

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER VR-101-E

Phil-Tite Phase I EVR Vapor Recovery System

WHEREAS, the California Air Resources Board (ARB) has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during the filling of underground gasoline storage tanks, in its **CP-201, Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities** (Certification Procedure) as last amended February 9, 2005, incorporated by reference in title 17, California Code of Regulations, section 94011;

WHEREAS, ARB has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, test procedures for determining the compliance of Phase I vapor recovery systems with emission standards;

WHEREAS, Phil-Tite Enterprises (Phil-Tite) requested and was granted certification of the Phil-Tite Phase I EVR Vapor Recovery System (Phil-Tite system) pursuant to the Certification Procedure on June 19, 2001 by Executive Order VR-101-A, as last modified April 27, 2004, by Executive Order VR-101-D;

WHEREAS, Phil-Tite requested a further modification to the certification to include Phil-Tite's 85000-1 series Spill Container;

WHEREAS, the requested modifications to the certification of the Phil-Tite system have been tested and evaluated pursuant to the Certification Procedure;

WHEREAS, the Certification Procedure provides that the ARB Executive Officer shall issue an Executive Order if he or she determines that the vapor recovery system, including modifications, conforms to all of the applicable requirements set forth in the Certification Procedure;

WHEREAS, G-01-032 delegates to the Chief of the Monitoring and Laboratory Division the authority to certify or approve modifications to certified Phase I and Phase II vapor recovery systems for gasoline dispensing facilities (GDF); and

WHEREAS, I, William V. Loscutoff, Chief of the Monitoring and Laboratory Division, find that the Phil-Tite Phase I Vapor Recovery System, including modifications, conforms with all of the requirements set forth in the Certification Procedure, and results in a vapor recovery system which is at least 98.0 percent efficient as tested in accordance with test procedure **TP-201.1, Volumetric Efficiency for Phase I Systems**;

NOW, THEREFORE, IT IS HEREBY ORDERED that the Phil-Tite system is certified to be at least 98.0 percent efficient when installed and maintained as specified herein and

in the following exhibits. Exhibit 1 contains a list of the certified components. Exhibit 2 contains the performance standards and specifications, typical installation drawings and maintenance intervals for the Phil-Tite system as installed in a gasoline dispensing facility (GDF). Exhibit 3 contains the manufacturing specifications.

IT IS FURTHER ORDERED that compliance with the applicable certification requirements, rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board are made conditions of this certification.

IT IS FURTHER ORDERED that Phil-Tite shall provide a warranty for the vapor recovery system and components to the initial purchaser and each subsequent purchaser within the warranty period. The manufacturer of components not manufactured by Phil-Tite shall provide a warranty for each of their components certified herein. This warranty shall include ongoing compliance with all applicable performance standards and specifications, and shall comply with all warranty requirements in Section 9.2 of the Certification Procedure. Phil-Tite may specify that the warranty is contingent upon the use of trained installers. Copies of the warranty for the system and components shall be made available to the GDF owner or operator.

IT IS FURTHER ORDERED that the certified Phil-Tite system shall be installed and maintained in accordance with the ***ARB-Approved Installation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System***. A copy of this Executive Order and manual shall be maintained at each GDF where a certified Phil-Tite system is installed.

IT IS FURTHER ORDERED that equipment listed in Exhibit 1, unless exempted, shall be clearly identified by a permanent identification showing the manufacturer's name and model number.

IT IS FURTHER ORDERED that any alteration in the equipment, parts, design, installation or operation of the system certified hereby is prohibited and deemed inconsistent with this certification unless the alteration has been submitted in writing and approved in writing by the Executive Officer or Executive Officer's delegate.

IT IS FURTHER ORDERED that the following requirements be made a condition of certification. The owner or operator of the Phil-Tite system shall conduct, and pass, the following tests no later than 60 days after startup and at least once every three (3) years after startup testing, using the latest adopted version of the following test procedures. ***TP-201.3, Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, TP-201.1B, Static Torque of Rotatable Phase I Adaptors*** and depending on the system configuration, either ***TP-201.1D, Leak Rate of Drop Tube Overfill Prevention Device and Spill Container Drain Valve***; or ***TP-201.1C, Leak Rate of Drop Tube/Drain Valve Assembly***. Shorter time periods may be specified in accordance with local district requirements. Notification of testing, and submittal of test results, shall be done in accordance with local district requirements

and pursuant to the policies established by that district. Alternative test procedures may be used if determined by the Executive Officer, in writing, to yield comparable results. Testing the Pressure/Vacuum (P/V) Vent valve will be at the option of the local districts. If P/V valve testing is required by the district, the test shall be conducted in accordance with **TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves.**

IT IS FURTHER ORDERED that the Phil-Tite system shall be compatible with gasoline in common use in California at the time of certification. Any modifications to comply with future California gasoline requirements shall be approved in writing by the Executive Officer or Executive Officer delegate.

IT IS FURTHER ORDERED that the certification of the Phil-Tite Phase I EVR vapor recovery system is valid through June 30, 2006.

IT IS FURTHER ORDERED that Executive Order VR-101-D issued on April 27, 2004 is hereby superceded by this Executive Order. Phil-Tite Phase I Vapor Recovery Systems certified under Executive Orders VR-101-A to D may remain in use at existing installations. This Executive Order shall apply to new installations or major modification of existing gasoline dispensing facilities.

Executed at Sacramento, California, this 30th day of June 2005.


William V. Loscutoff, Chief
Monitoring and Laboratory Division

Attachments:

- Exhibit 1 Phil-Tite Phase I EVR Vapor Recovery System Equipment List
- Exhibit 2 Installation, Maintenance and Compliance Specifications
- Exhibit 3 Manufacturing Performance Standards and Specifications

Phil-Tite Phase I EVR Vapor Recovery System

Exhibit 1**Phil-Tite Phase I EVR Vapor Recovery System Equipment List****Equipment****Manufacturer/Model Number****Spill Container**

Phil-Tite 85000 series
Phil-Tite 85000-1 series

85000 and 85000-1 series legend:

85W0X-YYY-ZZZ (85000 series)

85W0X-1 YYY-ZZZ (85000-1 series)

W represented by:

0 = preassembled spill container assembly

1 = replacement spill container

X represented by:

0 = product spill container

1 = vapor spill container

YYY represented by:

15 = 15-gallon capacity

EXT = external for sump configuration (not available for 85000-1 series)

NV = Vapor (replacement spill container)

F = Product (replacement spill container)

S = Stainless Steel (SS) Sleeve

GS = Stainless Steel (SS) Sleeve and Gravel Shield

ZZZ represented by:

15 = 15-gallon capacity

EXT = external for sump configuration (not available for 85000-1 series)

NV = Vapor (replacement spill container)

F = Product (replacement spill container)

S = Stainless Steel (SS) Sleeve

GS = Stainless Steel (SS) Sleeve and Gravel Shield

Spill Container Lid

Phil-Tite 85011 (not required with sump configuration lid)

Sump Configuration Lid¹

Fibre-Lite FL-36 inch

Debris Bucket

Phil-Tite PP-1005 TB (product) (required)

Phil-Tite PP-1005 TBP (vapor) (not required)

Product Adaptor

Phil-Tite SWF-100-B

Vapor Adaptor

Phil-Tite SWV-101-B

¹ Component optional for vapor recovery system configuration; other requirements may apply.

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Riser Adaptor	Phil-Tite	M/F4X4
Riser Support Bracket	Phil-Tite	M-1600
Dust Cap	Morrison Brothers	323C-0100ACEVR (vapor)
	Morrison Brothers	305C-0100ACEVR (product)
	OPW	1711T-EVR (vapor)
	OPW	634TT-EVR (product)
Pressure/Vacuum Vent Valve	Husky	4885
Tank Gauge Port Components	Ever-Tite	4097AGBR (threaded adaptor)
	Ever-Tite	4097AGMBRNL (adaptor)
	Ever-Tite	4097MBR (double handle cap)
	Veeder-Root	312020-952 (cap & adaptor)
	Morrison Brothers	305XPA1100AKEVR (cap and adaptor kit)
	Morrison Brothers	305-0200AAEVR (replacement adaptor)
	Morrison Brothers	305XP-110ACEVR (replacement cap)
Extractor¹	Universal	V421
	OPW	233
Ball Float Vent Valve¹	Universal	37
	OPW	53VML
	OPW	30MV
Drop Tube Overfill Prevention Device¹	Phil-Tite	61SO-PT
Drop Tube¹	OPW	61-T (various lengths)
Riser Offset¹	Phil-Tite	M-6050
Double Fill¹	Phil-Tite	(configuration only)
Sump Configuration¹	Phil-Tite	85000-EXT-CA2
Tank Bottom Protector¹	Phil-Tite	TBP-3516

¹ Component optional for vapor recovery system configuration; other requirements may apply.

Table 1
Components Exempt from Identification Requirements

Component Name	Manufacturer	Model Number
Drop Tube	OPW	61-T Straight Drop Tube
Ball Float	Universal	Model 37
Tank Gauge Port Components	Ever-Tite/Veeder-Root	4097 AGBR, AGMBRNL, MBR
	Morrison Brothers	305XPA1100AKEVR (cap and adaptor kit) 305-0200AAEVR (replacement adaptor) 305XP-1100ACEVR (replacement cap)
Riser Adaptor	Phil-Tite	M/F4X4
Riser Offset	Phil-Tite	M-6050
Riser Support Bracket	Phil-Tite	M-1600

The components in Table 2 may not be installed as a new or replacement part on or after September 1, 2002. These components, if installed prior to September 1, 2002, may be used for the remainder of their useful life.

Table 2

Component Name	Manufacturer	Model Number
Drop Tube	EBW	782-204 (various lengths)
	Emco Wheaton	A0020 (various lengths)
Extractor Fitting	EBW	3XX Series
	Emco Wheaton	A0079 Series

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Exhibit 2

Installation, Maintenance and Compliance Specifications

This Exhibit contains the installation, maintenance and compliance standards and specifications applicable to a Phil-Tite system installed in a gasoline dispensing facility (GDF).

General Specifications

1. Typical installations of the Phil-Tite system are shown in Figures 2A and 2B.
2. The Phil-Tite system shall be installed and maintained in accordance with the ***ARB-Approved Installation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System***.
3. Any repair or replacement of system components shall be done in accordance with the ***ARB-Approved Installation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System***.
4. The Phil-Tite system shall comply with the applicable performance standards and performance specifications in CP-201. Compliance of the system and all components shall be demonstrated in accordance with the latest adopted version of ***TP-201.3, Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities***.
5. There shall be at least one vapor recovery connection, throughout all Phase I deliveries, between the cargo tank and the GDF storage tank into which fuel is being delivered to ensure that vapor is returned to the cargo tank from the underground storage tank system.

Pressure/Vacuum Vent Valves For Storage Tank Vent Pipes

1. No more than three certified pressure/vacuum vent valves (P/V valves) listed in Exhibit 1 shall be installed on any GDF underground storage tank system.
2. Compliance determination of the following P/V valve performance specifications shall be at the option of the districts:
 - a. The leak rate of each P/V valve shall not exceed 0.05 cubic feet per hour (CFH) at 2.00 inches of H₂O positive pressure and 0.21 CFH at -4.00 inches negative pressure as determined by the latest adopted version of ***TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves***.
 - b. The positive pressure setting is 3.0 ± 0.5 inches of H₂O and the negative pressure setting is -8.0 ± 2.0 inches of H₂O as determined by the latest adopted version of ***TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves***.
3. A manifold may be installed on the vent pipes to reduce the number of potential leak sources and P/V valves installed. Vent pipe manifolds shall be constructed of steel pipe or an equivalent

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material that has been listed for use with gasoline. If a material other than steel is used, the GDF operator shall make available information demonstrating that the material is compatible for use with gasoline. One example of a typical vent pipe manifold is shown in Figure 2F. This shows only one typical configuration; other manifold configurations may be used. For example, a tee may be located in a different position, or fewer pipes may be connected, or more than one P/V valve may be installed on the manifold.

