REV	DESCRIPTION	DRAWN	DATE
		APPROVED	DATE
M	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	22-MAY-2012 20-NOV-2012
F	MISC. REVISIONS MADE.	J.CATALANELLO M.ADAMOWSKI	26-FEB-2010 26-FEB-2010
G	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	10-JAN-2011 12-JAN-2012
H	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	10-JAN-2011 03-FEB-2011
J	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	23-FEB-2011 28-FEB-2011
K	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	04-MAR-2011 22-JUN-2011
L	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	11-JUL-2011 01-MAR-2012
A	ADDED TAG NUMBERS TO VALVE TYPES	V. MAJDANSKI R. SCHMITT	25FEB08 26FEB08
B	MOVE CONDENSOR OUTSIDE TANK	J.CATALANELLO R.SCHMITT	07-DEC-2008 10-DEC-2008
C	MISC. REVISIONS MADE.	J.CATALANELLO R.SCHMITT	23-DEC-2008 06-JAN-2009
D	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	17-NOV-2009 14-DEC-2009
E	MISC. REVISIONS MADE.	J.CATALANELLO T.TOPE	17-NOV-2009 15-JAN-2010

LN2 TRAILER #22
4000 GAL MAX
50 PSIG MAX
30-40 PSIG OPERATING

LT 139N

PT 138N

SET @ 15 PSIG
PI 263N

MV-261-N2

PRV-262-N2

FCV-225-N2 (CV=2.0)

FOR TRAILER DETAILS SEE LN2 TANKER TRAILER FLOW SCHEMATIC DWG #1650-MD-167714, REV "D".

SP 140N

PARTICULATE FILTER (200 MESH-74 MICRON)

