 to 0.0000
14. **SERIAL COMMUNICATIONS**: (RS232 or RS485)
    Isolation To Sensor & User Input Commons: 500 Vrms for 1 min. Working Voltage: 50 V
    Not Isolated from all other commons.
    Data: 7/8 bits
    Baud: 300 to 19200
    Parity: no, odd or even
    Bus Address: selectable 0 to 99, Max. 32 meters per line (RS485)
    Transmit Delay: Selectable for 2 to 50 msec or 50 to 100 msec (RS485)
15. **ANALOG OUTPUT** :
    Types: 0 to 20 mA, 4 to 20 mA or 0 to 10 VDC
    Isolation To Sensor & User Input Commons: 500 Vrms for 1 min. Working Voltage: 50 V
    Not Isolated from all other commons.
    Accuracy: 0.17% of FS (18 to 28°C); 0.4% of FS (0 to 50°C)
    Resolution: 1/3500
    Compliance: 10 VDC: 10 KΩ load min.
    20 mA: 500 Ω load max.
16. **SETPOINT OUTPUT**: Four types of field installable cards
    Dual Relay Card:
    Type: Two FORM-C relays
    Isolation To Sensor & User Input Commons: 2000 Vrms for 1 min.
    Contact Rating:
    One Relay Energized: 5 amps @ 120/240 VAC or 28 VDC (resistive load), 1/8 HP @120 VAC, inductive load
    Total current with both relays energized not to exceed 5 amps
    Life expectancy: 100K cycles min. at full load rating. External RC snubber extends relay life for operation with inductive loads
    Quad Relay Card:
    Type: Four FORM-A relays
    Isolation To Sensor & User Input Commons: 2300 Vrms for 1 min.
    Contact Rating:
    One Relay Energized: 3 amps @ 250 VAC or 30 VDC (resistive load), 1/10 HP @120 VAC, inductive load
    Total current with all four relays energized not to exceed 4 amps
    Life Expectancy: 100K cycles min. at full load rating. External RC snubber extends relay life for operation with inductive loads
    Quad Sinking Open Collector:
    Type: Four isolated sinking NPN transistors.
    Isolation To Sensor & User Input Commons: 500 Vrms for 1 min. Working Voltage: 50 V
    Not Isolated from all other commons.
    Rating: 100 mA max @ V_{SAT} = 0.7 V max. V_{MAX} = 30 V
    Quad Sourcing Open Collector:
    Type: Four isolated sourcing PNP transistors.
    Isolation To Sensor & User Input Commons: 500 Vrms for 1 min. Working Voltage: 50 V
    Not Isolated from all other commons.
    Rating: Internal supply: 24 VDC ± 10% , 30 mA max. total all four outputs
    External supply: 30 VDC max., 100 mA max. each output
17. **MEMORY**: Nonvolatile E^2Prom retains all programmable parameters and display values.
18. **CERTIFICATIONS AND COMPLIANCES**:
    UL Recognized Component, File # E179259
    Recognized to U.S. and Canadian requirements under the Component Recognition Program of Underwriters Laboratories, Inc.

ELECTROMAGNETIC COMPATIBILITY

Immunity to EN 50082-2

electrostatic discharge	EN 61000-4-2	level 3; 8 Kv air
electromagnetic RF fields	EN 61000-4-3	level 3; 10 V/m [1] 80 MHz - 1 GHz
fast transients (burst)	EN 61000-4-4	level 4; 2 Kv I/O level 3; 2 Kv power
RF conducted interference	EN 61000-4-6	level 3; 10 V/rms 150 KHz - 80 MHz
Simulation of cordless telephones	ENV 50204	level 3; 10 V/m 900 MHz ± 5 MHz 200 Hz, 50% duty cycle

Emissions to EN 50081-2

RF interference	EN 55011	enclosure class A power mains class A

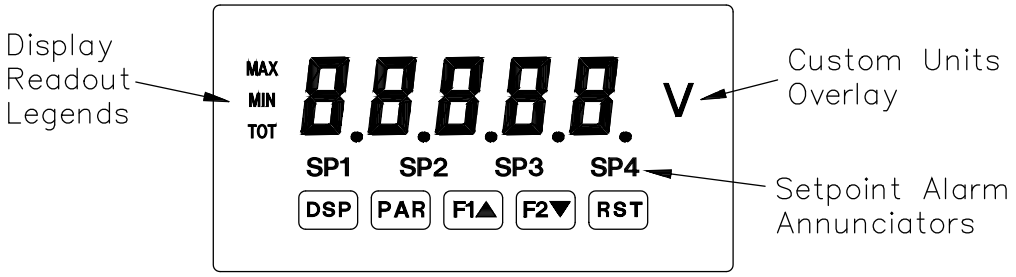
19. **ENVIRONMENTAL CONDITIONS**:
Operating Temperature Range: 0 to 50°C (0 to 45°C with all three plug-in cards installed)
Storage Temperature Range: -40 to 60°C
Operating and Storage Humidity: 0 to 85% max. non-condensing
Altitude: Up to 2000 meters
20. **CONNECTIONS**: High compression cage-clamp terminal block
Wire Strip Length: 0.35" (9 mm)
Wire Gauge Capacity: One 14 AWG solid or Two 18 AWG
21. **CONSTRUCTION**:This unit is rated for NEMA 4X/IP65 indoor use. IP20 Touch safe. Installation Category II, Pollution Degree 2. One piece bezel/case. Flame resistant. Synthetic rubber keypad. Panel gasket and mounting clip included.
22. **WEIGHT**: 10.4 oz. (295 g)

Safety Summary

All safety related regulations, local codes and instructions that appear in the manual or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Do not use this unit to directly command motors, valves, or other actuators not equipped with safeguards. To do so can be potentially harmful to persons or equipment in the event of a fault to the unit.

FRONT PANEL

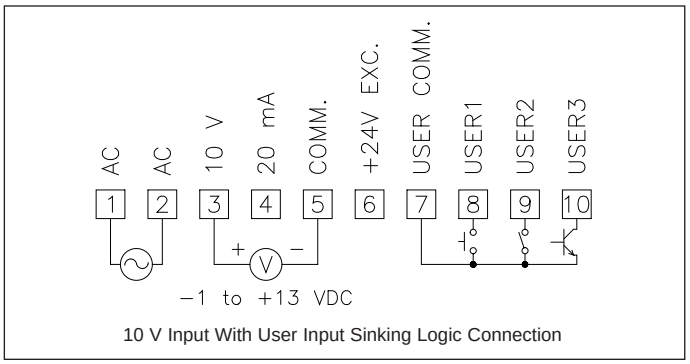


KEY	DISPLAY MODE OPERATION	PROGRAMMING MODE OPERATION
DSP	Index display through max/min/total/input readouts	Quit programming and return to display mode
PAR	Access parameter list	Store selected parameter and index to next parameter
F1▲	Function key #1; hold for 3 seconds for Second Function #1	Increment selected parameter value
F2▼	Function key #2; hold for 3 seconds for Second Function #2	Decrement selected parameter value
RST	Reset (function key)	Hold with F1▲, F2▼ to scroll value by x1000

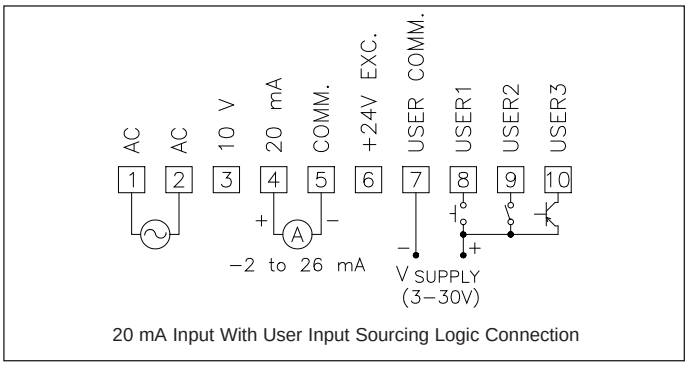
D

BASIC CONNECTIONS

Note: Option card field connection diagrams are supplied with the card.

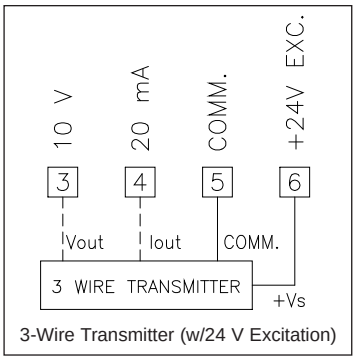


10 V Input With User Input Sinking Logic Connection

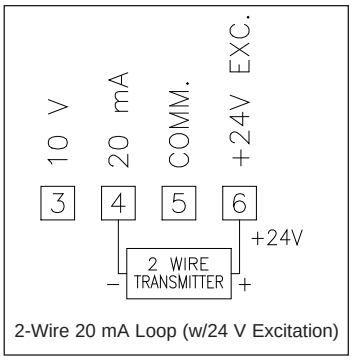


20 mA Input With User Input Sourcing Logic Connection

Sensor Input Common is NOT isolated from User Input Common. Do NOT tie commons together. 24 VDC supply is intended to power remote transmitters, do NOT use it for any other purpose.



3-Wire Transmitter (w/24 V Excitation)



2-Wire 20 mA Loop (w/24 V Excitation)

CUSTOM UNITS OVERLAY

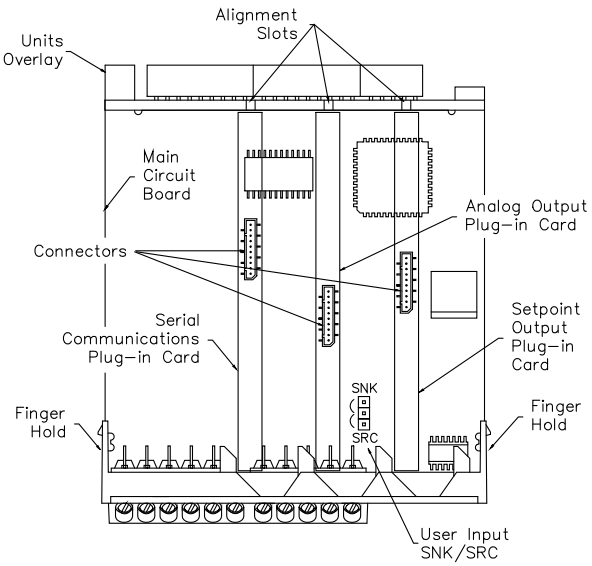
The meter has a backlighted units indicator that can be customized to the application. The backlight is turned on by programming the "b-L it" parameter. Overlays are available in the Units Label Kit. To install an overlay, remove the unit from the case. Select the label and apply it to the label frame, noting that the label must be aligned accurately. Install the label frame to the display board in the alignment holes located on the right side of the display.

PLUG-IN CARDS

The meter has three plug-in card slots. Each slot is dedicated to a specific function. These functions are:

Setpoint Outputs
Analog Outputs
Communication Option

The plug-in cards can be used in any combination, however, it is only possible to use one type of card from each category. Cards can be installed initially, or at a later date as system needs arise.



WARNING: Disconnect power to the unit before installing plug-in cards. To install a card, depress the side latches at the finger holds and remove the unit from the rear of the case. Insert the card into the appropriate slot and re-install the unit.

INPUTS

User Input Jumper Link

Select source position for use with sourcing logic (PNP).
Select sink position for use with sinking logic (NPN) and mechanical switches.

20 mA Input

The total range of the 20 mA input extends from -2 mA to 26 mA DC. The input is overload protected to 150 mA.

10 VDC Input

The total range of the 10 VDC input extends from -1 VDC to 13 VDC. The input is overload protected to 300 VDC.

Scaling

The meter has been factory calibrated on all ranges as a basic multimeter (voltmeter/ammeter). The basic meter readout can then be post scaled to read out in the process units (level, flow, temperature, etc.). The meter provides two ways in which to scale the display:

Key-in: Key in the input and display scaling points using known data.
Apply: Apply the actual input value and key in the corresponding display value. The meter records the input value applied.

For processes that require linearity compensation, up to 16 scaling points can be used for correction. The scaling range is extended up to five digits of resolution with selectable display rounding factors.

Input Features

A unique adaptive input filter is used. Whenever the difference between one reading and the next is less than the filter band value, the input is filtered. When the difference exceeds the filter band value, the input is not filtered. This avoids the usual compromise between using a relative high time constant for good noise rejection and using a low time constant filter for quick step response.

The readout can be corrected for process zero errors with an offset value. A tare function zeros the readout via a function operation.

FUNCTION KEYS AND USER INPUTS

The Function Keys and User inputs can be programmed to perform specific meter control operations. There are three function keys, with Function Keys #1 and #2 each having two types of functions, primary and secondary. The primary function is executed the instant the key is pressed. Holding the key for three seconds executes the second function. If the key is not held for 3 seconds, the second function is not executed. To implement a hidden key, program no function for the primary and program the desired function for the second.

The three user inputs can be selected for sinking or sourcing logic.

MAX AND MIN READING DETECTION

The meter records the maximum (max) and minimum (min) process inputs. Conditions such as valve activation, sudden change in material flow rate, etc., can result in false peaks which are not reflective of the true maximum and minimum of the process. In this case, Max and Min capture delay times can be used to prevent the detection of false maximums and minimums.

TOTALIZER (integrator)

The totalizer can be used to integrate a time-input product. The totalizer accumulates input readings according to the following relation:

Total(n) = Total(n-1) + [Input(n) * (scale factor/time base)]
n = nth sample instant (seconds)
input = input reading (ignore decimal point position)
scale factor = 0.001 to 65.000
time base: sec = 1
min = 60
hour = 3600
day = 86,400

When the total exceeds 5 digits, the front panel annunciator "TOT" flashes. In this case, the meter continues to totalize up to a 9 digit value. The high order 4 digits and the low order 5 digits of the total are displayed alternately. The letter "h" denotes the high order display.

The total decimal point position is independent of the input. A low cut value disables totalization below a set input value. Alarms can be programmed to activate when a set total is reached. Alternately, the totalizer can be used to accumulate batch weighing operations.

PARAMETER LOCK MODE

A user input can be used to lock the parameter list.When the user input is active, the meter is in the protected parameter mode, where it is only possible to access the setpoint values and the security code.

It is possible to lock the parameter list without using a user input as a program lock function. In this case, set the security code to a non-zero value. With a non-zero security value set, press the PAR key to view the programmed setpoint values. The security code requires a "key" value to gain access to the full parameter list.

SETPOINT ALARMS

The meter has four setpoint alarm Plug-in cards. Only one of these cards can be installed at a time. These are:

Dual relay, FORM-C
Quad relay, FORM-A
Isolated quad sinking NPN open collector
Isolated quad sourcing PNP open collector

The setpoint alarms can be independently configured for a variety of operating modes. It is also possible to set the alarms to trigger from the totalizer value. The setpoint alarm figures illustrate the operating modes:

Setpoint Alarm Values

When setpoint alarm is programmed as deviation or band acting, the effective trigger point is offset by SP1. In these modes, SP1 acts as a master setpoint, that the other setpoints track.

An alternate list of setpoint values can be stored and recalled as needed. Select the alternate list with a function key or user input and program the setpoint values. This allows for quick changeover for a new process condition.

Setpoint Alarm Hysteresis and On/Off Time Delay

Depending on the application, hysteresis or On/Off time delays can be used. When the setpoint is a control output, hysteresis is usually used to control the cycle period. Optionally, time delay can also be employed to ensure minimum On/Off times. This is useful to limit the cycling of refrigeration compressors.

On/Off time delays are effective when the setpoint is used as an alarm output. The time delays can be used to prevent false triggering during process transient events, while hysteresis eliminates output chatter at the switch point.

The hysteresis value can be selected to act in the balanced mode or unbalanced mode. In the balanced mode, the hysteresis action is centered about the trigger point, while in the unbalanced mode the hysteresis acts on one side of the trigger point. When the setpoint is a control output, usually balanced hysteresis is used. This tends to center the oscillation around the setpoint value. For alarm applications, usually unbalanced hysteresis is used. This makes the alarm activate precisely at the trigger value.

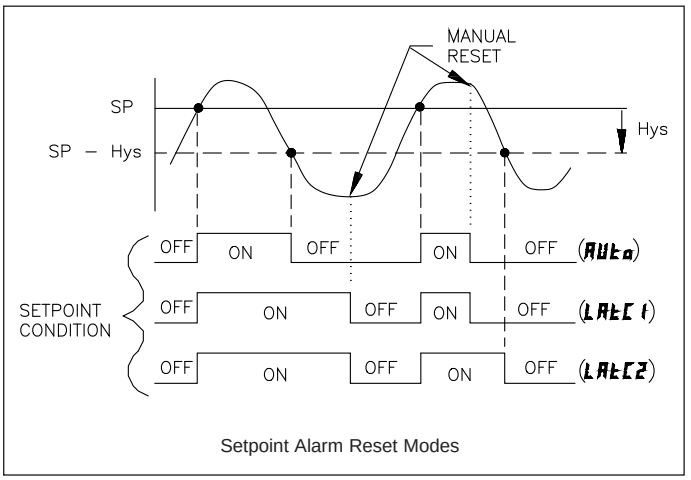
Setpoint Alarm Output Phase and Panel Annunciator

The output phase (logic) of each setpoint can be reversed. While the front panel indicator follows the output state, it can be programmed to reverse as well; or flash for added emphasis.

OUTPUT	ON CONDITION
RELAY	Energized
SNK O.C.	V_{OUT} = 0 V
SRC O.C.	$V_{OUT} = V_S$

Setpoint Alarm Reset Modes, Standby Operation

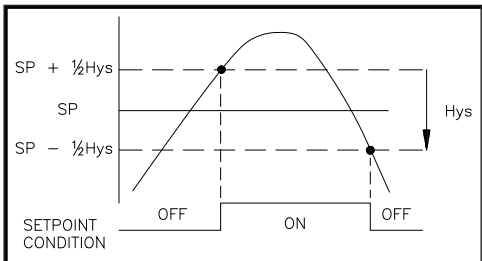
Each setpoint alarm can be programmed for auto or latching reset modes. Standby operation can be used to prevent the triggering of a low alarm until the process first exceeds the alarm value.This suppresses false alarms during system start-up.



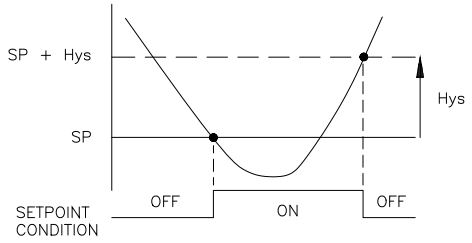
Setpoint Alarm Reset Modes

D

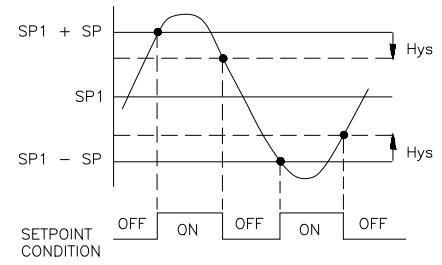
Setpoint Alarm Figures



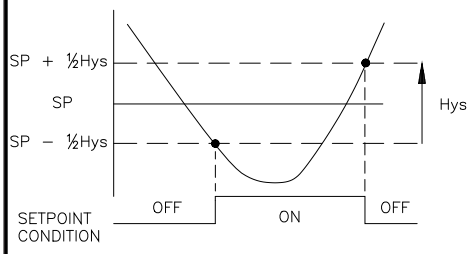
Absolute High Acting (Balanced Hys) = Ab-Hi



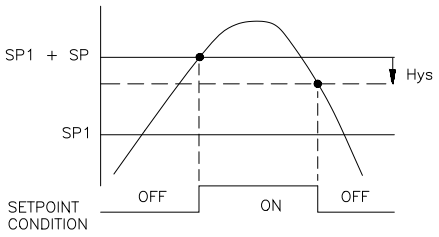
Absolute Low Acting (Unbalanced Hys) = AU-Lo



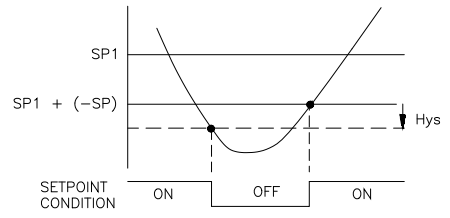
Band Outside Acting = bAnd



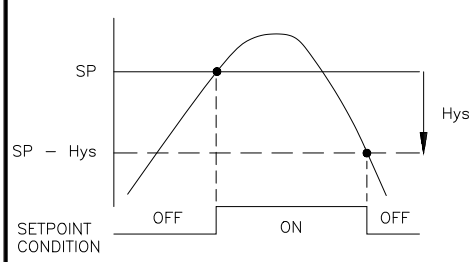
Absolute Low Acting (Balanced Hys) = Ab-Lo



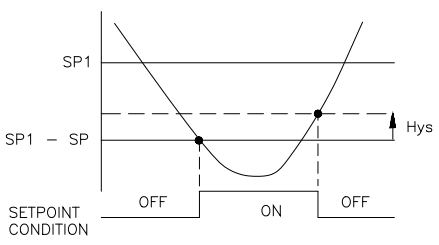
Deviation High Acting (SP > 0) = dE-Hi



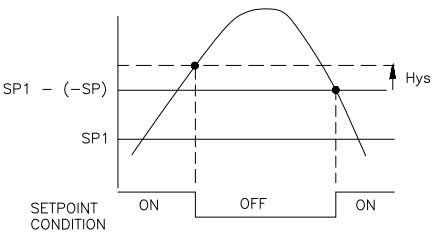
Deviation High Acting (SP < 0) = dE-Hi



Absolute High Acting (Unbalanced Hys) = AU-Hi



Deviation Low Acting (SP > 0) = dE-Lo



Deviation Low Acting (SP < 0)= dE-Lo

RS232 PLUG-IN CARD

An RS232 communication port can be installed with a Plug-in card. RS232 is intended to allow only 2 devices to communicate to each other (i.e., printer or computer).

RS485 PLUG-IN CARD

An RS485 communication port can be added with a Plug-in card. RS485 offers multi-drop bus communications. All devices connect in parallel on a 485 bus. Only one device is permitted to transmit at any one time, while all other devices are in receive mode.The meter controls the bus when it transmits data, otherwise the meter is in the receive mode.

DEVICENET PLUG-IN CARD

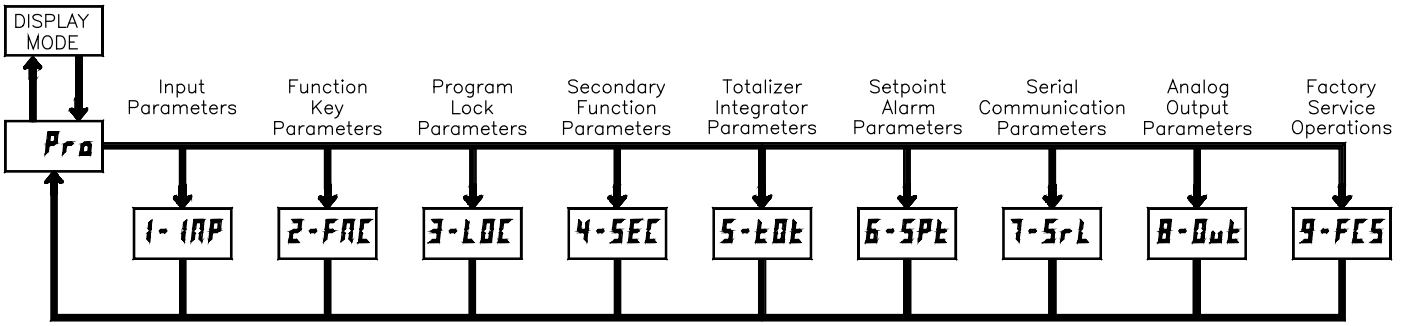
A DeviceNet communication port can be added to the meter. DeviceNet is a high level bus protocol based upon the CAN specification. The protocol allows the integration of devices of different types and manufacturers within a common communication framework.