4. The vent pipe manifold shall be installed at a height not less than 12 feet above the grade used for gasoline cargo tank delivery operations and shall conform to all applicable regulations.
5. Each P/V valve shall have permanently affixed to it a yellow or gold-colored label with black lettering stating the following specifications:

Positive pressure setting: 3.0 ± 0.5 inches H₂O
Negative pressure setting: -8.0 ± 2.0 inches H₂O
Positive Leakrate: 0.05 CFH at 2.0 inches H₂O
Negative Leakrate: 0.21 CFH at -4.0 inches H₂O

Rotatable Product and Vapor Recovery Adaptors

1. Rotatable product and vapor recovery adaptors shall be capable of at least 360-degree rotation and have an average static torque not to exceed 108 inch-pound (9 foot-pound). Compliance with this requirement shall be demonstrated in accordance with the latest adopted version of **TP-201.1B, *Static Torque of Rotatable Phase I Adaptors***.
2. The vapor adaptor poppet shall not leak when closed. Compliance with this requirement may be verified by the use of commercial liquid leak detection solution, or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists.)

Vapor Recovery and Product Adaptor Dust Caps

Dust caps with intact gaskets shall be installed on all Phase I tank adaptors.

Spill Container Drain Valve

The spill container drain valve is configured to drain liquid directly into the drop tube and is isolated from the underground storage tank ullage space. The leak rate of the drain valve shall not exceed 0.17 CFH at 2.00 inches H₂O. Depending on the presence of the drop tube overfill prevention device, compliance with this requirement shall be demonstrated in accordance with the latest adopted version of either **TP-201.1C, *Leak Rate of Drop Tube Overfill Prevention Device and Spill Container Drain Valve***; or **TP-201.1D, *Leak Rate of Drop Tube/Drain Valve Assembly***.

Drop Tube Overfill Prevention Device

1. The Drop Tube Overfill Prevention Device (overfill device) is designed to restrict the flow of gasoline delivered to the underground storage when liquid levels exceed a specified capacity. The drop tube overfill device is not a required component of the vapor recovery system, but may be installed as an optional component of the system. Other requirements may apply.

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2. The leak rate of the overfill device shall not exceed 0.17 CFH at 2.00 inches H₂O when tested as in accordance with the latest adopted version of **TP-201.1D, *Leak Rate of Drop Tube Overfill Prevention Device and Spill Container Drain Valves.***

Threaded Riser Adaptor

The Threaded Riser Adaptor shall provide a machined surface on which a gasket can seal and ensures that the seal is not compromised by an improperly cut or improperly finished riser. A Threaded Riser adaptor shall be installed on the following required connections. As an option, the adaptor may be installed on other connections.

- a. Product Spill Container (required)
- b. Vapor Recovery Spill Container (required)
- c. Tank Gauging Components (required)

Ball Float Vent Valve

A ball float vent valve (ball float) is designed to restrict the flow of a gasoline delivery by using back pressure when the storage tank levels exceed a specified level. If installed, a ball float must be installed at each vapor and vent connection to the tank. Ball floats are not required components of the vapor recovery system, but may be installed as optional components for vapor recovery; other requirements may apply.

Vapor Recovery Riser Offset

1. The vapor recovery tank riser may be offset from the tank connection to the vapor recovery Spill Container provided that the maximum horizontal distance (offset distance) does not exceed twenty (20) inches. One example of an offset is shown in Figure 2E.
2. A vapor recovery riser shall be offset up to 20 inches horizontal distance with use of commercially available, four (4) inch steel pipe fittings, a Phil-Tite Model M-6050 Vapor Riser Offset, or a combination of the two products. An example of a Phil-Tite Model M-6050 configuration is shown in Figure 2E.

Tank Gauge Port Components

The tank gauge adaptor and cap are paired. Therefore, an adaptor manufactured by one company shall be used only with a cap manufactured by the same company.

Connections and Fittings

All connections and fittings not specifically certified with an allowable leak rate shall not leak. The absence of vapor leaks may be verified with the use of commercial liquid leak detection solution (LDS), or by bagging, when the vapor containment space of the underground storage tank is subjected to a non-zero gauge pressure. (Note: leak detection solution will detect leaks only when positive gauge pressure exists).

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Double Fill Configuration

1. A Phil-Tite Double Fill Configuration shall be allowed for installation provided that no more than two fill points are installed on any single underground storage tank and that no offset of the vapor recovery riser pipe is installed. An example of a Phil-Tite Double Fill configuration is shown in Figure 2C.
2. Two vapor return hoses shall be connected to the double fill configuration with at least one connection to each cargo tank(s) used to simultaneously deliver gasoline through two product hoses into a single tank.

Sump Configuration

The Phil-Tite Sump Configuration is designed to place the spill containers inside of an underground sump with a single exterior lid. Phil-Tite sump configurations that use the thirty-six inch Fibre Lite F-36 lid do not require the Phil-Tite 85011 Cast Lids. The Phil-Tite “-EXT” Spill Container uses a permanently installed composite ring in place of the separate stainless steel ring. An example of a Phil-Tite Sump Configuration is shown in Figure 2D.

Maintenance Records

Each GDF operator or owner shall keep records of maintenance performed at the facility. Such record shall be maintained on site or in accordance with district requirements or policies. The records shall include the test or maintenance date, repair date to correct test failure, maintenance or test performed, and, if applicable, affiliation, telephone number and name of individual conducting maintenance or test. An example of a Phase I Maintenance Record is shown in Figure 2G.

