

## INSTALLATION INSTRUCTIONS for HEALY SYSTEMS, INC. CLEAN AIR SEPARATOR

The Model 9961 or 9961H, Healy Systems Clean Air Separator (CAS) consists of a 400 gallon steel vapor processor vessel that contains a fuel resistant bladder to hold excess gasoline vapors that may develop in gasoline storage tanks during idle periods of gasoline dispensing facility operation. Models and Drawings with a “H” suffix apply to horizontal CAS installations and those without a “H” suffix apply to vertical CAS installations. The CAS assembly weighs approximately 800 pounds which makes it necessary to have a power assisted lifting device available at the installation site to remove the CAS from the transportation vehicle and place it on the required concrete pad (see drawing 9900-9945 or 9900-9945H). The pad (level within 1/8”/foot) is located within 100 feet to the gasoline storage tank vent lines. The pad is a requirement of this installation. **DO NOT PLACE THE CLEAN AIR SEPARATOR DIRECTLY ON THE GROUND OR ASPHALT SURFACE.** NOTICE: The installer is responsible to ensure that the installation meets the latest edition requirements of NFPA 30A, Chapter 10. No electrical connections are required. The CAS securement method shown in drawing 9900-9945 or 9900-9945H shall be approved by the local authority having jurisdiction with respect to wind and seismic loading. Installer shall not loosen, rotate or remove factory installed fittings or flange as this may damage factory seals and void warranty.

In addition to the vapor processor vessel, there is a hardware kit that contains the following:

- 4 Locking 1” NPT Ball Valves
- 4 Pad locks (keyed alike)
- 1 Breather Assembly, Healy Model 9948
- 1 Float Check Valve Assembly, Model 9466G

Reference the appropriate Healy Systems installation drawing (9900-9942, 9900-9942H, 9900-9971, 9900-9971H, 9900-9972, 9900-9972H, 9900-9973 or 9900-9973H of this manual) for placement of the above parts for the vent stack configuration required by the local Authority Having Jurisdiction (AHJ) for the Underground Storage Tank (UST) system. **A flexible connection between the Clean Air Separator and the vent line(s) is allowable if required by the local Authority Having Jurisdiction (AHJ) to meet seismic requirements. Should the flex connection be installed such that it is not supported, the slope of the flex connection shall be greater than the 1/8”/foot slope required for the rest of the one inch galvanized piping.** The local contractor is responsible to provide all necessary, galvanized piping, non-hardening, UL classified pipe joint compound and plumbing fittings. Additional Pressure/Vacuum (P/V) vent valves to complete installation are not included in the hardware kit. Healy is not responsible for the warranty of any other P/V vent valve purchased to complete installation.

The CAS arrives at the site assembled and tested. All plumbing shall be done using 1” galvanized steel pipe (Schedule 40) and approved nipples, as called out in the installation drawing appropriate for the site installation. Mounting hardware shall be galvanized or stainless steel. Careful attention must be paid to the installation drawing appropriate for the site installation to assure proper operation of the bladder system. Do not inflate the bladder assembly after installation.

It is important that the CAS be secured to the concrete pad as shown in drawing 9900-9945 or 9900-9945H of this manual to prevent any unintentional repositioning of the CAS as the connecting plumbing to the vent system is accomplished.

## OPERATION AND PURGING

### NORMAL OPERATION:

- There are four ball valves on the CAS. Each ball valve is to be installed so as to allow opening and closing with nothing obstructing the full range (90°) of movement. In normal operation, only the valve (A) at the top of the CAS shall be open – the other three valves (B, C and D) shall be closed. All four valves shall be locked in the above positions. The two plugs (E and F) should be installed using a non-hardening, UL classified pipe joint compound and tightened to 60 ft-lbs.

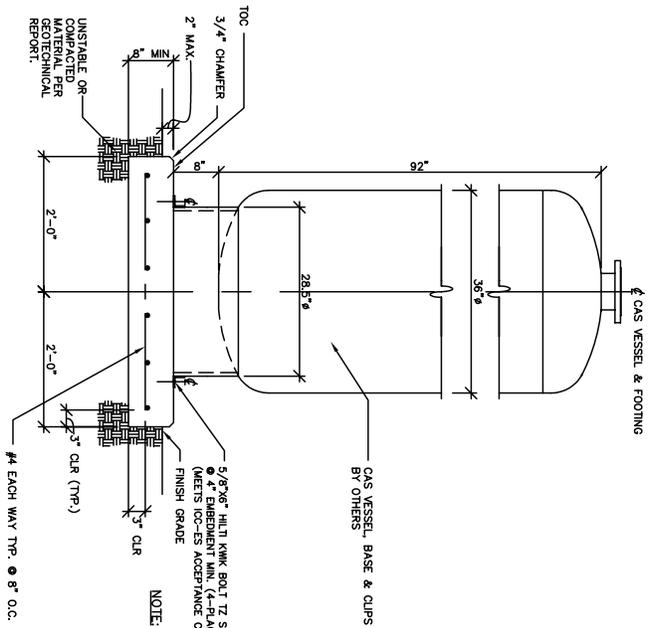
### DRAINING THE BLADDER:

- Any liquid coming over from the vent system would have collected above the valve (A) in the riser pipe before going into the bladder. An inspection of the need to drain the bladder is easily made by removing the plug (E) at the tee on the bottom plumbing of the CAS. Before removing this plug, open the valve (B) above the tee to release any liquid into the piping below. Wait approximately 30 seconds and then close the valve (B). Now, remove the plug (E) at the tee on the bottom plumbing of the CAS – be sure to have a container suitable for gasoline available to catch fluid. If liquid in excess of 16 ounces (473 ml) drains out, the bladder should also be drained.
- Should it be necessary to drain the bladder:
  1. Close the upper ball valve (A) (usually open) leading to the gasoline storage tank vent lines.
  2. Open the valve (C) that goes to the internal syphon tube. Be sure the other three ball valves (A, B and D) that connect to the vent lines and CAS are closed.
  3. Remove the plug (E) from the bottom tee and connect an explosion proof evacuation pump capable of handling liquid. Have a liquid tight, container suitable for gasoline positioned to receive any fluid that may exit the system and start the pump. If no liquid returns within 30 seconds, the bladder is dry – discontinue pumping, remove the pump, replace the plug (E) and return the ball valves to their normal, locked, positions.

