State of California
AIR RESOURCES BOARD

Executive Order G-70-140-A

Certification of Integral Phase I and Phase II
Aboveground Tank Configurations Using
the Healy Phase II Vapor Recovery System

This Executive Order shall supersede Executive Order G-70-140 dated March 17, 1992.

WHEREAS, the Air Resources Board (the "Board") has established, pursuant to Sections 39600, 39601, and 41954 of the Health and Safety Code, certification procedures for systems designed for the control of gasoline vapor emissions displaced during the filling of storage tanks at service stations ("Phase I vapor recovery systems") and for the control of gasoline vapor emissions from motor vehicle fueling operations ("Phase II vapor recovery systems") in its "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations" as last amended December 4, 1981 (the "Certification Procedures"), incorporated by reference in Section 94001 of Title 17, California Code of Regulations;

WHEREAS, the Board has established, pursuant to Sections 39600, 39601, and 41954 of the Health and Safety Code, test procedures for determining compliance of Phase I and Phase II vapor recovery systems with emission standards in its "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Service Stations" as last amended September 1, 1982 (the "Test Procedures"), incorporated by reference in Section 94000 of Title 17, California Code of Regulations;

WHEREAS, James W. Healy of Cambridge Engineering, Incorporated has applied for recertification of the Healy vacuum assist system for Phase II vapor recovery for aboveground gasoline storage tank systems utilizing a remote dispenser to include the #9000 mini-jet;

WHEREAS, Section VIII-A of the Certification Procedures provides that the Executive Officer shall issue an order of certification if he or she determines that a vapor recovery system conforms to all of the requirements set forth in Sections I through VII; and

WHEREAS, the Executive Order G-70-70 series contain the certification orders for Healy vacuum assist Phase II vapor recovery systems;

WHEREAS, I find that the Healy vacuum assist system for remote dispenser operation, when used with ARB Certified Phase I and Phase II aboveground tank balance systems, conforms with all the requirements set forth in Sections I through VII of the Certification Procedures;

NOW, THEREFORE, IT IS HEREBY ORDERED this certification shall apply to the use of the Healy vacuum assist system for Phase II vapor recovery for aboveground gasoline storage tank systems utilizing a remote dispenser. The systems certified hereby are shown in Exhibits 1, 2 and 3 attached hereto and may be used on aboveground single product tanks, split product tanks or multiple tanks which have been previously certified for Phase I and Phase II balance system operation.

IT IS FURTHER ORDERED that this system is certified to be at least 95 percent effective when used with a Board certified aboveground gasoline Phase I and Phase II storage tank system. A typical piping arrangement and parts list for the Healy Phase II system for a single suction pump located within 15 feet of the storage tank and where the vapor return piping is not routed below the level of the hose adaptor is shown in Exhibit 1. The piping arrangement and parts list for application to multiple nozzles, multiple tanks or where the vapor return piping is routed below the level of the hose adaptor (underground piping) is shown in Exhibits 2 and 3.

IT IS FURTHER ORDERED that a condensate trap as shown in Exhibits 2 and 3 shall be used when the vapor return piping is routed below the level of the hose adaptor. All exposed piping shall be insulated to the equivalent of 2 inches of material with a "K" value of 0.30 or less. The jet pump assembly shall be shaded by a sheet metal enclosure painted white.

IT IS FURTHER ORDERED that compliance with the rules and regulations of the local air pollution control district with jurisdiction where the installed system is located, shall be made a condition of this certification.

IT IS FURTHER ORDERED that the tank and associated piping and other equipment not specifically listed as approved Phase I or Phase II equipment in Executive Order G-70 series shall comply with the rules and regulations of the local fire officials with jurisdiction where the installed system is located, and that the use of a PV valve shall require the prior approval of such local fire official.