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**Table 2-1
Gasoline Dispensing Facility Compliance Standards and Specifications**

Component	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Overfill Prevention Device	TP-201.1D	≤0.17 CFH at 2.00 inches H ₂ O
Spill Container Drain Valve	TP-201.1C or TP-201.1D	≤0.17 CFH at 2.00 inches H ₂ O
P/V Valve ¹	TP-201.1E	Positive pressure setting: 3.0 ± 0.5 inches H ₂ O Negative pressure setting: -8.0 ± 2.0 inches H ₂ O Positive Leakrate: 0.05 CFH at 2.0 inches H ₂ O Negative Leakrate: 0.21 CFH at -4.0 inches H ₂ O
Gasoline Dispensing Facility	TP-201.3	As specified in TP-201.3 and/or CP-201
Connections and fittings certified without an allowable leak rate	Leak Detection Solution or bagging	No leaks

**Table 2-2
Maintenance Intervals for Phil-Tite System Components**

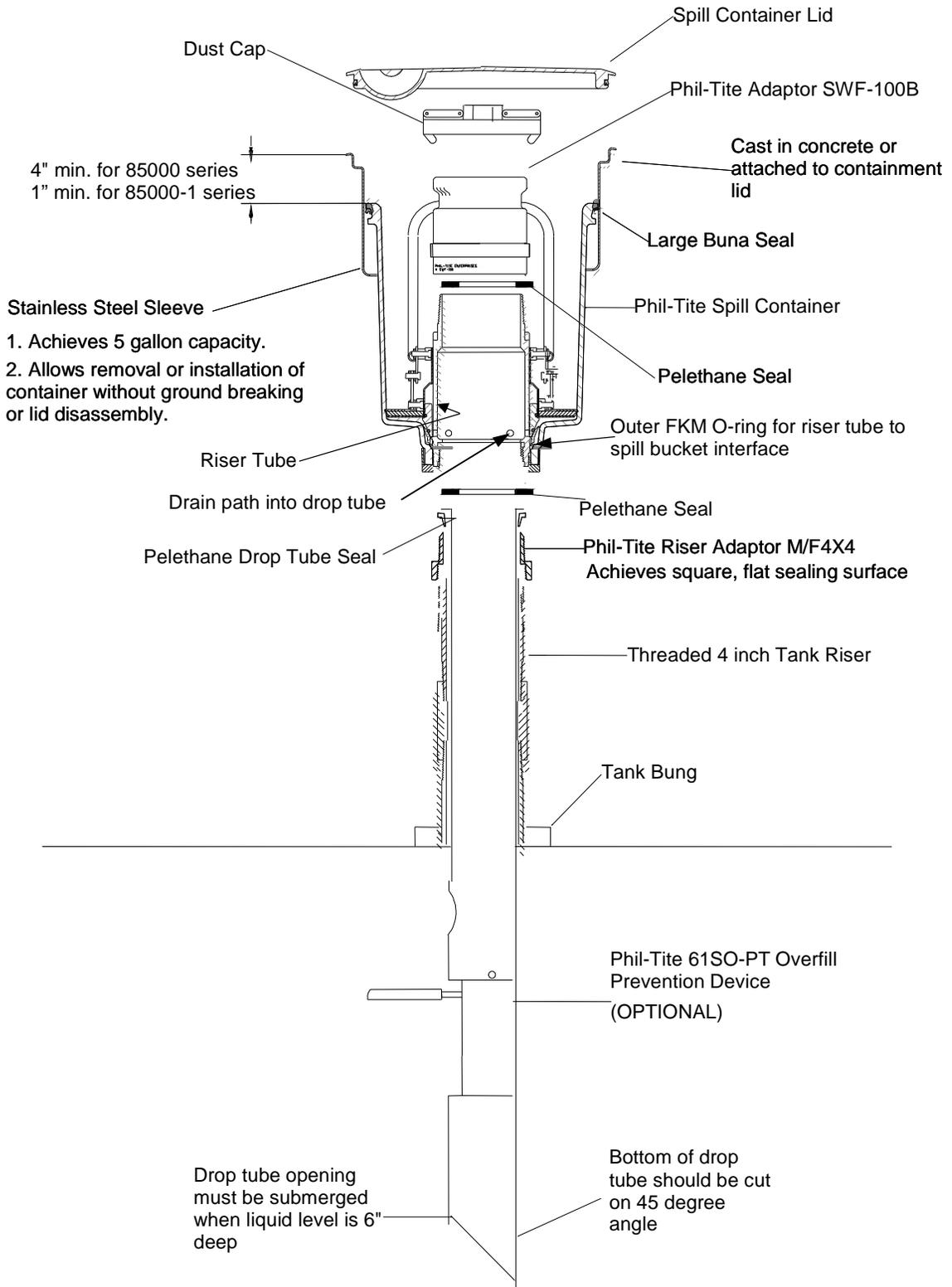
Manufacturer	Component	Maintenance Interval
Husky	Pressure/Vacuum Vent Valve	Annual
Morrison Brothers	Tank Gauge Port Component	Annual
OPW	Dust Cap	Annual
OPW	61-T Straight Drop Tube	Annual
OPW	Ball Float (all models)	Every 3 years
Phil-Tite	Spill Container (all models)	Every 3 years
Phil-Tite	Drop Tube Overfill Prevention Device	Annual
Phil-Tite	SWV-101-B Vapor Recovery Adaptor	Annual
Universal	Ball Float	Every 3 years

¹. Compliance determination is at the option of the district.