TE 141N

MV-148-N2

MV-142-N2

PI 149N

PSV 143N
SET @ 100 PSIG

PSV 150N
SET @ 100 PSIG

LN2 VAPORIZER 2000 SCFH

TE 146N

PI 145N

S

SV-144-N2

OUTSIDE PC4

INSIDE PC4

PI 1004 N

PSV 168 N
SET @ 100 PSIG

PT 1010 N

PI 1009 N

MV-1004-N2

MV-1007-N2

PSV 1008 N
SET @ 100 PSIG

SP 1001 N

MV-1002-N2

MV-1006-N2

140 MICRON

MV-1005-N2
SEE NOTE 2

FUTURE USE (PIPE WELDED SHUT) LBNE 35T

PSV 264N
SET @ 100 PSIG

MV-285-N2

N2 LIQUID
100 | SHEET 2
N2 TRAILER/LAPD TANK

PSV 209N
SET @ 100 PSIG

SP 271N

PARTICULATE
40 MICRON

PI 231N

MV-272-N2

N2 GAS
110 | SHEET 2
N2 TRAILER/N2 PURGES

SP 239N

PARTICULATE
40 MICRON

MV-232-N2

N2 GAS
105 | SHEET 4
N2 TRAILER/ANALYZERS

SP 243N

PARTICULATE
40 MICRON

PI 244N

MV-245-N2
BLEED UP GAS

PRV 106H

SET @ 100 PSIG
PSV 108H

PI 178H

PI 179H

TRAILER VALVE

97.5% Ar/2.5% H2
REGENERATION GAS
40,000 SCF

MV-171-HAr

MV-170-HAr

CAPILLARY TUBING

72 MICRON
SP 240N

CV-151-N2

MV-152-N2

N2, AR, OR AR/H2 GAS
101 | SHEET 3
FILTER GAS SUPPLY/LAPD FILTERS

MV-230-HAr

72 MICRON
SP 268H

CV-269-HAr

MV-270-HAr

AR/H2 GAS
109 | SHEET 3
FILTER GAS SUPPLY/LAPD FILTERS

72 MICRON
SP 241H

CV-153-HAr

MV-154-HAr

N2, AR, OR AR/H2 GAS
108 | SHEET 3
FILTER GAS SUPPLY/LAPD FILTERS

MV-233-V

72 MICRON
SP 242A

CV-236-Ar

MV-237-Ar

MV-234-V

SP 246A

PARTICULATE
40 MICRON

PI 247A

MV-248-Ar
BLEED UP GAS

301 SPARE
302 SHEET 3
303 SHEET 3
304 SHEET 3
305 SHEET 2
306 SHEET 2

PI 250A

PI 266A

MV-249-Ar

INSIDE THE GAS SHED LOCATED OUTSIDE OF PC4

PT 111H

PI 104H

MV-227-HAr

PT 132A

SET @ 65 PSIG
PRV 133A

PI 182A

PI 183A

SET @ 100 PSIG
PSV 134A

MV-135-Ar

MV-137-Ar

CV-208-Ar

MV-238-Ar

SET @ 65 PSIG
PRV 110A

SET @ 100 PSIG
PSV 114A

PI 175A

PI 176A

MV-115-Ar

MV-116-Ar

MV-113-Ar

(350 PSIG MAX)

GAS USE

H.P. LAr 180 L

FLEX LINE

CV-281-Ar

MV-103-Ar

ARGON SOURCE #1

(350 PSIG MAX)

GAS USE

H.P. LAr 180 L

FLEX LINE

CV-282-Ar

MV-102-Ar

(350 PSIG MAX)

GAS USE

H.P. LAr 180 L

FLEX LINE

CV-283-Ar

MV-101-Ar

(350 PSIG MAX)