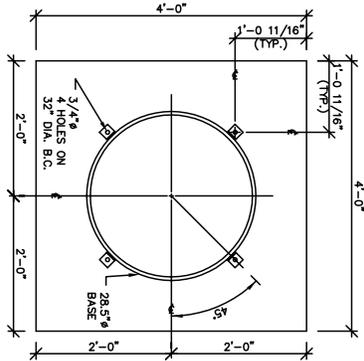
### DRAINING THE CAS:

- Should it be necessary to drain the CAS (between the bladder and steel wall):
  1. Close the ball valve at the top (A) of the CAS and also the two valves (B and C) on the vertical risers.
  2. Remove the plug (E) in the bottom tee and place a metal container below the pipe opening.
  3. Carefully open the ball valve (D) at the bottom of the CAS – observe that the container that is being drained into does not overflow – empty container as required until fluid no longer comes from the pipe when the valve is open.
  4. Close the ball valve (D) and replace the plug (E) into the tee.
  5. Return all ball valves to their normal locked positions.

DRW NO: 9900-9945

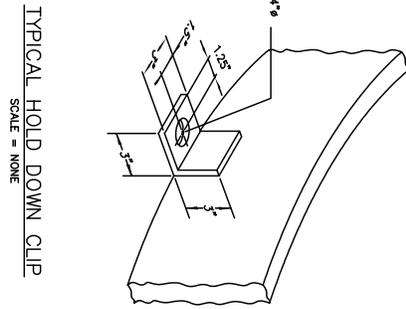


SECTION @ CAS SLAB  
SCALE = 3/4" = 1'-0"



BASE PLAN  
SCALE = 3/4" = 1'-0"

NOTE: WHERE ICC-ES ACCEPTANCE CRITERIA IS NOT REQUIRED, 5/8" X 6" HILTI KWIK BOLT 3 @ 4" EMBEDMENT MIN. CAN BE USED (PER ESR-1395 REPORT, ISSUED 09/01/04).



TYPICAL HOLD DOWN CLIP  
SCALE = NONE

CRITERIA  
SOIL BEARING 1000 psf  
BASIC WIND SPEED 100mph  
SEISMIC  $S_a = 2g$   
 $S_w = 1g$   
MIN. CONCRETE COMP STRENGTH,  $f'_c = 2500$  psi  
MIN. REINF. YIELD STRENGTH,  $f_y = 40000$  psi

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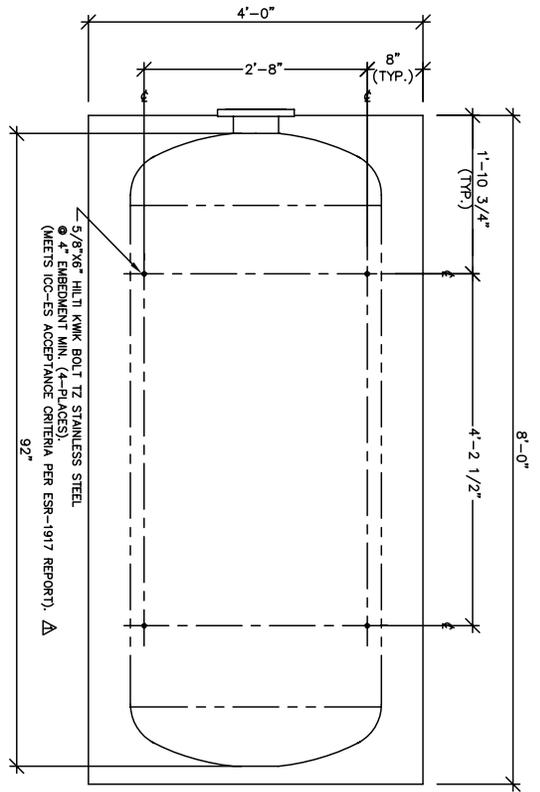
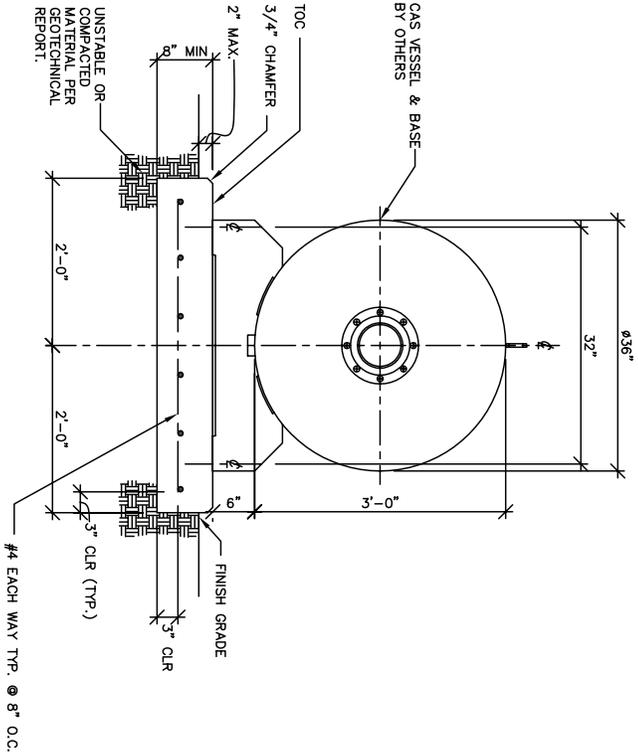
REV	DESCRIPTION	ECN NO	BY	DATE
7	ADDED GAS DIMENSIONS, REVERSED CRITERIA LIST	-	JF	01/02/08
6	K8-TZ SS WAS REQ, ESR-1917 WAS ESR-1395, ADDED NOTE 1	-	JF	12/21/07

MATERIAL:		DO NOT SCALE DRAWING		XX ± .02	
STANDARD INCH TOLERANCES (UNLESS OTHERWISE SPECIFIED)		ANGULAR ± 1/2°		XXX ± .005	
SPECIAL DIST:		DRAWN: JWH		DATE: 07/31/02	
APPROVAL:		DATE:		DRW NO: 9900-9945	
SCALE: 1/8"		SHEET 1		OF 1	



TITLE: CLEAN AIR SEPARATOR MOUNTING SLAB DETAILS



SECTION @ CAS SLAB

CRITERIA  
 SOIL BEARING: 1000 psf  
 BASIC WIND SPEED: 100mph  
 SEISMIC  $S_s=29$   
 $S_d=19$   
 MIN. CONCRETE COMP. STRENGTH,  $f'_c = 2500$  psi  
 MIN. REINF. YIELD STRENGTH,  $f_y = 40000$  psi

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MATERIAL:

DO NOT SCALE DRAWING	.XX ± .02
STANDARD INCH TOLERANCES (UNLESS OTHERWISE SPECIFIED)	.XXX ± .005
SPECIAL DIST:	ANGULAR ± 1/2°

BASE PLAN

NOTE:  
 Δ WHERE ICC-ES ACCEPTANCE CRITERIA IS NOT REQUIRED, 5/8" x 6" HILT KWK BOLT 3 @ 4' EMBEDMENT MIN. CAN BE USED (PER ESR-1385 REPORT, ISSUED 09/01/04).