ANALOG OUTPUT PLUG-IN CARD

The analog output is available as a Plug-in card. Either the 20 mA or the 10 V output can be used. The output can be scaled independent of the input range. Reverse acting output is possible by reversing the scaling point positions. Other features are selectable update rate and output source selection.

PROGRAMMING MENU

The programming menu of the meter is accessed by pressing the PAR key. The menu is organized into modules, which group together parameters which are related in function. Use the arrow keys to select the module, then press PAR to enter the module. The PAR key stores the selected parameter and simultaneously indexes to the next parameter. *(**Note**: Since many parameters are dependent on scaling of process units, it is recommended to scale the display first, then set the other parameters.)*



D

PARAMETER MODULE 1 - Input Configuration Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
rANGE	Input Range	0.02A - 20 mA 10u - 10 V	Select the input range
dECPt	Display Resolution	0 0.0 0.00 0.000 0.0000	Select scaling decimal point position
round	Display Rounding Increment	1 - round by 1 2 - round by 2 5 - round by 5 10 - round by 10 20 - round by 20 50 - round by 50 100 - round by 100	Select least significant display rounding factor
FILtr	Filter Setting	0.0 to 25.0 seconds	Sets the digital filter time constant. 0 = disabled

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
bANd	Filter Enable Band	0 to 250 display units	0 = always on Δ = reading - previous reading filter on : |Δ| < band filter off : |Δ| > band
PtS	Scaling Points	2 to 16	Select # of scaling points
StyLE	Scaling Style	KEY - key-in data APLY - apply signal	Select Scaling technique
InP x	Input Value for Scaling Point x	-19999 to 19999	Key-in or apply input value for scaling point x. If applied, press PAR to accept signal. Decimal point follows range selected.
dSP x	Display Value for Scaling Point x	-19999 to 99999	Key-in display value for scaling point x. Decimal point follows that assigned.

PARAMETER MODULE 2 - External Input and Front Panel Function Key Configuration Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
USr-1 USr-2 USr-3	User Input Function	no - no function	User Input #1, #2, and #3 programming. Active = Lock
		PLOC - Lock parameter list	
		rEL - Zero display	
		d-rEL - Select relative display (net/gross)	Active = relative *net = rEL *gross = Abs
		d-HLd - Hold Display	
		A-HLd - Hold all functions	
		Sync - Synchronize meter readings	
		bAt - Store batch readings in totalizer	
		d-tot - Select total display	
		rtot1 - Reset totalizer	
		rtot2 - Reset and gate totalizer	
		E-tot - Gate totalizer	Active = Enable
		d-hi - Select max display	
		r-hi - Reset, display and gate max reading	
		d-Lo - Select min display	
		r-Lo - Reset, display and gate min reading	
		r-HL - Reset max and min	
		LISt - Select main or alternate setpoint list	Active = Alternate *main = Lod-A *alternate = Lod-b
		r-1 - Reset setpoint 1	Maintained Reset
		r-2 - Reset setpoint 2	
		r-3 - Reset setpoint 3	
		r-4 - Reset setpoint 4	
		r-34 - Reset setpoint 34	
		r-234 - Reset setpoint 234	
		r-ALL - Reset all setpoints	
		Print - Print Request	Maintained Action
F1 F2 rSt	Function Keys	no - same as above	Function key programming. Function is executed when key is pressed. Hold key for 3 seconds for second function.
		rEL - same as above	
		d-rEL - Select relative display (net/gross)	
Sc-F1	Second F1	bAt - same as above	
Sc-F2	Second F2	r-tot - reset totalizer	
		r-hi - reset max	
		r-Lo - reset min	
		r-HL - reset max and min	
		LISt - Select main or alternate setpoint list	*main = Lod-A *alternate = Lod-b
		r-1 - same as above	Momentary Reset
		r-2 - same as above	
		r-3 - same as above	
		r-4 - same as above	
		r-34 - same as above	
		r-234 - same as above	
		r-ALL - same as above	
		Print - same as above	Momentary Action

* Momentarily displayed at transition.

D

PARAMETER MODULE 3 - Parameter and Display Lock-out Configuration Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
Hi	Maximum Display	LOC - lockout	Display Readout Options
Lo	Minimum Display	rEd - display readout	
tOt	Total Display		
SP-1	Setpoint 1	LOC - lockout	Protected Parameter Mode Options
SP-2	Setpoint 2	rEd - read only	
SP-3	Setpoint 3	Ent - read and enter value	
SP-4	Setpoint 4		
CodE	Security Code	0 to 250	Security Code; code ≠ 0 parameters are locked. 222 = universal unlock

PARAMETER MODULE 4 - Secondary Function Configuration Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
Hi-t	Max Capture Delay Time	0.0 to 3275.0 sec	Sets time delay for capturing new max/min values. Helps to avoid false captures.
Lo-t	Min Capture Delay Time		
dSP-t	Display Update Rate	1, 2, 5, 10, 20 updates/second	Affects display rate only. 20/sec disables zero correction (See Specs)
b-Lit	Units Label Backlight	On - Backlight on Off - Backlight off	Install label
OFFSt	Post Scaling Offset	-19999 to 99999	Applies directly to scaled readout. Holds value (tare) from rEL operation

PARAMETER MODULE 5 - Totalizer Configuration Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
dECPt	Totalizer Decimal Point Position	0 0.0 0.00 0.000 0.0000	Independent of input scaling.
tbASE	Totalizer Time Base	SEC _in hour dAY	Set the time base of the totalizer. _in = minutes

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
SCFAC	Totalizer Scale Factor	0.000 to 65.000	
Locut	Low Cut Value	-19999 to 99999	Input < locut disables totalizer
P-UP	Power Up Reset	no - do not reset buffer rSt - reset buffer	Resets totalizer buffer at meter power-up

PARAMETER MODULE 6 - Setpoint Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
SPSEL	Select Setpoint		Select setpoint for configuration
Act-n	Action for Setpoint	OFF - setpoint is disabled Ab-HI - absolute high, balanced hysteresis Ab-LO - absolute low, balanced hysteresis AU-HI - absolute high, unbalanced hysteresis AU-LO - absolute low, unbalanced hysteresis * dE-HI - deviation high, unbalanced hysteresis * dE-LO - deviation low, unbalanced hysteresis * bAnd - band outside, unbalanced hysteresis ** totLo - Lower totalizer absolute high, unbalanced ** totHI - Upper totalizer absolute high, unbalanced	Select operating action for setpoint See Figures for operation Deviation and Band operation is relative to SP1. *Not available for SP1 ** Totalizer has 9 digit capacity. Select to trigger on the upper or lower portion of the number.

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
SP-n	Setpoint Value	-19999 to 99999	Main or alternate, as selected
HYS-n	Hysteresis	1 to 65000	
tON-n tOF-n	On Time Delay Off Time Delay	0.0 to 3275.0 sec	
out-n	Output Logic	nor - Normal rEu - Reversed	
rSt-n	Reset Action	AUto - Automatic Reset LAtC1 - Latch w/immediate reset LAtC2 - Latch w/delayed reset	See Reset Mode Figure
Stb-n	Standby Operation	nO - Disable standby YES - Enable standby	Power-up standby operation.
L It-n	Output Panel Light	OFF - Always off nor - On when output on rEu - Reverse from nor FLASH - Flashes when output is on	

PARAMETER MODULE 7 - Serial Communications Parameters

D

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
bAUd	Baud Rate	300 600 1200 2400 4800 9600 19200	Set baud rate to match other equipment. Set to 9600 for PC configuration software.
dALA	Number of Data Bits	7 8	8 = No parity
PAr	Parity Bit	Odd EUEN nO	Possible Combinations: 8, N, 1 7, O, 1 7, E, 1 7, N, 2

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
Addr	Node Address	0 to 99	Unique address for each meter. Set to 0 for PC configuration software.
Abru	Abbreviated Output	nO - ID characters printed YES - ID characters suppressed	Select full or abbreviated transmission
OPt	Print Options	YES - Enter sub-menu nO - Disables parameter inP - Input tot - Total HILO - Max & Min SPnt - Setpoint Values	Sub-menu to select parameters shown below for output transmission.

PARAMETER MODULE 8 - Analog Output Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
tYPE	Select Analog Output Type	0-20 - 0 to 20 mA 4-20 - 4 to 20 mA 0-10 - 0 to 10 V	
AS in	Output Source Assignment	inP - input signal HI - max reading LO - min reading tot - totalizer value	Select source of linear output signal. If totalizer, scaling limited to lower 5 digits.

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
AnLO AnHI	Display Scale Value Low Display Scale Value High	-19999 to 99999	Low = 0 mA/ 4 mA/ 0 V High = 20 mA/ 10 V For reverse acting, reverse scale high and scale low
udt	Update Time	0.0 to 10.0 sec	0.0 = Instant updates

PARAMETER MODULE 9 - Factory Service Function Parameters

DISPLAY	PARAMETER	RANGE AND UNITS	DESCRIPTION/ COMMENTS
CodE	Factory Service Access Code	48 - Calibration 66 - Restore Factory Defaults	Consult Factory for Calibration Procedure

PARAMETER VALUE CHART Code_____

1-INP - Input Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
rANGE	INPUT RANGE	0.02A	
dECPt	DISPLAY RESOLUTION	0.00	
round	DISPLAY ROUNDING INCREMENT	0.01	
FILtr	FILTER SETTING	10	
bAnd	FILTER ENABLE BAND	0.10	
PtS	SCALING POINTS	2	
inP 1	INPUT VALUE 1	0.000	
dSP 1	DISPLAY VALUE 1	0.00	
inP 2	INPUT VALUE 2	20.000	
dSP 2	DISPLAY VALUE 2	100.00	
inP 3	INPUT VALUE 3	0.000	
dSP 3	DISPLAY VALUE 3	0.00	
inP 4	INPUT VALUE 4	0.000	
dSP 4	DISPLAY VALUE 4	0.00	
inP 5	INPUT VALUE 5	0.000	
dSP 5	DISPLAY VALUE 5	0.00	
inP 6	INPUT VALUE 6	0.000	
dSP 6	DISPLAY VALUE 6	0.00	
inP 7	INPUT VALUE 7	0.000	
dSP 7	DISPLAY VALUE 7	0.00	
inP 8	INPUT VALUE 8	0.000	
dSP 8	DISPLAY VALUE 8	0.00	
inP 9	INPUT VALUE 9	0.000	
dSP 9	DISPLAY VALUE 9	0.00	
inP 10	INPUT VALUE 10	0.000	
dSP 10	DISPLAY VALUE 10	0.00	
inP 11	INPUT VALUE 11	0.000	
dSP 11	DISPLAY VALUE 11	0.00	
inP 12	INPUT VALUE 12	0.000	
dSP 12	DISPLAY VALUE 12	0.00	
inP 13	INPUT VALUE 13	0.000	
dSP 13	DISPLAY VALUE 13	0.00	
inP 14	INPUT VALUE 14	0.000	
dSP 14	DISPLAY VALUE 14	0.00	
inP 15	INPUT VALUE 15	0.000	
dSP 15	DISPLAY VALUE 15	0.00	
inP 16	INPUT VALUE 16	0.000	
dSP 16	DISPLAY VALUE 16	0.00	

2-FnC - External Input and Function Key Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
USr-1	USER INPUT 1	no	
USr-2	USER INPUT 2	no	
USr-3	USER INPUT 3	no	
F1	FUNCTION KEY 1	no	
F2	FUNCTION KEY 2	no	
rSt	RESET KEY	no	
Sc-F1	2nd FUNCTION KEY 1	no	
Sc-F2	2nd FUNCTION KEY 2	no	

3-LOC - Parameter Lockouts

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
HI	MAX. READING DISPLAY	rEd	
LO	MIN. READING DISPLAY	rEd	
tOt	TOT READING DISPLAY	rEd	
SP-1	SETPOINT 1	LOC	
SP-2	SETPOINT 2	LOC	
SP-3	SETPOINT 3	LOC	
SP-4	SETPOINT 4	LOC	
CodE	SECURITY CODE	0	

4-SEC - Secondary Function Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
HI-t	MAX CAPTURE DELAY TIME	0.0	
LO-t	MIN CAPTURE DELAY TIME	0.0	
dSP-t	DISPLAY UPDATE TIME	2	
b-LIt	UNITS LABEL LIGHT	OFF	
OFFSt	DISPLAY OFFSET	0.00	

5-tOt - Totalizer Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
dECPt	TOTALIZER DECIMAL POINT	0.00	
tbASE	TOTALIZER TIME BASE	__.in	
SCFAC	TOTALIZER SCALE FACTOR	1.000	
Locut	TOTALIZER LOW CUT VALUE	-199.99	
P-UP	TOTALIZER POWER-UP RESET	no	

7-SrL - Serial Communication Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
bAUd	BAUD RATE	9600	
dAtA	WORD LENGTH	7	
PAr	PARITY	Odd	
Addr	ADDRESS	0	
Abru	ABBREVIATED	YES	
inP	PRINT INPUT	YES	
tot	PRINT TOTAL	YES	
HILO	PRINT MAX & MIN	YES	
SPnt	PRINT SETPOINT VALUES	no	

8-Out - Analog Output Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
tYPE	ANALOG TYPE	4-20	
AS IN	ANALOG ASSIGNMENT	inP	
An-LO	ANALOG LOW SCALE VALUE	0.00	
An-HI	ANALOG HIGH SCALE VALUE	100.00	
udt	UPDATE TIME	0.0	

D

G-SPt - Setpoint Parameters

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
ACt-1	ACTION FOR SETPOINT	OFF	
SP-1	SETPOINT VALUE (main)	10.00	
	SETPOINT VALUE (alternate)*	10.00	
HYS-1	SETPOINT HYSTERESIS	0.02	
tON-1	ON TIME DELAY	0.0	
tOF-1	OFF TIME DELAY	0.0	
out-1	OUTPUT LOGIC	nor	
rSt-1	RESET ACTION	AUto	
Stb-1	STANDBY OPERATION	no	
Lit-1	OUTPUT PANEL LIGHT	nor	

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
ACt-3	ACTION FOR SETPOINT	OFF	
SP-3	SETPOINT VALUE (main)	30.00	
	SETPOINT VALUE (alternate)*	30.00	
HYS-3	SETPOINT HYSTERESIS	0.02	
tON-3	ON TIME DELAY	0.0	
tOF-3	OFF TIME DELAY	0.0	
out-3	OUTPUT LOGIC	nor	
rSt-3	RESET ACTION	AUto	
Stb-3	STANDBY OPERATION	no	
Lit-3	OUTPUT PANEL LIGHT	nor	

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
ACt-2	ACTION FOR SETPOINT	OFF	
SP-2	SETPOINT VALUE (main)	20.00	
	SETPOINT VALUE (alternate)*	20.00	
HYS-2	SETPOINT HYSTERESIS	0.02	
tON-2	ON TIME DELAY	0.0	
tOF-2	OFF TIME DELAY	0.0	
out-2	OUTPUT LOGIC	nor	
rSt-2	RESET ACTION	AUto	
Stb-2	STANDBY OPERATION	no	
Lit-2	OUTPUT PANEL LIGHT	nor	

DISPLAY	PARAMETER	FACTORY SETTING	USER SETTING
ACt-4	ACTION FOR SETPOINT	OFF	
SP-4	SETPOINT VALUE (main)	40.00	
	SETPOINT VALUE (alternate)*	40.00	
HYS-4	SETPOINT HYSTERESIS	0.02	
tON-4	ON TIME DELAY	0.0	
tOF-4	OFF TIME DELAY	0.0	
out-4	OUTPUT LOGIC	nor	
rSt-4	RESET ACTION	AUto	
Stb-4	STANDBY OPERATION	no	
Lit-4	OUTPUT PANEL LIGHT	nor	

D

* Select alternate list to program these values.

TROUBLESHOOTING

As part of the start-up procedure, the meter performs a series of internal self tests. If one or more of the diagnostic tests fails, meter operation is disabled and an error message is displayed. Press the **RST** key to acknowledge the error. Refer to the error table below for the cause and remedy for the fault detected. For further technical assistance, contact technical support at the appropriate company numbers listed.

Error Code	Problem	Remarks
Err 1	Internal hardware fault	A fault of the microprocessor and/or the input circuit has been detected. Return meter for repair.
Err 2	Parameter list memory fault	One or more of set-up parameters has changed value due to possible electrical glitch or loss of power during parameter save operation. (during "End" display) Verify all set-up parameters, exit parameter set-up mode and cycle power to meter to clear error. If error remains, return meter for repair.
Err 3	Calibration memory fault	Verify calibration accuracy of meter. If out of tolerance, re-calibrate the meter. Otherwise, to clear error, enter and exit parameter set-up mode and cycle power to meter. If error remains, return meter for repair.
Err 4	Analog output calibration memory fault	Verify calibration accuracy of analog output. To clear error, enter and exit parameter set-up mode and cycle power to meter. If error remains, replace analog output card.
Err 5	Defective keypad	The meter has detected one of the keypad switches is defective. Inspect keypad for signs of damage or sticking. Cycle power to meter to clear error. If error remains, return meter for repair.

Installation Environment

The unit should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation. The minimum vertical clearance to allow proper ventilation is 1". Placing the unit near devices that generate excessive heat should be avoided. Be sure to keep it away from heat sources (ovens, furnaces, etc.), away from direct contact with caustic vapors, oils, steams, or any other process by-products that may affect proper operation.

Continuous exposure to direct sunlight may accelerate the aging process of the bezel. The bezel should be cleaned only with a soft cloth and neutral soap product. Do NOT use solvents.

Do not use tools of any kind (screwdrivers, pens, pencils, etc.) to operate the keypad of the unit.

EMC GUIDELINES

The PAX meter has been designed and tested to meet the requirements of EMC Directive 89/336/EEC. However, successful installations depend upon several factors. These include cable routing, termination of cable shields, associated equipment, etc.

Installation

This meter meets NEMA 4X/IP65 requirements for indoor use when properly installed. The unit is intended to be mounted into an enclosed panel. Prepare the panel cutout to the dimensions shown in the Dimensions drawing. Remove the panel latch and cardboard sleeve from the unit and discard the cardboard sleeve. Slide the panel gasket over the rear of the unit to the back of the bezel. The unit should be installed fully assembled. Insert the unit into the panel cutout. While holding the unit in place, push the panel latch over the rear of the unit so that the tabs of the panel latch engage in the slots on the case. The panel latch should be engaged in the farthest forward slot possible. To achieve a proper seal, tighten the latch screws evenly until the unit is snug in the panel (Torque to approximately 7 in-lbs [79N-cm]). Do not over-tighten the screws.

ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBERS
X **PAXP**	Process Input Panel Meter, Upgradeable, AC Powered	PAXP0000
	Process Input Panel Meter, Upgradeable, DC Powered	PAXP0010
X**PAXCDS**	Dual Setpoint Relay Output Card	PAXCDS10
	Quad Setpoint Relay Output Card	PAXCDS20
	Quad Setpoint Sinking Open Collector Output Card	PAXCDS30
	Quad Setpoint Sourcing Open Collector Output Card	PAXCDS40
PAXCDC	RS485 Serial Communications Card	PAXCDC10
	RS232 Serial Communications Card	PAXCDC20
	DeviceNET Communications Card	PAXCDC30
PAXCDL	Analog Output Card	PAXCDL10
PAXLBK	Units Label Kit Accessory	PAXLBK10
SFPAX	PC Configuration Software for Windows 3.x and 95 (3.5” disk)	SFPAX

TECHNICAL DATA SHEET
ELECTRONIC SENDING UNITS

Electronic Sending Units For Fuel, Water and Holding Tanks

- Rugged
- Reliable
- Long Life
- Recognized

GENERAL DESCRIPTION

The ELECTRONIC SENDING UNIT for FUEL, WATER and HOLDING tanks provides a continuous readout of the liquid level in your tank. The unit (which has no moving parts) consists of a sensor probe and an amplifier. The amplifier components, which are located in the mounting plate assembly, are encapsulated in an epoxy resin compound to seal out moisture and other contaminants which could affect the operation. The mounting plate assembly has the same 5 hole SAE bolt pattern mounting dimensions as the standard float sending units they replace. The meter (receiving unit) can be remotely located close by or in your dash.

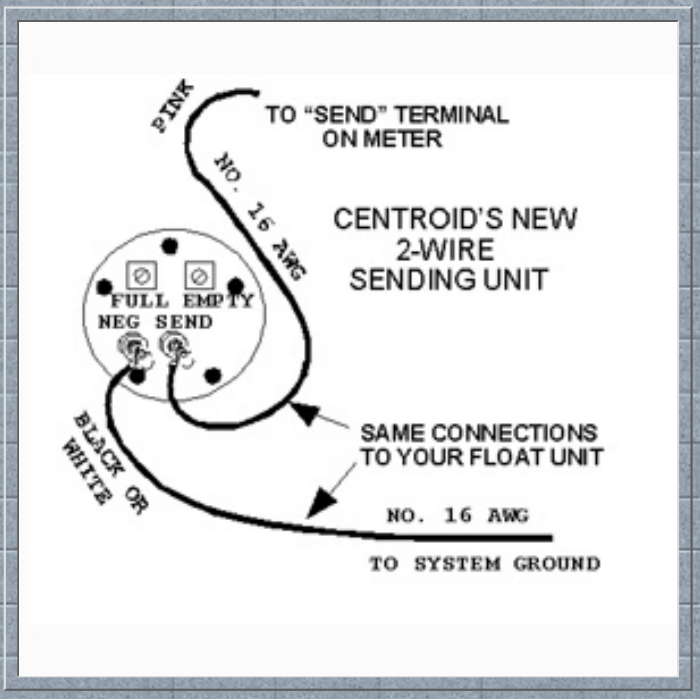
Introducing Centroid's new 2-wire 240/33 ohm

SENSING UNIT

Like a radio, Centroid probes have reguired a battery connection to run their electronics. Now you may use a 2-wire versions of the same probes, which do not require the battery connection. Currently these senders are available at no extra cost.

The advantages are!

- ☑ **You can use your existing wiring. No need to add the 3rd wire for battery connection.**
- ☑ **Can be used with either 12 or 24 volt meters.**

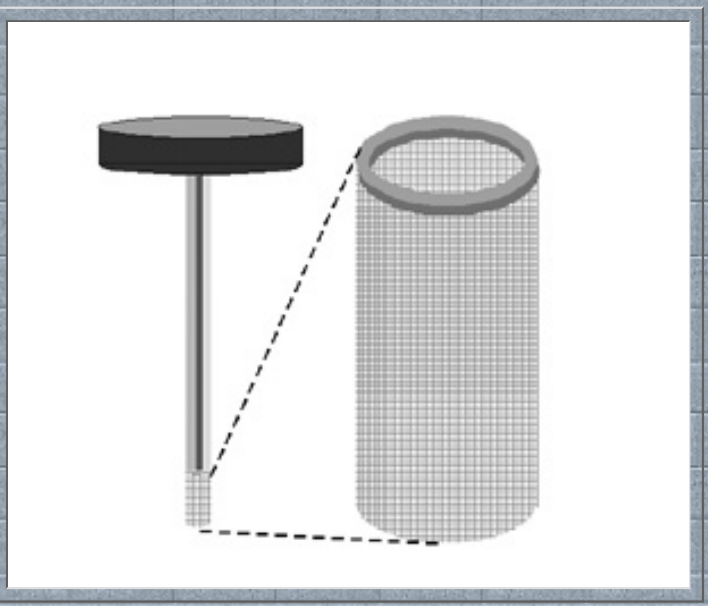


The 2-wire unit does have some restrictions and is not fully compatible with all 240/33 ohm meters. The following is a partial list of 240/33 meters which are/are not compatible:

Yes	MEDALLION (Centroid Stock Item) OMC US GAUGE STEWART WARNER TELEFLEX DATCON GAFFRIG (Ater 1/1/96)
Maybe*	FARIA VDO STANDARD LINE
No	WESTACH GAFFRIG (Before 1/1/96) TEMPO VDO BLUE LINE

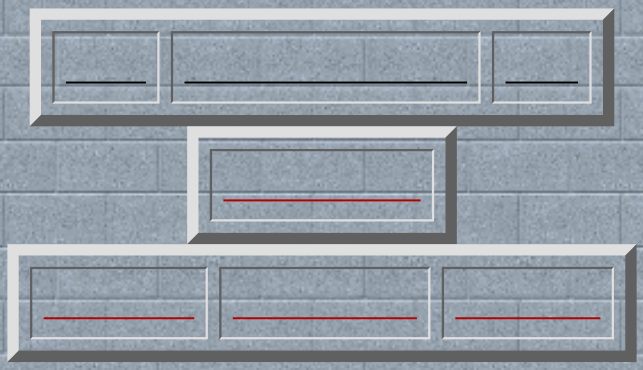
*Maybe=Will have trouble getting to full if battery voltage drops below 12 volts.