GAS USE

H.P. LAr 180 L

FLEX LINE

CV-284-Ar

MV-226-Ar

CAPILLARY TUBING

MV-228-Ar

PT 105A

PI 229A

FLEX LINE

CV-273-Ar

MV-128-Ar

FLEX LINE

CV-274-Ar

MV-129-Ar

FLEX LINE

CV-275-Ar

MV-130-Ar

FLEX LINE

CV-276-Ar

MV-131-Ar

Ar

ARGON SOURCE #3

SET @ 75 PSIG
PRV 124A

PI 180A

PI 181A

SET @ 100 PSIG
PSV 125A

MV-119-Ar

PT 123A

MV-119-Ar

MV-120-Ar

MV-121-Ar

MV-122-Ar

FLEX LINE

CV-277-Ar

FLEX LINE

CV-278-Ar

FLEX LINE

CV-279-Ar

FLEX LINE

CV-280-Ar

Ar

ARGON SOURCE #2

SET @ 150 PSIG
PRV 214 AIR

PRV 216 AIR

SET @ 50 PSIG

PSV 218 AIR

SET @ 100 PSIG

PI 212 AIR

SET @ 100 PSIG
PRV 215 AIR

MV-213-AIR

MV-126-Ar

CV-187-Ar

CV-186-Ar

PT 210 AIR

PI 294 AIR

CV-293-AIR

MV-295-AIR

PI 296 AIR

PT 211 AIR

MV-212-AIR

CV-297-AIR

AIR

LOW PRESSURE Ar PURGES

SET @ 5 PSIG
PRV 207A

PI 206A

PI 174A

MV-167-Ar

MV-260-Ar

P 101 FCV-157-Ar
P 102 FCV-158-Ar
P 103 FCV-159-Ar
P 104 FCV-160-Ar
P (SPARE) FCV-161-Ar
P (SPARE) FCV-162-Ar

P 107 FCV-163-Ar
P (SPARE) FCV-164-Ar
P (SPARE) FCV-165-Ar
P 111 FCV-166-Ar
P (SPARE) FCV-189-Ar
P (SPARE) FCV-190-Ar

P 113 FCV-191-Ar
P 114 FCV-192-Ar
P 115 FCV-193-Ar
P 116 FCV-194-Ar
P (SPARE) FCV-195-Ar
P 118 FCV-196-Ar

P 119 FCV-197-Ar