REV	DESCRIPTION	ECN NO	BY	DATE
5	ADDED GAS DIMENSIONS, REVISED CRITERIA LIST	-	TF	01/02/08
4	KB-TZ SS WAS KB3, ESR-1917 WAS ESR-1385, ADDED NOTE 1	-	TF	12/21/07

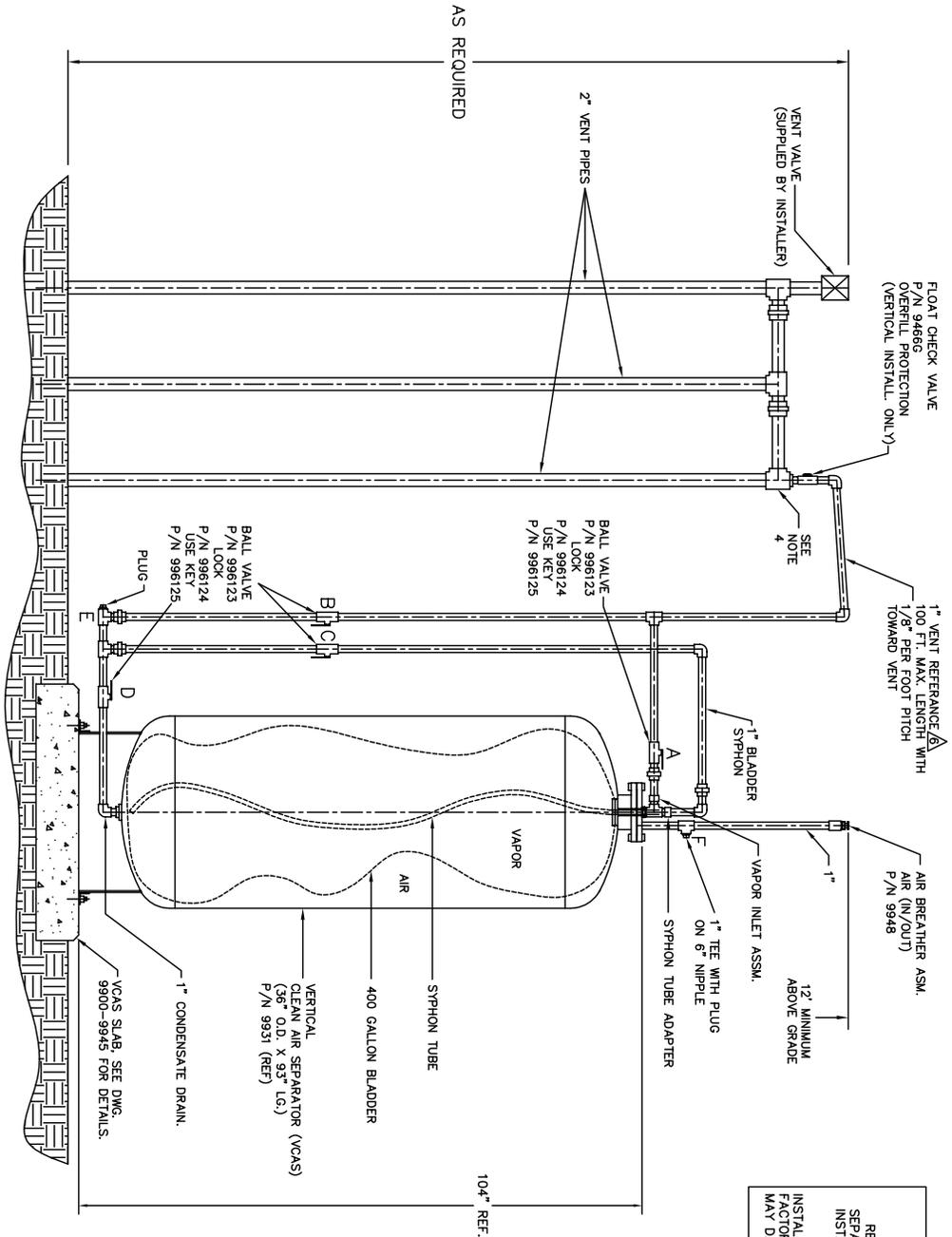


Madison, WI 53718

TITLE:  
 CLEAN AIR SEPARATOR HORIZONTAL MOUNTING SLAB DETAILS

DRAWN: TF	DATE: 05/22/07	DRW NO: 9900-9945	SUFFIX: H
APPRVL: MDB	DATE: 06/05/07	SCALE: 3/4" = 1'	SHEET 1 OF 1

DRW No: 9900-9945H



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
  - 2 - PASSIVE PRESSURE CONTROL-NO ELECTRICAL POWER REQUIRED.
  - 3 - AIR BREATHERS MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE.
  - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
  - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.

△ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AAH) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

NOTICE  
DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.  
INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