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Figure 2A

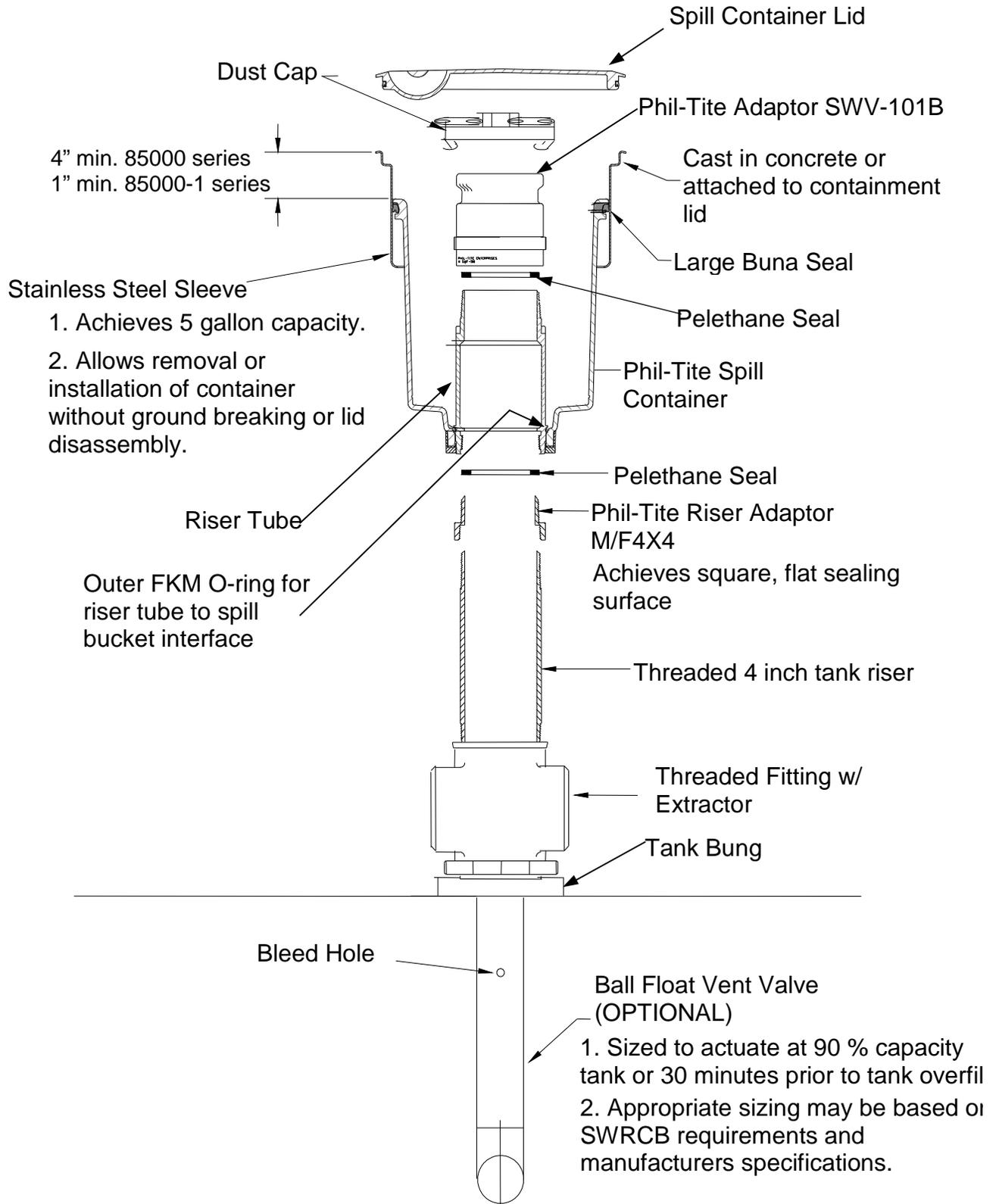
Typical Product Side Installation Using Phil-Tite System



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Figure 2B

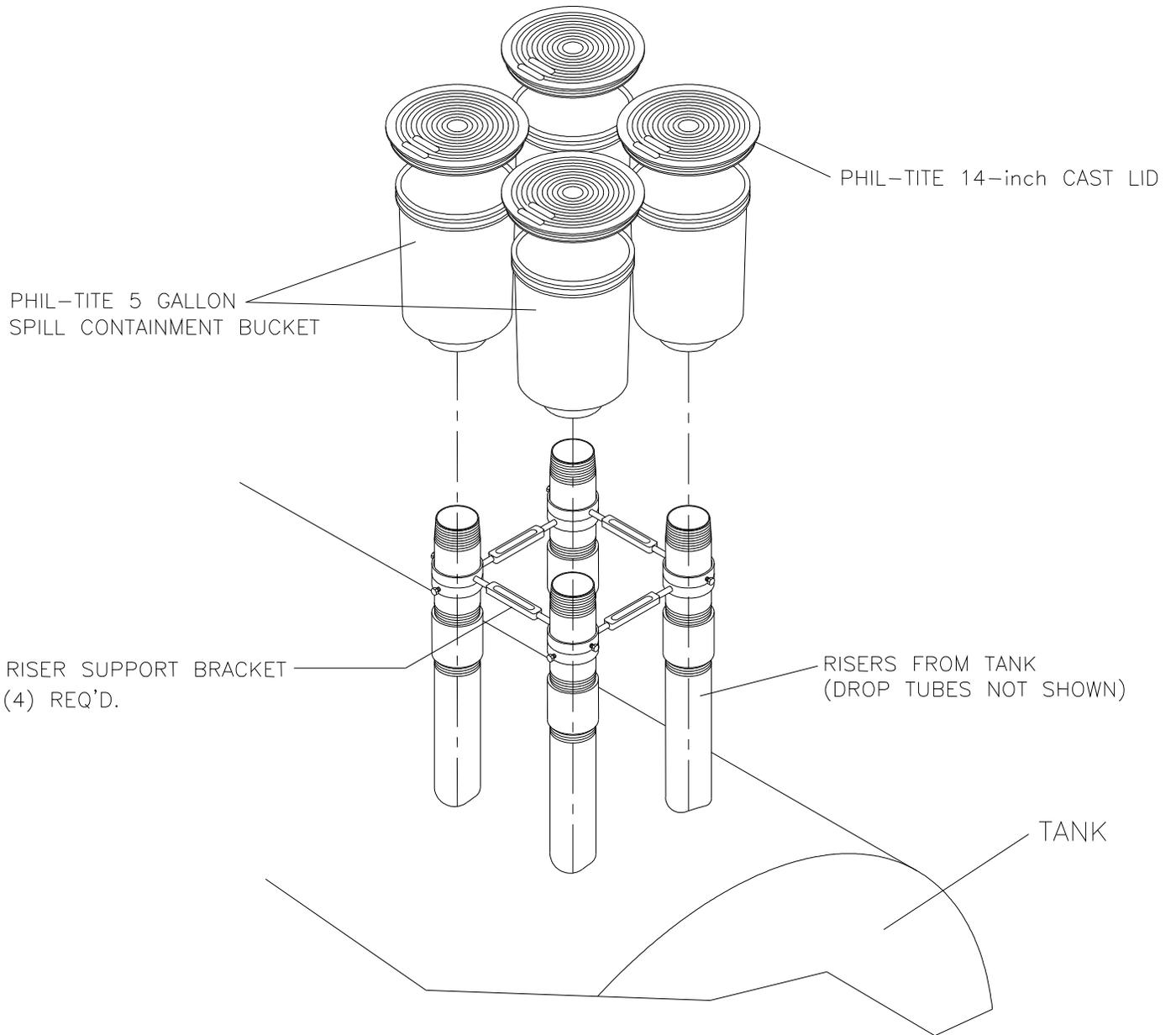
Typical Vapor Recovery Installation Using Phil-Tite System