P 120 FCV-198-Ar
P 121 FCV-199-Ar
P 122 FCV-200-Ar
P 123 FCV-201-Ar
P 124 FCV-202-Ar

SP 258A

PARTICULATE
40 MICRON

MV-156-Ar

PI 265A

SP 259A

PARTICULATE
40 MICRON

ARGON PURGE GAS
103 | SHEET 2
ARGON SUPPLY/LAPD TANK

ARGON RECIRCULATION MAKEUP GAS
104 | SHEET 3
ARGON SUPPLY/LAPD FILTERS

ARGON SAMPLE GAS
106 | SHEET 4
ARGON SUPPLY/ANALYZER

TANK PRESSURE MAKEUP GAS
107 | SHEET 2
ARGON SUPPLY/LAPD TANK

SP 290 AIR

PARTICULATE

PI 291 AIR

MV-292-AIR

SP 287 AIR

PARTICULATE

PI 288 AIR

MV-289-AIR

MV-286-AIR

OUTSIDE PC4

INSIDE PC4

NOTES

1. VALVE TO REMAIN LOCKED CLOSED DURING NORMAL LAPD CRYOGENIC OPERATIONS. VALVE MAY ONLY BE UNLOCKED AND OPENED BY A PPD/MD/F&T ENGINEER FOLLOWING A RELEVANT PROCEDURE.
2. VALVE TO REMAIN LOCKED CLOSED DURING LAPD CRYOGENIC OPERATIONS.

UNLESS OTHERWISE SPECIFIED	ORIGINATOR	R.SCHMITT	26-JUN-2007
	DRAWN	J.CATALANELLO	07-DEC-2007
± ± ±	CHECKED	R.SCHMITT	12-DEC-2007
1. BREAK ALL SHARP EDGES MAX.	APPROVED	R.SCHMITT	12-DEC-2007
2. DO NOT SCALE DRAWING. 3. DIMENSIONS BASED UPON ASME Y14.5M-1994 4. MAX. ALL MACH. SURFACES	USED ON		
5. DRAWING UNITS: U.S. INCH	MATERIAL		

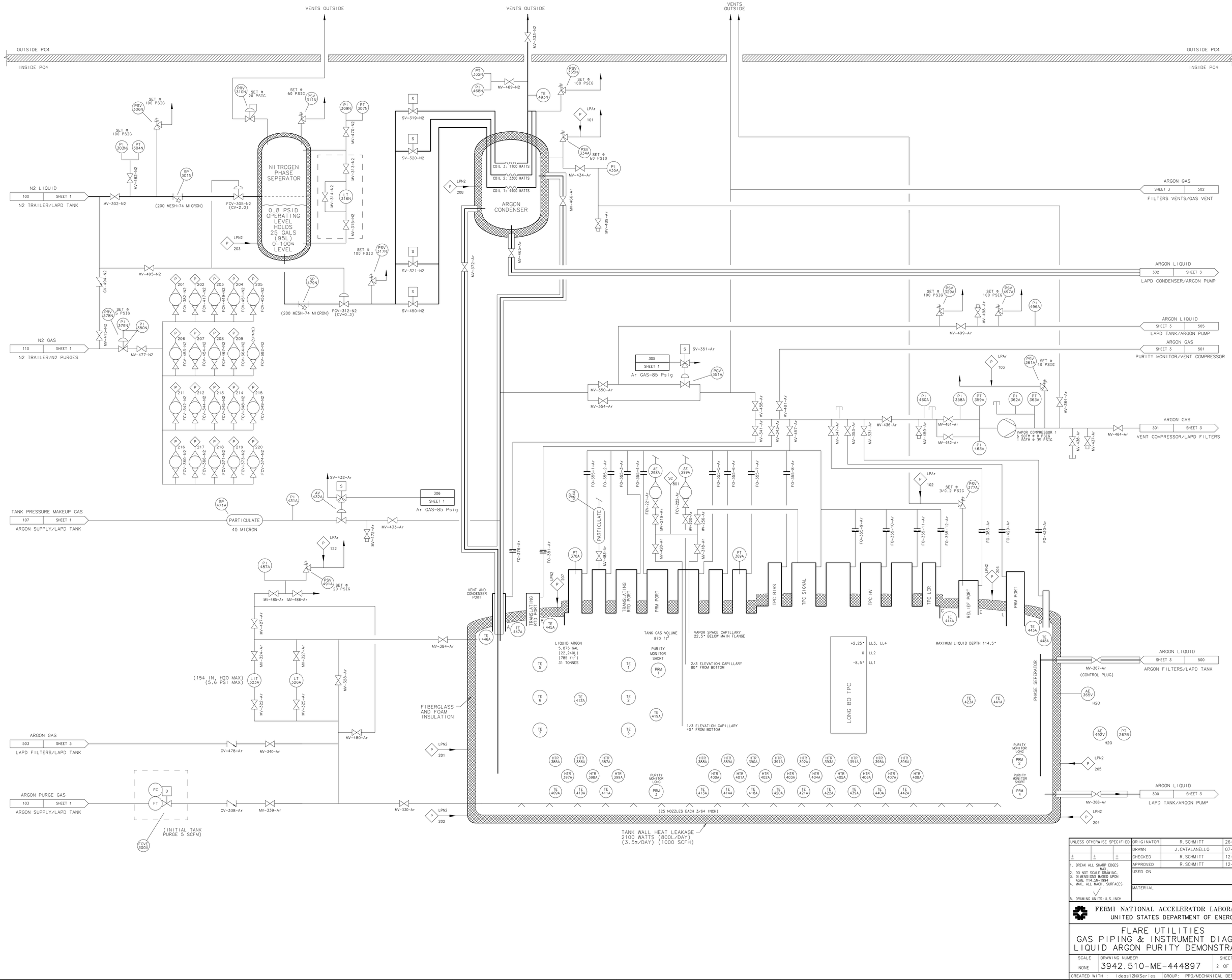
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

FLARE UTILITIES
GAS PIPING & INSTRUMENT DIAGRAM
LIQUID ARGON PURITY DEMONSTRAT'N

SCALE	DRAWING NUMBER	SHEET	REV
NONE	3942.510-ME-444897	1 OF 4	M

CREATED WITH : Ideas12NXSeries | GROUP: PPD/MECHANICAL DEPARTMENT

Created: 13:18:24 on 20-11-12 (D-M-Y) By: catalan State: 1-INITIAL



UNLESS OTHERWISE SPECIFIED			ORIGINATOR	R.SCHMITT	26-JUN-2007
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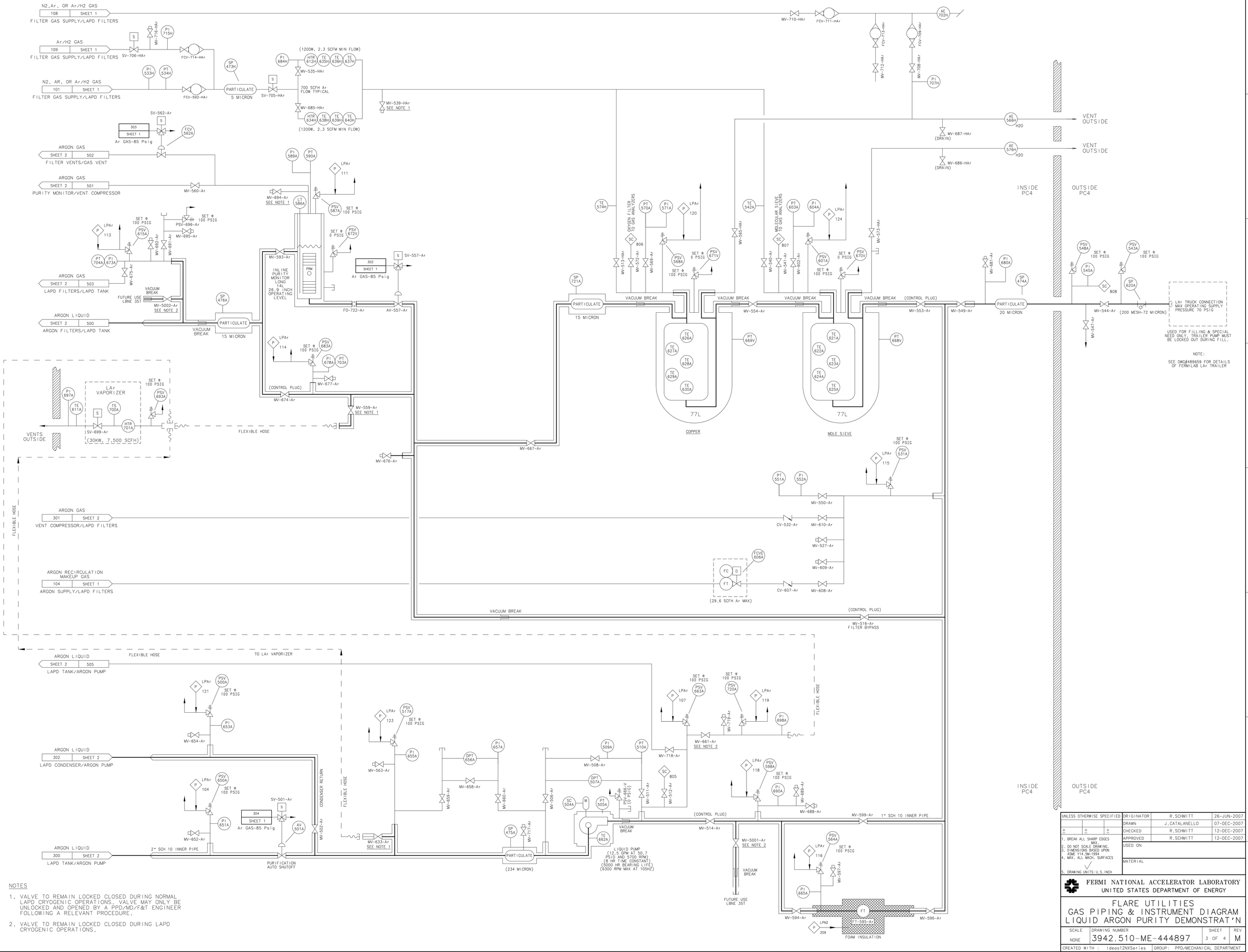
FLARE UTILITIES
GAS PIPING & INSTRUMENT DIAGRAM
LIQUID ARGON PURITY DEMONSTRAT'N

SCALE	DRAWING NUMBER	SHEET	REV
NONE	3942.510-ME-444897	2 OF 4	M

CREATED WITH : Ideas12NXSeries | GROUP: PPD/MECHANICAL DEPARTMENT



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UNLESS OTHERWISE SPECIFIED			ORIGINATOR	R.SCHMITT	26-JUN-2007
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UNITED STATES DEPARTMENT OF ENERGY

FLARE UTILITIES
GAS PIPING & INSTRUMENT DIAGRAM
LIQUID ARGON PURITY DEMONSTRAT'N

SCALE	DRAWING NUMBER	SHEET	REV
NONE	3942.510-ME-444897	3 OF 4	M

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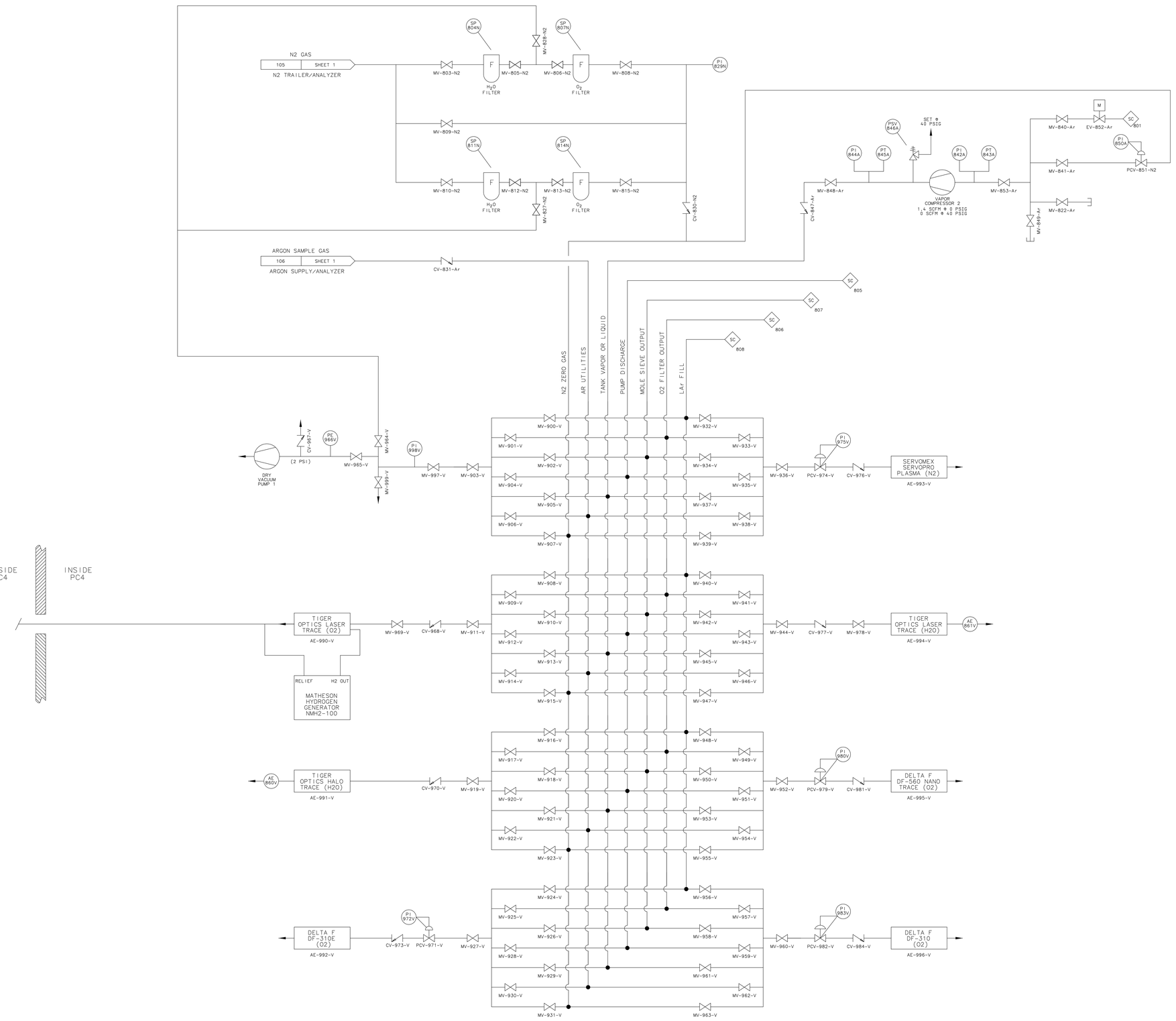
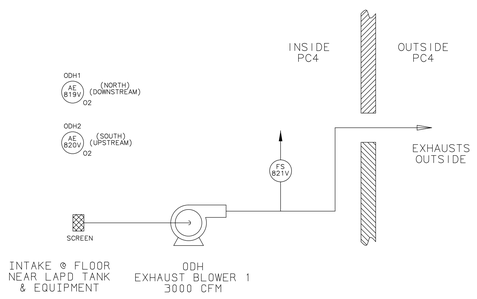
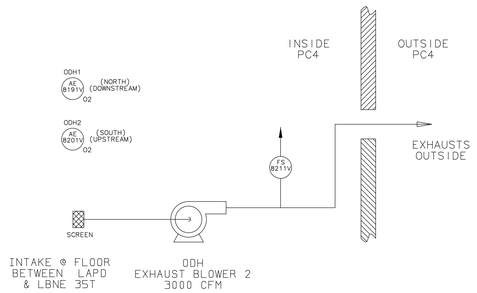


GAS ANALYZER DISTRIBUTION





UNLESS OTHERWISE SPECIFIED	ORIGINATOR	R.SCHMITT	26-JUN-2007
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	MATERIAL		

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

FLARE UTILITIES
GAS PIPING & INSTRUMENT DIAGRAM
LIQUID ARGON PURITY DEMONSTRAT'N

SCALE	DRAWING NUMBER	SHEET	REV
NONE	3942.510-ME-444897	4 OF 4	M

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