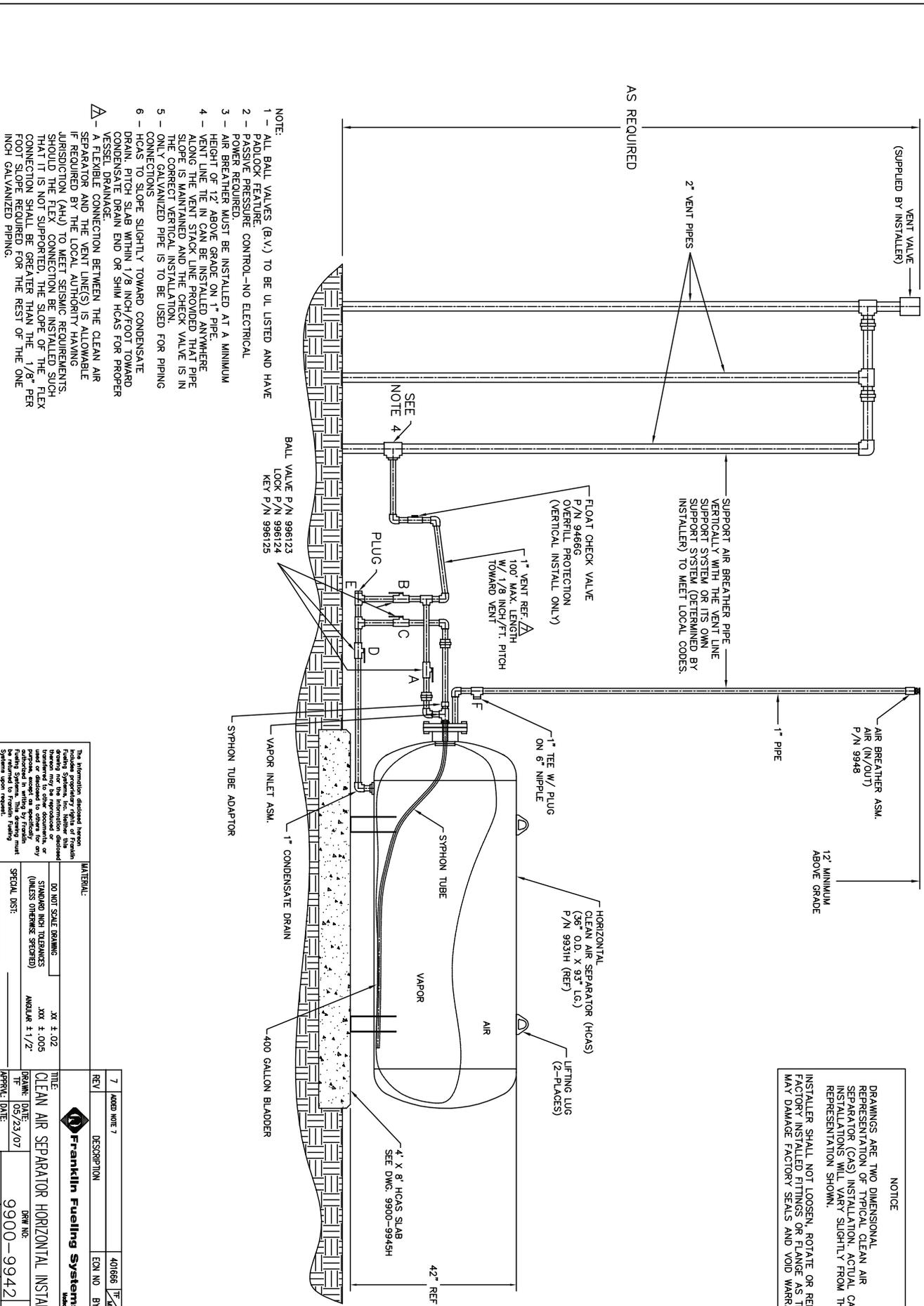
DRW NO: 9900-9942

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MATERIAL:	
DO NOT SCALE DRAWING	XX ± 0.2
STANDARD TECH REQUIREMENTS (PLEASE OPENING 9309)	.001 ± .005
SPECIAL DWT:	MINIMUM ± 1/2"

15	ADD'D NOTE 6	401666	TR	06/23/20/08
REV	DESCRIPTION	EON NO	BY	DATE
<b>Franklin Fuelling Systems</b> Member of 8370				
TITLE: CLEAN AIR SEPARATOR VERTICAL INSTALLATION				
DRAWN:	JWH	DRW NO:	9900-9942	SHEET:
DATE:	05/14/02	SCALE:	N.T.S.	SHEET 1 OF 1
APPROVAL DATE:	06/05/07	ACQD HLTV SCALE:	N.T.S.	SHEET 1 OF 1





- NOTE:**
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
  - 2 - PASSIVE PRESSURE CONTROL—NO ELECTRICAL POWER REQUIRED.
  - 3 - AIR BREATHER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE ON 1" PIPE.
  - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
  - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
  - 6 - HCAS TO SLOPE SLIGHTLY TOWARD CONDENSATE DRAIN. PITCH SLAB WITHIN 1/8 INCH/FOOT TOWARD CONDENSATE DRAIN END OR SHIM HCAS FOR PROPER VESSEL DRAINAGE.
- △ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) TO MEET SEISMIC REQUIREMENTS. SHAFT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER INCH SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

**NOTICE**

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.

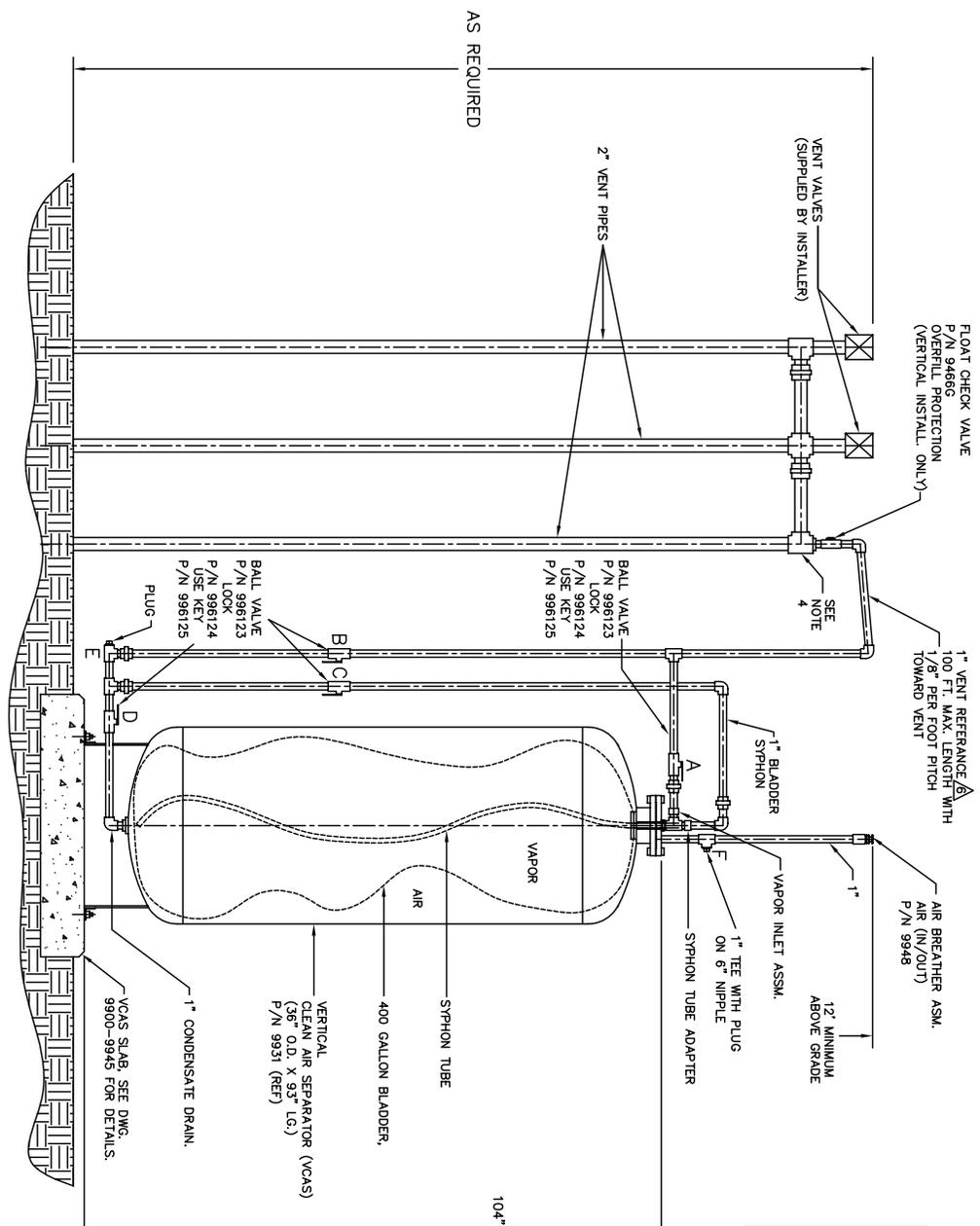
INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DWG NO. 9900-9942H

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MATERIAL:		DO NOT SCALE DRAWING		JX ± .02	
STANDARD DIMENSIONS (UNLESS OTHERWISE SPECIFIED)		XXX ± .005		ANGULAR ± 1/2°	
SPECIAL DIST.					
TITLE:		CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION		DWG NO. 9900-9942	
REV. 7		401666		DATE: 03/20/08	
DESCRIPTION		EQU NO BY DATE		APPROVAL DATE: 05/23/07	
7		401666		DATE: 06/05/07	
APPROVAL DATE: 06/05/07		SCALE: N.T.S.		SHEET 1 OF 1	





- NOTE:
- 1 – ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
  - 2 – PASSIVE PRESSURE CONTROL—NO ELECTRICAL POWER REQUIRED.
  - 3 – AIR BREAKER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12" ABOVE GRADE.
  - 4 – VENT LINE THE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
  - 5 – ONLY SCHEDULE 40 PIPE IS TO BE USED FOR PIPING CONNECTIONS.
- ▲ – A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (A.HJ) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

NOTICE

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INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR CHANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

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MATERIAL:	
DO NOT SCALE DRAWING	JX 4 1/2
STANDARD DIMENSIONS (UNLESS OTHERWISE SPECIFIED)	XXX ± .005
SPECIAL DIST	ANODIZE ± 1/2"

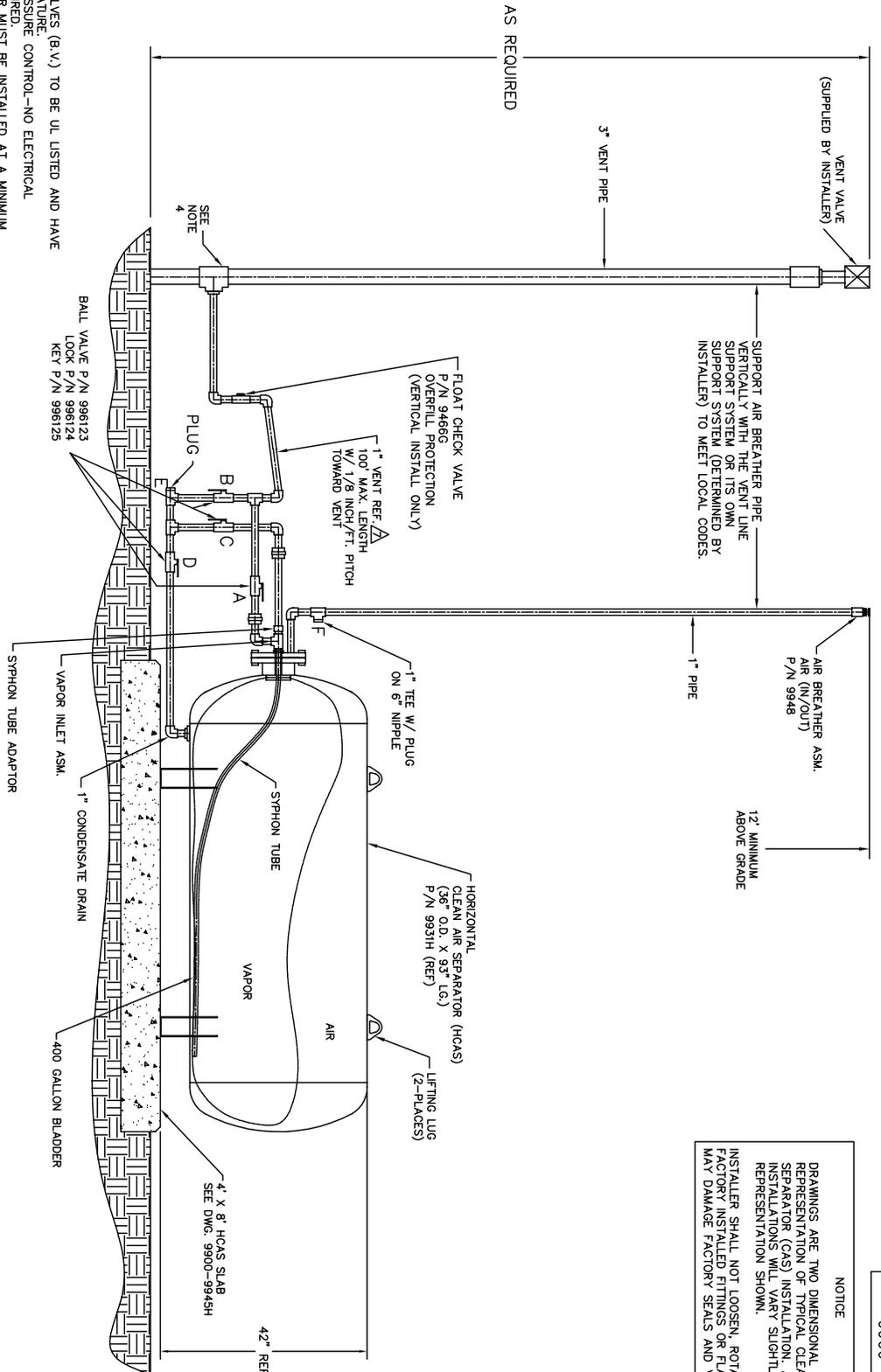
REV	8	ADDED NOTE 6	401666	TR	03/20/08
REV		DESCRIPTION	EQN NO	BY	DATE
<p><b>Franklin Fuelling Systems</b></p> <p>Model 2 SPS</p>					
<p>DATE: 05/14/02</p> <p>DATE: 06/05/07</p> <p>DATE: 06/05/07</p>					
<p>ACAD HLY SCALE: N.T.S. SHEET 1 OF 1</p>					