IT IS FURTHER ORDERED that compliance with all applicable certification requirements and rules and regulations of the Division of Measurement Standards, the Office of the State Fire Marshal, and the Division of Occupational Safety and Health of the Department of Industrial Relations shall be made a condition of this certification.

IT IS FURTHER ORDERED that any alteration of the equipment, parts, design, or operation of the configurations certified hereby, is prohibited, and deemed inconsistent with this certification, unless such alteration has been approved by the undersigned or the Executive Officer's designee.

IT IS FURTHER ORDERED that the certified Healy Phase II vapor recovery system shall, at a minimum, comply with the manufacturer's recommended operation, installation and maintenance procedures.

IT IS FURTHER ORDERED that the Healy Phase II vapor recovery system nozzle, jet pump, control valve and multi-jet pump shall be 100 percent performance checked at the factory including checks of proper operation in all aspects of performance.

Executed this 1ST day of July 1992, at Sacramento, California.

James D. Boyd
Executive Officer

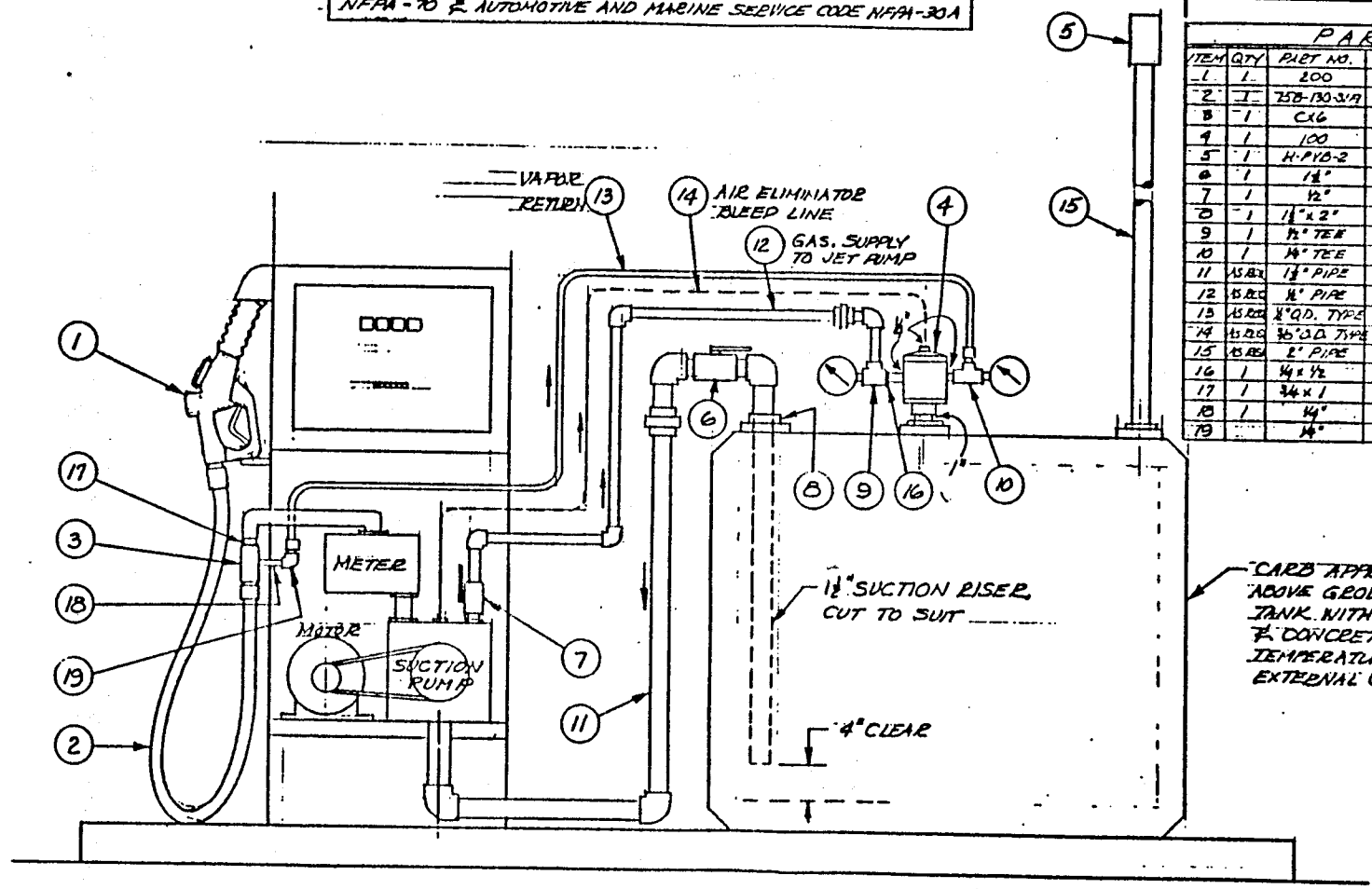
Exhibit 1

Executive Order G-70-140-A

Healy Phase II Vapor Recovery System for Integral Aboveground Gasoline Tank Systems Utilizing a Remote Dispenser

This drawing is not to be used for making reproductions thereof, or for making any apparatus based thereon, without first obtaining written authorization of Cambridge Engineering Inc.

— REFERENCE CODES —
THIS EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH NFPA-70 & AUTOMOTIVE AND MARINE SERVICE CODE NFPA-30A



CARB APPROVED ABOVE GROUND STORAGE TANK WITH STAGE I EQUIPMENT & CONCRETE OR OTHER EQUIVALENT TEMPERATURE STABILIZATION EXTERNAL COVER.

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
A	ORIG. ISSUE	9-17-91	JWH

PARTS LIST

ITEM	QTY	PART NO.	DESCRIPTION
1	1	200	NOZZLE
2	1	758-130-3/A	CO-AXIAL HOSE
3	1	CX6	HOSE ADAPTER
4	1	100	JET PUMP
5	1	H-PVB-2	PRESSURE/VAC. VENT VALVE
6	1	1½"	BALL VALVE
7	1	½"	BALL VALVE
8	1	1½" x 2"	DOUBLE TAP BUSHING.
9	1	½" TEE	GALV. (WITH PLUG FOR PRESS. GAGE)
10	1	¼" TEE	GALV. (" " " " ")
11	AS REQ	1½" PIPE	GALV. & FITTINGS
12	AS REQ	½" PIPE	GALV. & FITTINGS
13	AS REQ	½" O.D. TYPE	L, COPPER TUBE & FITTINGS
14	AS REQ	⅜" O.D. TYPE	L, " " "
15	AS REQ	2" PIPE	GALV.
16	1	¼ x ½	BUSHING, GALV
17	1	¾ x 1	BUSHING, "
18	1	¼"	NIPPLE, "
19		¼"	ELBOW, "

NOTES:

1. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS A GENERAL ARRANGEMENT AND IS INTENDED AS A GUIDELINE FOR TYPICAL SINGLE SUCTION PUMP DISPENSERS USING A MODEL #100 JET PUMP FOR VACUUM. THE GENERAL ARRANGEMENT SHALL BE MODIFIED TO SUIT INDIVIDUAL INSTALLATION AND CONDITIONS AND IS NOT INTENDED TO BE USED FOR ACTUAL DESIGN AND INSTALLATION.
2. INSTALLATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED HEREIN: CALIFORNIA AIR RESOURCES BOARD REGULATIONS; CALIFORNIA STATE FIRE MARSHAL REGULATIONS; SUB-CHAPTER 11.5 AND LOCAL APCD RULES.
3. ALL PIPING AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. METAL PIPE SHALL BE MINIMUM SCHEDULE 40 WELDED OR SEAMLESS STEEL PIPE PER ASTM A-53, GALVANIZED, AND FITTINGS SHALL BE 150# MALLEABLE IRON, GALVANIZED. ALL NON-METALLIC PIPE AND FITTINGS SHALL BE UL LISTED.