Water screens for fuel probes!



A feature of centroid probes is that they indicate water in the fuel tank by pegging to an above-full reading. For customers who do not want this feature, water screens are now available to keep water out of the probes.

The price is $3 each.
(For 1/2" tubing probes only.)



FUEL SENSOR PROBE (Gasoline or Diesel) - The probe is constructed of concentric tubing (a small brass or alum. tube inside a larger aluminum tube). The tubes, which are separated by small insulators to keep the tubes from touching, acts as a capacitor that has one valve in air (empty tank) and changes in value as the fuel level rises inside the probe. The amplifier converts these values to a signal suitable to drive a standard meter or other display device.

UNAFFECTED BY CORROSION

Even if the sensor did corrode (which is improbable because of the high quality materials used), a thin layer of corrosion on the surface of the sensing elements would not change the accuracy because the gap over which the capacitor works is almost 1/10 of an inch wheras corrosion would be measured in 1/100 s.

STANDARD FEATURES

A Capacitive sensor is capable of detecting water in the fuel tank. The presence of water, which will ruin a diesel engine, is readily shown by an overfull indication on the meter. If fuel were being pumped into your tank from a supplier who had water in his big tanks, the presence of the water would show up immediately on your gauge by giving a overfull indication even though the tanks were only 1/4 full. This does not damage the sensor and once the water is pumped out, everything would be normal again.

Electronics have been designed to minimize meter error caused by variation of battery voltage.

Eliminates excessive needle bounce on the meter while underway.

Can be built to fit tanks from 3 inches to 120 inches deep.

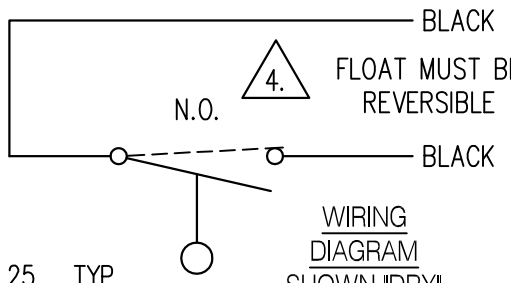
Works with most reciever units (meters).

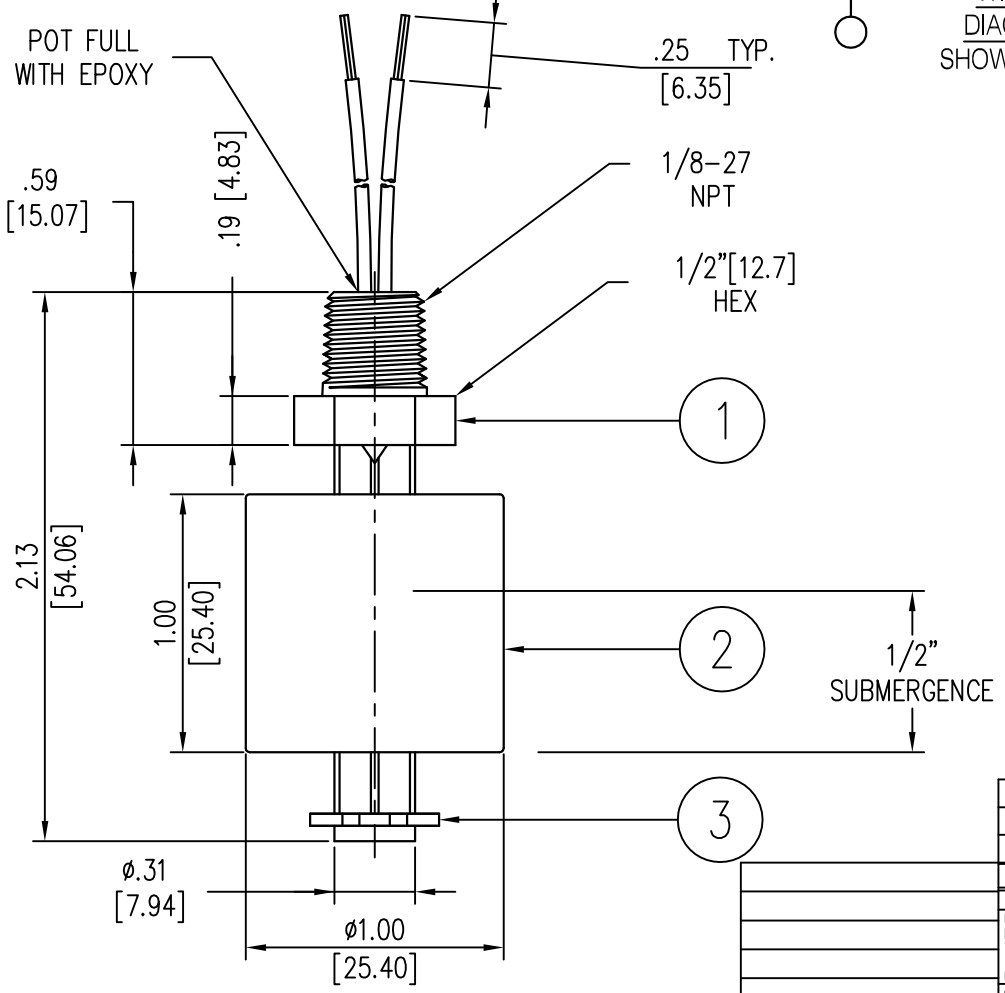
BACKED BY A TWO YEAR GUARANTEE

GUARANTEE:

CENTROID PRODUCTS has a two year guarantee against failure of any electronic component in the sending unit. Simply return the defective unit to the factory and we will either repair or replace if free of charge diring the warranty period.

REVISION BLOCK				
REV.	E.C.N. NO.	DESCRIPTION	DATE	APPRV'D.
00		INITIAL RELEASE	6/21/04	MD





NOTES:

1. MECHANICAL SPECIFICATIONS:
   MATERIAL: RIBBED STEM: NYLON
   FLOAT: BUNA
   "C" RETAINING CLIP: NYLON
   OPERATING PRESSURE MAX: 150 PSIG
   OPERATING TEMPERATURE: –40°F TO +212°F
   (–40°C TO +100°C)
   RECOMMENDED MIN. LIQUID S.G. : 0.63
2. ELECTRICAL SPECIFICATIONS:
   SWITCHING VOLTAGE: 240V AC MAX.
   SWITCHING CURRENT: 0.5 AMP MAX.
   CONTACT RATING: 50 VA
   LEAD WIRE, 22 AWG TEFLON UL/CSA 1213 APPROVED WIRE
3. AGENCY APPROVALS: UL/CUL FILE # E203716

4. SWITCH SHOWN IN THE N.O. DRY POSITION, LOGIC TO BE REVERSIBLE BY REMOVING THE CLIP AND INVERTING THE FLOAT.
5. FLOAT OVER TRAVEL TO BE 1/16" TO 3/16".

ITEM	QT'Y	PART NUMBER	DESCRIPTION, CATALOG NO. OR FINISHED SIZE	MAT'L
3	1	0620–0001–0018	"C" RETAINING CLIP	NYLON
2	1	2010–1010–0021	1010 FLOAT	BUNA
1	1	0125–0118–0001	1/8" NPT RIBBED MOUNTING STEM	NYLON

NEXT ASS'Y.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES, [ ] ARE IN MM (MILLIMETERS)
TOLERANCES:
.X±.1 .XX±.01 .XXX±.005
FRACTIONS ±1/64, ANGLES±30'
MACHINED SURFACES: 63 √ RMS
REMOVE ALL BURRS AND SHARP EDGES

MAT'L PART #
HEAT TREAT
FINISH
PLATING
DRAWN BY: MJR DATE: 6/21/04
CHKD. BY: MD DATE: 6/21/04
APPRVD. BY: MD DATE: 6/21/04
PROJECT NO.
SKETCH NO.
MAT'L: NOTE 1. / B.O.M.

INNOVATIVE SOLUTIONS, LLC
60 GREAT HILL ROAD, NAUGATUCK, CT 06770 USA
TITLE: L003 SERIES NYLON/BUNA SINGLE POINT LEVEL SENSOR
SIZE: B FSCM NO.
DWG. NO. L003C2775–0001 REV. 00
SCALE 2 : 1 SHEET 1 OF

RELEASED
By Casey V. at 8:45 am, Nov 22, 2010

ISSUED: 2017-05-17

STANDARDIZED APPENDIX PAGES
SUBJECT 142

for

ABOVEGROUND FLAMMABLE LIQUIDS TANKS (EEEV)
and/or
ABOVEGROUND FLAMMABLE LIQUIDS TANKS CERTIFIED for CANADA (EEEV7)

STANDARDIZED APPENDIX PAGES

TABLE OF CONTENT

ABOVEGROUND FLAMMABLE LIQUIDS TANKS (EEEV) and/or ABOVEGROUND FLAMMABLE LIQUIDS TANKS CERTIFIED for CANADA (EEEV7)

ABOVEGROUND FLAMMABLE LIQUID TANKS (EEEV) and/or
ABOVEGROUND FLAMMABLE LIQUID TANKS CERTIFIED FOR CANADA (EEEV7)

APPENDIX A – FIELD ENGINEER'S RESPONSIBILITIES AND INSTRUCTIONS FOR EXAMINATION OF PRODUCTS

I FIELD ENGINEER'S RESPONSIBILITIES

The Field Engineer's general responsibilities, as part of the Follow-Up Services Procedure, are as noted in the published document titled, "UL Mark Surveillance Requirements", and is available through UL's secure customer portal MyHome@UL.com and/or through UL's internet site www.UL.com. Manufacturers that do not have Internet access may obtain the current version of these requirements from their local UL Customer Service Representative or UL Field Engineer.

II PROCEDURE IN THE EVENT OF NONCONFORMANCE

When a product does not comply with the Follow-Up Service Procedure require that the manufacturer implement appropriate action as outlined in the "UL Variation Notice and Corrective Action Requirements" document.

III SPECIAL INSTRUCTIONS FOR STEEL TANKS

A. The Field Engineer shall pay particular attention to the critical items and/or perform special tasks related to inspection of steel tanks as described below:

1. Periodically witness (at least one shipment/year) manufacturer measurement and acceptance procedures of incoming steel plate and pipe stock as described in Appendix D – Steel Stock Verification.

2. Periodically witness (at least one test/year) manufacturer production tests on completely fabricated tanks as described in Appendix D - Tank Production Tests.

3. For cUL, ULC or cULus Marks Only - Periodically review (at least once/year) each manufacturer's procedures and records for compliance with ULC-S601 Sec 4.3 and similar "welding" requirements in other ULC Standards covered under EEEV7.

The written welding procedure shall be 3rd party recognized (see examples below) to ensure that welders are trained and qualified, with records available for review to verify each welder's compliance to it.

a) American Welding Society (AWS) for AWS B2.1 Weld Procedure Specification and D Series Structural Codes,
b) American Society of Mechanical Engineers (ASME) for ASME Sec 8 Pressure Vessels "U" or "H" Stamps,
c) American Society of Mechanical Engineers (ASME) for ASME IX
d) Canadian Welding Bureau (CWB) for CSA W47.1 Div 2 or 3,
e) Alberta Boiler Safety Association (ABSA),
f) Technical Safety Standards Association (TSSA),
g) Mechanical Contractors Association of America,
h) A PE who is Licensed for steel tank design, or
i) Other equivalents as accepted by the Canadian Welding Bureau or Authority Having Jurisdiction

ABOVEGROUND FLAMMABLE LIQUID TANKS (EEEV) and/or
ABOVEGROUND FLAMMABLE LIQUID TANKS CERTIFIED FOR CANADA (EEEV7)

B. The Field Engineer shall apply the following general guidelines for accessories and components that are shipped attached to or separately from the tank:

1. Tanks are permitted to have either UL Certified or unlisted accessories and/or components attached directly to, or shipped with the tank assembly as follows:

a) Accessories and components that are covered by a Standard (such as tank supports, lift lugs and heating coils) shall comply with all applicable construction and/or performance requirements, shall be Procedure covered, and shall subject to inspections. See Sec Gen Table 3C for details.

b) Accessories and components that are not covered by a Standard (such as most e-vent devices, pressure/vacuum vent devices, overfill prevention devices, leakage monitor, sensors, etc.), shall not be subject to inspection. See Sec Gen Table 3C for details.

c) If tanks are used as a component in construction of a more complex end product (such as generators) at the same manufacturing location, only the tank shall be subject to inspection.

2. Tanks shall be shipped from the manufacturer as a completely assembled unit with all procedure covered mechanical accessories and components attached, except as permitted below:

a) If the complete assembly is too large and/or too heavy for transportation, major accessories (such as access devices, supports, or dikes) may be shipped disassembled from the base tank.

b) If components (such as pressure/vacuum vents, emergency vents, overfill preventers, etc.) could be damaged during transport if assembled to the base tank, they may be shipped disassembled.

c) Where accessories or components are shipped disassembled, assembly instructions, hardware and any other information supplied by the OEM shall be provided.

ABOVEGROUND FLAMMABLE LIQUID TANKS (EEEV) and/or ABOVEGROUND FLAMMABLE LIQUID TANKS CERTIFIED FOR CANADA (EEEV7)

APPENDIX B – INSTRUCTIONS FOR FIELD ENGINEER'S SAMPLE SELECTION

RESERVED FOR FUTURE USE

ABOVEGROUND FLAMMABLE LIQUID TANKS (EEEV) and/or
ABOVEGROUND FLAMMABLE LIQUID TANKS CERTIFIED FOR CANADA (EEEV7)

APPENDIX C – INSTRUCTIONS FOR FOLLOW-UP TESTS AT UL

RESERVED FOR FUTURE USE

ABOVEGROUND FLAMMABLE LIQUID TANKS (EEEV) and/or ABOVEGROUND FLAMMABLE LIQUID TANKS CERTIFIED FOR CANADA (EEEV7)

APPENDIX D - MANUFACTURER'S RESPONSIBILITIES AND REQUIREMENTS FOR CONSTRUCTION CONSIDERATIONS AND PRODUCTION TESTS

The Follow-Up Services Procedure covering these tanks is loaned to the manufacturer and constitutes the basis on which these tanks are judged for continued Certification compliance. Some construction, marking/instruction and other requirements may reference Standards applicable for the specific tank type, as identified in the Section General or each Descriptive Section.

I MANUFACTURER'S GENRAL RESPONSIBILITIES

The Manufacturer's general responsibilities, as part of the Follow-Up Services Procedure, are as noted in the published document titled, "UL Mark Surveillance Requirements", and is available through UL's secure customer portal MyHome@UL.com and/or through UL's internet site www.UL.com. Manufacturers that do not have Internet access may obtain the current version of these requirements from their local UL Customer Service Representative or UL Field Engineer.

II MANUFACTURER'S SPECIAL RESPONSIBILITIES FOR STEEL TANKS

A. Steel Stock Verification – All base stock steel used for the fabrication of certified tanks shall be verified to comply with the material requirements of UL 142 Sec S.1-5.3 (for UL Marks), ULC-S601 Sec 4.2.1-4.2.2 (for cUL or ULC Marks) and/or other specific steel tank standards referenced in each description for the tank type if applicable. Steel Mill Specifications, Bill of Materials or other proof of compliance shall be kept with records for review by the UL Field Engineer.

B. Steel Thickness Measurement – Acceptance of all steel stocks in a lot for compliance with the minimum thickness requirements for specific tank types and sizes in referenced Standards before welding or coating shall use measurement methods per UL 142 Sec 5.4 (for UL Marks), and/or ULC-S601 Sec 4.2.3-4.2.4, or similar methods in other ULC Standards covered under EEEV7 (for cUL or ULC Marks) with a calibrated micrometer, caliper, or other instrument accurate to at least 0.0005 in or 0.0125 mm.

C. The above steel stock verification and thickness determination method shall also be used for acceptance of flanges, pipes, angles, channels or other pre-fabricated complex shapes or forms, or a calibrated micrometer, caliper, or other instrument accurate to at least 0.0005 in or 0.0125 mm.

D. For cULus Dual Certifications, the most stringent requirement referenced in the applicable UL or ULC Standard shall be applied.

ABOVEGROUND FLAMMABLE LIQUID TANKS (EEEV) and/or
ABOVEGROUND FLAMMABLE LIQUID TANKS CERTIFIED FOR CANADA (EEEV7)

III MANUFACTURER'S RESPONSIBILITIES FOR TANK PRODUCTION TESTS

A. Tank Production Tests - Conduct all Tank Production Tests in accordance with the referenced test method and basis of acceptability as identified in Table A before painting and application of the UL Mark or other required markings. General information for the test methods are specified below:

TABLE A

Sec #	Tank Type	Freq	Production Test	Test Method Reference
1	Primary (Single Wall) Tank	100%	Tank Leakage	UL 142 Sec 45 and/or ULC-S601 Sec 9 (*)
2	Secondary (Double Wall or Integrally Contained) Tank	100%	Tank Leakage	UL 142 Sec 45 and/or ULC-S601 Sec 9 (*)
3	Diked (Contained Tank Assembly) Tank	100%	Dike Leakage	UL 142 Sec 46 and/or ULC-S653 Sec 7 (*)
(*) For the cULus Mark – the most stringent requirements shall be applied.				

1. Any pressure or vacuum supply source shall have manual or automatic control at the tank, and a safety relief device. The pressure or vacuum shall be determined on the tank by a calibrated gauge with accuracy of +/- 2.0 % or better.

2. Unless other alternatives are allowed by the specific Test Method Referenced, the Leakage Test shall be conducted with positive air pressure and a soap/water solution applied to all welded tank joints, welded tank accessories, seams and gaskets.

3. Where vacuum testing is allowed as an alternate interstitial space leak detection, but method details are unspecified, no loss of vacuum after 30 min @ 5.0 in Hg (16.9 kPa) or 15 min @ 25.0 in Hg (84.7 kPa) for every 10 cu ft of interstitial volume shall be applied.

4. All pressure tests shall be conducted with a calibrated pressure gauge with scale range from 0 to not more than 30 psi (200 kPa) and scale increments of not more than 1.0 psi (5 kPa).

5. All vacuum tests shall be conducted with a calibrated vacuum gauge with scale range from 0 to not less than 30 in Hg (100 kPa) and scale increments of not more than 1.0 in Hg (2.0 kPa).

6. Where pressure or vacuum testing of dike tanks is not possible, a Hydro Load Test where the dike is filled with water to maximum capacity while inspecting joints for leakage is an equivalent.

12 Laboratory Drive
P.O. Box 13995
Research Triangle Park
North Carolina 27709-3995
(919) 549-1400

Underwriters Laboratories Inc.®

File MH15232 Vol 1 Issued 1994-04-29
Revised 2004-06-16

FOLLOW-UP SERVICE PROCEDURE
(TYPE L)

ABOVE GROUND FLAMMABLE LIQUIDTANKS
(EEEV)

Manufacturer: PRITCHARD BROWN L L C
(115041-001) 6501 ERDMAN AVE
BALTIMORE MD 21205

Applicant: SAME AS MANUFACTURER
(115041-001)

Listee: SAME AS MANUFACTURER
(115041-001)

This Procedure authorizes the above Manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

This PROCEDURE, and any subsequent revisions, is the property of UNDERWRITERS LABORATORIES INC. and is not transferable.

UNDERWRITERS LABORATORIES INC.

A.W. Schaefer
Vice President and General Manager
US and Canadian Operations

N

GENERAL

FACTORY LOCATION AND IDENTIFICATION:

Products covered by this volume are identified by the following Factory Identification in the serial number of the product:

Location	Identification
484831-001	NONE
277401-001	D
*	*

LISTING MARK:

UNDERWRITERS LABORATORIES INC

®

LISTED

Aboveground Tank For Flammable Liquids
(Account 58-2-1)

D E S C R I P T I O N

PRODUCT COVERED:

Aboveground Rectangular Tanks for Flammable Liquids. 3000 gallon.

GENERAL:

The tanks covered by this report are aboveground rectangular steel tanks intended for storage of flammable liquids at atmospheric pressure. They are for use only with non-corrosive, stable liquids that have a specific gravity not exceeding that of water.

The tanks are intended for stationary installation in accordance with the Standard for Flammable and Combustible Liquids Code of the National Fire Protection Association, NFPA No. 30.

The tanks are fabricated, inspected, and tested for leakage before shipment from the factory as completely assembled vessels.

REQUIREMENTS:

Details not specifically described in this descriptive section of the Follow-Up Service Procedure shall conform with the current edition of the Underwriters Laboratories Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, UL 142.

A copy of this Standard is included herein and forms a part of this Procedure.

Details not specifically covered in the descriptive section of this Follow-Up Service Procedure shall conform with this Standard.

TESTS TO BE CONDUCTED BY MANUFACTURER:

Each tank, before painting, shall be tested by the manufacturer in accordance with the following test procedure. CAUTION: A pressure relief device is to be used when testing tanks with air pressure.

1. Each compartment of a compartment tank shall be tested separately.

2. The tank shall be pressurized to 3 psig and held for 1 hour to check for leakage. A continuous drop in pressure is considered evidence of leakage.

   An alternate method the tank shall be pressurized to 3 psig. Soap suds, or other leak detection fluid, are to be applied to the tank when pressurizing to detect leaks.

   If leaks are found, the tank is to be made tight by welding an retesting. Defects in welds shall be repaired as detailed in the UL 142 Standard by chipping or melting out from one or both sides of the joint, as required, and rewelding.

MARKING:

A method of marking shall be in accordance with the UL 142 Standard. A stamped metal nameplate welded to the top surface of the tank is to be employed. The marking shall be as specified in UL 142 with the following or equivalent:

1. Manufacturer's name, trade name or trade mark, or distinctive marking representing the manufacturer.

2. The following statement:

   "This Tank is Intended for Stationary Installation Only."

3. Identification of emergency vent openings.

4. **The following statement about manways, if provided for emergency venting:**

   "This Manway Is Provided with Long Bolts To Provide Emergency Venting. Do Not Replace With Shorter Bolts."

5. **The statement or equivalent: "This tank is to be leak tested at 3 psig"**

6. **When the tank has integral welded steel supports the tank shall be marked: "On Supports." The mark shall be adjacent to the conformity mark.**

*

7. The statement:

"This Tank Requires Emergency Relief Venting Capacity Not Less Than (+) Cubic Feet Per Hour.

(+) - See Table I.

TABLE I

Nominal Tank Capacity (Gal.)	Venting Capacity (+) (Cubic Feet per Hour)	Minimum Vent Opening Nominal Pipe Size (Inches) (++)
3000	288,000	6

(+) These values determined from UL 142.

(++) These pipe sizes apply only to open vent pipes of the indicated diameter not more than 12 inches long and a pressure in the tank of not more than 2.5 psig. If the tank is equipped with a venting device or flame arrestor, the vent opening must accommodate the venting device or flame arrestor sized in accordance with the last two columns of Table I above.

LISTING MARK:

ABOVEGROUND TANK FOR FLAMMABLE LIQUIDS

Account 58-2-1

CONSTRUCTION DETAILS:

General - The tanks shall be constructed in accordance with the current edition of UL 142 and the following description.

Welds/Connections - Refer to UL 142 for details on the connection and continuous weld to provide a leak-tight construction.

Material and Thickness - The steel shall comply with the specifications in UL 142. The thickness of the steel shall be minimum specified in Table II below and in Ill. 1.

TABLE II

Nominal Tank Capacity (Gal.)	Dimensions (inches) Length	Width	Height	Shell Thickness (Inches)
3000	313-1/2	105-1/2	21-1/2	12 GA.(0.1046)

Gasket - Gaskets shall be of Listed gasket material minimum 1/8 inch thick.

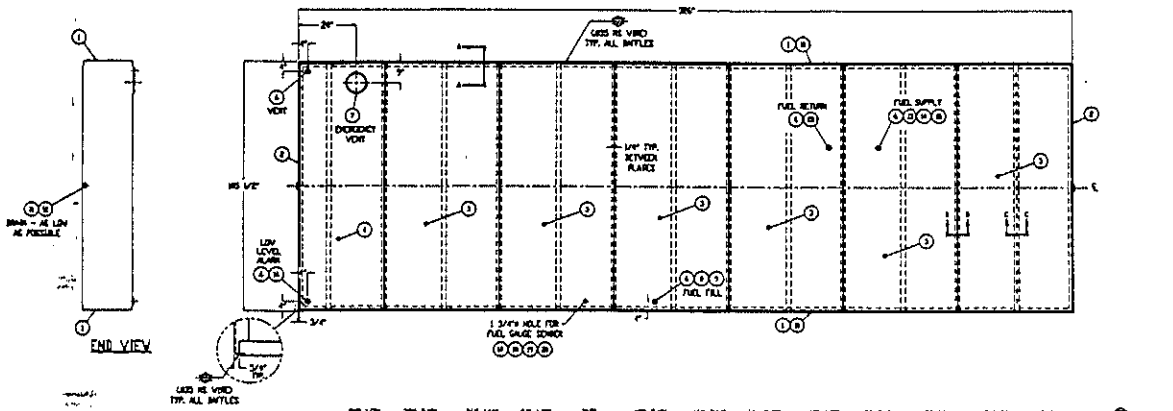
Bracing and Support steel - All bracing and support steel shall be provided as shown in the respective illustrations. Arrangement and details for welding the bracing and supports are specified in the illustrations.

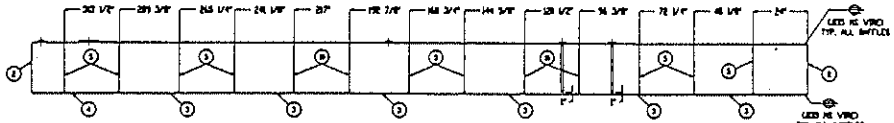
Provision for Venting - Each tank shall have a provision for normal and emergency venting of. The vent shall consist of pipe connections sized as indicated in Table I. The vent opening shall be identified and be in addition to filling, withdrawal, or monitoring openings. They shall be located as indicated in the respective illustrations. Fittings shall be constructed in accordance with the UL 142 Standard.

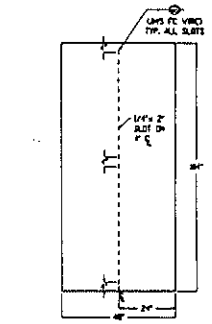
Nominal Tank Capacity (Gal.)	Minimum Vent Opening Nominal Pipe Size (Inches)
3000	6

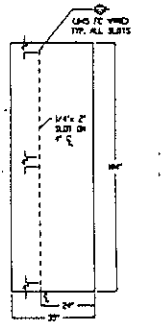
Additional Openings - Separate openings shall be provided in the top of the tank above the normal maximum liquid level for connection of fill piping and monitoring as indicated on the respective illustrations. All openings shall employ fittings constructed in accordance with the Standard.

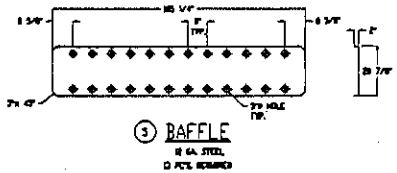
Effective December 15, 2009, lifting fittings, handles or lugs not described herein may not be installed on tanks covered in this follow-up services procedure.



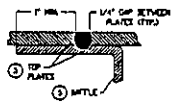


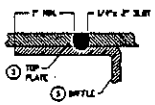


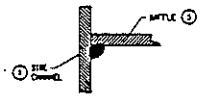




ILL. 1
SEC. 1
VOL. 1
File # MH15232



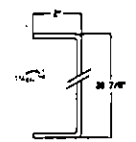


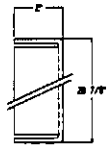


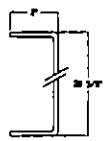
FABRICATION NOTES:

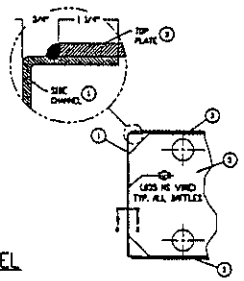
1. UL PERSONNEL TO WITNESS & DOCUMENT AS REQUIRED (TEST UNIT ONLY)
2. COMPLETE TANK ROLL AND CERTIFICATION PER UL 142
3. TERMINATE TO ENTITIE ENGINEERING
4. ALL SEAMS SPLICE WELDS FROM TOP/BOTTOM SHEET TO BAFFLE TO BE SHORT FLUX CORE WELDING WIRE w/ GAS SHIELD
5. ALL WELDS WITH EXCEPTION OF NOTE #3 TO USE 6010 MILD STEEL WELDING WIRE w/ GAS SHIELD
6. SOLVENT CLEAN & PRIME FINISH w/ EXPOXY COOLAR (POST PRIMER AFTER COMPLETION OF TANK TESTS)
7. PAINT ONE (1) FINISH COAT OF BLACK ENAMEL

* PRODUCTION UNITS ONLY









ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE
20	FG-14	FUEL GAUGE BRACKET	14 GA. A/STEL	1	STL
19		INSTALLATION KIT	"VIBD"	1	STL
18	286-881	FUEL GAUGE SENSOR	"VIBD"	1	STL
17	781-382	FUEL GAUGE	"VIBD"	1	STL
16	LS-3	LOW LEVEL ALARM	"EDP LEVEL SWITCH	1	STL
15		PIPE	BLACK STEEL	1	3/4" x A/R
14	94-444	FOOT VALVE	BRONZE	1	3/4" NPT
13	4579	REDUCER TAPPED BUSHING	BLACK STEEL	2	2" x 1" NPT
12		PLUG	BLACK STEEL	2	1 1/2" NPT
11		1/2 COUPLING	BLACK STEEL	2	1 1/2" NPT
10		SPLICE CHANNEL	12 GA. STEEL (A-569)	4	METAL A-6
9	4858	FUEL FILL CAP	BLACK STEEL	1	2" NPT
8		NIPPLE	BLACK STEEL	1	2" NPT, x CLOSE
7	308	TANK FLANGE	"PHOENIX"	1	6" NPT
6	308	TANK FLANGE	"PHOENIX"	1	2" NPT
5		BAFFLE	12 GA. STEEL (A-569)	13	METAL B-7
4		PLATE, TOP & BOTTOM	12 GA. STEEL (A-569)	2	METAL C-1
3		PLATE, TOP & BOTTOM	12 GA. STEEL (A-569)	12	METAL C-2
2		END CHANNEL	12 GA. STEEL (A-569)	2	METAL A-7
1		SIDE CHANNEL	12 GA. STEEL (A-569)	2	METAL A-8

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D

REVISION

PRITCHARD-BROWN
DIV. of ENVIRO-INDUSTRIES, INC.
6601 ERDMAN AVE.
BALTIMORE, MD. 21205

DATE 3/2/94

ABOVE GROUND RECTANGULAR STEEL DIESEL FUEL STORAGE TANK

DRW. RLB	JOB SERIAL NO. FOR REF.	U.L. TEST TANK #2
CHK. RJS		
APP. CCG		
APP. LV	SCALE	SHEET OF

D E S C R I P T I O N

PRODUCT COVERED:

* Aboveground Rectangular Tanks for Flammable Liquids, 65 to 8,000 Gal. Capacities.

GENERAL:

The tanks covered by this report are primary containment aboveground rectangular steel tanks intended for storage of flammable liquids at atmospheric pressure. They are for use only with non-corrosive, stable liquids that have a specific gravity not exceeding that of water.

The tanks are intended for stationary installation in accordance with the Standard for Flammable and Combustible Liquids Code of the National Fire Protection Association, NFPA No. 30.

The tanks are fabricated, inspected, and tested for leakage before shipment from the factory as completely assembled vessels.

REQUIREMENTS:

Details not specifically described in this descriptive section of the Follow-Up Service Procedure shall conform with the current edition of the Underwriters Laboratories Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, UL 142.

A copy of this Standard is included herein and forms a part of this Procedure.

Details not specifically covered in the descriptive section of this Follow-Up Service Procedure shall conform with this Standard.

ECH/DB

TESTS TO BE CONDUCTED BY MANUFACTURER:

Each tank, before painting, shall be tested by the manufacturer in accordance with the following test procedure.
CAUTION: A pressure relief device is to be used when testing tanks with air pressure.

1. Each compartment of a compartment tank shall be tested separately.

2. The tank shall be pressurized to 3 to 5 psig and held for 1 hour to check for leakage. A continuous drop in pressure is considered evidence of leakage.

   An alternate method is to apply soap suds, or other leak detection fluid to the tank when pressurizing to detect leaks.

   If leaks are found, the tank is to be made tight by welding an retesting. Defects in welds shall be repaired as detailed in the UL 142 Standard by chipping or melting out from one or both sides of the joint, as required, and rewelding.

MARKING:

A method of marking shall be in accordance with the UL 142 Standard. A stamped metal nameplate welded to the top surface of the tank is to be employed. The marking shall be as specified in UL 142 with the following or equivalent:

1. Manufacturer's name, trade name or trade mark, or distinctive marking by which the organization responsible for the product can be identified.

2. The following statements, or equivalent:

   A. "This Tank is Intended for Stationary Installation Only."

   B. "Maximum Test Pressure 3 psig."

   C. **When the tank has integral welded steel supports the tank shall be marked: "On Supports." The mark shall be adjacent to the conformity mark.**

3. Identification of emergency vent openings.

4. **The following statement about manways, if provided for emergency venting:**

   "This Manway Is Provided with Long Bolts To Provide Emergency Venting. Do Not Replace With Shorter Bolts."

*

5. The statement:

"This Tank Requires Emergency Relief Venting Capacity Not Less Than (+) Cubic Feet Per Hour.

(+) - See Comments Below

Calculating Venting Capacities for tanks:

A. Calculate the Wetted Surface using the formula:

Wetted Surface = 2LH + LW + 2HW

where L = length of tank in feet
W = Width of tank in feet
H = Height of tank in feet

B. With the calculated Wetted Surface, determine the Venting Capacity from Table 8.1 of Standard UL 142.

Either round up to the nearest value, or interpolate the capacity.

6. Listing Mark

LISTING MARK:

ABOVEGROUND TANK FOR FLAMMABLE LIQUIDS

Account 58-2-1

CONSTRUCTION DETAILS:

General - The tanks shall be constructed in accordance with the current edition of UL 142 and the following description and illustrations.

Welds/Connections - Refer to UL 142 for details on the connection and continuous weld to provide a leak-tight construction.

Internal Bracing - The internal bracings of the tanks shall be in accordance with the illustrations as indicated:

Tanks 65 to 125 Gal.: The bracing and maximum bracing spacing shall be as indicated for the 125 Gal. Tank in Ill. 1.

Tanks 126 to 5000 Gal.: The bracing and maximum bracing spacing shall be as indicated for the 5,000 Gal. Tank in Ill. 2.

* Tanks 5001 to 8000 Gal.: The bracing and maximum bracing spacing shall be as indicated for the 8,000 Gal. Tank in Ills.3 and 4.

Material and Thickness - The steel shall comply with the specifications in UL 142. The thickness of the steel plates shall be minimum 12 Ga. The other materials shall be as specified in the accompanying illustrations. The type steel shall be as specified in the illustrations or be stainless steel at the indicated thicknesses.

Dimensions - Dimensions of the tanks may vary from those indicated in the illustrations to allow any size capacity tank from 65 to 8,000 Gal. The following restrictions apply:

Tanks 65 to 125 Gal.: The maximum dimensions of any length, width, and/or height, shall not exceed those dimensions as indicated for the 125 Gal. Tank in Ill. 1.

Tanks 126 to 5000 Gal.: The maximum dimensions of any length, width, and/or height, shall not exceed those dimensions as indicated for the 5,000 Gal. Tank in Ill. 2.

* Tanks 5001 to 8000 Gal.: The maximum dimensions of any length, width, and/or height, shall not exceed those dimensions as indicated for the 8,000 Gal. Tank in Ills. 3 and 4.

ECH/DB

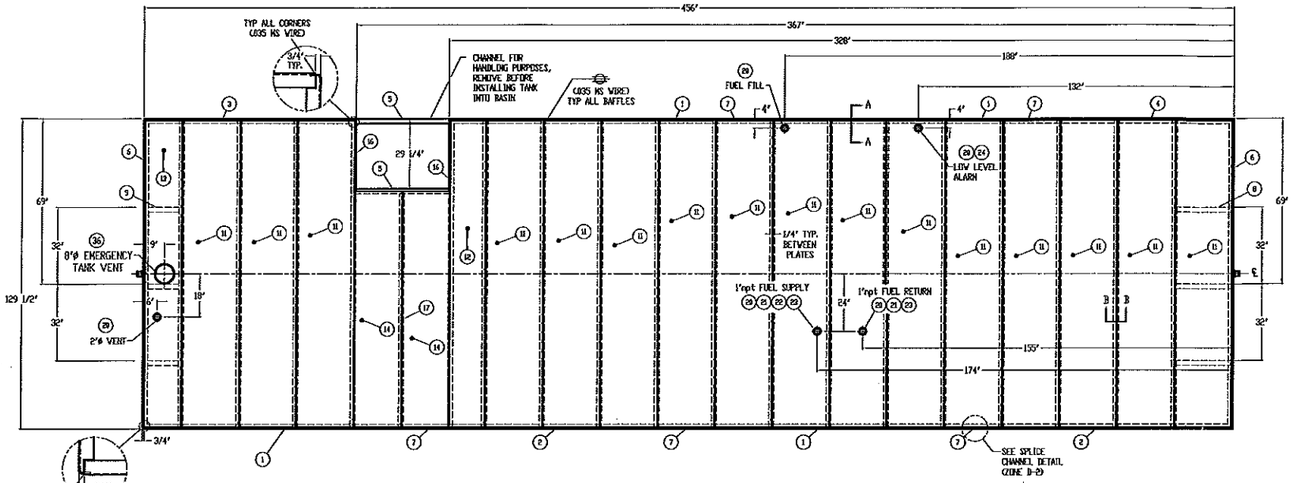
Gasket - Gaskets shall be of Listed gasket material minimum 1/8 inch thick.

Provision for Venting - Each tank shall have a provision for normal and emergency venting of. The vent shall consist of pipe connections sized as required by Table 8.1 of Standard UL 142. The vent opening shall be identified and be in addition to filling, withdrawal, or monitoring openings.

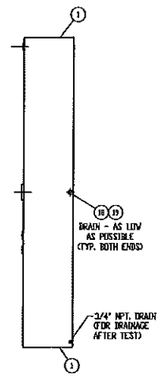
Additional Openings - Separate openings shall be provided in the top of the tank above the normal maximum liquid level for connection of fill piping and monitoring as indicated on the respective illustrations. Additional openings may be employed and location of openings may vary. All openings shall employ fittings constructed in accordance with the Standard.

Effective December 15, 2009, lifting fittings, handles or lugs not described herein may not be installed on tanks covered in this follow-up services procedure.

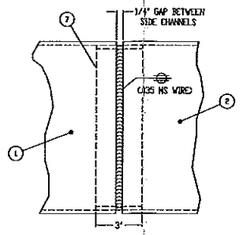
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



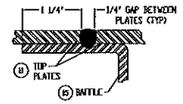
FUEL TANK



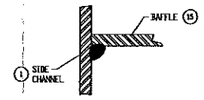
END VIEW



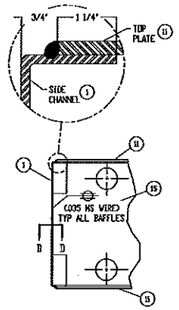
SPLICE CHANNEL DETAIL



SECTION B-B

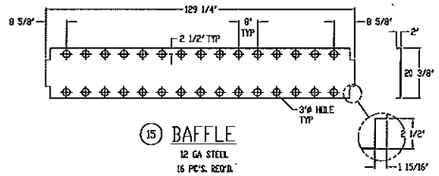


SECTION D-D

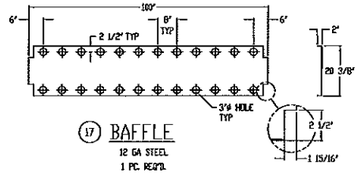


SECTION A-A

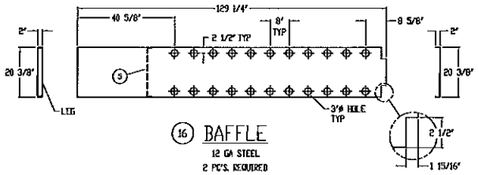
(BAFFLE/SIDE CHANNEL/TOP & BOTTOM PLATE INTERFACE)



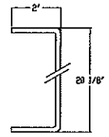
(15) BAFFLE
12 GA STEEL
16 PC'S. REQ'D.



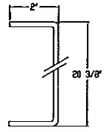
(17) BAFFLE
12 GA STEEL
1 PC. REQ'D.



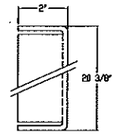
(16) BAFFLE
12 GA STEEL
2 PC'S. REQUIRED



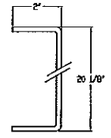
SUPPORT CHANNEL
12 GA STEEL
(8) 3 PC'S - 23 7/8"
(9) 3 PC'S - 16 3/4"



SIDE CHANNEL
12 GA STEEL
(1) 4 PC'S. - 129"L
(2) 2 PC'S. - 106 7/8"L
(3) 1 PC. - 87 1/2"L
(4) 1 PC. - 86"L
(5) 2 PC'S. - 39"L



(6) END CHANNEL
12 GA STEEL
2 PC'S. - 129 1/4"L



(7) SPLICE CHANNEL
12 GA STEEL
5 PC'S. - 3"

B.O.M. FOR ONE (1) FUEL TANK

ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE	WEIGHT
24	LS-3	LOW LEVEL ALARM	"GEM" LEVEL SWITCH	1	STD.	
23		PIPE	BLACK STEEL	2	1" NPT. x A/R	
22	91-0044	FOOT VALVE	BRONZE	1	1" NPT.	
21	4579	DOUBLE TAPPED BUSHING	BLACK STEEL	2	2"x 1" NPT.	
20	398	TANK FLANGE	"PHOENIX"	5	2" NPT.	
19		PLUG	BLACK STEEL	2	1 1/2" NPT.	
18		1/2 COUPLING	BLACK STEEL	2	1 1/2" NPT.	
17		BAFFLE	12 GA STEEL (A-569)	1	DETAIL C/6	73
16		BAFFLE	12 GA STEEL (A-569)	2	DETAIL B/8	175
15		BAFFLE	12 GA STEEL (A-569)	16	DETAIL C/8	1400
14		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	4	19 7/8"x 98 7/8"	239
13		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	2	15 1/2"x 128"	121
12		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	2	14 1/2"x 128"	113
11		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	32	23 3/4"x 128"	2556
10						
9		SUPPORT CHANNEL	12 GA STEEL (A-569)	3	DETAIL A/6	12
8		SUPPORT CHANNEL	12 GA STEEL (A-569)	3	DETAIL A/7	17
7		SPLICE CHANNEL	12 GA STEEL (A-569)	5	DETAIL A/6	11
6		END CHANNEL	12 GA STEEL (A-569)	2	DETAIL A/7	192
5		SIDE CHANNEL	12 GA STEEL (A-569)	2	DETAIL A/8	58
4		SIDE CHANNEL	12 GA STEEL (A-569)	1	DETAIL A/8	64
3		SIDE CHANNEL	12 GA STEEL (A-569)	1	DETAIL A/8	65
2		SIDE CHANNEL	12 GA STEEL (A-569)	2	DETAIL A/8	158
1		SIDE CHANNEL	12 GA STEEL (A-569)	4	DETAIL A/8	355

FABRICATION NOTES:

1. UL PERSONNEL TO WITNESS & DOCUMENT AS REQUIRED.
2. COMPLETE TANK TEST AND CERTIFICATION PER UL. 142 & FORWARD TO SYSTEMS ENGINEERING.

CUSTOMER:

REFERENCE:

UNITS REQ'D:

THIRD-ANGLE PROJECTION

REVISION

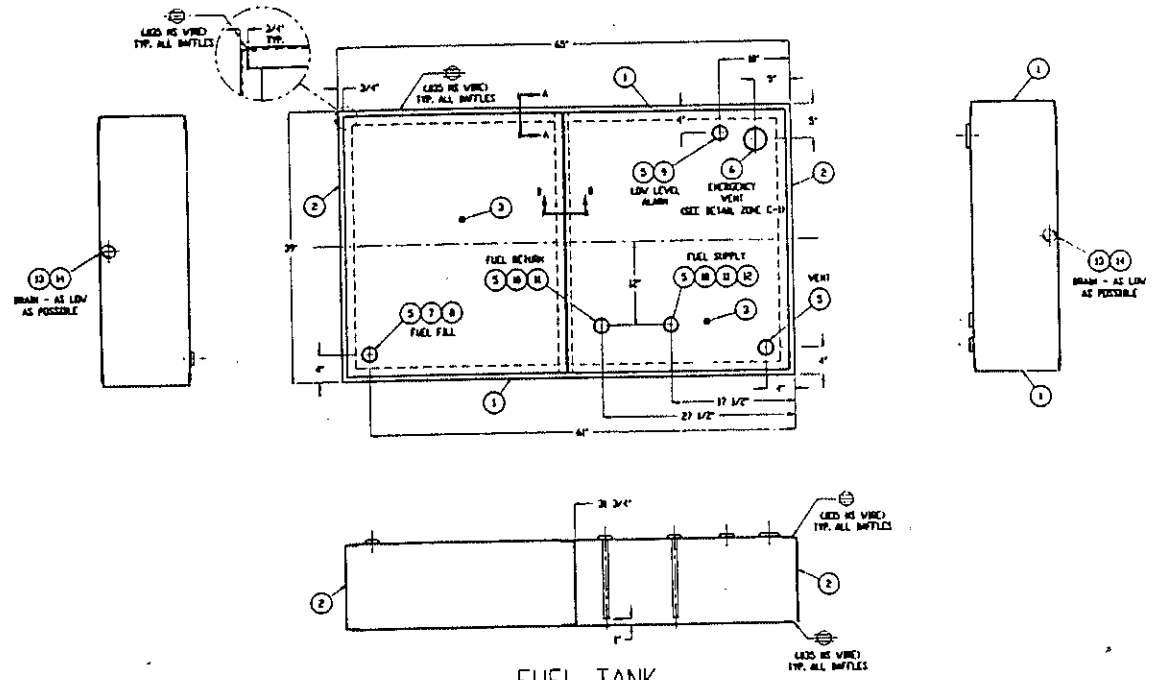
PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE 06 20 94

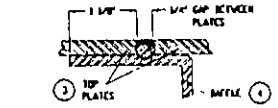
5,000 GAL. FUEL STORAGE TANK

DRW.	RLB	JOB SERIAL NO.
CHK.	BJS	UL TEST TANK
APP.	LW	
APP.	LW	SCALE: SHEET OF

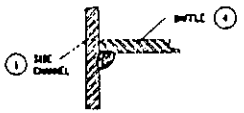
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



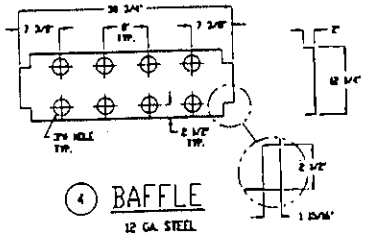
FUEL TANK



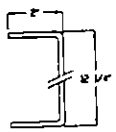
SECTION B-B



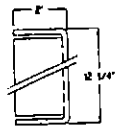
SECTION C-C



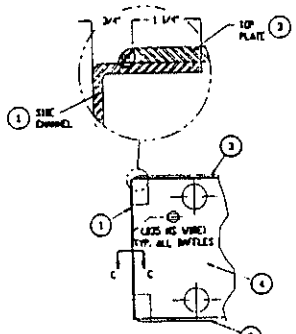
④ BAFFLE
12 GA. STEEL
1 PC. REQ'D.



① SIDE CHANNEL



② END CHANNEL
12 GA. STEEL



SECTION A-A

FABRICATION NOTES:
1. UL. PERSONNEL TO WITNESS & DOCUMENT AS REQUIRED (TEST UNIT ONLY)
2. COMPLETE TANK TEST AND CERTIFICATION PER UL. 142
3. FORWARD TO SYSTEMS ENGINEERING

BOM FOR QNC 01 FUEL TANK

ITEM	PART NO.	DESCRIPTION	MATERIAL	QTY	SIZE
24					
23					
22					
21					
20					
19					
18					
17					
16					
15					
14		PLUG	BLACK STEEL	2	1 1/2" spl.
13		1/2 COUPLING	BLACK STEEL	2	1 1/2" spl.
12	98-844	FUEL VALVE	BRIDGE	1	3/4" spl.
11	4579	REDUCER TAPPED BUSHING	BLACK STEEL	2	2"x 1" spl.
10		PIPE	BLACK STEEL	2	3/4" spl. x 6"
9	LS-2	LOW LEVEL ALARM	"OIL" LEVEL SWITCH	1	STI
8	4858	FUEL FILL CAP	BLACK STEEL	1	2" spl.
7		BAFFLE	BLACK STEEL	1	2" spl. x CLOSE
6	308	TANK FLANGE	"PHOENIX"	1	2" spl.
5	308	TANK FLANGE	"PHOENIX"	5	2" spl.
4		BAFFLE	12 GA. STEEL (A-569)	1	BETAN, B-B
3		PLATE, TOP & BOTTOM	12 GA. STEEL (A-569)	2	37 1/2"W X 5/8"L
2		CHANNEL, END	12 GA. STEEL (A-569)	2	BETAN, A-1
1			12 GA. STEEL (A-569)	2	BETAN, A-B

PATENT NO. 3,868,048
NOTICE TO PERSONS RECEIVING THIS DRAWING.
PRITCHARD-BROWN DIV. of ENVIRO-INDUSTRIES, INC. CLAIMS PROPRIETARY RIGHT IN THE MATERIAL DISCLOSED HEREON THIS DRAWING IS ISSUED FOR SALES INFORMATION ONLY AND MAY NOT BE REPRODUCED OR USED TO MANUFACTURE ANYTHING SHOWN HEREON WITHOUT PERMISSION FROM PRITCHARD-BROWN DIV OF ENVIRO-INDUSTRIES, INC TO THE USER.

PRITCHARD-BROWN
DIV of ENVIRO-INDUSTRIES, INC.
6901 ERDMAN AVE.
BALTIMORE, MD 21205

REVISION

DATE 5/29/

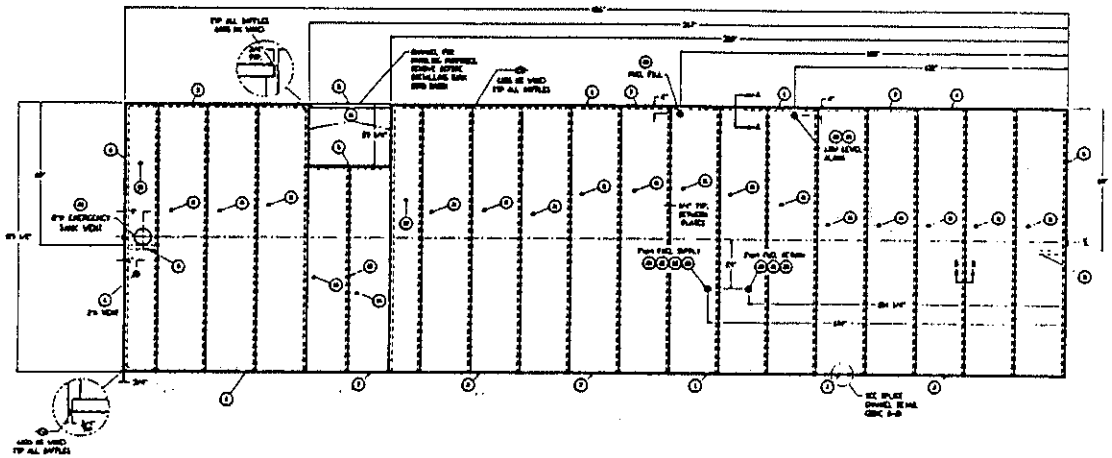
125 GAL. FUEL STORAGE TANK

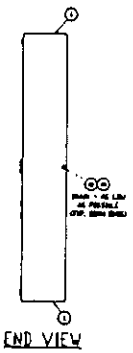
DRN RLJ
CHK RJE
APP LV

JOB NUMBER
NO FOR REF

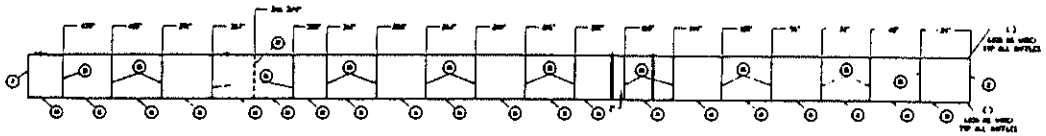
U.L. TEST TANK

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D

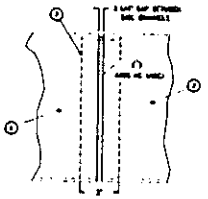




END VIEW

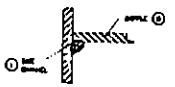


FUEL TANK

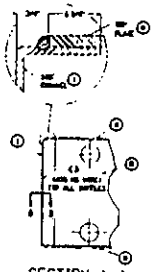


SPLICE CHANNEL DETAIL

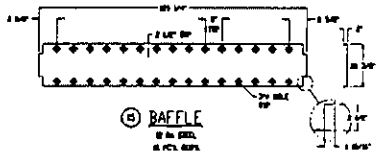
SECTION B-B



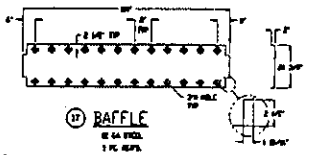
SECTION D-D



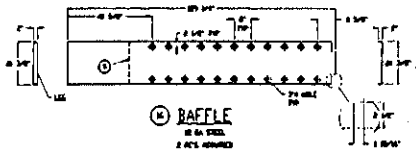
SECTION A-A



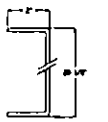
⑮ BAFFLE



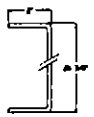
⑰ BAFFLE



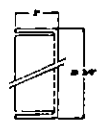
⑯ BAFFLE



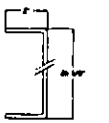
SUPPORT CHANNEL



SIDE CHANNEL



④ END CHANNEL



⑦ SPLICE CHANNEL

ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE
25		1/2 COUPLING	BLACK STEEL	1	6"npt
24	LS-2	LOW LEVEL ALARM	"GEM" LEVEL SWITCH	1	S19
23		PIPE	BLACK STEEL	3	2"npt x A/R
22	N-044	FUEL VALVE	BRONZE	1	2"npt
21	4579	REDUCER (TAPPED BUSHING)	BLACK STEEL	1	2"x 1"npt
20	388	TANK FLANGE	"PADELFORT"	1	2"npt
19		PLUG	BLACK STEEL	1	1 1/2"npt
18		1/2 COUPLING	BLACK STEEL	1	1 1/2"npt
17		BAFFLE	12 GA STEEL (A-569)	1	REMAL C-6
16		BAFFLE	12 GA STEEL (A-569)	2	REMAL B-8
15		BAFFLE	12 GA STEEL (A-569)	1	REMAL C-6
14		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	4	41 7/8"x 30 7/8"
13		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	2	23 1/2"x 120"
12		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	2	24 1/2"x 120"
11		PLATE, TOP & BOTTOM	12 GA STEEL (A-569)	2	23 3/4"x 120"
10					
9		SUPPORT CHANNEL	12 GA STEEL (A-569)	1	REMAL A-6
8		SUPPORT CHANNEL	12 GA STEEL (A-569)	1	REMAL A-7
7		SPLICE CHANNEL	12 GA STEEL (A-569)	5	REMAL A-6
6		END CHANNEL	12 GA STEEL (A-569)	2	REMAL A-7
5		SIDE CHANNEL	12 GA STEEL (A-569)	2	REMAL A-8
4		SIDE CHANNEL	12 GA STEEL (A-569)	1	REMAL A-8
3		SIDE CHANNEL	12 GA STEEL (A-569)	1	REMAL A-8
2		SIDE CHANNEL	12 GA STEEL (A-569)	2	REMAL A-8
1		SIDE CHANNEL	12 GA STEEL (A-569)	1	REMAL A-8

FABRICATION NOTES:

PATENT NO 5,666,906

NOTICE TO PERSONS RECEIVING THIS DRAWING

PRITCHARD-BROWN DIV. of DYNEO-INDUSTRIES, INC CLAIMS PROPRIETARY RIGHT IN THE MATERIAL DISCLOSED HEREON THIS DRAWING IS ISSUED FOR SALES INFORMATION ONLY AND MAY NOT BE REPRODUCED OR USED TO MANUFACTURE ANYTHING SHOWN HEREIN WITHOUT PERMISSION FROM PRITCHARD-BROWN DIV. OF DYNEO-INDUSTRIES, INC TO THE USER

REVISION

PRITCHARD-BROWN
DIV. of DYNEO-INDUSTRIES, INC
6901 ERDMAN AVE.
BALTIMORE, MD 21205

DATE 5/2/96

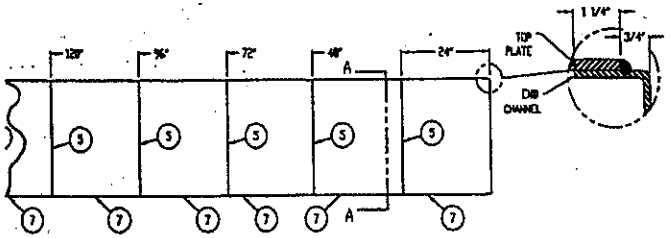
5,000 GAL. FUEL STORAGE TANK

DRW AJS
CHK LE
APP LV

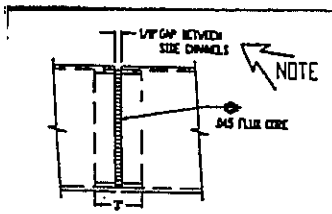
JOB SERIAL NO FOR REF.

UL TEST TANK

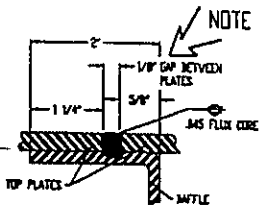
1A



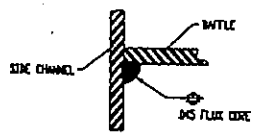
FUEL TANK



SPLICE CHANNEL DETAIL



SECTION "B-B"



SECTION "C-C"

FABRICATION NOTES:

1. COMPLETE TANK CERTIFICATION AND FORWARD TO PLANT MANAGER.

ESTIMATED TANK WEIGHT: 9,000 lbs.

B.O.M. FOR (1) FUEL TANK

ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE	WGT/EA.
11						
10						
9						
8		PLATE, TOP & BOTTOM	12 GA. STEEL	2	10 1/2" x 128 1/2"	69
7		PLATE, TOP & BOTTOM	12 GA. STEEL	42	23 7/8" x 128 1/2"	77
6						75
5		BAFFLE	10 GA. STEEL	21	DETAIL A/7	75
4						
3		CHANNEL, SPLICE	10 GA. STEEL	8	DETAIL B/6	2
2		CHANNEL, END	10 GA. STEEL	2	DETAIL B/7	78
1		CHANNEL, SIDE	10 GA. STEEL	10	DETAIL B/8	60

REVISION

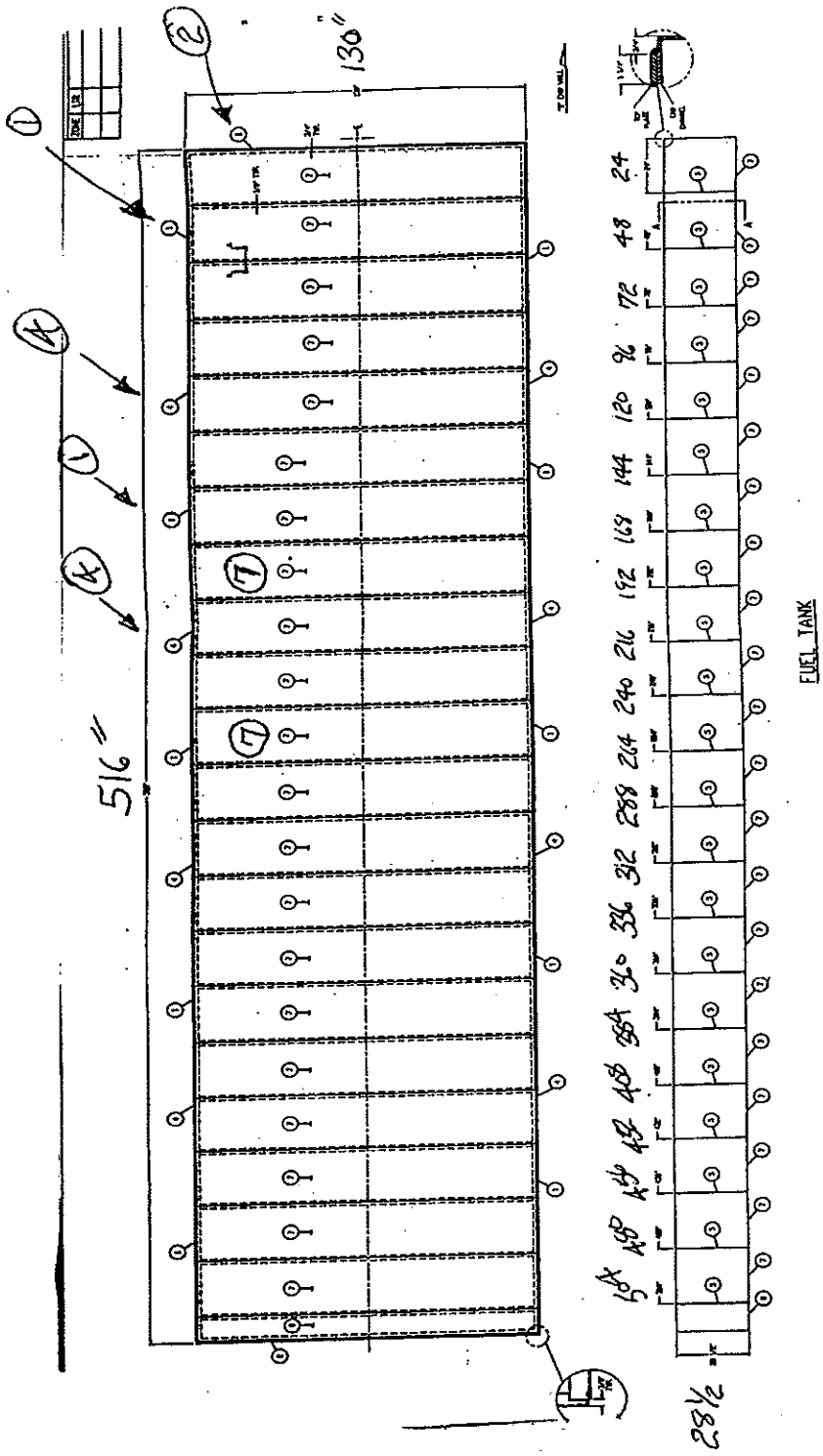
PRITCHARD-BROWN
DIV. of ENVIRO-INDUSTRIES, INC.
6501 ERDMAN AVE.
BALTIMORE, MD. 21206

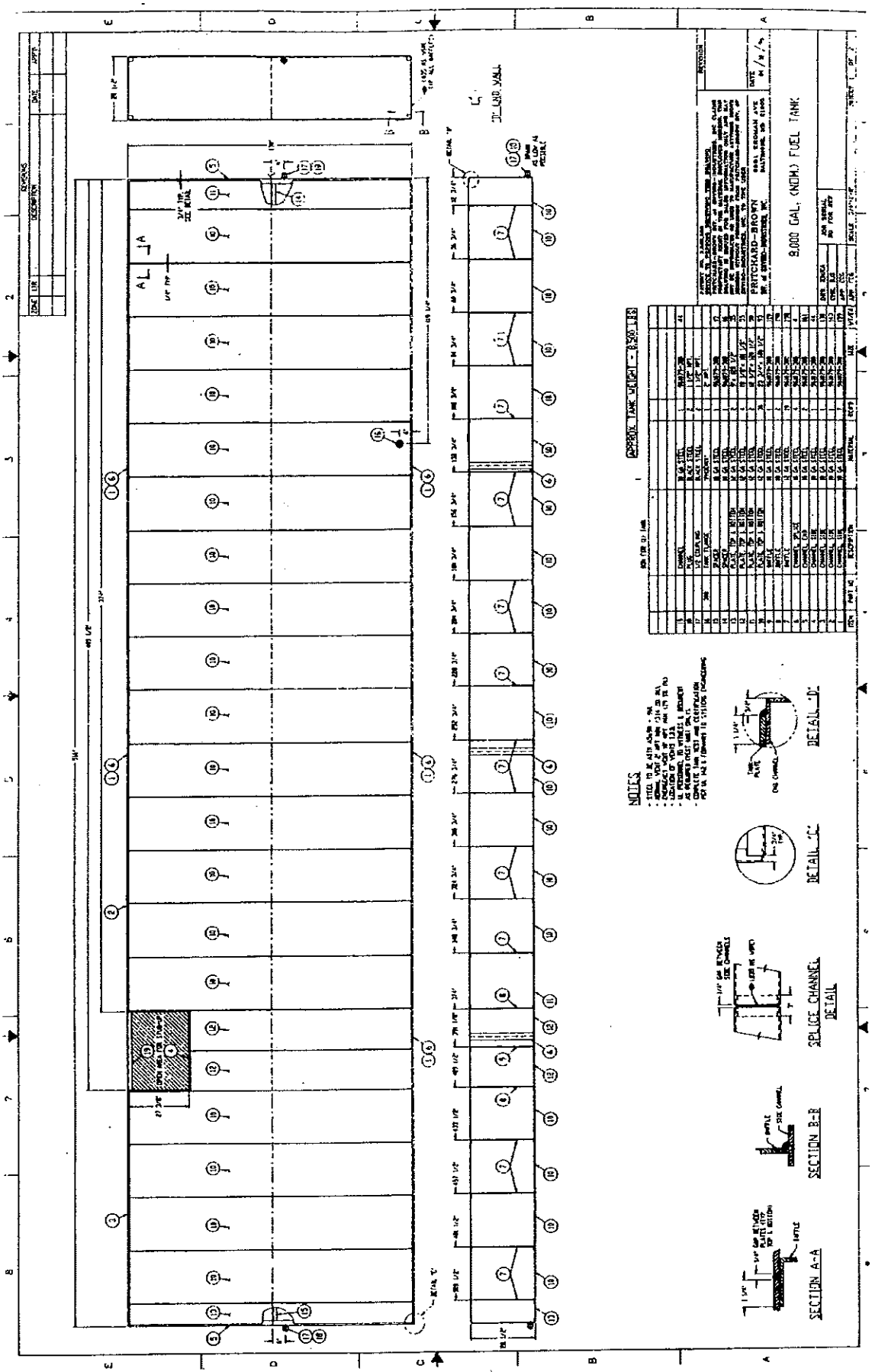
DATE 09/28/00

CURRENT FUEL TANK DESIGN ≈ 8000 GAL

DRW.	JLC	JOB SERIAL NO. FOR REF.	FUEL TANK - 1
CHK.	RHR		
APP.	JZ		
APP.		SCALE 3/4" = 1'-0"	SHEET 1 OF 2

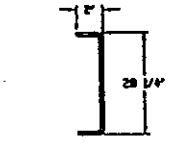
4 3 2 1


130"
516"
FUEL TANK
28½
2A

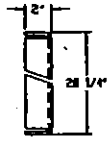

8,000 GAL. (NOM.) FUEL TANK
PRITCHARD-BROWN
NOTES
SECTION A-A
SECTION B-B
SPLICE CHANNEL DETAIL
DETAIL "C"
DETAIL "D"

R96-08239

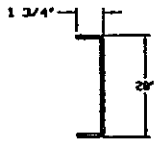
3A



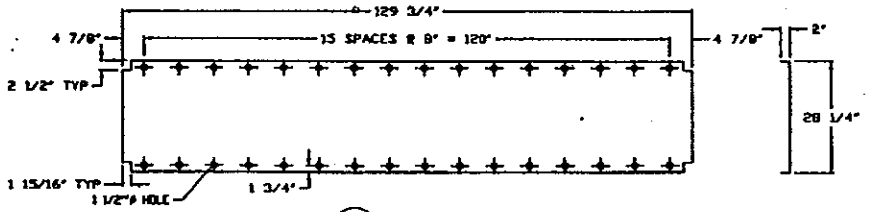
① CHANNEL, SIDE
18 GA STEEL
18 PCS - 182 3/4"



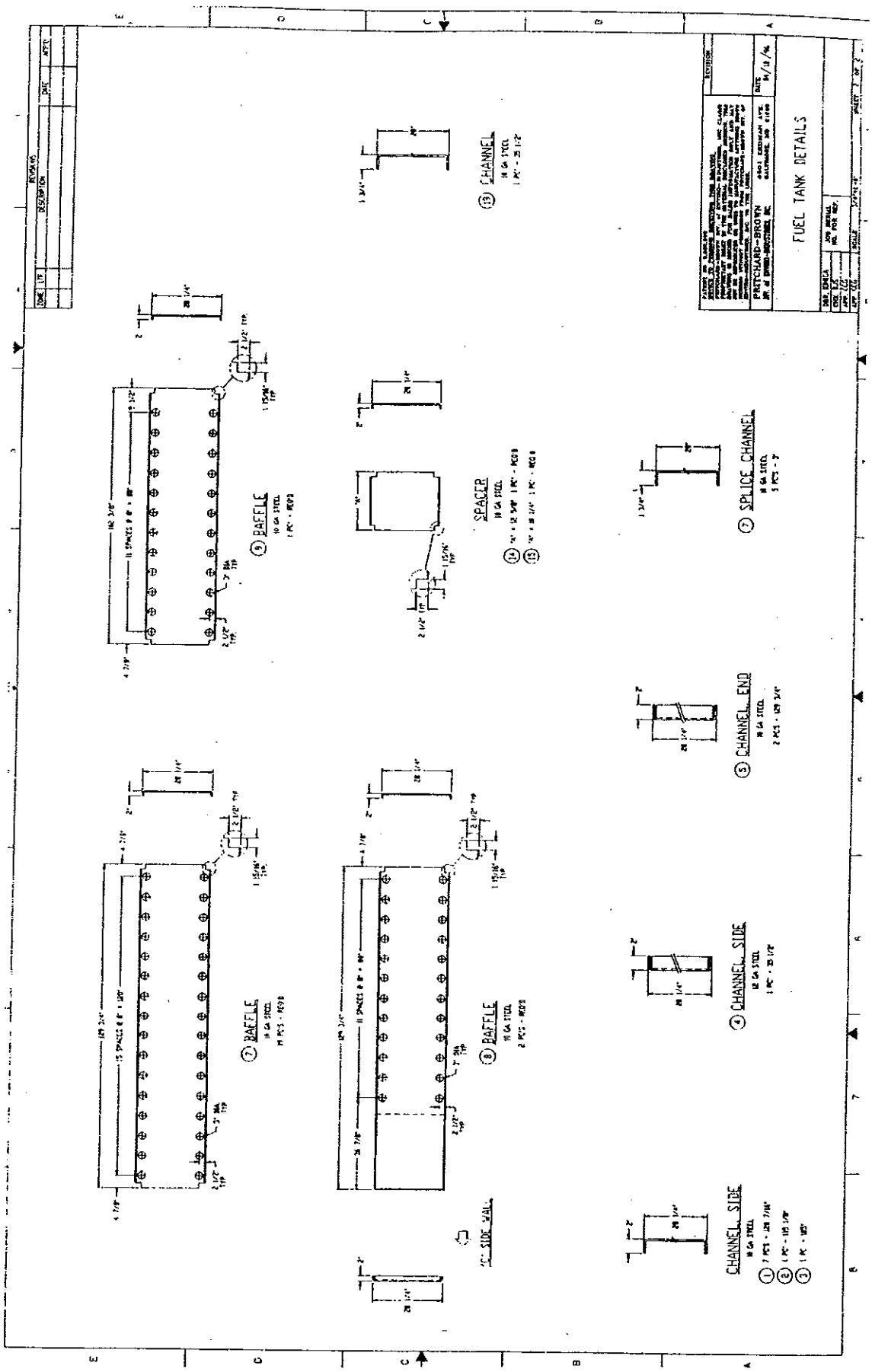
② CHANNEL, END
18 GA STEEL
2 PCS - 129 3/4"



③ SPLICE CHANNEL
13 GA STEEL
8 PCS - 3"



⑤ BAFFLE
18 GA STEEL
21 PCS REQD


FUEL TANK DETAILS
PRITCHARD-BROWN
⑨ BAFFLE
⑦ BAFFLE
⑧ BAFFLE
SPACER
⑬ CHANNEL
⑦ SPLICE CHANNEL
⑤ CHANNEL END
④ CHANNEL SIDE
CHANNEL SIDE
SIDE WALL

R96-08240

16

ESTIMATED TANK WEIGHT: 9,000 lbs.

B.O.M. FOR (1) FUEL TANK

ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE	WGT/EA.
12		PLATE, REINFORCING	10 GA. STEEL	21	3" x 6"	
11		BACKUP TAB	12 GA. STEEL	42	2" x 2"	2
10		PLATE, BOTTOM	12 GA. STEEL	1	34 1/2" x 128 1/2"	2
9		PLATE, BOTTOM	12 GA. STEEL	10	47 7/8" x 128 1/2"	69
8		PLATE, TOP	12 GA. STEEL	1	10 1/2" x 128 1/2"	77
7		PLATE, TOP	12 GA. STEEL	21	23 7/8" x 128 1/2"	69
6						77
5		BAFFLE	10 GA. STEEL	21	DETAIL A/7	
4						75
3		CHANNEL, SPLICE	10 GA. STEEL	8	DETAIL B/6	
2		CHANNEL, END	10 GA. STEEL	2	DETAIL B/7	2
1		CHANNEL, SIDE	10 GA. STEEL	10	DETAIL B/8	78
						60

5 4 3

REVISION

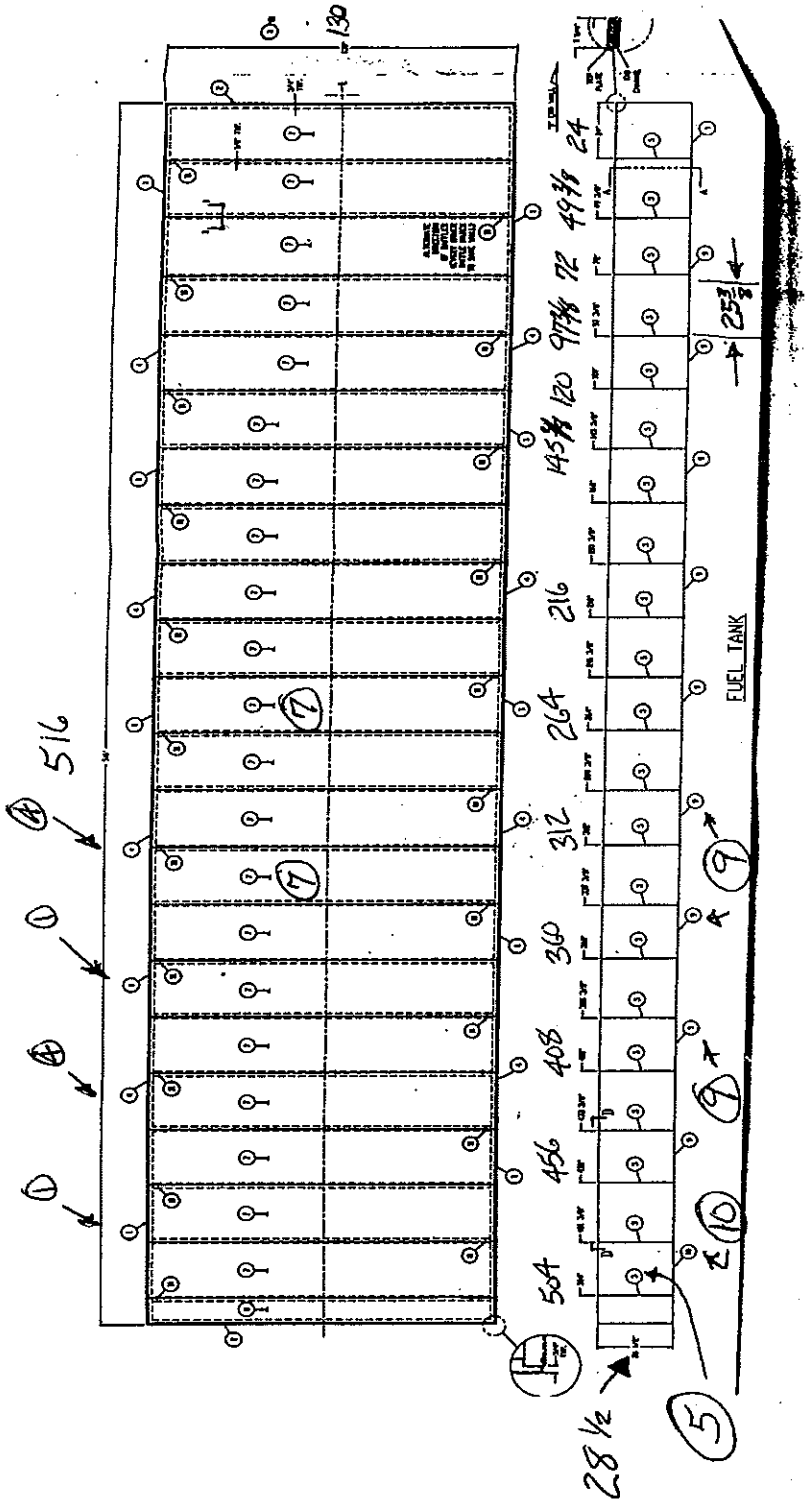
PRITCHARD-BROWN
DIV. of ENVIRO-INDUSTRIES, INC.
6501 ERDMAN AVE.
BALTIMORE, MD. 21205

DATE 09/28/00

PROPOSED FUEL TANK
DESIGN ≃ 8000 GAL.

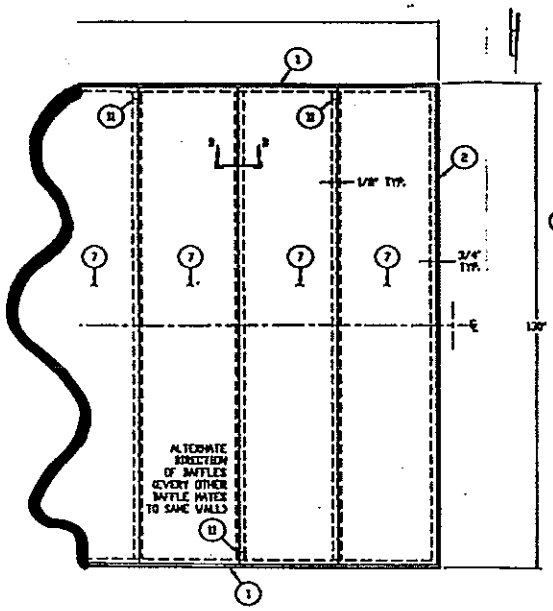
DRW.	J.C	JOB SERIAL NO. FOR REF.	FUEL TANK - 2
CHK.	RHR		
APP.	JZ		
APP.		SCALE 3/4" = 1'-0"	SHEET 2 OF 2

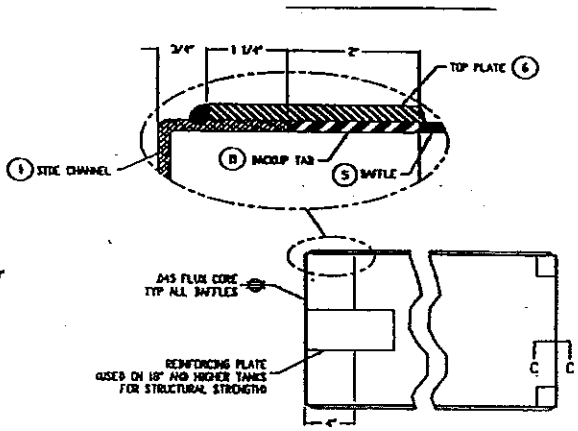
2 1


130
24
49½
72
97½
120
145½
216
264
312
360
408
456
504
FUEL TANK
516
28½

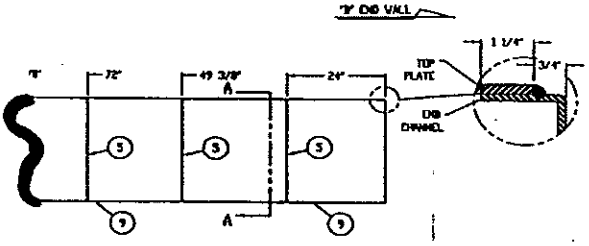
28

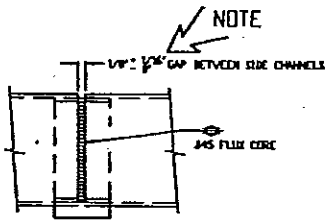
3B



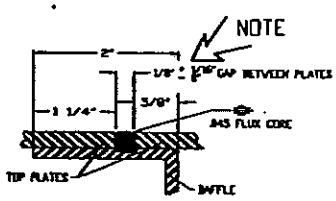


SECTION 'A-A'
BAFFLE, SIDE CHANNEL & TOP & BOTTOM PLATE INTERFACE

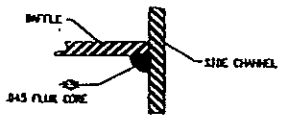




SPLICE CHANNEL DETAIL



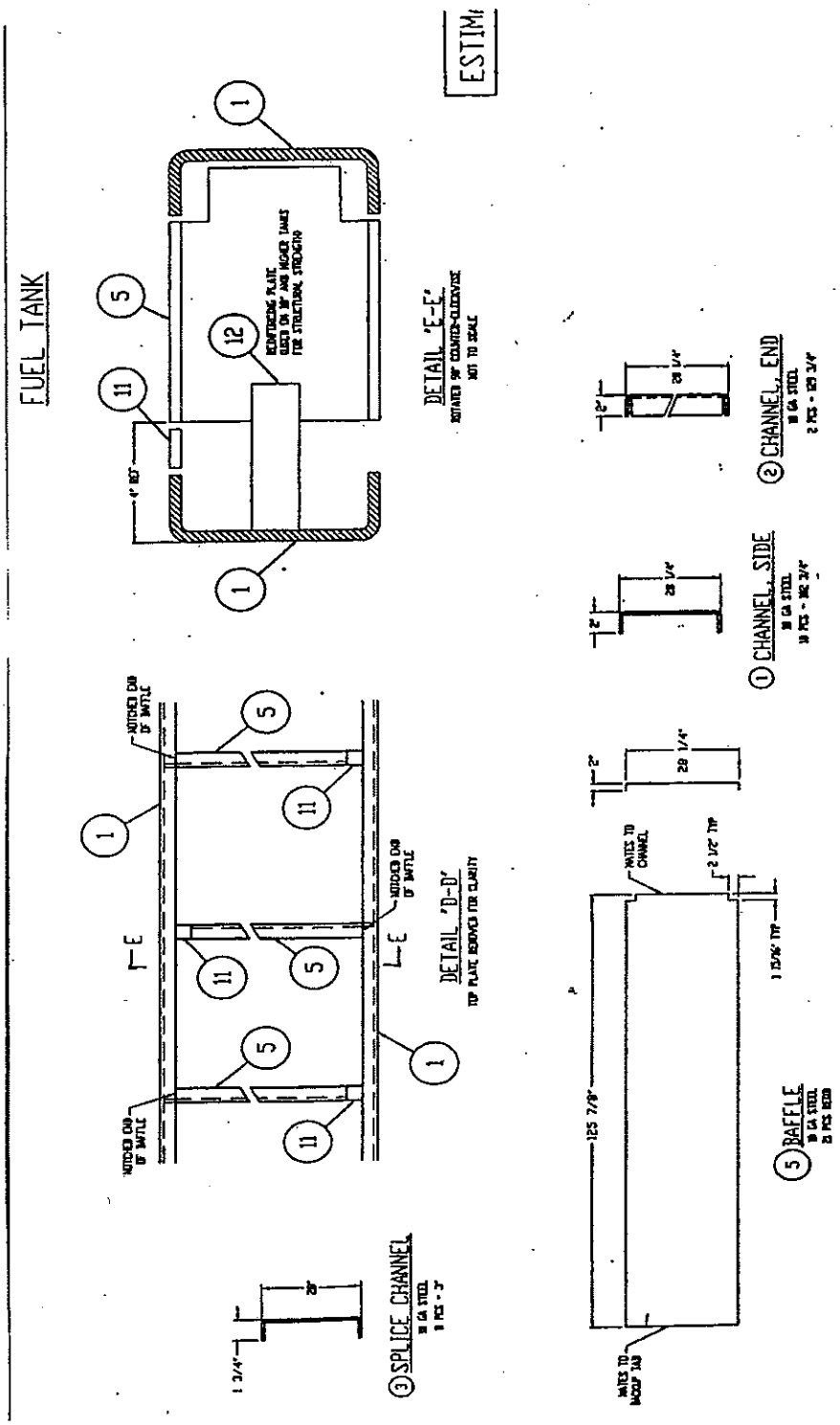
SECTION 'B-B'



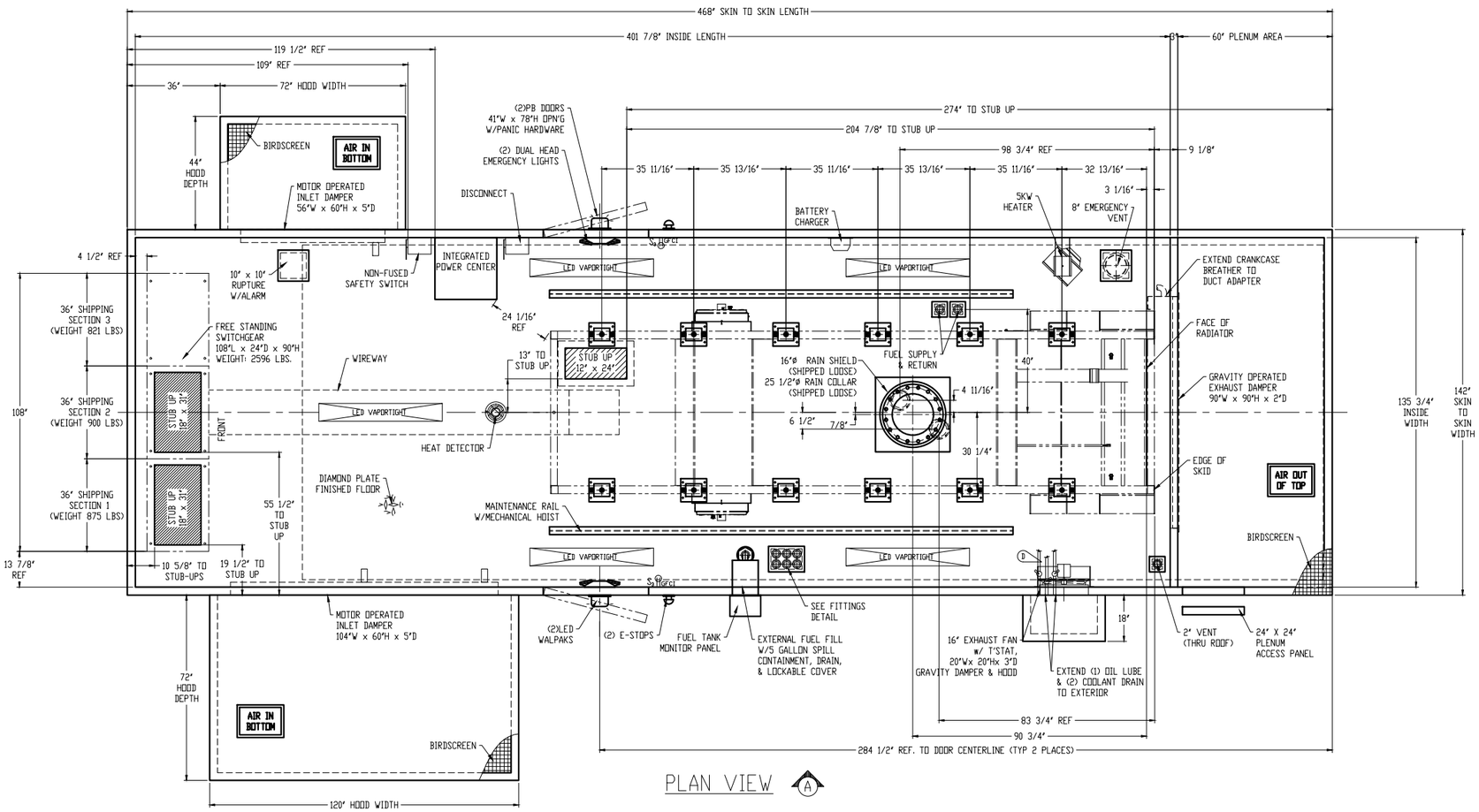
SECTION 'C-C'

FABRICATION NOTES:

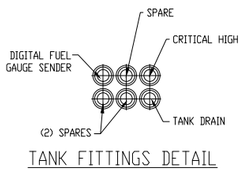
1. COMPLETE TANK CERTIFICATION AND FORWARD TO PLANT MANAGER.


FUEL TANK
ESTIM
DETAIL 'E-E'
DETAIL 'D-D'
NOTCHED END OF BAFFLE
TOP PLATE REMOVED FOR CLARITY
1 CHANNEL, SIDE
2 CHANNEL, END
3 SPLICE CHANNEL
5 BAFFLE
NOTCH TO CHANNEL
NOTCH TO BOOST RAIL

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



PLAN VIEW (A)



TANK FITTINGS DETAIL

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142 File No. MH15232

CUSTOMER: FDEP

REFERENCE: XXX

UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE: XX / XX / XX

GENERATOR ENCLOSURE
[ ] L x [ ] W x [ ] INSIDE HEIGHT

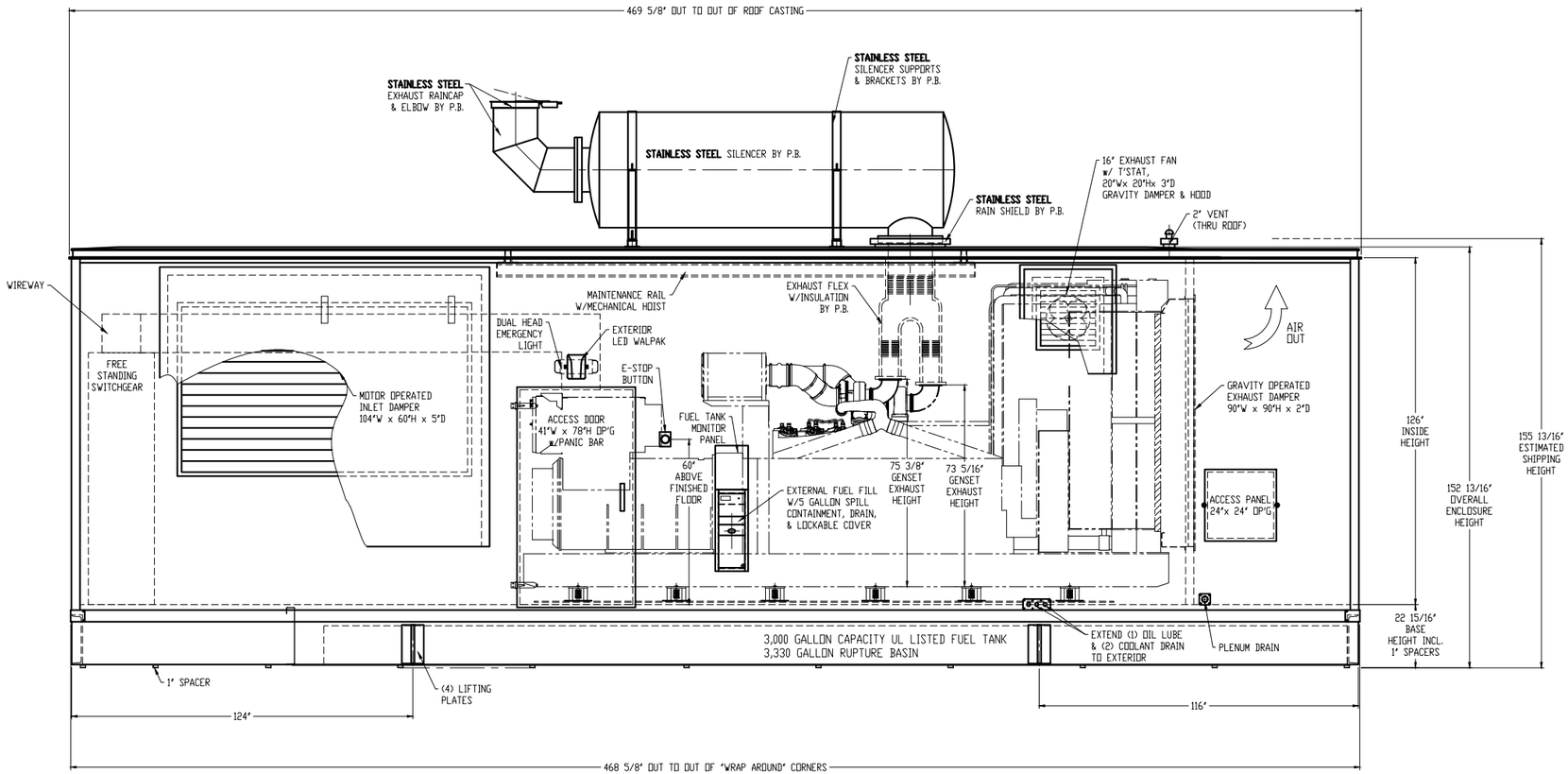
DRW.	PWC
CHK.	XXX
APP.	XXX
APP.	XXX

JOB SERIAL NO.: TYPICAL

SCALE: ---

SHEET 1 OF 9

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



"A" SIDE WALL

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

SCALE IN FEET: 0 1' 2' 3' 4' 5' 6'