DWG NO: 9900-9972

DWG NO. 9900-9971H

NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.  
 INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

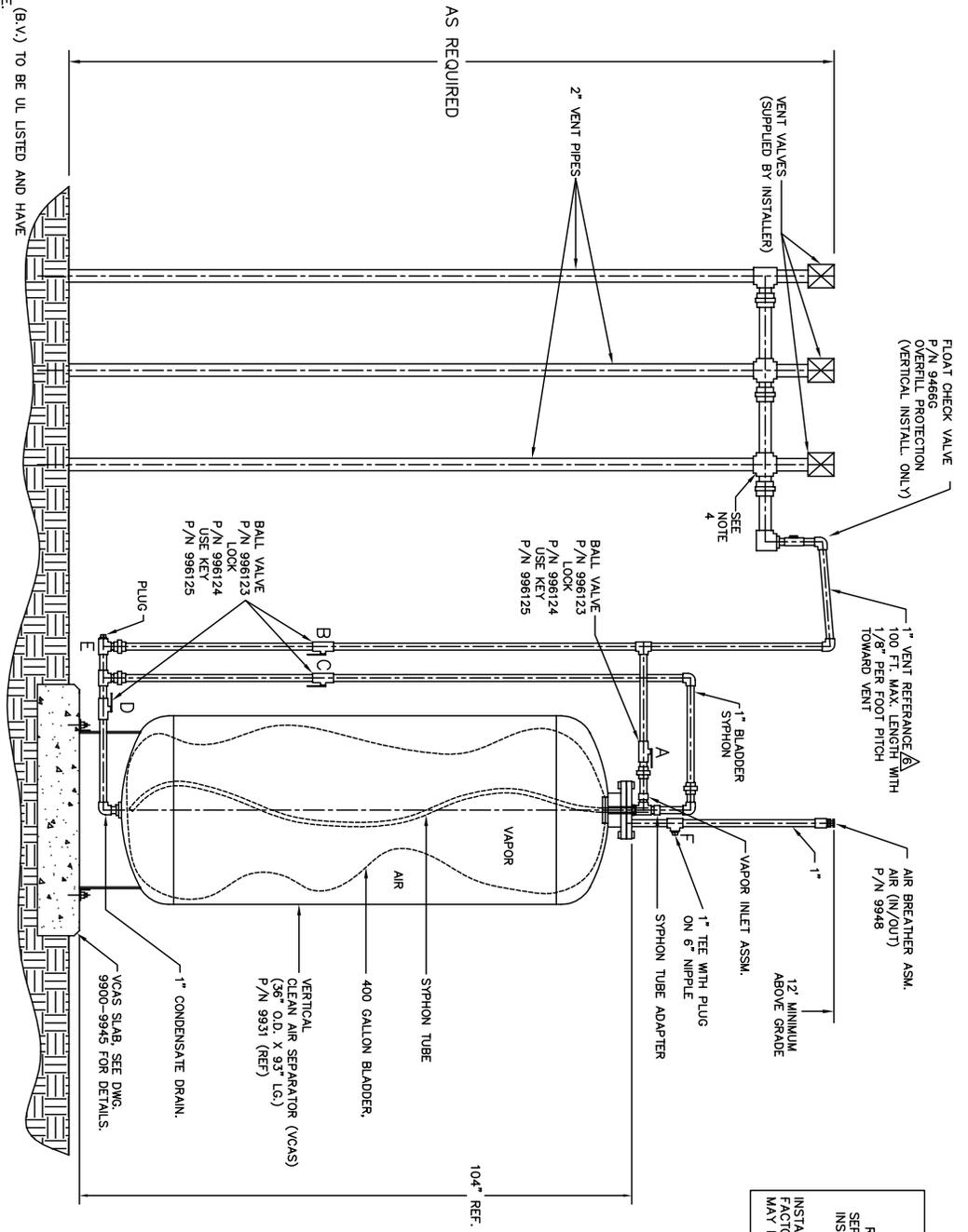


- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
  - 2 - PASSIVE PRESSURE CONTROL--NO ELECTRICAL POWER REQUIRED.
  - 3 - AIR BREAKER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12" ABOVE GRADE ON 1" PIPE.
  - 4 - VENT LINE THE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
  - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
  - 6 - HCAS TO SLOPE SLIGHTLY TOWARD CONDENSATE DRAIN. PITCH SLAB WITHIN 1/8 INCH/FOOT TOWARD CONDENSATE DRAIN END OR SHIM HCAS FOR PROPER VESSEL DRAINAGE.
- △ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (HAJ) TO MEET SEISMIC REQUIREMENTS. SHOULD THE HAJ TO MEET SEISMIC REQUIREMENTS, THAT IT IS NOT SUPPORTED, THE SLOPE OF THE LEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER INCH GALVANIZED PIPING.

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MATERIAL:	
DO NOT SCALE DRAWING	JX 1.02
STANDARD DIMENSIONS (UNLESS OTHERWISE SPECIFIED)	.005 ± .005
SPECIAL DIST.	ANGLURE ± 1/2"

REV	7	ADDED NOTE 7	401666	TR	03/20/08
DESCRIPTION				BY	DATE
<p><b>Franklin Fuelling Systems</b>                  Made in USA</p>					
TITLE:	CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION (1 VENT VALVE)				
DATE:	05/22/07	DWG NO.:	9900-9971	SHEET:	H
APPROV. DATE:	06/05/07	SCALE:	N.T.S.	SHEET	1 OF 1



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PADLOCK FEATURE.
  - 2 - PASSIVE PRESSURE CONTROL--NO ELECTRICAL POWER REQUIRED.
  - 3 - AIR BREAKER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE.
  - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
  - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTION
- △ - FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (A.H.U.) TO MEET SEISMIC REQUIREMENTS. SHOULD IT NOT BE SUPPORTED ON THE SLOPE OF THE DUCT CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.