BREAK ALL SHARP CORNERS

UNLESS OTHERWISE SPECIFIED
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1°
MATERIALS
HEAT TREATMENT
FINAL PROTECTIVE FINISH

ORIGINAL ISSUE DATE
DWN JWH DATE 9-17-91
CHKD DATE
APPD DATE
SUBMITTED
C.E. INC.
CLIENT

DO NOT SCALE THIS DRAWING

ABOVE GROUND TANK INSTALLATION WITH SUCTION PUMP

CAMBRIDGE ENGINEERING, INC.
HEALY SYSTEMS, INC.
HUDSON, NEW HAMPSHIRE

DWG SIZE C 9001-112
SCALE ~ NO REQ'D CODE SHEET OF

Exhibit 2

Executive Order G-70-140-A

Healy Phase II Vapor Recovery System for Integral Aboveground Gasoline Tank Systems Utilizing a Remote Dispenser

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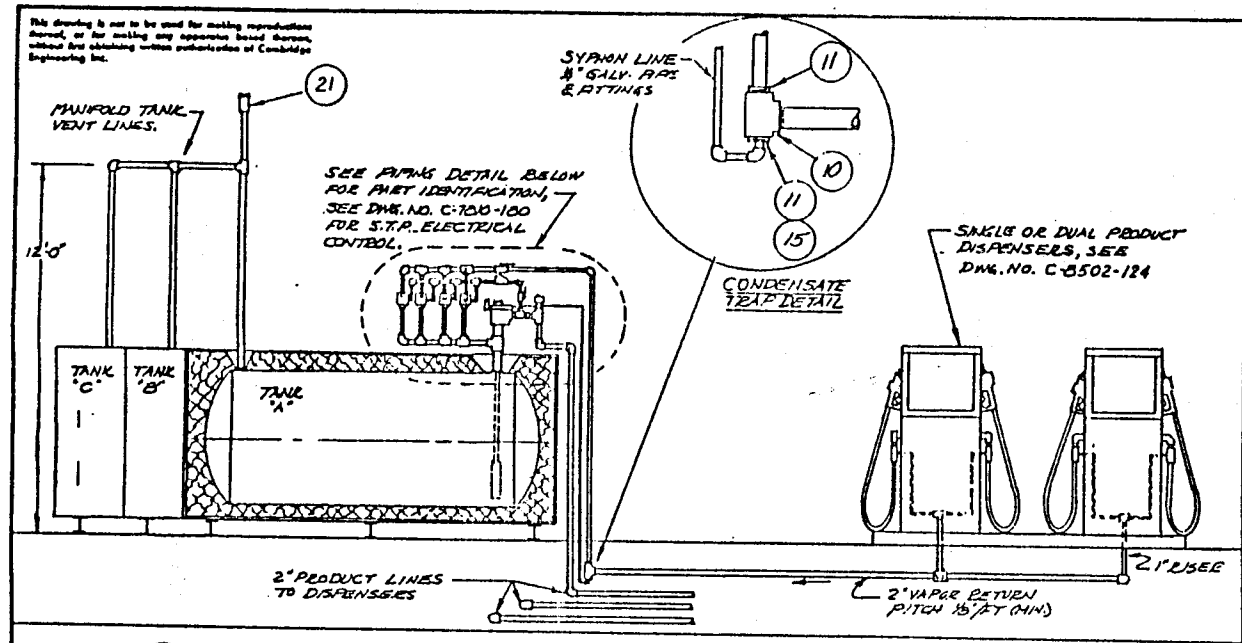
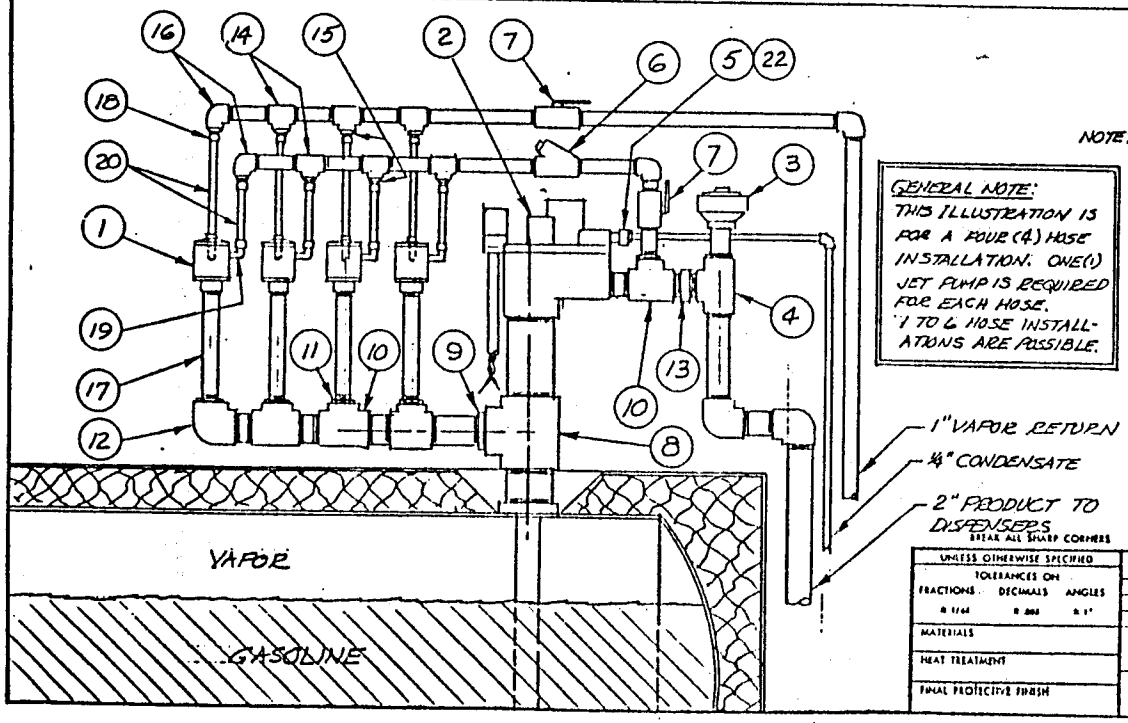


REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ORIG. ISSUE	12/10/90	JWH

PARTS LIST

ITEM	QTY	DESCRIPTION	P/N
1	4	JET PUMP	100
2	1	¾ HP RED JACKET SUB. TURBINE PUMP	
3	1	RED JACKET LEAK DETECTOR	
4	1	RED JACKET TEE	
5	1	RED JACKET SYPHON CHECK	
6	1	"Y"-TYPE STRAINER, 20 MESH SCREEN	
7	2	1" BALL VALVE, UL LISTED, FLAMMABLE LIQUIDS	
8	1	4" TEE (GALV.)	
9	1	2"x4" RED. BUSHING (GALV)	
10	5	2" TEE (GALV)	
11	5	1"x2" RED. BUSHING (GALV)	
12	1	2" ELBOW	
13	1	UNIVERSAL CHECK VALVE #212 BPE	
14	6	1" TEE (GALV.)	
15	9	¼"x1" RED. BUSHING	
16	2	1" ELBOW	
17	4	1"x12" NIPPLE (GALV)	
18	8	½" MPT x ½ OD TUBE FLARE CONN (BRASS)	
19	8	½ MPT x ½ OD TUBE FLARE ELBOW (BRASS)	
20	AS REQ	½" OD COPPER TUBE TYPE "L"	
21	1	VENT VALVE	H-PVB-2
22	1	¼"x⅜" RED. BUSHING (GALV).	