UL #142 File No. MH15232

CUSTOMER: FDEP

REFERENCE: XXX

UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE: XX / XX / XX

GENERATOR ENCLOSURE
[ ] L x [ ] W x [ ] INSIDE HEIGHT

DRW.	PWC
CHK.	XXX
APP.	XXX
APP.	XXX

JOB SERIAL NO.: TYPICAL

SCALE: ---

SHEET 2 OF 9

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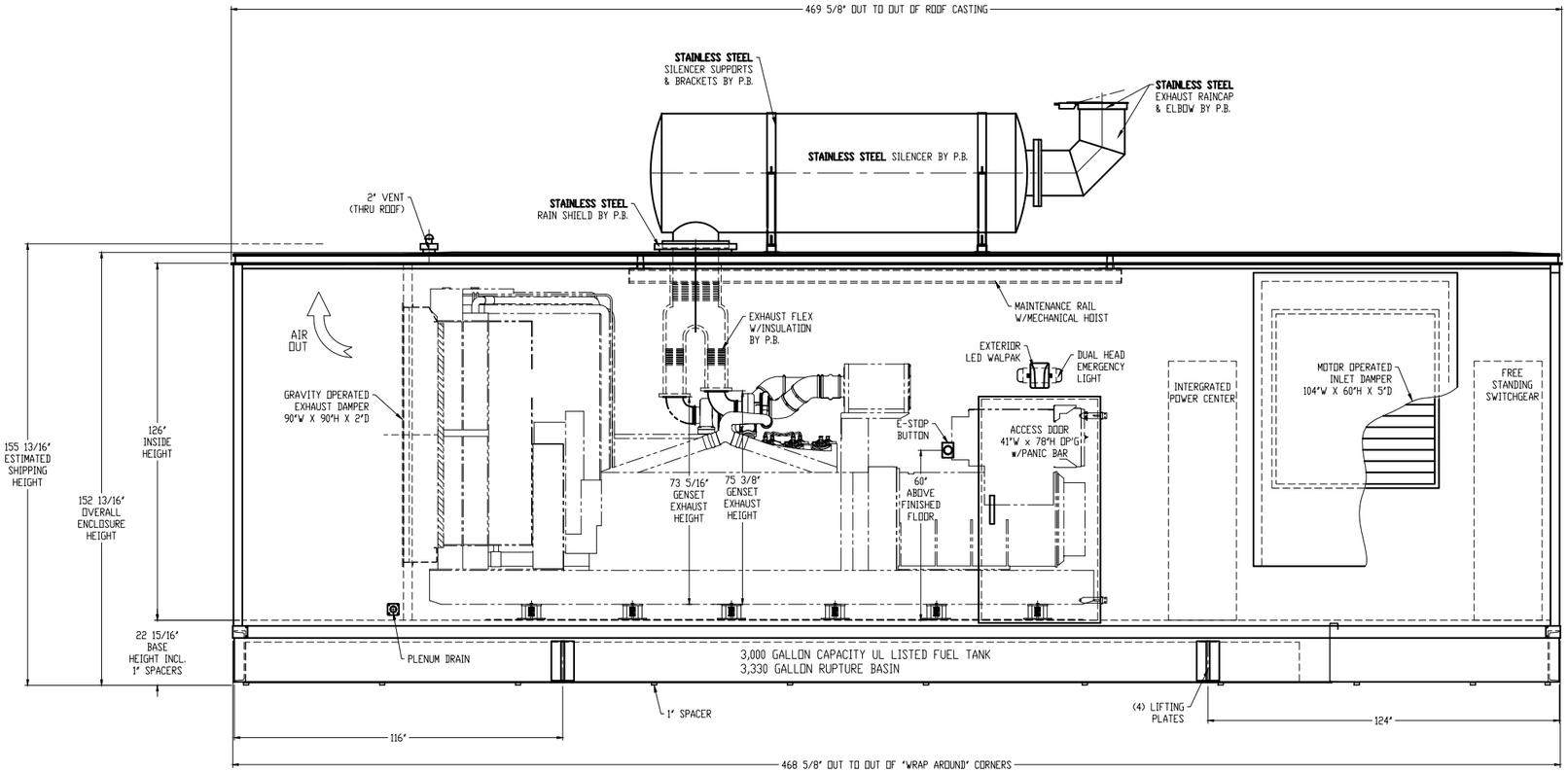
created using AutoCAD

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



"C" SIDE WALL

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142
File No. MH15232

CUSTOMER:
FDEP

REFERENCE: XXX

UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

PATENT NO. 3,882,592

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE XX / XX / XX

GENERATOR ENCLOSURE
[ ] L x [ ] W x [ ] INSIDE HEIGHT

DRW.	PWC
CHK.	XXX
APP.	XXX
APP.	XXX

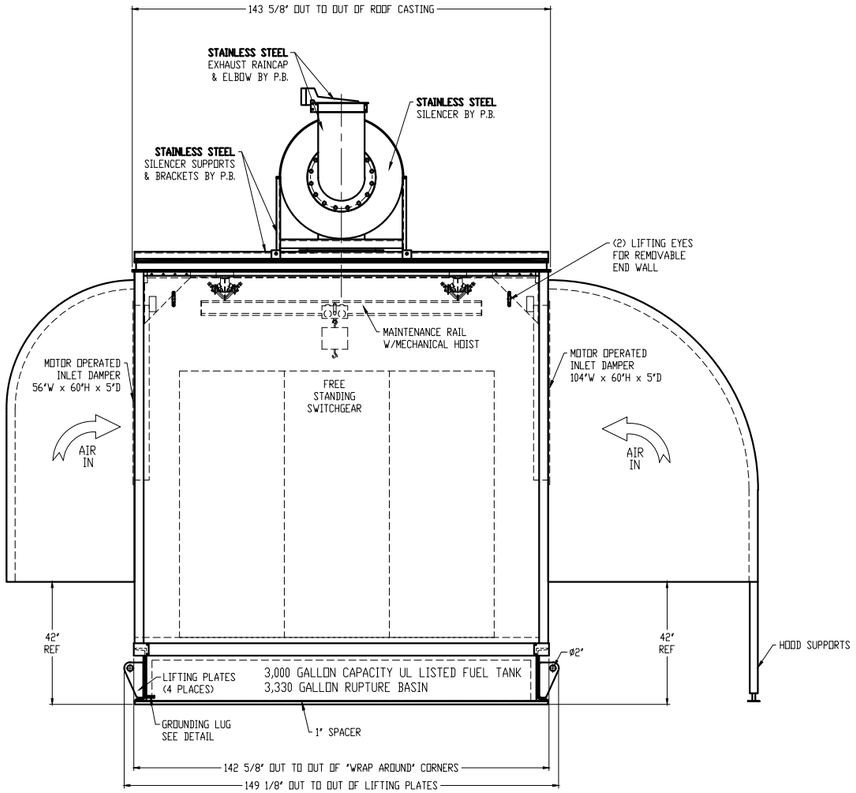
JOB SERIAL NO.
TYPICAL

SCALE: ---

SHEET 3 OF 9

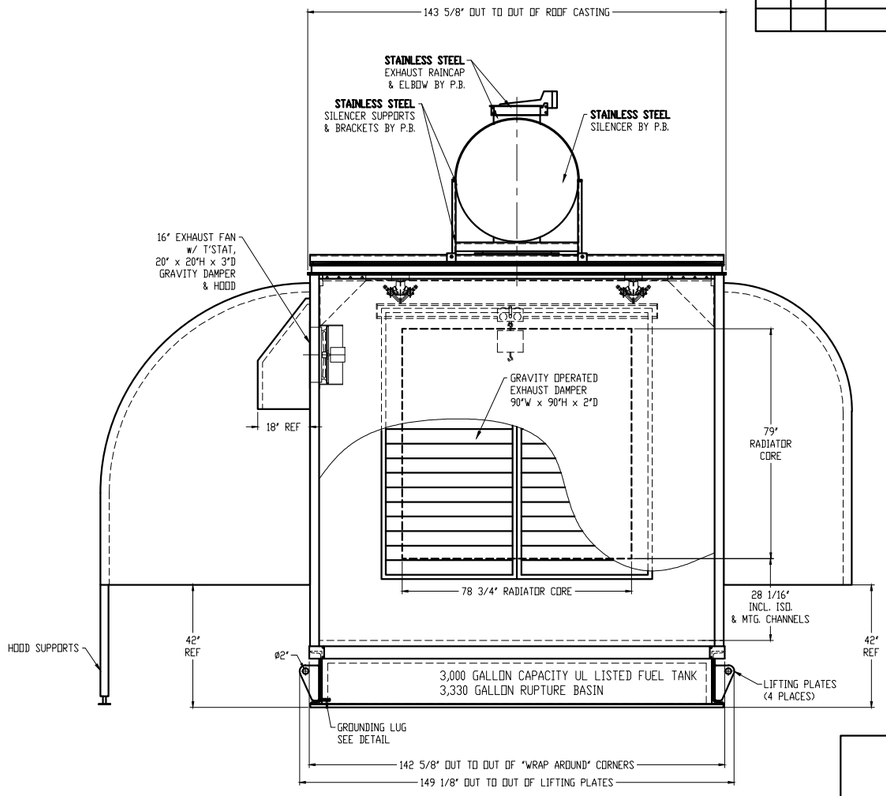
created using AutoCAD

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



"B" END WALL

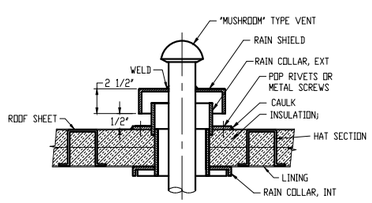
"REMOVABLE"



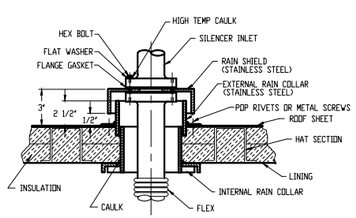
"D" END WALL

TYPICAL

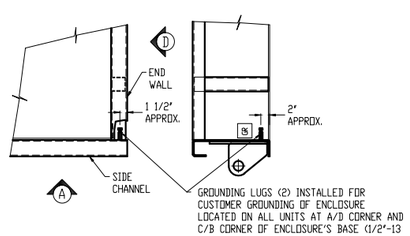
THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS



VENT SHIELD/COLLAR INSTALLATION

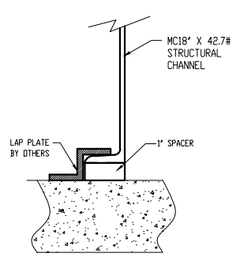


RAIN SHIELD INSTALLATION



GROUNDING LUG DETAIL

EXTERNAL GROUNDING LUGS FOR CUSTOMER GROUNDING OF ENCLOSURE



RECOMMENDED TIEDOWN PROCEDURE

(SUPPLIED & INSTALLED BY OTHERS)

FDEP

0 1' 2' 3' 4' 5' 6'

SCALE IN FEET

UL #142 File No. MH15232

CUSTOMER: FDEP

REFERENCE: XXX

UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE XX / XX / XX

GENERATOR ENCLOSURE
[ ] L x [ ] W x [ ] INSIDE HEIGHT

DRW.	PWC
CHK.	XXX
APP.	XXX
APP.	XXX

JOB SERIAL NO.

TYPICAL

SCALE: ---

SHEET 4 OF 9

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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D

SEE PANEL SCHEDULE SUPPLIED WITH 'AS BUILTS' FOR ACTUAL CIRCUIT LAYOUT.

FUSED DISCONNECT

480 VOLT 3ϕ INPUT BY OTHERS

100A MAIN

PDP-120-001
PANELBOARD
100AMP, 3ϕ, 120/208V
(18 KAIC)

A B C

(125A MLO)

TO TRANSFORMER ---------- 40A MAIN

LED VALPAK LIGHT

LED VALPAK LIGHT

PHOTO CELL

PHOTO CELL

DUAL HEAD EMERGENCY LIGHTS

EMERGENCY LT.

EMERGENCY LT.

3 WAY LIGHT SWITCHES

S_3 S_3

DUPLEX RECEPTACLES GFCI TYPE (INTERIOR)

RP-130-001
PANELBOARD
100AMP, 3ϕ, 120/208V
(10 KAIC)

A B C

100A MAIN ---------- FROM TRANSFORMER

GENSET HTR

JVH#1 L1
JVH#1 L2

JVH#1 SVT LEG

JVH

JVH#2 L1
JVH#2 L2

JVH#2 SVT LEG

JVH

GENSET HTR

ADC

HTR L1
HTR L2
HTR L3

LOUVER / RR

HTR SVT LEG

HTR 5KW 3ϕ 208V

BATTERY CHARGER

L1
N
G

191

192

STARTER

2-BATTERIES (24VDC)

SEE DIGITAL FUEL MONITOR

COMMON
LOW VOLT
HIGH VOLT
CHG. FAIL

TO CCB REF A8

TR-130-001
480V TRANSFORMER
30 KVA

FROM 480V PANEL ----------

SEC 120/208V 3ϕ

---------- TO 208V PANEL

RUN RELAY

STAT

T'STAT

FAN

16" EXHAUST FAN

11 12 14 A1 A2

ADC

LOUVER MOTORS (SEE NOTES)

LOUVER NC

LM LM LM

TB1-5

TB1-12

E-STOP BREAK GLASS

TB8-1

TB8-12

TO EMCP

ENGINE:1500DGGAB, 1500KW, 480V

(7)500MCM PER PHASE & NEUTRAL
(1)500MCM GROUND IN WIREWAY

FREE STANDING SWITCHGEAR

CUSTOMER CONNECTION TERMINALS LOCATED IN GENERATOR BOX

PB1

BATTERY CHARGER

1 LBVC

3 HBVC

5 CHG FAIL

7 CHARGER ALARM COMMON

CRITICAL LOW FUEL
CRITICAL LOW FUEL
LOW FUEL
LOW FUEL
HIGH FUEL
HIGH FUEL
CRITICAL HIGH FUEL
CRITICAL HIGH FUEL
RUPTURE
RUPTURE

FUEL ALARM PANEL

HEAT DETECTOR

PB1-1 PB1-2 PB1-3 PB1-4 PB1-5 PB1-6 PB1-7 PB1-8 PB1-9 PB1-10 PB1-11 PB1-12 PB1-13 PB1-14 PB1-15 PB1-16 PB1-17 PB1-18 PB1-19 PB1-20 PB1-21 PB1-22

LEGEND:

CCT - CUSTOMER CONNECTION TERMINALS
LFLAC - LOW FUEL LEVEL ALARM CONTACTS
HFLAC - HIGH FUEL LEVEL ALARM CONTACTS
RUPTURE - TANK BASIN RUPTURE CONTACTS
LBVC - LOW BATTERY VOLTAGE CONTACTS
HBVC - HIGH BATTERY VOLTAGE CONTACTS
CHG FAIL - BATTERY CHARGER FAIL ALARM CONTACTS
ADC - AUX DISCONNECT
RR - RUN RELAY
AC - ALTERNATE CURRENT
DC - DIRECT CURRENT
PBI - PRITCHARD BROWN CUSTOMER CONNECTION TERMINAL STRIP
⊘ - PBI TERMINAL
◪ - CONTROL RELAY TERMINAL
⊠ - DIGITAL FUEL GAUGE TERMINAL
----- - WIRING BY OTHERS

* NOTES:

- LOUVERS ARE SPRING OPEN / MOTOR CLOSE
- RUN RELAY LOCATED IN ENGINE CONTROL PANEL UNLESS OTHERWISE NOTED
- FUSE LOCATED IN DC PB SUPPLIED JUNCTION BOX
- ALL POWER WIRING #12AWG UNLESS OTHER WISE NOTED

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

SCALE IN FEET: 0 1' 2' 3' 4' 5' 6'

UL #142 File No. MH16232

CUSTOMER: FDEP

REFERENCE: XXX

UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE: XX / XX / XX

ELECTRICAL ONE LINE
3 PHASE

DRW.	PWC
CHK.	XXX
APP.	XXX
APP.	XXX

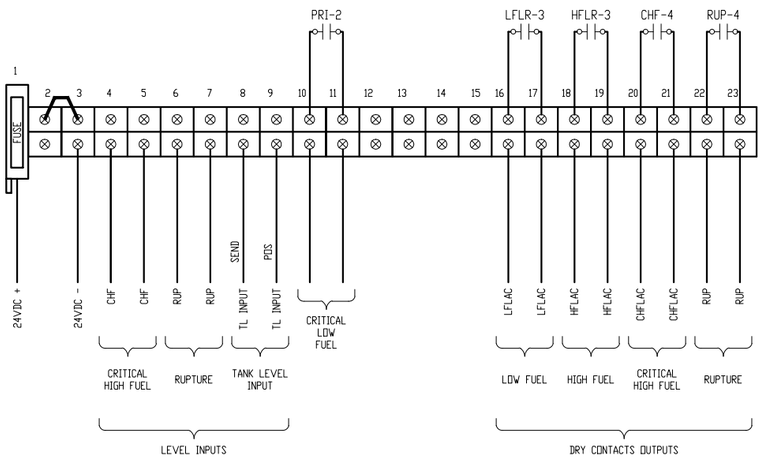
JOB SERIAL NO.: TYPICAL

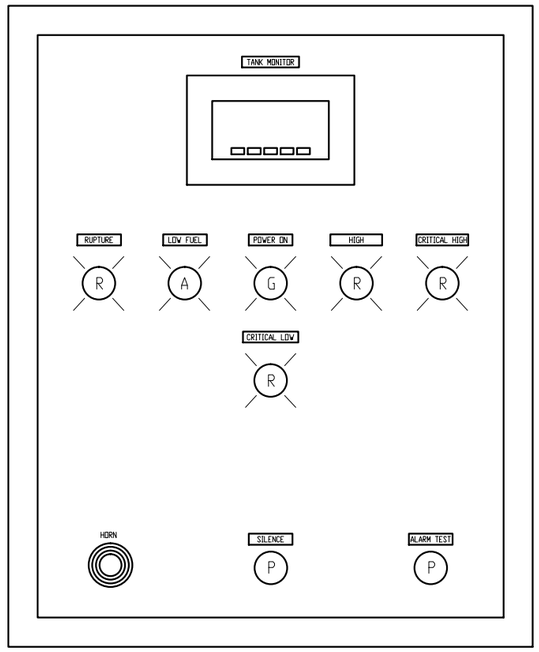
SCALE: ---

SHEET 5 OF 9

created using AutoCAD

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D





LEGEND:

DFG - DIGITAL FUEL GUAGE
LFLR - LOW FUEL LEVEL RELAY
HFLR - HIGH FUEL LEVEL RELAY
PR1 - PUMP RELAY 1
SR1 - SILENCE RELAY
CHF - CRITICAL HIGH FUEL
RUP - RUPTURE
ADC - AUX DISCONNECT
RR - RUN RELAY
DC - DIRECT CURRENT
PB1 - PRITCHARD BROWN CUSTOMER CONNECTION TERMINAL STRIP
⊘ - PB1 TERMINAL
◪ - CONTROL RELAY TERMINAL
DFG - DIGITAL FUEL GAUGE TERMINAL
– – – – - WIRING BY OTHERS

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142
File No. MH15232

CUSTOMER: FDEP

REFERENCE: XXX
UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

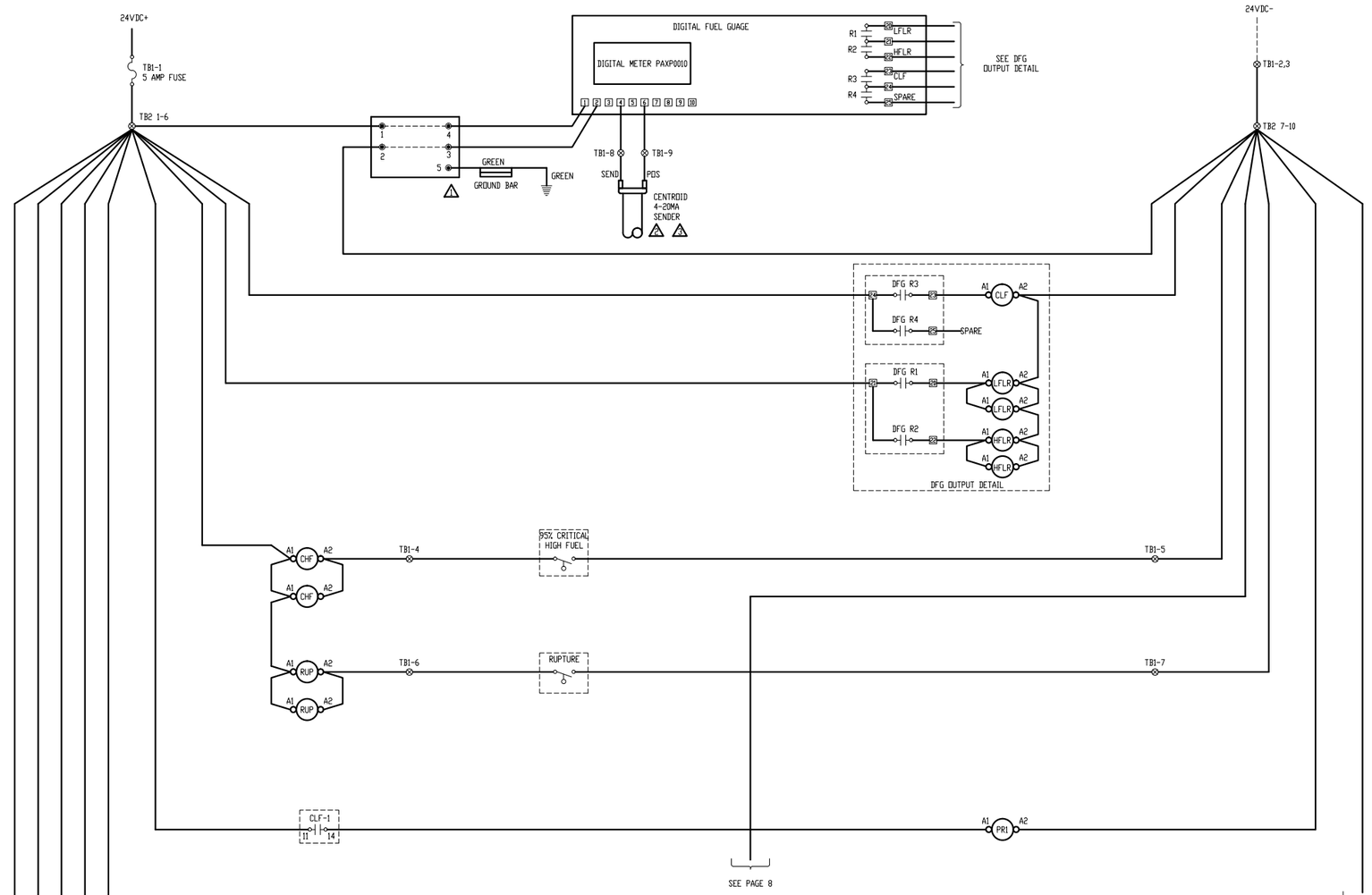
PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE XX / XX / XX

FUEL ALARM PANEL

DRW.	PWC	JOB SERIAL NO.	TYPICAL
CHK.	XXX		
APP.	XXX		
APP.	XXX	SCALE: ---	SHEET 6 OF 9

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



LEGEND:

DFG - DIGITAL FUEL GUAGE
LFLR - LOW FUEL LEVEL RELAY
HFLR - HIGH FUEL LEVEL RELAY
CLF - CRITICAL LOW FUEL
PR1 - CLF POWER RELAY
SR1 - SILENCE RELAY
CHF - CRITICAL HIGH FUEL
CLF - CRITICAL LOW FUEL
RUP - RUPTURE
ADC - AUX DISCONNECT
RR - RUN RELAY
AC - ALTERNATE CURRENT
DC - DIRECT CURRENT
PB1 - PRITCHARD BROWN CUSTOMER CONNECTION TERMINAL STRIP
⊘ - PB1 TERMINAL
◕ - CONTROL RELAY TERMINAL
⊠ - DIGITAL FUEL GAUGE TERMINAL
– – – – - WIRING BY OTHERS

NOTES

1. - INSTALL DC POWER SUPPLY PROTECTION IN ENCLOSURE WITH DIGITAL FUEL GAUGE.
2. - INSTALL THE SENDER SO THAT THE PROBE IS 1" FROM THE BOTTOM OF THE TANK. AN OPTIONAL WATERSCREEN WILL BE INSTALLED 1/2" FROM THE BOTTOM.
3. - FINE ADJUSTMENTS CAN BE MADE BY GENTLY TURNING THE FULL POT ON TOP OF THE SENDER UNTIL THE DESIRED READING IS ACHIEVED.

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142
File No.
MH15232

CUSTOMER:
FDEP

REFERENCE: XXX
UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

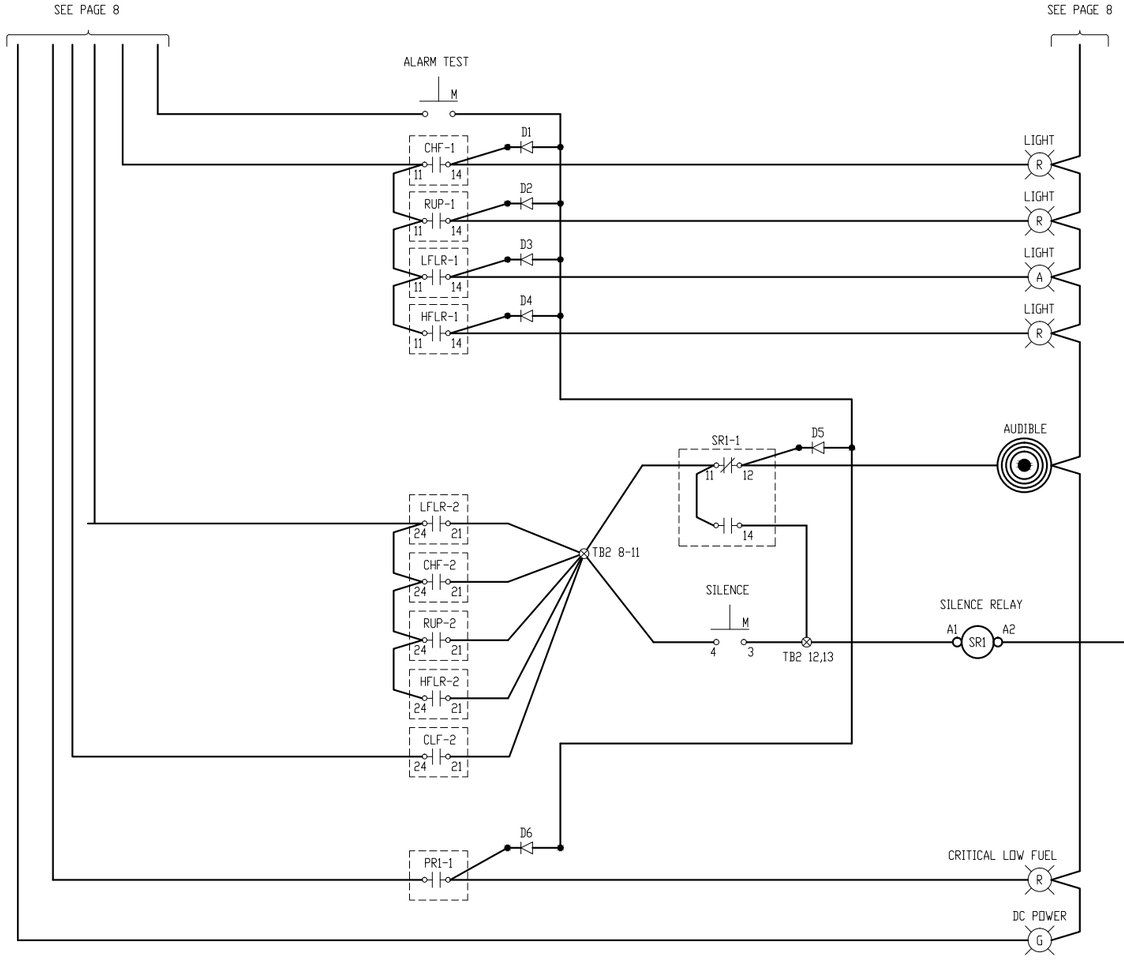
PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

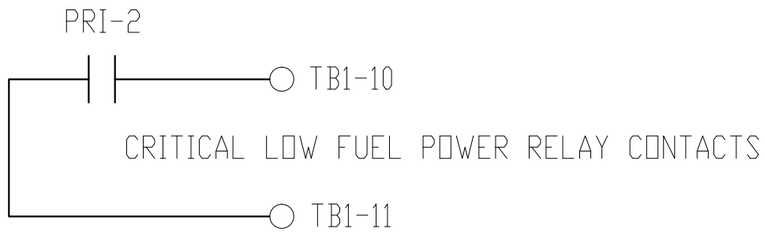
DATE
XX / XX / XX

FUEL ALARM PANEL

DRW.	PWC	JOB SERIAL NO.	TYPICAL
CHK.	XXX		
APP.	XXX		
APP.	XXX	SCALE: ---	SHEET 7 OF 9

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D





LEGEND:

DFG - DIGITAL FUEL GUAGE
LFLR - LOW FUEL LEVEL RELAY
HFLR - HIGH FUEL LEVEL RELAY
PR1 - CLF POWER RELAY
SR1 - SILENCE RELAY
CHF - CRITICAL HIGH FUEL
CLF - CRITICAL LOW FUEL
RUP - RUPTURE
ADC - AUX DISCONNECT
RR - RUN RELAY
AC - ALTERNATE CURRENT
DC - DIRECT CURRENT
PB1 - PRITCHARD BROWN CUSTOMER CONNECTION TERMINAL STRIP
TB1 - PUMP CONTROLLER TERMINAL STRIP
TB2 - PUMP CONTROLLER TERMINAL STRIP
⊗ - PUMP CONTROLLER TERMINAL
⊘ - PB1 TERMINAL
◒ - CONTROL RELAY TERMINAL
[28] - DIGITAL FUEL GAUGE TERMINAL
- - - - - WIRING BY OTHERS

NOTES

1. - INSTALL DC POWER SUPPLY PROTECTION IN ENCLOSURE WITH DIGITAL FUEL GAUGE.
2. - INSTALL THE SENDER SO THAT THE PROBE IS 1" FROM THE BOTTOM OF THE TANK. AN OPTIONAL WATERSCREEN WILL BE INSTALLED 1/2" FROM THE BOTTOM.
3. - FINE ADJUSTMENTS CAN BE MADE BY GENTLY TURNING THE FULL POT ON TOP OF THE SENDER UNTIL THE DESIRED READING IS ACHIEVED.

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FDEP

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142 File No. MH15232

CUSTOMER: FDEP

REFERENCE: XXX

UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

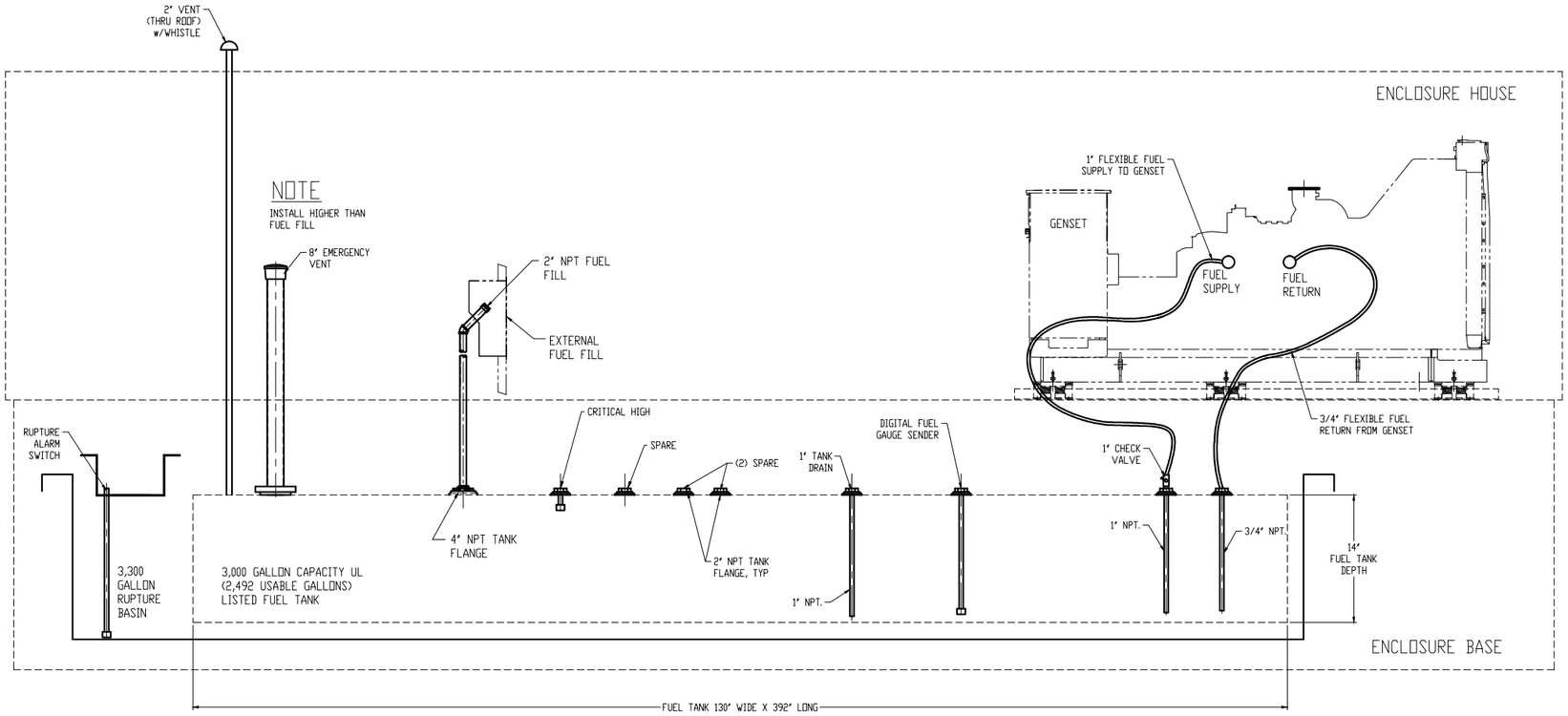
PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE XX / XX / XX

FUEL ALARM PANEL

DRW.	PWC	JOB SERIAL NO.	TYPICAL
CHK.	XXX		
APP.	XXX		
APP.	XXX	SCALE: ---	SHEET 8 OF 9

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



FUEL TANK DIAGRAM

NOT TO SCALE

TYPICAL

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FDEP

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142
File No.
MH15232

CUSTOMER:
FDEP

REFERENCE: XXX
UNITS REQ'D: (1) ONE

THIRD-ANGLE PROJECTION

REVISION

PATENT NO. 3,882,592

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

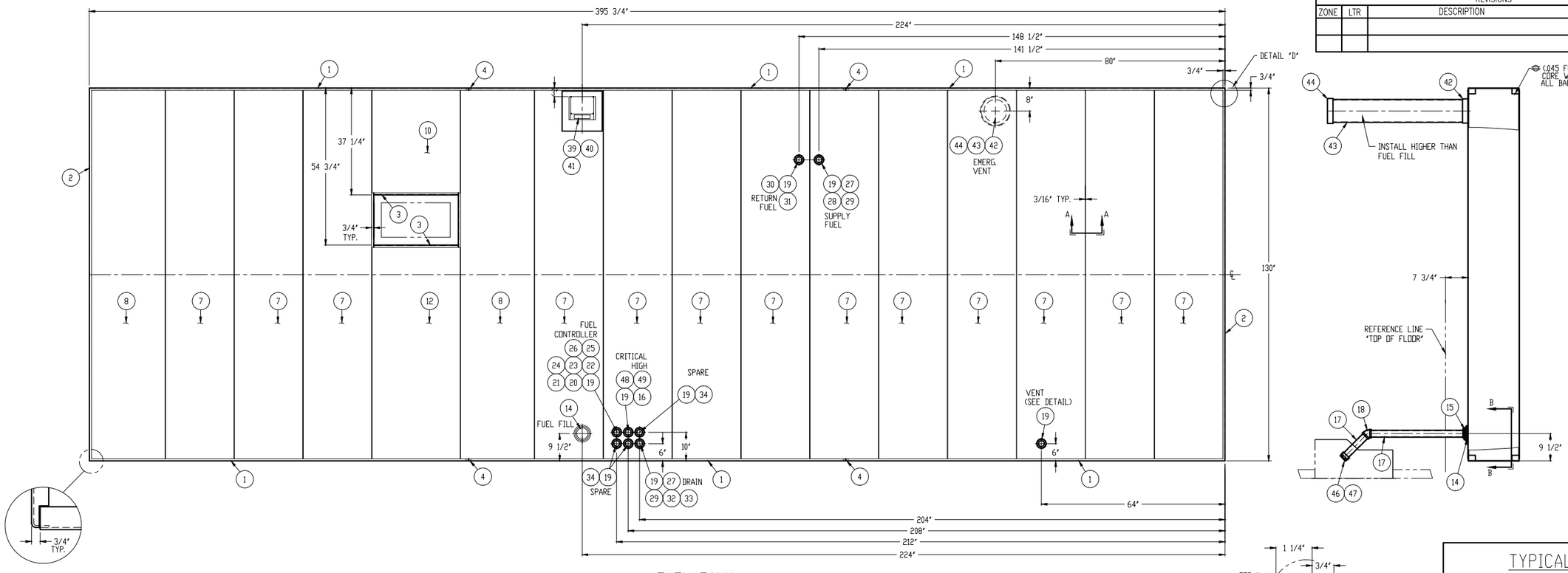
DATE
XX / XX / XX

FUEL TANK DIAGRAM

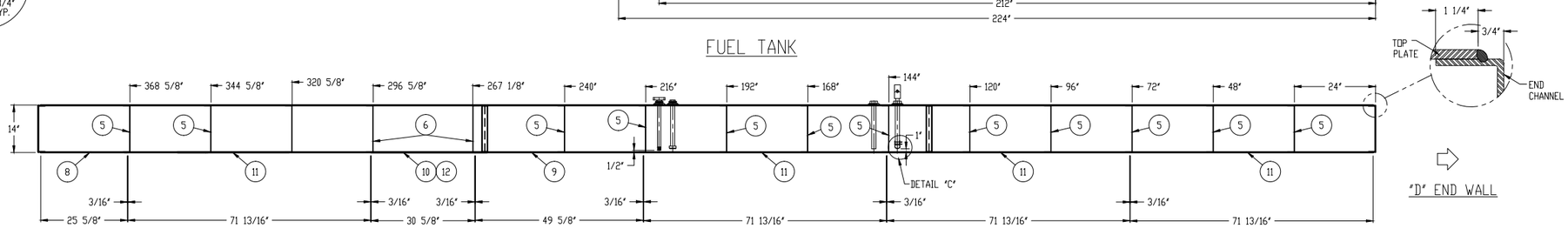
DRW.	PWC	JOB SERIAL NO.	TYPICAL
CHK.	XXX		
APP.	XXX		
APP.	XXX	SCALE: ---	SHEET 9 OF 9

created using AutoCAD

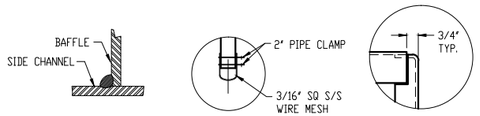
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



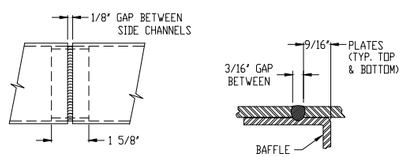
FUEL TANK



"D" END WALL



SECTION B-B DETAIL "C" DETAIL "D"



SPLICE CHANNEL DETAIL SECTION A-A

ESTIMATED TANK WEIGHT: 5,623 lbs.

B.O.M. FOR (1) FUEL TANK - 2 UNITS REQ'D

ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE
49	460-002	NIPPLE	BLACK STEEL	1	1/8" x A/R
48	127-026	"GEM" LEVEL SWITCH # LS-3	"GEM"	1	STD.
47	461-015	DUST CAP, CAMLOCK FILL	"MORISON"	1	2" NPT.
46	461-014	ADAPTER, CAMLOCK FILL	"MORISON"	1	2" NPT.
45					
44	461-090	TANK FLANGE	"PHOENIX"	2	8" NPT.
43	460-025	NIPPLE	BLACK CAST IRON	2	8" NPT. x A/R
42	460-028	EMERGENCY VENT, FEMALE PRESS	"MORRISON BROS"	2	8" NPT.
41	520-357	UL MTG. PLATE	14 GA. AL/STL.	1	STD.
40	520-214	COVER, UL SERIAL PLATE	14 GA. AL/STL.	1	STD.
39	520-213	BRACKET, UL PLATE MTG.	14 GA. AL/STL.	1	STD.
38	461-003	CAP, VENT-MUSHROOM	GALVANIZED	1	2" NPT.
37	461-140	NIPPLE	BLACK STEEL	1	2" NPT x 12"
36	461-022	COUPLING	BLACK STEEL	1	2" NPT.
35	460-006	PIPE	BLACK STEEL	1	2" NPT x A/R
34	461-201	PLUG, COUNTERSUNK	BLACK STEEL	3	2" NPT
33	461-096	DRAIN SPACER	BLACK STEEL	1	STD.
32	461-206	PLUG, SQ. HEAD	BLACK STEEL	1	1" NPT.
31	460-008	PIPE	BLACK STEEL	1	3/4" NPT. x A/R
30	461-115	BUSHING, HEX, REDUCING	BLACK STEEL	1	2" x 3/4" NPT.
29	460-001	PIPE	BLACK STEEL	2	1" NPT. x A/R
28	461-097	VALVE, CHECK	"GRAINGER"	1	1" NPT.
27	461-111	BUSHING, HEX, REDUCING	BLACK STEEL	2	2" x 1" NPT.

HIGHER THAN FUEL FILL

SEE PAGE #200

ITEM	PART NO.	DESCRIPTION	MATERIAL	REQ'D	SIZE
26	461-112	BUSHING, HEX, REDUCING	BLACK STEEL	1	2" x 1/2" NPT.
25	127-037	FUEL GAUGE ELECTRONIC SENDER	"CENTROID PRODUCTS"	1	36" (CUT TO LENGTH)
24	127-038	FUEL GAUGE WATER SCREEN	"CENTROID PRODUCTS"	1	STD.
23		F/GAUGE PROCESS INPUT METER BOX	"HOFFMAN"	1	6' x 6' x 4"
22	127-039	FUEL GAUGE PROCESS INPUT METER	"RED LION CONTROLS"	1	PAXP0010
21	127-040	FUEL GAUGE RELAY CARD	"RED LION CONTROLS"	1	PAXCDS20
20	127-027	FUEL GAUGE FUEL FILL INDICATOR	"NEWARK"	1	46WX733
19	461-095	FLANGE, TANK	"PHOENIX 388"	9	2" NPT.
18	461-070	45° ELBOW	BLACK STEEL	1	2" NPT
17	460-006	NIPPLE	BLACK STEEL	2	2" NPT x A/R
16	461-209	PLUG, SQUARE HEAD	BLACK CAST IRON	1	2" NPT.
15	461-222	BUSHING, HEX, REDUCING	BLACK STEEL	1	4" x 2" NPT
14	461-093	FLANGE, TANK	"PHOENIX 388"	1	4" NPT.
13					
12	249-027	PLATE, TOP & BOTTOM	12 GA. STEEL	2	30 5/8" x 73 3/4"
11	249-027	PLATE, BOTTOM	12 GA. STEEL	4	71 13/16" x 128 1/2"
10	249-028	PLATE, TOP & BOTTOM	12 GA. STEEL	2	30 5/8" x 35 3/4"
9	249-030	PLATE, BOTTOM	12 GA. STEEL	1	49 5/8" x 128 1/2"
8	249-030	PLATE, TOP & BOTTOM	12 GA. STEEL	3	25 5/8" x 128 1/2"
7	249-030	PLATE, TOP	12 GA. STEEL	13	23 13/16" x 128 1/2"
6	249-004	BAFFLE	10 GA. STEEL	2	SEE PAGE #200
5	249-004	BAFFLE	10 GA. STEEL	13	SEE PAGE #200
4	249-001	CHANNEL, SPLICE	10 GA. STEEL	4	SEE PAGE #200
3	249-001	CHANNEL, STUB-UP	10 GA. STEEL	2	SEE PAGE #200
2	249-004	CHANNEL, END	10 GA. STEEL	2	SEE PAGE #200
1	249-004	CHANNEL, SIDE	10 GA. STEEL	6	SEE PAGE #200

TYPICAL

THIS DRAWING IS MEANT TO BE REPRESENTATIVE OF A TYPE ONLY, AND NOT FOR ACCURATE DIMENSIONS OR DETAILS

FABRICATION NOTES:

1. COMPLETE TANK CERTIFICATION AND FORWARD TO PLANT MANAGER.
2. GROUNDING LUG W/GROUND STRAP INSTALLED BEFORE FLOORING INSTALLATION

0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142
File No. MH15232

CUSTOMER: FDEP

REFERENCE: XXX

UNITS REQ'D: ONE

THIRD-ANGLE PROJECTION

REVISION

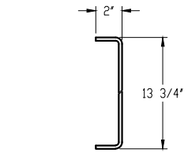
PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE: XX / XX / XX

FUEL TANK - 3000 GALLON

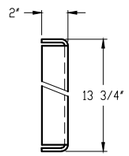
DRW.	CT	JOB SERIAL NO.	TYPICAL - 100
CHK.	XXX		
APP.	XXX		
APP.	XXX	SCALE: ---	SHEET 1 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APP'D



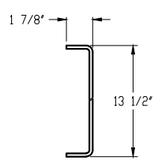
① CHANNEL, SIDE

10 GA STEEL
6 PCS - 131 5/16"



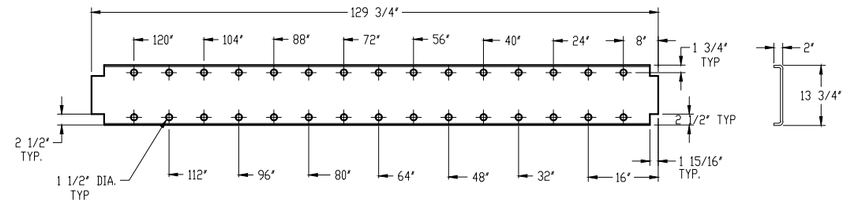
CHANNEL, END

10 GA STEEL
② 2 PC'S - 129 3/4"
③ 2 PCS - 29 1/2"



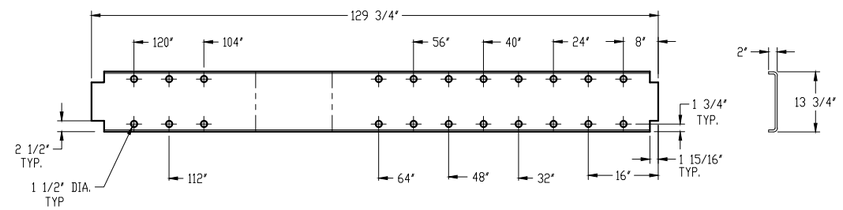
④ SPLICE CHANNEL

10 GA STEEL
4 PCS - 1 5/8"



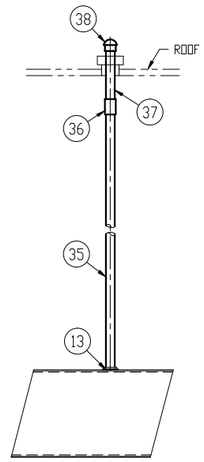
⑤ BAFFLE

10 GA STEEL
13 PCS REQ'D

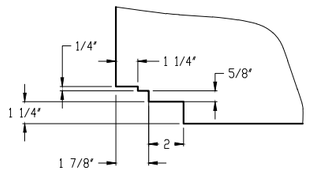


⑥ BAFFLE

10 GA STEEL
2 PCS REQ'D



TANK VENT
2" NPT.



END CHANNEL DETAIL

FLAT PATTERN

TYPICAL

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0 1' 2' 3' 4' 5' 6'
SCALE IN FEET

UL #142
File No. MH15232

CUSTOMER: FDEP

THIRD-ANGLE PROJECTION

REFERENCE: XXX
UNITS REQ'D: (1) ONE

REVISION

PATENT NO. 3,882,592

PRITCHARD-BROWN, LLC
6501 ERDMAN AVE.
BALTIMORE, MD 21205

DATE XX / XX / XX

FUEL TANK DETAILS

DRW.	CT	JOB SERIAL NO.	TYPICAL - 200
CHK.	XXX		
APP.	XXX		
APP.	XXX	SCALE:	SHEET 2 OF 2

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