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Figure 2C

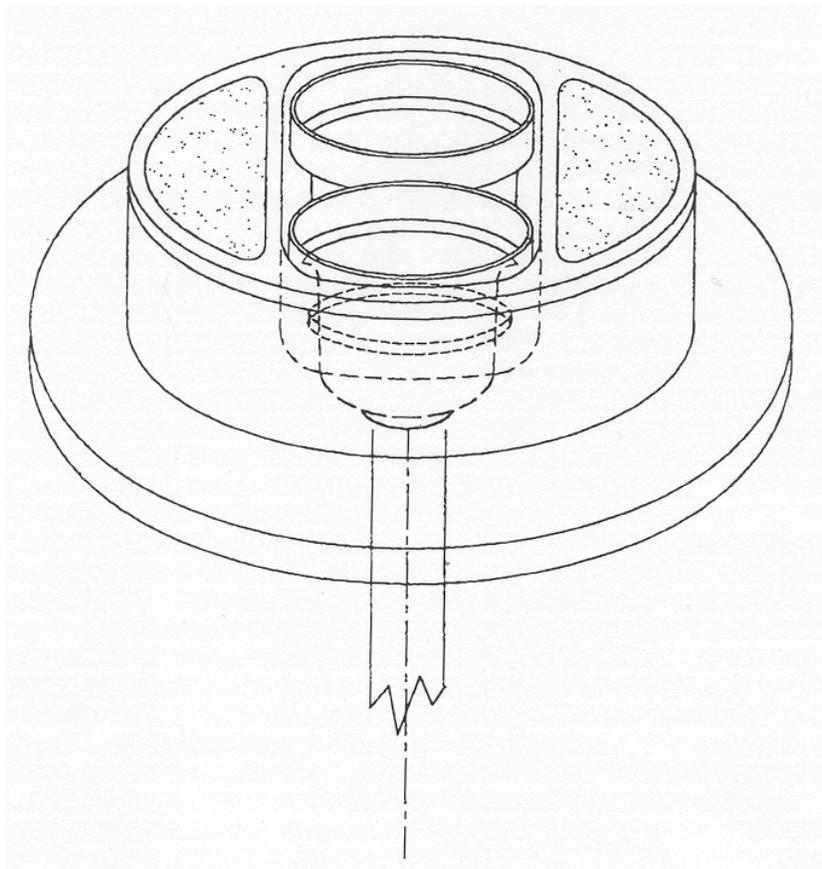
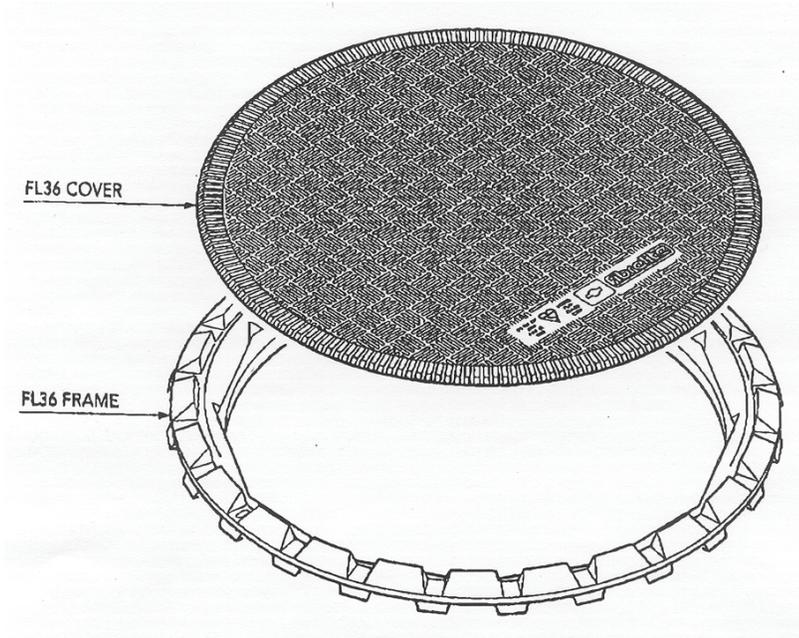
Typical Phil-Tite Double Fill Configuration



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Figure 2D

Typical Phil-Tite Sump Configuration

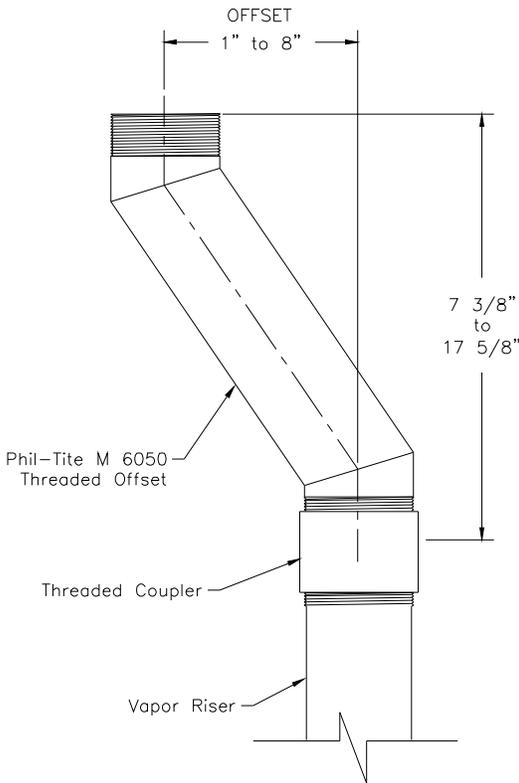


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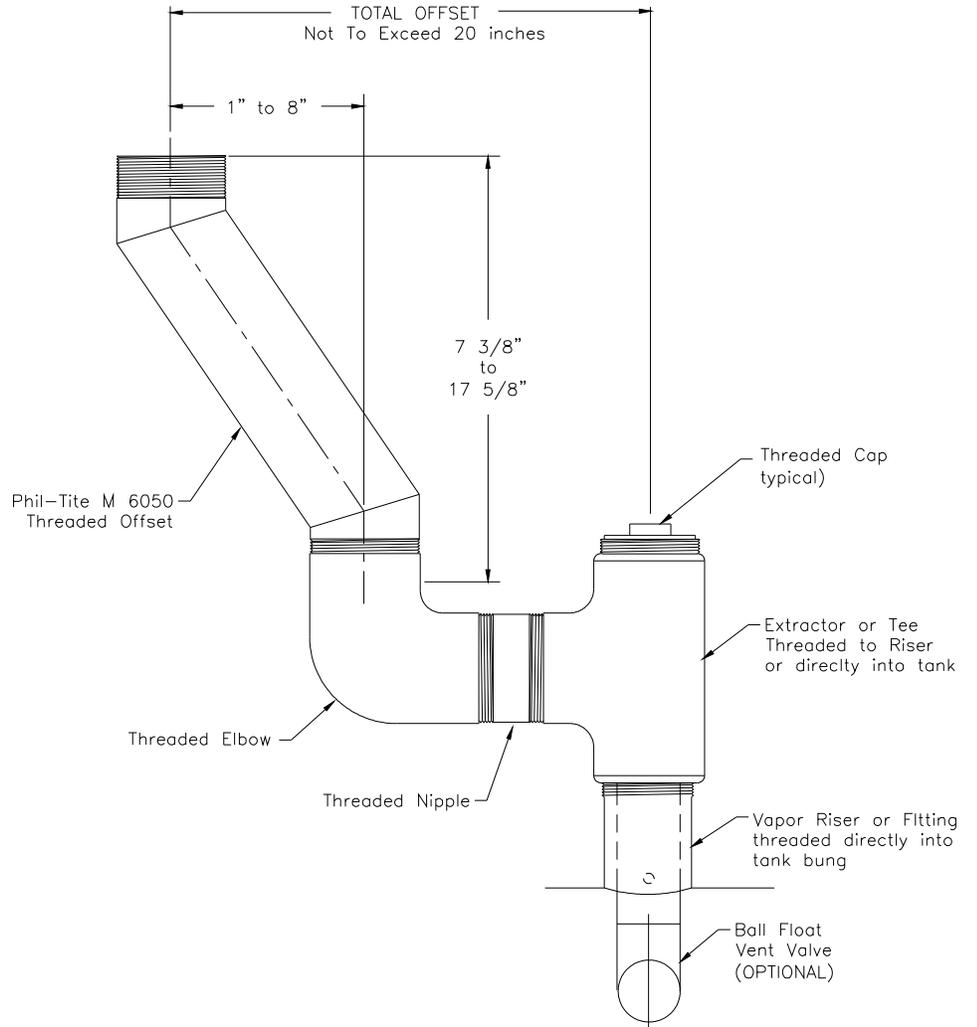
Figure 2E

Typical Phil-Tite Model M-6050 Vapor Recovery Riser Offset

Offset Using Straight Riser



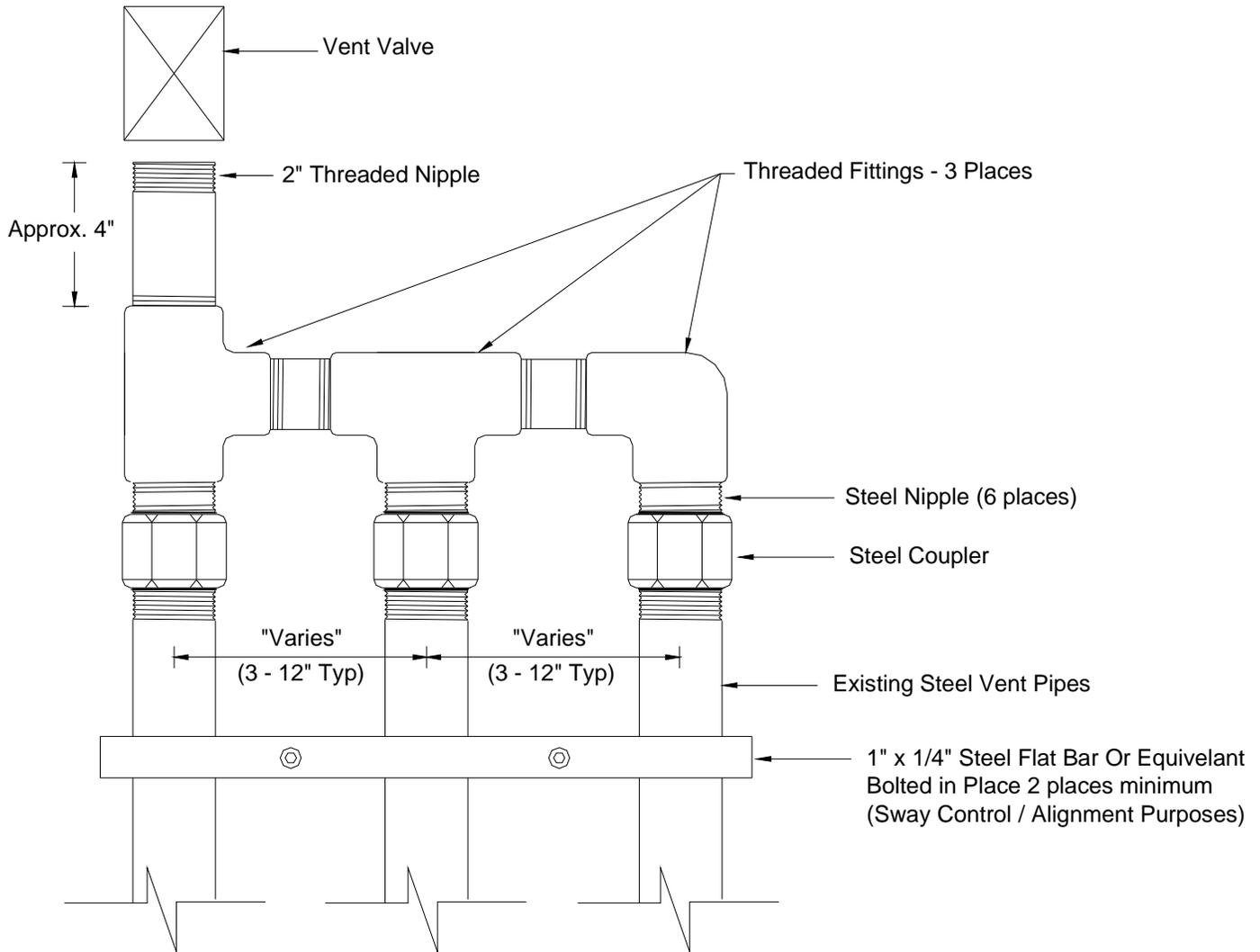
Offset Using Ball Float



Note: This figure represents one instance where a vapor recovery riser has been offset in order to construct a two-point Phase I vapor recovery system. The above figure illustrates an offset using a 90-degree elbow. However, in some instances, elbows less than 90 degrees may be used. All fittings and pipe nipples shall be 4-inch diameter similar to those of the spill container and rotatable Phase I adaptors in order to reduce back pressure during a gasoline delivery.

Figure 2F

Typical Vent Pipe Manifold



Note: This shows one typical configuration; other manifold configurations may be used. For example, a tee may be located in a different position, or fewer pipes may be connected, or more than one P/V valve may be installed on the manifold.

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Exhibit 3**Manufacturing Performance Standards and Specifications**

The Phil-Tite system and all components shall be manufactured in compliance with the performance standards and specifications in CP-201, as well as the requirements specified in this Executive Order. All components shall be manufactured as certified; no change to the equipment, parts, design, materials or manufacturing process shall be made unless approved in writing by the Executive Officer. Unless specified in Exhibit 2 or in the ARB approved Installation, Operation and Maintenance Manual for the Phil-Tite Phase I Vapor Recovery System, the requirements of this section apply to the manufacturing process and are not appropriate for determining the compliance status of a GDF.

Pressure/Vacuum Vent Valves for Storage Tank Vent Pipes

1. Each Pressure/Vacuum Vent Valve (P/V valve) shall be 100 percent performance tested at the factory for cracking pressure and leak rate at each specified pressure setting and shall be done in accordance with **TP-201.1E, Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves**. Each P/V valve shall be shipped with an card or label stating the performance specifications listed below, and a statement that the valve was tested to, and met, these specifications.
 - a. The pressure settings for the P/V valve
 - Positive pressure setting of 3.0 ± 0.5 inches H₂O.
 - Negative pressure setting of -8.0 ± 2.0 inches H₂O.
 - b. The leak rate for each P/V valve, including connections, shall not exceed:
 - 0.05 CFH at 2.0 inches H₂O.
 - 0.21 CFH at -4.0 inches H₂O.
2. Each P/V valve shall have permanently affixed to it a yellow or gold label with black lettering listing the positive and negative pressure settings specified above. The lettering of the label shall have a minimum font size of 20.

Rotatable Product and Vapor Recovery Adaptors

1. The rotatable product and vapor recovery adaptors shall not leak.
2. The product adaptor cam and groove shall be manufactured in accordance with the cam and groove specifications shown in Figure 3A of CP-201.
3. The vapor recovery adaptor cam and groove shall be manufactured in accordance with the cam and groove specifications shown in Figure 3B of CP-201.
4. Each product and vapor recovery adaptor shall be 100 percent performance tested at the factory for static torque, rotatability, and the absence of liquid or vapor leaks. Each adaptor shall have affixed to it a card or label stating the performance specification listed

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below, and a statement that the adaptor was factory tested to, and met, the following specifications:

- a. The average static torque for the rotatable adaptor shall not exceed 108 inch-pound average static torque when tested in accordance with the latest adopted version of **TP-201.1B, *Static Torque of Rotatable Phase I Adaptors.***
- b. The rotatable adaptor shall be capable of rotating at least 360 degrees when tested in accordance with the latest adopted version of **TP-201.1B, *Static Torque of Rotatable Phase I Adaptors.***

Spill Container and Drain Valves

Each Spill Container Drain Valve shall be 100 percent performance tested at the factory. Each Spill Container Drain Valve shall have affixed to it a card or label stating the performance specifications listed below, and a statement that the valve was tested to, and met, the following performance specification;

- a. The maximum leak rate shall not exceed 0.17 CFH at 2.00 inches H₂O when tested in accordance with the latest adopted version of either **TP-201.1C, *Leak Rate of Drop Tube/Drain Valve*** or **TP-201.1D, *Leak Rate of Drop Tube Overfill Prevention Device.***

Drop Tube Overfill Prevention Device

Each Drop Tube Overfill Prevention Device shall be 100 percent performance tested at the factory to verify that it does not exceed the maximum allowable leak rate. Each Drop Tube Overfill Prevention Device shall have affixed to it a card or label stating the performance specifications listed below, and a statement that the device was tested to, and met, the following performance specification;

- a. The maximum leak rate shall not exceed 0.17 CFH at 2.00 inches H₂O when tested in accordance with the latest adopted version of **TP-201.1D, *Leak Rate of Drop Tube Overfill Prevention Device.***

**Table 3-1
Manufacturing Component Standards and Specifications**

Component	Test Method	Standard or Specification
Rotatable Phase I Adaptors	TP-201.1B	Minimum, 360-degree rotation Maximum, 108 pound-inch average static torque
Rotatable Phase I Adaptors	Micrometer	Cam and Groove Specifications (CP-201)
Overfill Prevention Device	TP-201.1D	≤0.17 CFH at 2.00 inches H ₂ O
Spill Container Drain Valve	TP-201.1C or TP-201.1D	≤0.17 CFH at 2.00 inches H ₂ O
Pressure/Vacuum Vent Valve	TP-201.1E	Positive Pressure: 3.0 ±0.5 inches H ₂ O Negative Pressure: -8.0 ±2.0 inches H ₂ O Leak rate: ≤ 0.05 CFH at +2.0 inches H ₂ O ≤ 0.21 CFH at -4.0 inches H ₂ O