GENERAL NOTE: THIS ILLUSTRATION IS FOR A FOUR (4) HOSE INSTALLATION. ONE(1) JET PUMP IS REQUIRED FOR EACH HOSE. 1 TO 6 HOSE INSTALLATIONS ARE POSSIBLE.

— REFERENCE CODES —
THIS EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH NFPA-70 AND AUTOMOTIVE & MARINE SERVICE CODE NFPA-30A

NOTE:

1. THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS A GENERAL ARRANGEMENT AND IS INTENDED AS A GUIDELINE FOR TYPICAL SINGLE, DUAL OR MULTIPRODUCT DISPENSERS, USING CENTRAL VACUUM VAPOR RECOVERY EQUIPMENT. THE GENERAL ARRANGEMENT SHALL BE MODIFIED TO SUIT INDIVIDUAL INSTALLATION AND CONDITIONS AND IS NOT INTENDED TO BE USED FOR ACTUAL DESIGN AND INSTALLATION.
2. INSTALLATION SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS SPECIFIED HEREIN: CALIFORNIA AIR RESOURCES BOARD REGULATIONS, CALIFORNIA STATE FIRE MARSHAL REGULATIONS, SUB-CHAPTER 11.5 AND LOCAL APCD RULES.
3. ALL PIPING AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. METAL PIPE SHALL BE MINIMUM SCHEDULE 40 WELDED OR SEAMLESS STEEL PIPE PER ASTM A-53, GALVANIZED, AND FITTINGS SHALL BE 150# MALLEABLE IRON, GALVANIZED. ALL NON-METALLIC PIPE AND FITTINGS SHALL BE UL LISTED.
4. VAPOR RETURN LINES AND VENT LINES TO BE 2" DIAMETER PIPE UNLESS OTHERWISE NOTED. SLOPE MUST BE MINIMUM 1/8" PER FOOT, WITHOUT SAGS OR TRAPS, DRAINING UNIFORMLY TOWARD PRODUCT STORAGE TANK.
5. VENT LINES MUST BE SEPARATED BY PRODUCT.
6. ALL VAPOR PIPING TRENCHING MUST BE COMPACTED TO 95% UNDISTURBED SOIL BEFORE THE PIPES ARE INSTALLED AND BACKFILLED WITH SAND AT LEAST SIX INCHES BELOW AND ABOVE THE PIPING.
7. VENT PIPES SHALL BE MANIFOLDED AT MINIMUM HEIGHT OR 13 FEET ABOVE DRIVEWAY LEVEL.

DO NOT SCALE THIS DRAWING

UNLESS OTHERWISE SPECIFIED
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1°
MATERIALS
HEAT TREATMENT
FINAL PROTECTIVE FINISH

ORIGINAL ISSUE DATE
DWN JWH DATE 12/10/90
CHKD DATE
APPD DATE
SUBMITTED C.E. INC.
CLIENT

ABOVE GROUND TANK VAPOR RECOVERY PIPING FOR #100 JET PUMPS.

SCALE ~ NO REQ'D.

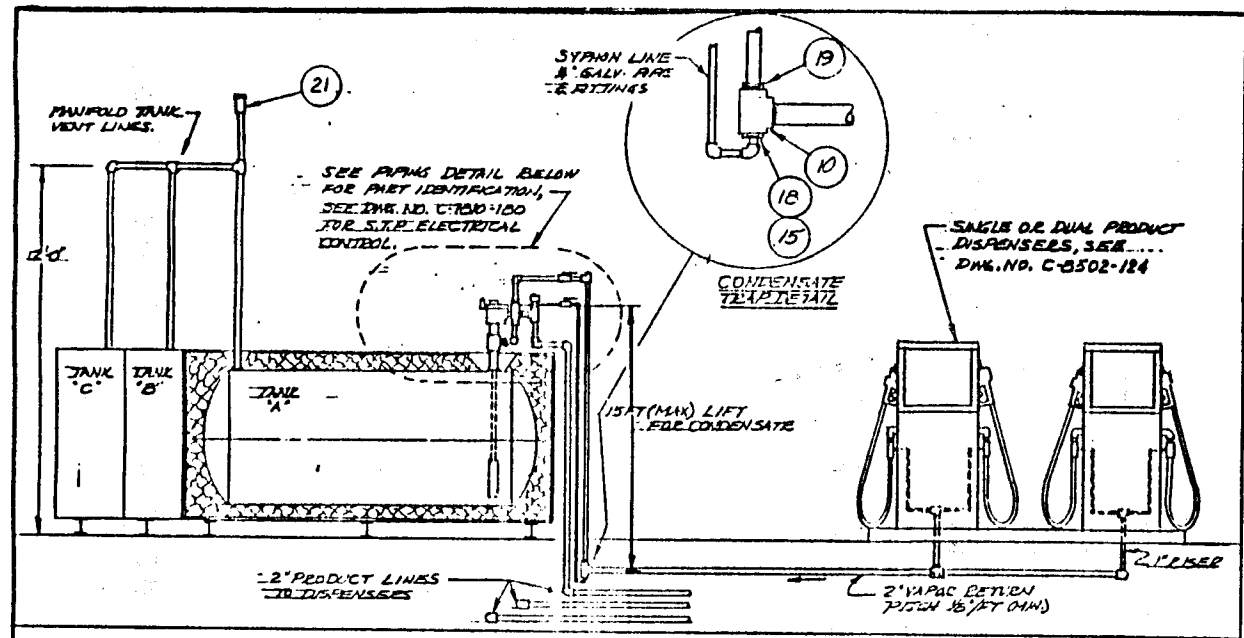
CAMBRIDGE ENGINEERING, INC.
HEALY SYSTEMS, INC.
HUDSON, NEW HAMPSHIRE

DWG DIS C 9000-913
CODE SHEET OF

Exhibit 3

Executive Order G-70-140-A

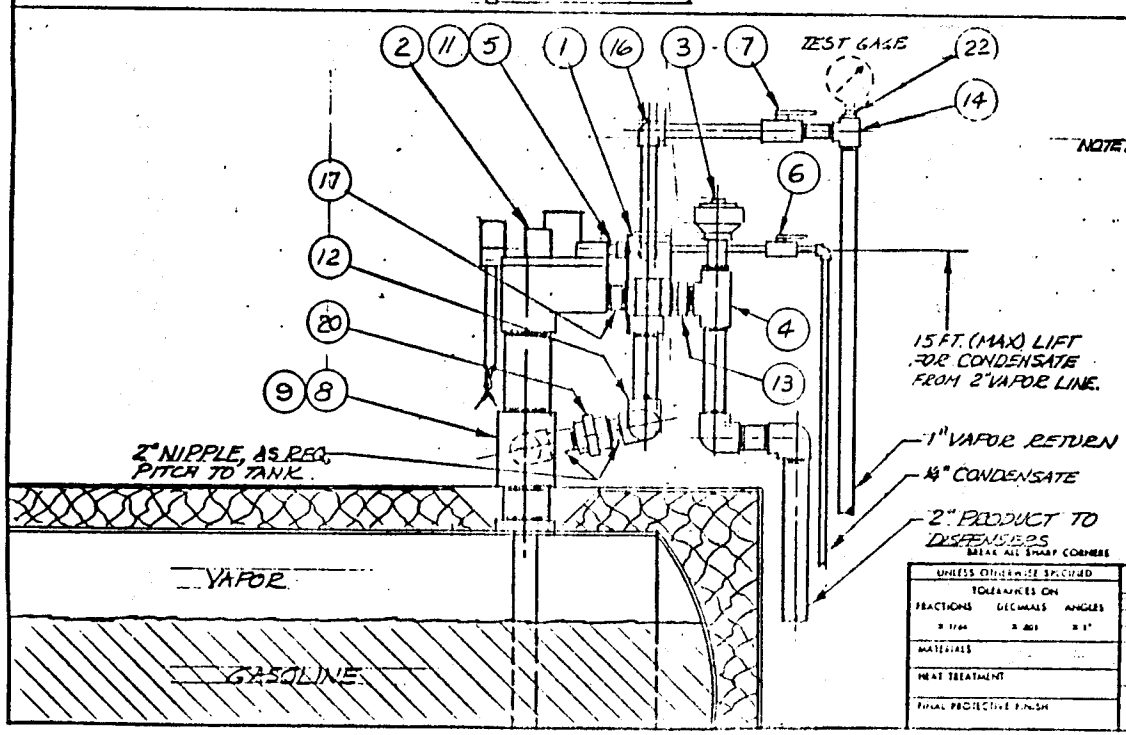
Healy Phase II Vapor Recovery System for Integral Aboveground Gasoline Tank Systems Utilizing a Remote Dispenser



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ORIG. ISSUE	4-23-92	JWN

PARTS LIST

ITEM	QTY	DESCRIPTION	P/N
1	1	MINI-JET	9000
2	1	3/4 HP RED JACKET SUB. TURBINE PUMP	
3	1	RED JACKET LEAK DETECTOR	
4	1	RED JACKET TEE	
5	1	RED JACKET SYPHON CHECK	
6	1	1/4" BALL VALVE, UL LISTED FLAM. LIQUIDS	
7	1	1" BALL VALVE, UL LISTED, FLAMMABLE LIQUIDS	
8	1	4" TEE (GALV)	
9	1	2"x4" RED. BUSHING (GALV)	
10	1	2" TEE (GALV)	
11	1	4"x3" RED. BUSHING (GALV)	
12	3	2" ELBOW (GALV)	
13	1	UNIVERSAL CHECK VALVE #212 BPE	
14	1	1" TEE (GALV)	
15	1	3/4"x1" RED. BUSHING (GALV)	
16	1	1" ELBOW (GALV)	
17	1	2"x4" NIPPLE (GALV)	
18	1	1/4"x1" RED. BUSHING (GALV)	
19	1	1"x2" RED. BUSHING (GALV)	
20	1	2" UNION (GALV)	
21	1	VENT VALVE	H-PVB-2
22	1	1" PIPE PLUG (GALV)	



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4. VAPOR RETURN LINES AND VENT LINES TO BE 2" DIAMETER PIPE UNLESS OTHERWISE NOTED. SLOPE MUST BE MINIMUM 1/8" PER FOOT, WITHOUT SAGS OR TRAPS, DRAINING UNIFORMLY TOWARD PRODUCT STORAGE TANK.
5. VENT LINES MUST BE SEPARATED BY PRODUCT.
6. ALL VAPOR PIPING TRENCHING MUST BE COMPACTED TO 90% UNDISTURBED SOIL. BEFORE THE PIPES ARE INSTALLED AND BACKFILLED WITH SAND AT LEAST SIX INCHES BELOW AND ABOVE THE PIPING.
7. VENT PIPES SHALL BE MANIFOLDED AT MINIMUM HEIGHT OR 12 FEET ABOVE DRIVEWAY LEVEL.

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MATERIALS
HEAT TREATMENT
FINAL PROTECTIVE FINISH

ORIGINAL ISSUE DATE
DWN VAC DATE 4-23-92
CHKD DATE
APPD DATE
SUBMITTED
CE INC
CLIENT

ABOVE GROUND TANK VAPOR RECOVERY PIPING FOR #9000 MINI-JET

SCALE ~ NO REQ'D

CAMBRIDGE ENGINEERING, INC. SYSTEMS, INC.
HEALY

DWG NO C 9000-930
CODE SHEET OF