KENNEDY SPACE CENTER
CONVERTER COMPRESSOR FACILITY, K7-468

LIQUID HELIUM DEWAR FILL LINE FABRICATION

DRAWING SHEET INDEX

SHEET NO.	REV	SHEET TITLE	DISCIPLINE SHEET NO.
GENERAL			
1		TITLE, INDEX AND REFERENCE DOCUMENTS	G-1
PROCESS			
2		LHE DEWAR FILL LINE	D-1

REFERENCE DOCUMENTS:

BASELINE NUMBER:

463.81	PER 79K89979 "KSC STS/CARGO IDENTIFICATION LIST FOR FACILITIES, SYSTEMS AND EQUIPMENT BY BASELINE NUMBER"

DESIGN SPECIFICATIONS:

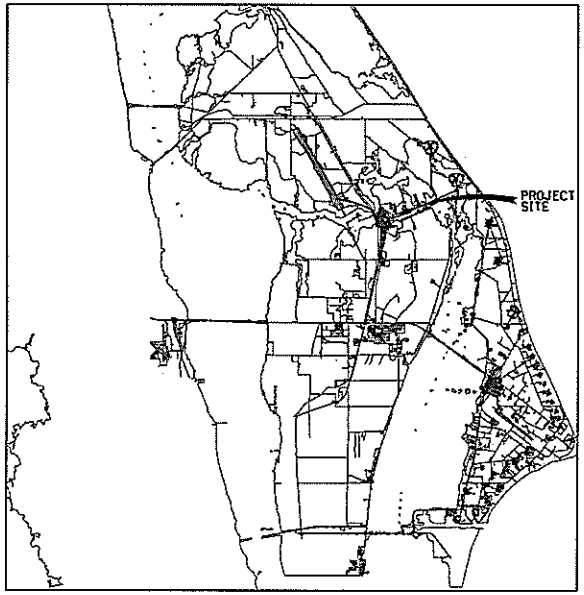
79K14572	VALVE ASSEMBLY, VACUUM, SPECIFICATION FOR
79K35482	CONVERTER COMPRESSOR FACILITY MODIFICATIONS FOR LIQUID HELIUM STORAGE SYSTEM (REFERENCE DOCUMENT)
79K35467	PIPING, LIQUID HELIUM, VACUUM JACKETED, RIGID AND FLEXIBLE, SPECIFICATION FOR
KSC-C-123	SURFACE CLEANLINESS OF FLUID SYSTEMS, SPECIFICATION FOR
MIL-PRF-27401	PROPELLANT PRESSURIZING AGENT, NITROGEN
MIL-PRF-27407	PROPELLANT PRESSURIZING AGENT, HELIUM
MS33649	BOSSES, FLUID CONNECTION, INTERNAL STRAIGHT THREAD
ASME BPVC	SECTION VIII, RULES FOR CONSTRUCTION OF PRESSURE VESSELS, DIVISION 1 & 2
	SECTION IX, WELDING AND BRAZING QUALIFICATIONS
ASME B16.9	FACTORY MADE WROUGHT STEEL BUTTWELDED FITTINGS
ASME B31.3	PROCESS PIPING
ASNT 2585	QUALIFICATION AND CERTIFICATION OF NONDESTRUCTIVE TEST PERSONNEL, STANDARD FOR
ASTM A182	STANDARD SPECIFICATION FOR FORGED OR ROLLED ALLOY AND STAINLESS STEEL PIPE FLANGES, FORGED FITTINGS, AND VALVES AND PARTS FOR HIGH-TEMPERATURE SERVICE
ASTM A240	HEAT RESISTING CHROMIUM AND CHROMIUM-NICKEL STAINLESS STEEL PLATE, SHEET AND STRIP FOR PRESSURE VESSELS, STANDARD SPECIFICATION FOR
ASTM A269	SEAMLESS AND WELDED AUSTENITIC STAINLESS STEEL TUBING FOR GENERAL SERVICE, STANDARD SPECIFICATION FOR
ASTM A312	SEAMLESS AND WELDED AUSTENITIC STAINLESS STEEL PIPES, STANDARD SPECIFICATION FOR
ASTM A380	CLEANING AND DESCALING, AND PASSIVATION STAINLESS STEEL PARTS, EQUIPMENT AND SYSTEMS, STANDARD PRACTICE FOR
ASTM A403	WROUGHT AUSTENITIC STAINLESS STEEL PIPING FITTINGS, STANDARD SPECIFICATION FOR
EJMA STANDARDS	EXPANSION JOINT MANUFACTURERS ASSOCIATION STANDARDS, 2003 EDITION

CONFIGURATION DOCUMENTATION:

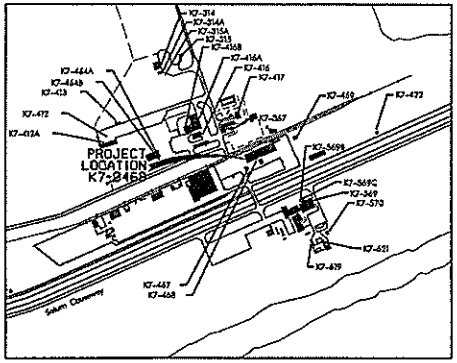
81K86902	GHE SUPPLY SYSTEM MECHANICAL CONFIGURATION DRAWING

REFERENCE DRAWINGS:

SK-2008-4419	LIQUID HELIUM DEWAR WITHDRAWAL LINE FABRICATION
SK-2008-4419	LIQUID HELIUM DEWAR VENT DISCHARGE LINE FABRICATION
SK-2008-4420	LIQUID HELIUM DEWAR NON-VJ MANIFOLD FABRICATION



VICINITY MAP
SCALE: NONE



LOCATION MAP
SCALE: NONE

THIS SKETCH REPLACES PREVIOUSLY RELEASED SK-2008-4409.

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CHECKING THE CHECK-BOXES BELOW IN RESPONSE TO SBU DIRECTIVES THAT THIS DOCUMENT HAS BEEN REVIEWED UNDER THE REQUIREMENTS FOR "SENSITIVE BUT UNCLASSIFIED" INFORMATION AS DESCRIBED IN NPR 1600.1.

CONTAINS SBU? YES ☒ NO ☐ REVIEWER'S NAME / SIGNATURE / DATE: Robert Leahy 7/11/08

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EAR 99 OR Mil EC	☒	THE INFORMATION CONTAINED IN THE DOCUMENT IS CONSIDERED TECHNICAL DATA BUT IS NOT TECHNICAL DATA AS DEFINED IN THE EAR OR ITAR AND THEREFORE IS EAR 99 AND EXPORT LICENSE REQUIRED
EAR	☐	THIS DOCUMENT IS WITHIN THE PURVIEW OF THE EXPORT ADMINISTRATION REGULATIONS (EAR), IS CFR 730-774, AND IS EXPORT CONTROLLED.
ITAR	☐	THIS DOCUMENT FALLS UNDER THE PURVIEW OF THE U.S. MUNITIONS LIST (USML) AS DEFINED IN THE INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR), 22 CFR 120-130, AND IS EXPORT CONTROLLED.

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DESIGN ENGINEERING
60650, SGS-127
KENNEDY SPACE CENTER, FLORIDA 32815

HAZARDOUS MATERIALS:
LISTED BELOW ARE THE KNOWN HAZARDOUS MATERIALS RELATED TO THIS PROJECT. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

	YES	NO
SUSPECTED LEAD	☐	☒
SUSPECTED ASBESTOS	☐	☒

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SPECIFICATION:
THESE DRAWINGS ARE PART OF A CONSTRUCTION DOCUMENT BID SET WHICH INCLUDES SPECIFICATION 79K25467 IN PART.

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LIQUID HELIUM DEWAR
FILL LINE FABRICATION

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WON NO:	10472660
CAD DWG NO:	SK-2008-4421
CAD FILE NO:	SK20084421.001

NAME	SIGNATURE	DATE
DESIGNED BY: W.DENEUTE	[signature] for	7/11/08
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APPROVED BY: R.KOSS	[signature]	7/11/08
SUBMITTED BY: W.DENEUTE	[signature] for	7/11/08

SHEET TITLE:
TITLE, INDEX & REFERENCE DOCUMENTS

SHEET NO.: G-1 REV:
SHEET 1 of 2

END-F-0034 (REV. 9)

SPECIFIC NOTES:

A. THE VACUUM PUMP-OUT AND RELIEF VALVE SHALL BE IN ACCORDANCE WITH SPECIFICATION 79K35467.

B. FLEXIBLE BELLOWS WITH GUARD SHALL BE IN ACCORDANCE WITH SPECIFICATION 79K35467 AND INSTALLED PER MANUFACTURER'S STANDARDS. MATING FLANGES SHALL BE IN ACCORDANCE WITH BELLOWS MANUFACTURER'S STANDARD.

C. RELIEF VALVE FROM EXISTING FILL LINE TO BE REUSED. TRANSITION FROM VJ TO 1" MS33649-16 IN ACCORDANCE WITH SPECIFICATION 79K35467.