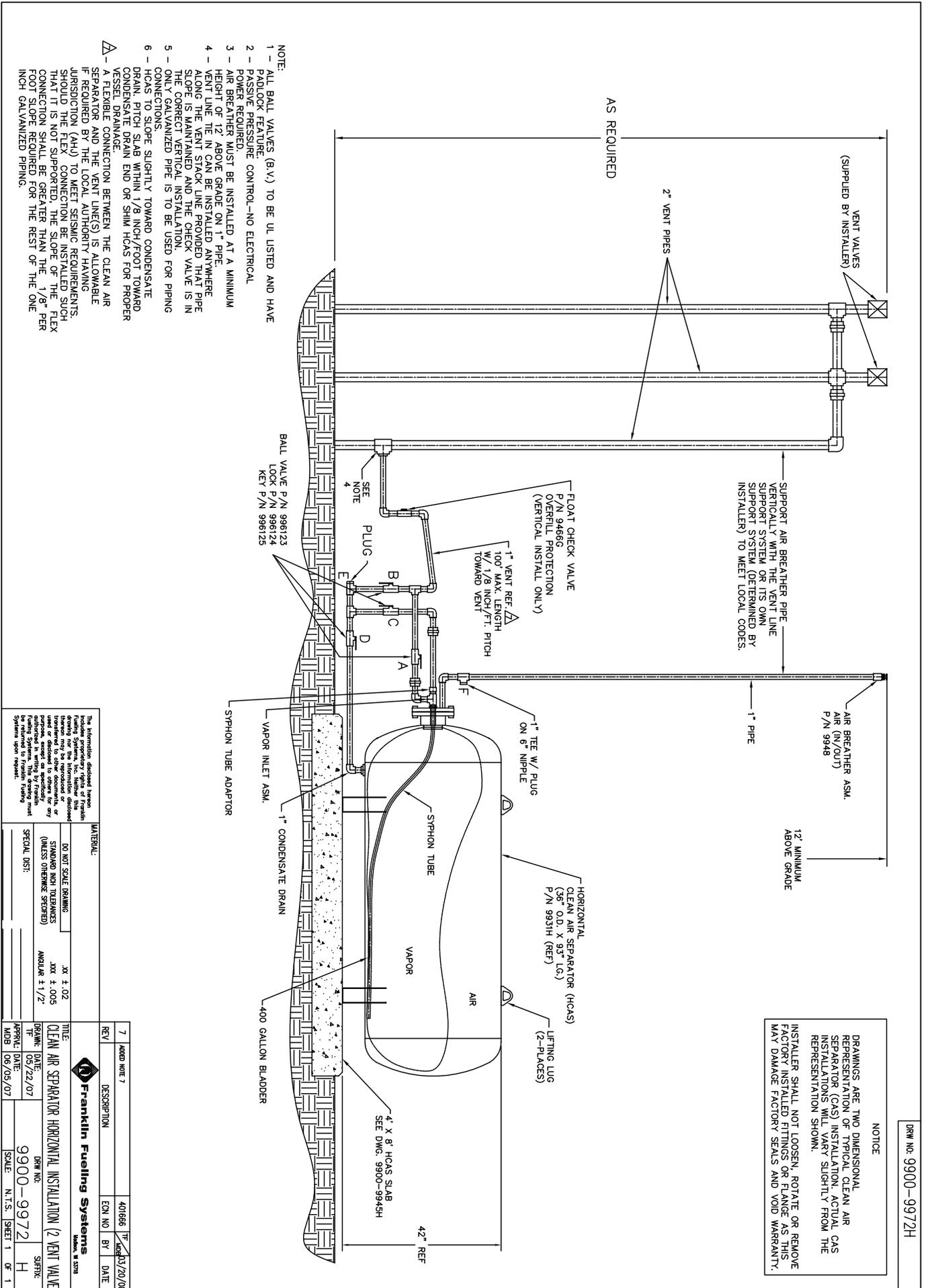
INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DWG NO. 9900-9973

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MATERIAL:	
DO NOT SCALE DRAWING	XX ± .02
STANDARD TOLERANCES (UNLESS OTHERWISE SPECIFIED)	XXX ± .005
SPECIAL DIST	ANGULAR ± 1/2"

REV	8	ADDED NOTE 6	401666	TR	03/20/08
DESCRIPTION			EQN NO	BY	DATE
<p><b>Franklin Fuelling Systems</b></p> <p>INCORPORATED</p>					
TITLE:		CLEAN AIR SEPARATOR VERTICAL INSTALLATION (3 VENT)			
DRAWN	DATE	DWG NO.	SHEET		
JHM	05/14/02	9900-9973	1 OF 1		
APPROV	DATE	ACAD H'LY	SCALE	N.T.S.	SHEET
MOB	06/05/07				1 OF 1



**NOTICE**

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.

INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.

DWG NO. 9900-9972H

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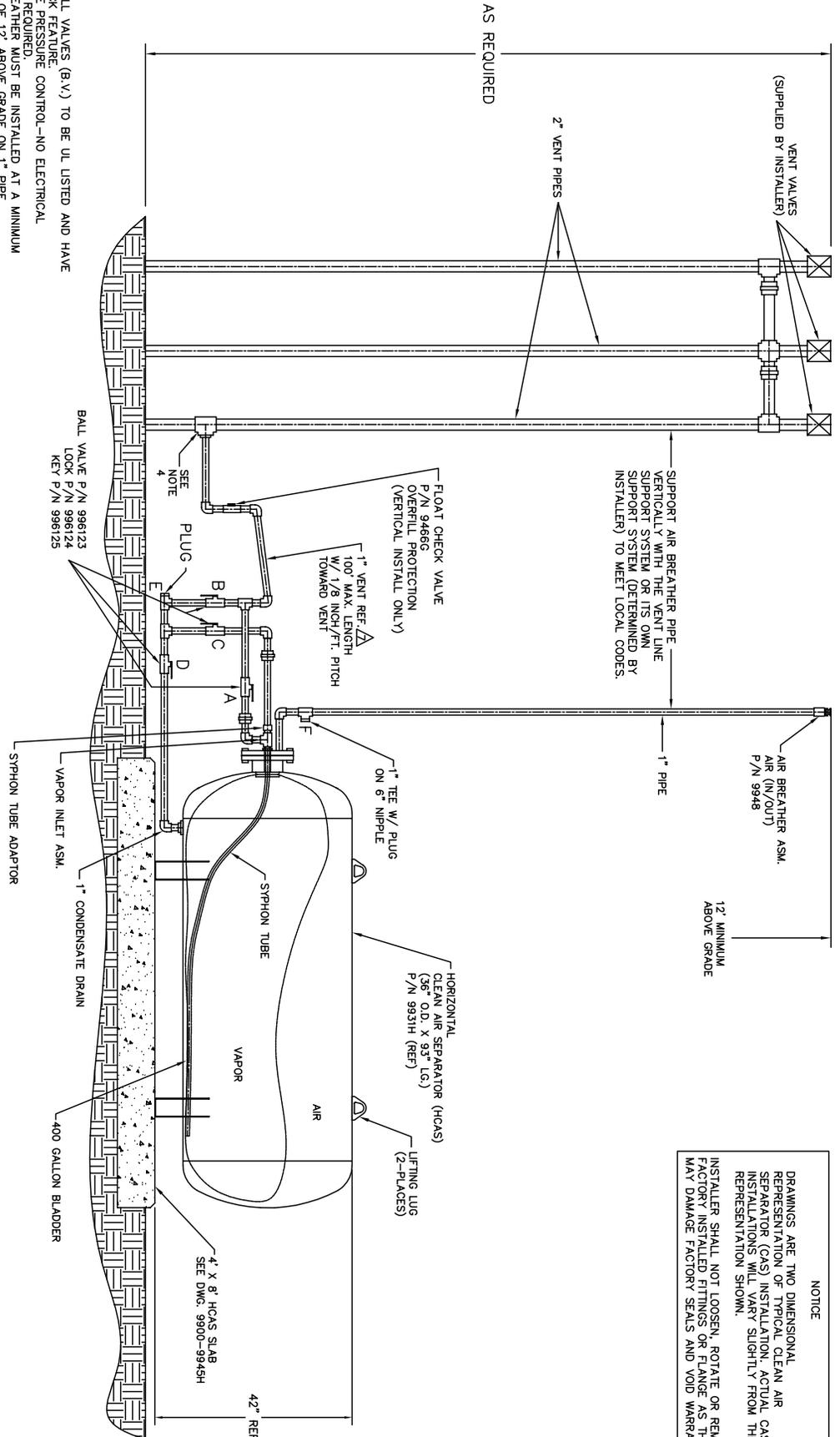
MATERIAL:	
DO NOT SCALE DRAWING	JX ± 1/32
STANDARD DIMENSIONS (UNLESS OTHERWISE SPECIFIED)	ANGULAR ± 1/2°
SPECIAL DIST.	

7	ADD NOTE 7	401666	TR	03/20/08
REV	DESCRIPTION	EQU NO	BY	DATE
<p><b>Franklin Fuelling Systems</b>  <small>MAKES US STRONG</small></p>				
TITLE:		DRAW NO.		
CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION (2 VENT VALVE)		9900-9972		
DATE:	05/22/07	DATE:	06/05/07	SHEET
APPROVAL:		SCALE:	N.T.S.	SHEET 1 OF 1

DWG NO. 9900-9973H

NOTICE

DRAWINGS ARE TWO DIMENSIONAL REPRESENTATION OF TYPICAL CLEAN AIR SEPARATOR (CAS) INSTALLATION. ACTUAL CAS INSTALLATIONS WILL VARY SLIGHTLY FROM THE REPRESENTATION SHOWN.  
 INSTALLER SHALL NOT LOOSEN, ROTATE OR REMOVE FACTORY INSTALLED FITTINGS OR FLANGE AS THIS MAY DAMAGE FACTORY SEALS AND VOID WARRANTY.



- NOTE:
- 1 - ALL BALL VALVES (B.V.) TO BE UL LISTED AND HAVE PASSIVE FIRE PROTECTION.
  - 2 - PASSIVE FIRE PROTECTION-NO ELECTRICAL HEAT REQUIRED.
  - 3 - AIR BREATHER MUST BE INSTALLED AT A MINIMUM HEIGHT OF 12' ABOVE GRADE ON 1" PIPE.
  - 4 - VENT LINE TIE IN CAN BE INSTALLED ANYWHERE ALONG THE VENT STACK LINE PROVIDED THAT PIPE SLOPE IS MAINTAINED AND THE CHECK VALVE IS IN THE CORRECT VERTICAL INSTALLATION.
  - 5 - ONLY GALVANIZED PIPE IS TO BE USED FOR PIPING CONNECTIONS.
  - 6 - HCAS TO SLOPE SLIGHTLY TOWARD CONDENSATE DRAIN. PITCH SLAB WITHIN 1/8 INCH/FOOT TOWARD CONDENSATE DRAIN END OR SHIM HCAS FOR PROPER VESSEL DRAINAGE.
- △ - A FLEXIBLE CONNECTION BETWEEN THE CLEAN AIR SEPARATOR AND THE VENT LINE(S) IS ALLOWABLE IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) TO MEET SEISMIC REQUIREMENTS. SHOULD THE FLEX CONNECTION BE INSTALLED SUCH THAT IT IS NOT SUPPORTED, THE SLOPE OF THE FLEX CONNECTION SHALL BE GREATER THAN THE 1/8" PER FOOT SLOPE REQUIRED FOR THE REST OF THE ONE INCH GALVANIZED PIPING.

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MATERIAL:	
DO NOT SCALE DRAWING	JX ± 1/2
STANDARD AND TOLERANCES (UNLESS OTHERWISE SPECIFIED)	JXX ± .005
SPECIAL DIST.	ANALOGUE ± 1/2"

TITLE:		401666		TR		03/20/08	
REV	DESCRIPTION	EQ	NO	BY	DATE		
7	ADDED NOTE 7						
PROJECT:		CLEAN AIR SEPARATOR HORIZONTAL INSTALLATION (3 VENT VALVE)		DWG NO.		9900-9973	
DATE:	05/22/07	DATE:	06/05/07	SHEET:	H		
APPROVAL:		DATE:		SHEET:	1	OF 1	
SCALE:	N.T.S.	SHEET					



Franklin Fueling Systems  
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ARB Approved Installation, Operation and Maintenance Manual

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