D. PROTECTIVE BRAID ON OUTER FLEXIBLE LINES SHALL BE IN ACCORDANCE WITH SPECIFICATION 79K35467 AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

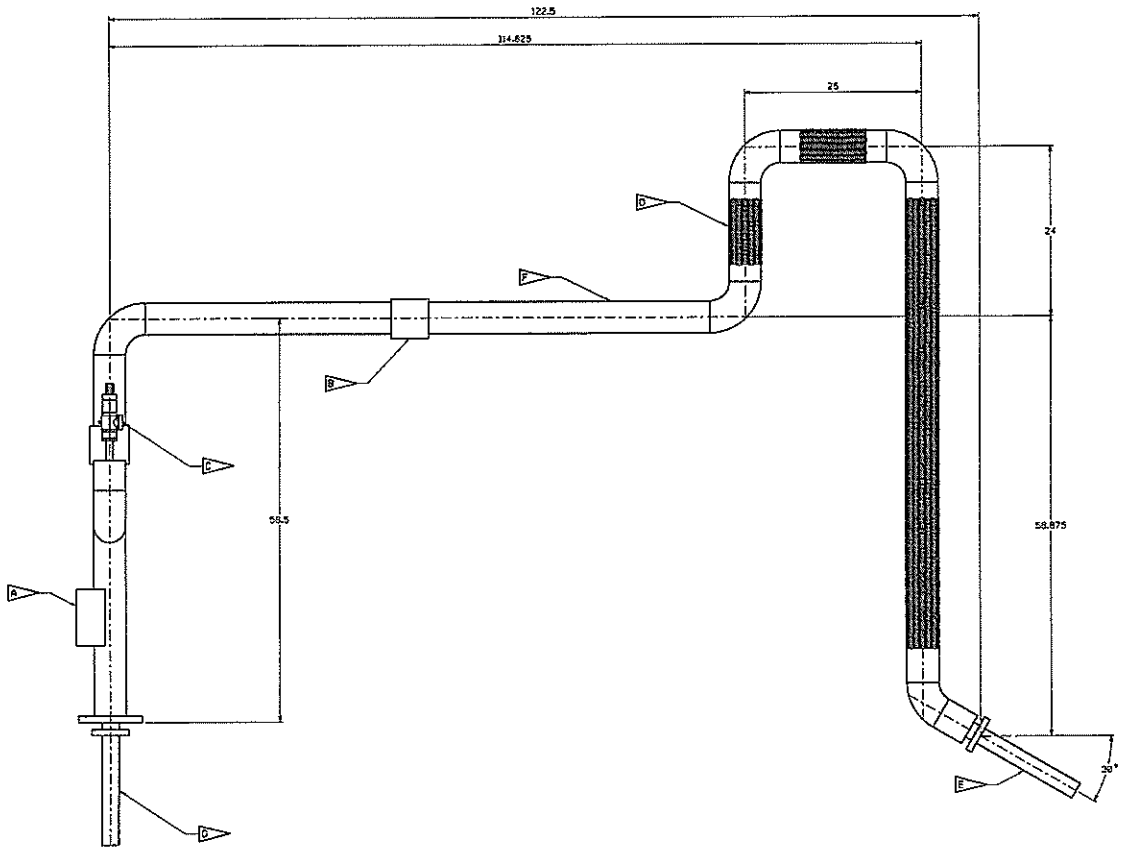
E. 2" CRYENCO STYLE BAYONET. 4" VACUUM JACKET ADAPTER.

F. VJ PIPE: 2" INTERNAL PIPING IN ACCORDANCE WITH SPECIFICATION 79K35467; 4" VACUUM JACKET PIPING IN ACCORDANCE WITH SPECIFICATION 79K35467.

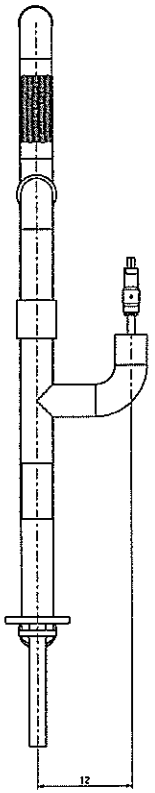
G. 2" CRYENCO STYLE BAYONET. 4" - 150 LB ANSI RF FLANGE CONNECTION.

H. ALL DIMENSIONS IN INCHES. ALL ANGLES IN DEGREES.

J. ADDITIONAL FABRICATION, CLEANING, INSPECTION AND QUALITY REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATION 79K35467.



A1 DEWAR FILL LINE - SOUTH ELEVATION
SCALE: NONE



A3 DEWAR FILL LINE - WEST ELEVATION
SCALE: NONE

ENG-F-0054 (REV B)

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KENNEDY SPACE CENTER, FLORIDA 32815

SCHEDULE(S):

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SUSPECTED LEAD	☐	☒
SUSPECTED ASBESTOS	☐	☒

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LIQUID HELIUM DEWAR FILL LINE FABRICATION

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WON NO:	10472960
CAD DWG NO:	SK-2008-4421
CAD FILE NO:	SK20084421.002

	NAME	SIGNATURE	DATE
DESIGNED BY:	W.DENEUTE	W.Deneute for	7/11/08
DRAWN BY:	W.DENEUTE	W.Deneute for	7/11/08
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APPROVED BY:	R.KOSS	R. Koss	7/11/08
SUBMITTED BY:	W.DENEUTE	W.Deneute for	7/11/08

SHORT TITLE:
LHE DEWAR FILL LINE

SHEET NO.: D-1
SHEET 2 of 2

REV: