MINIMUM REQUIREMENTS OF OSHA'S

HAZARD COMMUNICATION STANDARD (HCS)

OSHA promulgated a final occupational safety and health standard entitled "Hazard Communication," codified as 29 CFR 1910.1200, on November 25, 1983; more commonly referred to as the "labeling" or "right-to-know" rule.

Chemical manufacturers and importers must assess the hazards of chemicals which they produce or import. Employers in SIC codes 20 through 39 must provide information to their employees concerning hazardous chemicals by means of hazard communication programs including labels, material safety data sheets (MSDSs), training and access to written records.

Additionally, manufacturers and distributors are to ensure that containers are properly labeled and are to provide MSDSs to their customers by November 25, 1985. All other employers covered by the standard are to be in compliance by May 25, 1986, including initial training for all current employees.

The following summarizes some of the rule's requirements:

1. Hazard Determination -- Manufacturers, importers and employers must evaluate any known chemical produced, imported or used to determine if it presents a physical hazard or a health hazard.

   A "Physical Hazard" means a chemical which is combustible, compressed, explosive, flammable, organic peroxide, oxidizer, pyrophoric, unstable (reactive) or water reactive.

   A "Health Hazard" means a chemical that may result in an acute or chronic health effect in exposed employees. Appendices A and B of the HCS must be used to evaluate a health hazard. Substances regulated by OSHA (29 CFR 1910, Subpart Z) or listed in the latest edition of ACGIH Threshold Limit Values (TLVs) are to be treated as hazardous.

2. Carcinogens -- Any substance is to be considered a carcinogen if (a) evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen, (b) it is listed by the National Toxicology Program (NTP), or (c) it is regulated by OSHA as a carcinogen.

3. Mixtures -- If a mixture has not been tested as a whole for a particular health hazard, the mixture shall be assumed (a) to present the same health hazards as do the components present at one percent or greater and (b) to present a carcinogenic hazard if it contains 0.1 percent or greater of a carcinogen.

4. Written Hazard Communication Program -- Employers must develop and implement a written hazard communication program for their workplaces including a list of hazardous chemicals and employee training methods. Existing hazard communication programs are acceptable for compliance if they meet certain criteria.

5. Labels -- Containers leaving the workplace must be labeled, tagged or marked with (a) identity of hazardous chemicals, (b) appropriate hazard warnings , and (c) name and address of the chemical manufacturer or importer.

   Containers in the workplace must be labeled with the identity of hazardous chemicals contained therein and must show appropriate hazard warnings. Other methods may be used in lieu of labels on stationary process containers.

   Labeling requirements do not apply to materials subjected to the labeling requirements of FIFRA, FDA, FAA, CPSC or RCRA. Also exempt are tobacco, tobacco products, wood, wood products and articles.

6. Material Safety Data Sheets* -- MSDSs must be in English. MSDSs must contain, among other items, the chemical identity and, if a mixture not tested as a whole, the chemical names of all ingredients presenting a health hazard comprising 1% or greater of composition except that carcinogens must be listed if at 0.1% or greater.

7. Employee Information and Training -- At the time of initial assignment and whenever a new hazard is introduced, employees shall be informed where hazardous chemicals are present in their work areas, the location and availability of the written hazard communication program, including lists of hazardous chemicals and MSDSs.

8. Employees and their designated representatives must be provided access to the written hazard communication program and related materials. Note that a certified bargaining agent shall be treated as a "designated representative".

9. Trade Secrets -- Specific chemical identity may be withheld from MSDSs under specific conditions.

   When a treating physician or nurse determines that it is necessary for emergency or first-aid treatment, the specific chemical identity must be disclosed.

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*The term "Material Safety Data Sheet" is used by OSHA to designate any sheet or number of sheets which contain specified information.

INDEX

PYROPHORICS

CAPABLE OF IGNITING SPONTANEOUSLY IN AIR AT AMBIENT TEMPERATURES. ALUMINUM ALKYLS ALSO REACT VIOLENTLY WITH WATER. DILUTE ALUMINUM ALKYLS ARE LESS REACTIVE WITH WATER AND USUALLY DO NOT IGNITE BY THEMSELVES. THEY WILL, HOWEVER, GIVE OFF A FLAMMABLE DENSE SMOKE IN AIR.

MOST EFFECTIVE FIRE EXTINGUISHING AGENT IS DRY CHEMICAL.

ATB
BEM
EADC
TIPT
$TICL_4$

COMBUSTIBLES

ANY LIQUID WITH A FLASH ONT AT OR ABOVE 100° F. AVOID CONTACT WITH SOURCES OF IGNITION.

FIRE EXTINGUISHING AGENTS ARE DRY CHEMICAL, WATER FOG, FOAM OR CO_2.

OCTYL ALCOHOL

SIMPLE ASPHYXIANTS

DISPLACES AIR IN THE SURROUNDING ATMOSPHERE. THE MINIMAL OXYGEN CONTENT OF BREATHABLE AIR SHOULD BE 18 PERCENT BY VOLUME UNDER NORMAL ATMOSPHERIC PRESSURE. ATMOSPHERES DEFICIENT IN OXYGEN DO NOT PROVIDE ADEQUATE WARNING AND MOST SIMPLE ASPHYXIANTS ARE ODORLESS. SEVERAL SIMPLE ASPHYSIANTS PRESENT AN EXPLOSION HAZARD.

HYDROGEN
NITROGEN
ETHYLENE
BUTENE
METHANE
CARBON DIOXIDE

FLAMMABLES

ANY CHEMICAL WITH A FLASH POINT BELOW 100° F. MOST EFFECTIVE FIRE EXTINGUISHIG AGENT IS FOAM. WATER CAN BE USED WHEN THE MATERIAL IS HEAVIER THAN WATER OR IS SOLUBLE IN WATER. WATER FOG CAN BE USED TO DISPERSE A GAS OR VAPOR LEAK.

ETHYLENE
BUTENE
HEXANE - AVOID SKIN CONTACT; ANESTHETIC; IRRITATING TO THE MUCOUS MEMBRANE
NPA - RESPIRATORY AND EYE IRRITANT. AVOID SKIN CONTACT
HYDROGEN

NUISANCE DUST

IN GENERAL, THE EFFECTS OF OVEREXPOSURE ARE LIMITED TO IRRITATION OF THE EYES, NOSE AND THROAT. MAY FORM EXPLOSIVE MIXTURES IN AIR.

FIRE EXTINGUISHING MEDIA IS WATER SPRAY, DRY CHEMICAL OR CO_2.

HDPE
CALIUM STEARATE
IRGANOX 1010
ISONOX 129
WESTON 626
DHT4-A

STRONG IRRITANTS

OVEREXPOSURE RESULTS IN SIGNIFICANT IRRITATION AND/OR INJURY TO EXPOSED AREAS.

ARMOSTAT 410	-	A STRONG BASIC LIQUID. AVOID SKIN CONTACT. WASH EXPOSED AREAS THOROUGHLY. ABSORB SPILLS WITH SAWDUST OR PADS.
CAUSTIC	-	STRONG BASE. MAY REACT VIOLENTLY OR EXPLOSIVELY WITH WATER OR ACIDS. OVEREXPOSURE MAY CAUSE SEVERE EYE, SKIN OR RESPIRATORY IRRITATION.
CHLORINE	-	OVEREXPOSURE MAY RESULT IN SEVERE IRRITATION TO THE EYES, SKIN AND RESPIRATORY SYSTEM. MAY REACT VIOLENTLY WITH WATER AND ORGANIC COMPOUNDS.
BETZ 30K-30126	-	CORROSIVE; SEVERELY IRRITATING TO THE EYES; MODERATELY IRRITATING TO THE SKIN AND RESPIRATORY SYSTEM.

MILD IRRITANTS

CHEMICAL WHICH RESULT IN LITTLE OR NO SYMPTOMS FROM EXPOSURE. LOW IN TOXICITY; INJURY IS UNLIKELY. CONTACT MAY RESULT IN IRRITATION THE THE EYES, NOSE, THROAT OR SKIN.

- BETZ 2020
- REGAL OILS
- KEMAMIDE E
- PROPYLENE GLYCOL
- POLYETHYLENE GLYCOL
- TEXAMATIC FLUIDS
- LITHIUM BROMIDE
- CSC

DOW EMPLOYEE TRAINING DOCUMENTATION RECORD

DATE: 10/2/86 PLANT: Poly B

SUBJECTS COVERED: Use, limitations, and Maintenance of Respiratory Equipment used at Poly. Film on use of Scott Air Pak II (Vallen Safety)

INSTRUCTOR: Mark Ryland

EMPLOYEES ATTENDING:

NAME	CLASSIFICATION	MASTER NUMBER
Lynn Tureau	SOT	433900
Clarence Banks, Jr	OS	432240
Darrell Tubbs	O.S.	432093
Robert Moore		432487
Jim Dunfield	OS	431818
Toby Fullard	OS	433087

DO 081749
CONFIDENTIAL

DOW EMPLOYEE TRAINING DOCUMENTATION RECORD

DATE: 10/16/86 PLANT: Poly B

SUBJECTS COVERED: Use, limitations + Maintenance of Respirators used at Poly B. Film on Scott II AirPak (VALEN SAFETY)

INSTRUCTOR: Mark Ryland

EMPLOYEES ATTENDING:

NAME	CLASSIFICATION	MASTER NUMBER
Donna M. Lodrigo	Asst. Chemist	433613
Roy J. Giroir	S. S.	431931
Don Decoard	O. S.	432076
M M Sant	SOT	433350
Tom London	OS	433026
R. L. Gregory	S.S.	430691
Butch Seguin	MAT. CONTROLLER	432130
[illegible]	OS	432057
Dale Thibodeaux	Secty -	434282
E. Hayes	Asst. Chemist	432601
Dave Turner	Sup	431325
Gary J. Pecora	SOT	3680
Walter Johnson	maint Sup	2074

DO 081750
CONFIDENTIAL

DOW EMPLOYEE TRAINING DOCUMENTATION RECORD

DATE: 10/23/86 PLANT: Poly B

SUBJECTS COVERED: Uses, limitations & maintenance of 3m dust mask, MSA type N canister full-face mask, 3m organic vapor respirator. Film "Scott Air Pak II" Vallen

INSTRUCTOR: Mark D. Ryland

EMPLOYEES ATTENDING:

NAME	CLASSIFICATION	MASTER NUMBER
Pam L. Weir	Sr. Prod. Eng.	433481
Robert Moore	Safety guy	432987
[illegible]	S.S.	431677
Bobbie A. Leatherman	SOT	434586
OJ Bonin	OS	432040
[illegible]	OS	432560
Scott Vanalstine	Prod. Supervisor	074897
Angelo [illegible]	OS	431385
Warren [illegible]	Sof	433919
Dale E Smith	Asst. Chem	433477
Brenda J. Nero	Quality/Lab Supv.	433331

DO 081751
CONFIDENTIAL

DOW EMPLOYEE TRAINING DOCUMENTATION RECORD

DATE: 10/9/86 PLANT: Poly B

SUBJECTS COVERED: Uses, limitations + maintenance of 3M dust mask, MSA TypeN canister full face gas mask, Scott Air Pak, 3M organic vapor Respirator. Practiced using Scott Air Pak

INSTRUCTOR: Mark Rylund

EMPLOYEES ATTENDING:

NAME	CLASSIFICATION	MASTER NUMBER
Mark Cockrell	SS	431166
John FRANKS	SOT	433558
[illegible]		
Terry Knight	SS	430732
Rodney White	SOT	433341
Lloyd Bell	OA	432328
Eric Cochran	OS	432720
Duncan Kilmore	Engineer	434618
Harold J. Hinel Jr.	O.S.	433359

DO 081752
CONFIDENTIAL

12-2-86

Safety Meeting

Roz J Gicoi
M P Bent
Tom Sanders
Z. L. Gregoire
Dale Thibodeaux
Cross J. Richard
Dave Z
Don Decorald
Henry Lossiegne Jr
Karen Wilcher

Hazards of cyclohexane — new solvent used at Triblock

DO 081753
CONFIDENTIAL

Dec - 9 - 1986 Safety Meeting

1. Bobbie Smitherman
2. [illegible]
3. Jim Boring
4. Francis Singleton
5. Manuel [illegible]
6. [illegible]

Hazards of cyclo-hexane — mild solvent
for Tri Chlor.

DO 081754
CONFIDENTIAL

"C" SAFETY MEETING 12/23/86

Paul Boyer
Eric Cochran
Donna Rodrigo
Elton Hynes
John Franke
Harold J. Hunel Jr.
Pam L. Vaio

DO 081755
CONFIDENTIAL

B Shift. 12-16-86

1. Alan Babin
2. Garry Tullier
3. Clarence Banks. J.
4. Greg Brumfield
5. Lynn Turcotte
6. Darrell Tubbs
7. Larry Feigle
8. Dale Smith
   Scott Hanrahan
   Angelo Venova
   Dave [illegible]

DOW

DOW CHEMICAL U S A
LOUISIANA DIVISION

ENVIRONMENTAL CONTROL

REFERENCE NO 607

DATE THIS REPORT 1-8-86

CHANGE 64

ULPT poly B

REPORT OF ANALYSIS

DATE SAMPLES COLLECTED 10-24-86

SAMPLES Potential Exposure to personnel to N-Hexane

ID	Concentration (total milligrams)					REMARKS
	N-Hexane					
8841	BLD					
8815	.039					
8955	.050					
9041	.280					
8964	.091					

METHOD GC - FID

MLS SOLVENT 2

LIMIT OF DETERMINATION .0164 mg/ml

*BLD BELOW LIMIT OF DETERMINATION

(WEIGHT/VOLUME)

VALUES REPORTED HAVE BEEN CORRECTED FOR INTERFERENCES

REMARKS

DO 081757
CONFIDENTIAL

BY Louise J. Almo

SIGNED Terry Wells

DOW

PLASTICS DEPARTMENT
INDUSTRIAL HYGIENE SAMPLE RECORD

Louisiana Division

PLANT Poly B

AREA OR PERSON V202B (Vent) (Dry Hexane)

EMPLOYEE NUMBER _____

JOB CLASS _____

DATE 9/15/86

MONITORING FOR: Hexane

OTHER CHEMICALS PRESENT: _____ TYPE SAMPLE: _____

DESCRIPTION OF TASK PERFORMED DURING MONITORING PERIOD INCLUDING ANY UNUSUAL ACTIVITIES: _____

SAMPLING EQUIPMENT TYPE Dupont P-200

SERIAL NUMBER 8159

TYPE OF CALIBRATION: Gilian Buck calibrator S/N 31199

ANALYTICAL METHOD Chilled CS_2/GC

COLLECTION MEDIA charcoal + silica

TIME STARTED 1:40 TIME STOPPED 1:46 SAMPLE TIME (MIN.) 6

BEGINNING FLOW RATE _____ ENDING FLOW RATE _____ AVERAGE FLOW RATE 104cc/min SAMPLE VOLUME (LITERS) .6

MLS SOLVENT _____ DETECTION LIMITS _____ RECOVERY VOLUME _____ WEIGHT/ VOLUME _____ TOTAL WT. _____

CALCULATIONS	CC/MIN.	CONCENTRATIONS DETECTED
	6 of - 102.7	$\frac{50.6\ mg}{.6} \times 1{,}000\ l/m^3 = 84{,}333\ mg/m^3$
	104.3	
	104.9	$84{,}333\ mg/m^3 \times \frac{24.45}{86.18} =$
	103.3	23,926 ppm or 2.4% Hexane
	105.0	

RESPIRATORY PROTECTIVE EQUIPMENT USED? ☐ YES ☐ NO TYPE: _____

APPROVAL NUMBER: _____

WEATHER CONDITIONS: TEMP _____ HUMIDITY _____ WIND _____

SAMPLE BY: MDR ANALYZED BY: _____ SAMPLE NUMBER 06697

DO 081758
CONFIDENTIAL

*** * * * * DOW CONFIDENTIAL* * * ***

DOW

PLASTICS DEPARTMENT
INDUSTRIAL HYGIENE SAMPLE RECORD

Louisiana Division

PLANT Poly B

AREA OR PERSON ~~VENT~~ Foam Pipe Heat V201 B (Spent)

EMPLOYEE NUMBER _____

JOB CLASS _____

DATE 9/15/88

MONITORING FOR: Hexane

OTHER CHEMICALS PRESENT: _____ TYPE SAMPLE: _____

DESCRIPTION OF TASK PERFORMED DURING MONITORING PERIOD INCLUDING ANY UNUSUAL ACTIVITIES: _____

SAMPLING EQUIPMENT TYPE Dupont P-200

SERIAL NUMBER 8159

TYPE OF CALIBRATION: Gilian Bubb calibrator s/n 31199

ANALYTICAL METHOD chilled CS2/GC

COLLECTION MEDIA charcoal & silica

TIME STARTED 1pm

TIME STOPPED 1pm

SAMPLE TIME (MIN.) 7

BEGINNING FLOW RATE _____

ENDING FLOW RATE _____

AVERAGE FLOW RATE 104cc/min

SAMPLE VOLUME (LITERS) .7

MLS SOLVENT _____

DETECTION LIMITS _____

RECOVERY VOLUME _____

WEIGHT/ VOLUME _____

TOTAL WT. _____

CALCULATIONS	CC/MIN.	CONCENTRATIONS DETECTED
	Bef- 102.7	.186mg x 1000/.7 m³ = 266 mg/m³
	104.3	
	104.7	266 mg/m³ x 24.45/86.18 = 75 ppm Hexane
	103.3	
	105.0	
	After-	

RESPIRATORY PROTECTIVE EQUIPMENT USED? ☐ YES ☐ NO TYPE: _____

APPROVAL NUMBER: _____

WEATHER CONDITIONS: TEMP _____ HUMIDITY _____ WIND _____

SAMPLE BY: MDK

ANALYZED BY: _____

SAMPLE NUMBER 0 6676

* * * * * DOW CONFIDENTIAL * * * * *

DO 081759
CONFIDENTIAL

DOW CHEMICAL U S A
LOUISIANA DIVISION

ENVIRONMENTAL CONTROL

REFERENCE NO. 657

DATE THIS REPORT 10-8-8

CHARGE

DEPT Poly B

REPORT OF ANALYSIS

DATE SAMPLES COLLECTED 9-16-86

SAMPLES Vent Emission for Hexane

ID	Concentration (total milligram)					REMARKS
	Hexane					
6676	.186					Silica gel (Spent Tank Foam)
6676	ND					Charcoal (spent Tank Foam pipe)
6677	50.9					Charcoal (Dry Hexane tank vent)
Blank	ND					Silica gel
Blank	ND					Charcoal

METHOD Chilled CS_2 GC-FID

MLS SOLVENT

LIMIT OF DETERMINATION .006 mg/ml

(WEIGHT/VOLUME)

*BLD BELOW LIMIT OF DETERMINATION

VALUES REPORTED HAVE BEEN CORRECTED FOR INTERFERENCES

REMARKS Refer to databook 0101 p. 15

DO 081760
CONFIDENTIAL

BY Louise J. Almo

SIGNED Mesia Kagawachi

DOW

PLASTICS DEPARTMENT
INDUSTRIAL HYGIENE SAMPLE RECORD

Louisiana Division

PLANT Poly B ~~PERSON~~ Vent H500 EMPLOYEE NUMBER

JOB CLASS DATE 1/20/86

MONITORING FOR: Particulate

OTHER CHEMICALS PRESENT: TYPE SAMPLE: Vent

DESCRIPTION OF TASK PERFORMED DURING MONITORING PERIOD INCLUDING ANY UNUSUAL ACTIVITIES:

Vent Particulate emission Evaluation at X500 powder hopper. Sample taken at Baleaire Vent while transferring powder into hopper. Note: NO visible emissions.

SAMPLING EQUIPMENT TYPE Gilian HFS113 4TA w/ 37mm/1.4 Aerosol Filter SERIAL NUMBER 5219

TYPE OF CALIBRATION: Gilian Buck calibrator S/N 31199

TIME STARTED 12 40 PM TIME STOPPED 12 50 PM SAMPLE TIME (MINUTES) 10

BEGINNING FLOW RATE	ENDING FLOW RATE	AVERAGE FLOW RATE	SAMPLE VOLUME (LITERS)
3 L/min	2.9 L/min	2.95 L/min	29.5

MLS SOLVENT	DETECTION LIMITS	RECOVERY VOLUME	WEIGHT/ VOLUME	TOTAL WT.
				.1 mgs

CALCULATIONS		CONCENTRATIONS DETECTED
	L/min	Tare Final
flow calibrations before	2.9	Filters .6456 gms .6459 gms
	3.0	
	3.0	
	2.9	
	3.0	.1 mgs / 29.5 L x 1,000 L/m³ = 3.4 mg/m³
After	2.9	
	2.9	
	2.9	
	3.0	
	2.9	

PROTECTIVE EQUIPMENT USED? ☐ YES ☒ NO TYPE:

WEATHER CONDITIONS: TEMP 64°F HUMIDITY [redacted] WIND

SAMPLED BY: MDR ANALYZED BY: MDR SAMPLE NUMBER

*****DOW CONFIDENTIAL*****

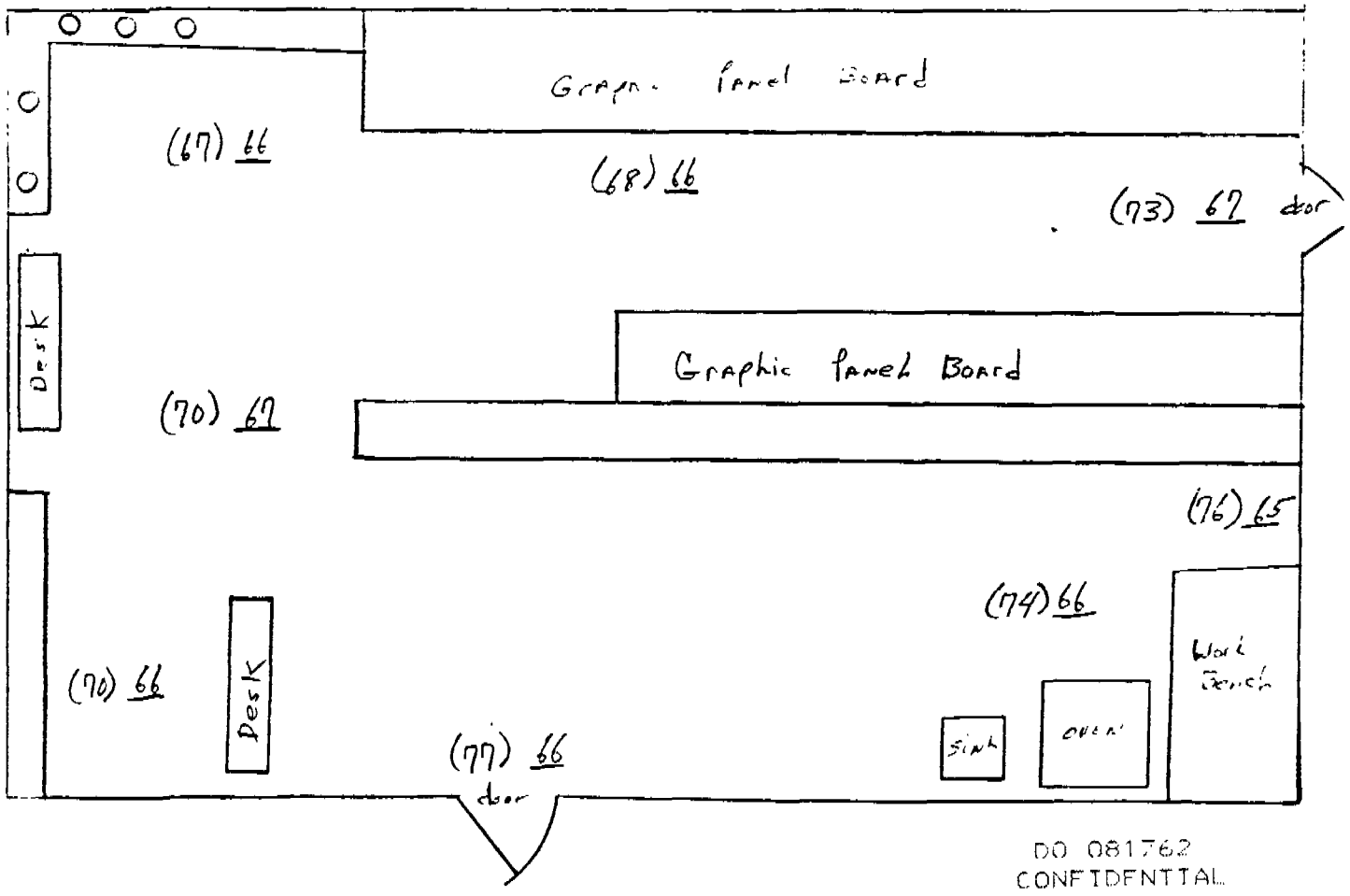
DO 081761
CONFIDENTIAL

Memo [illegible]

Subject: [illegible] Noise Survey at the Poly Plant

Summary: Noise levels in the GPA were lowered an average of 6 dB(A) after the installation of insulating doors and roof material. In addition to the measurements taken with sound level meter, measurements were made with the outside extruder horn alarm before and after insulation. On the average noise levels were reduced 1 dB(A) with the alarm [79-86 before; 78-85 after]. The present noise levels in the GPA are acceptable without ear protection requirements.

Before controls 6/5/85 – ( ) After controls 2/19/86 – ___



DO 081762
CONFIDENTIAL

Mark Ryland

Poly B – Graphic Panel Room

Area Noise levels decibels (A)

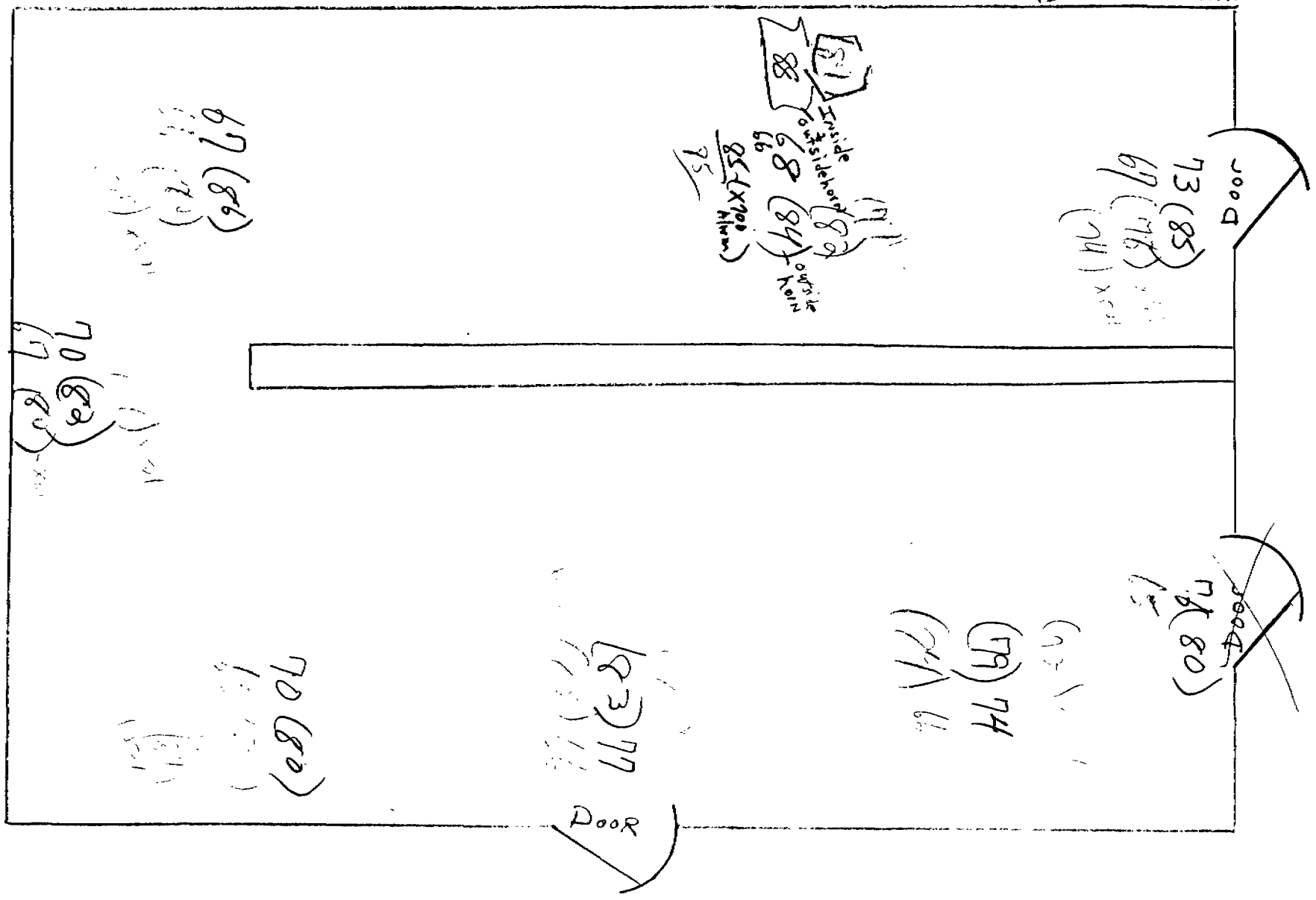
6-5-85 1:00 PM

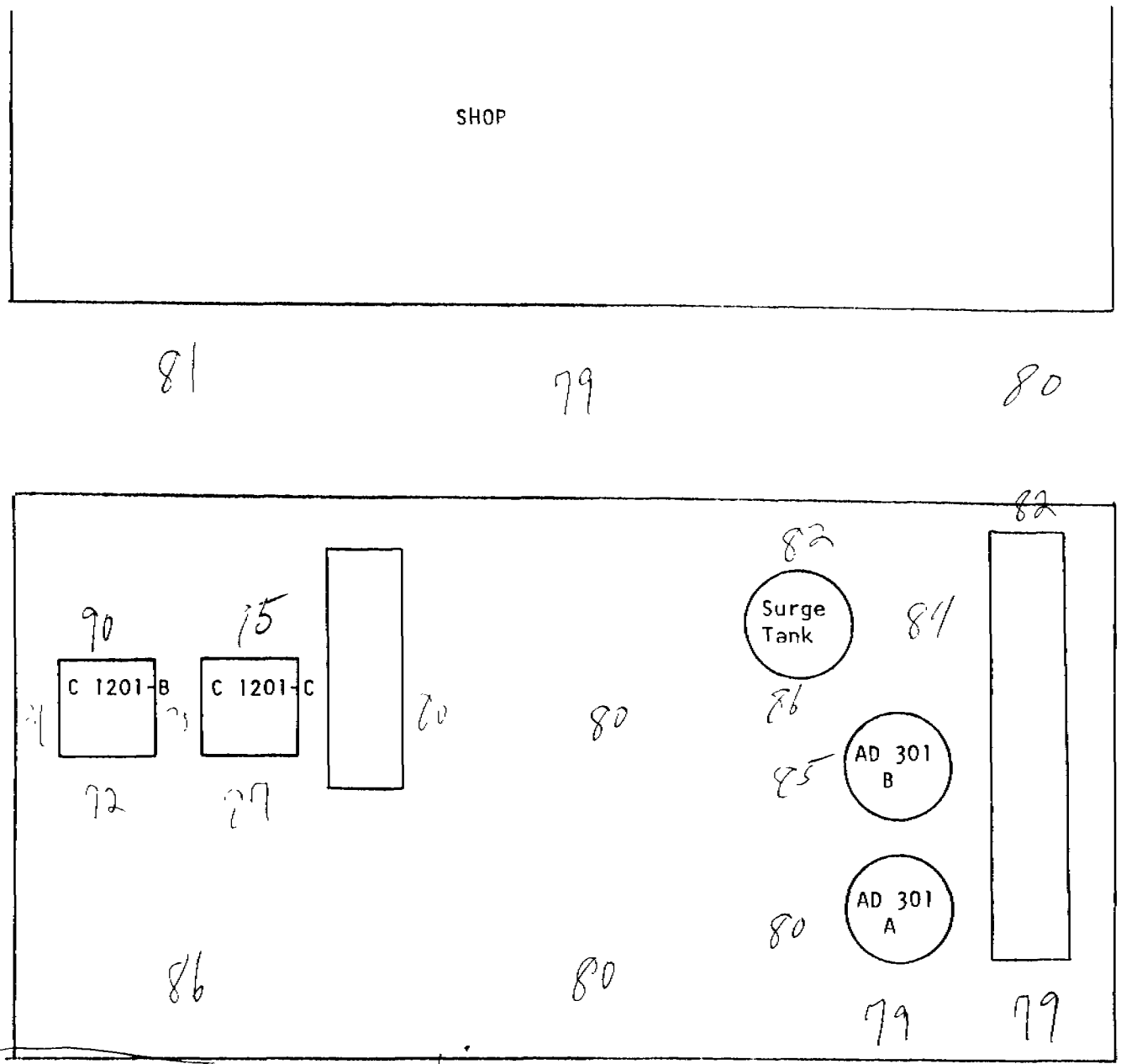
Dupont MK-2 Audio Dosimeter ser # 014329

( ) – outside horn

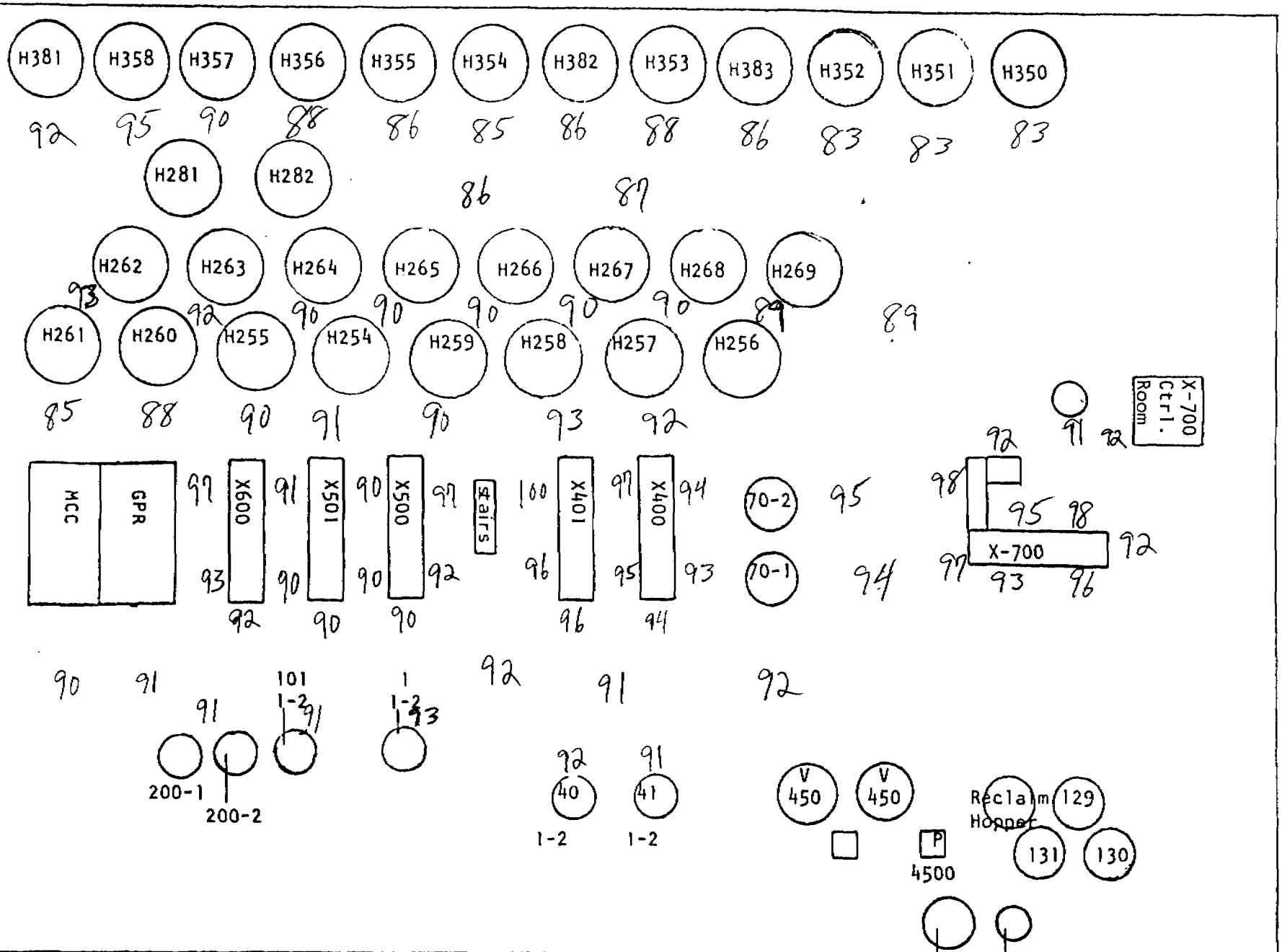
After ... Mod.
11-1-85

DO 081763
CONFIDENTIAL



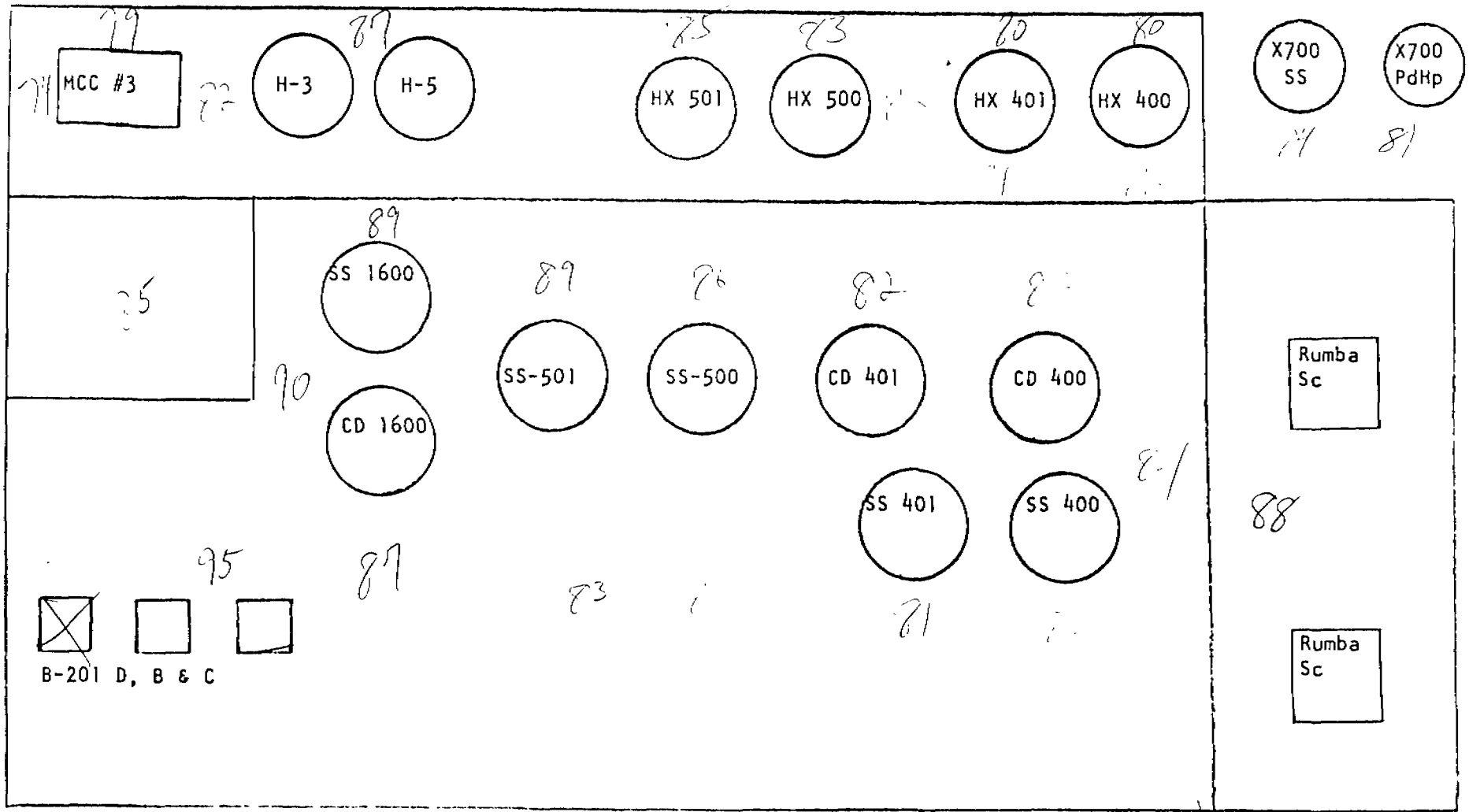


DO 081764
CONFIDENTIAL

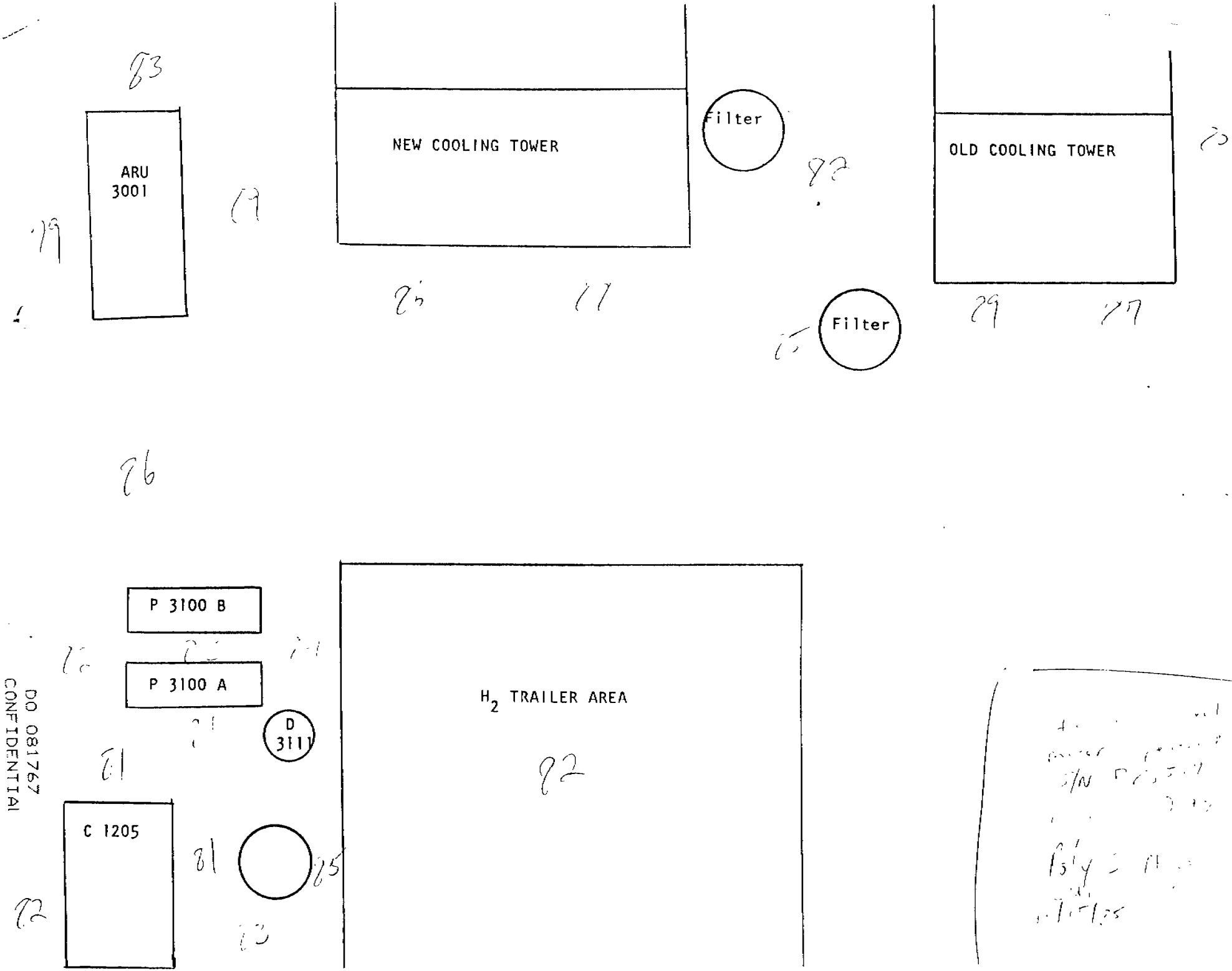


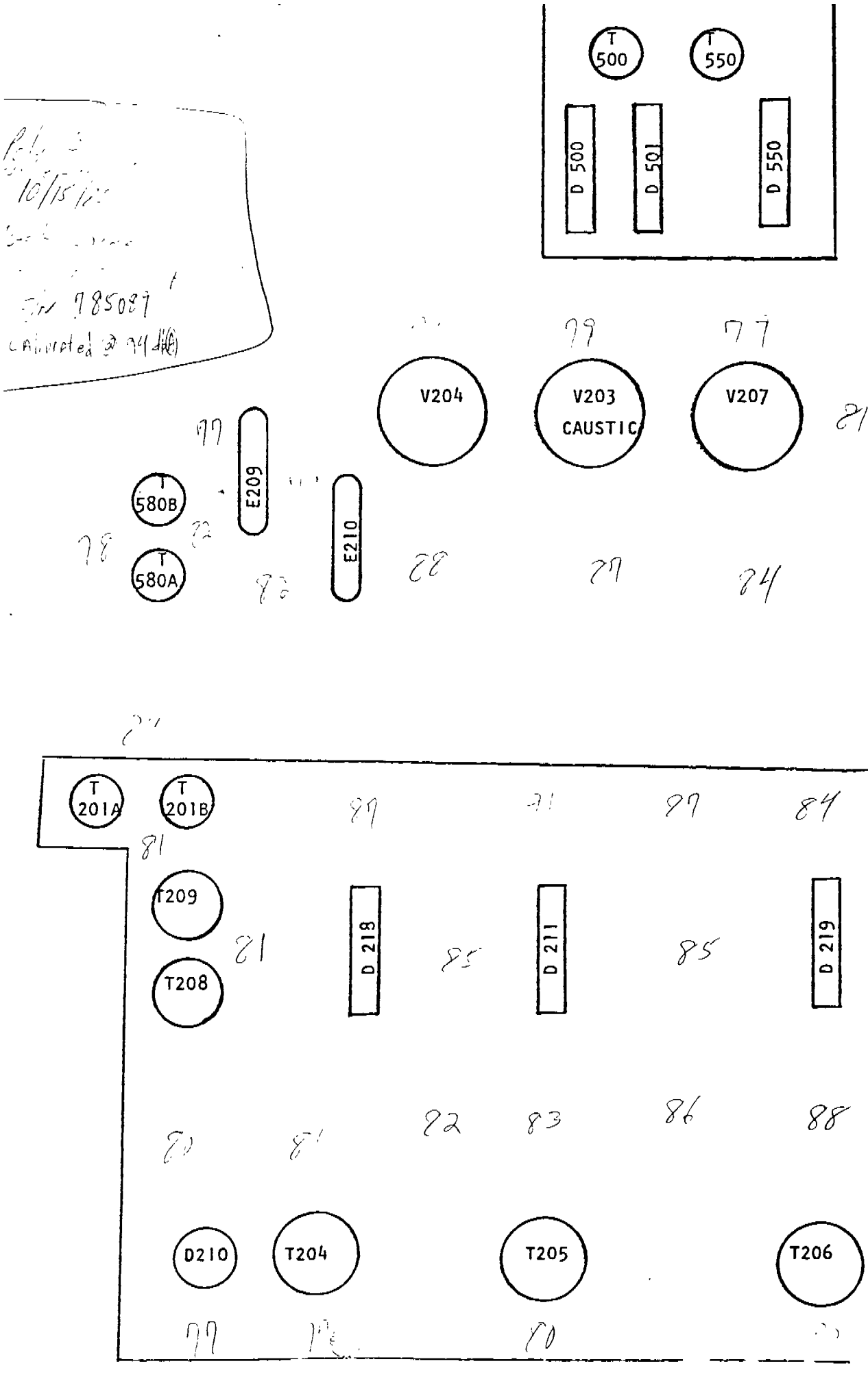
DO 081765
CONFIDENTIAL

Poly B Area Noise Survey (Trains 3&4 running)
9/17/85
MDR
B&K sound level. star type 2219 S/N 785089

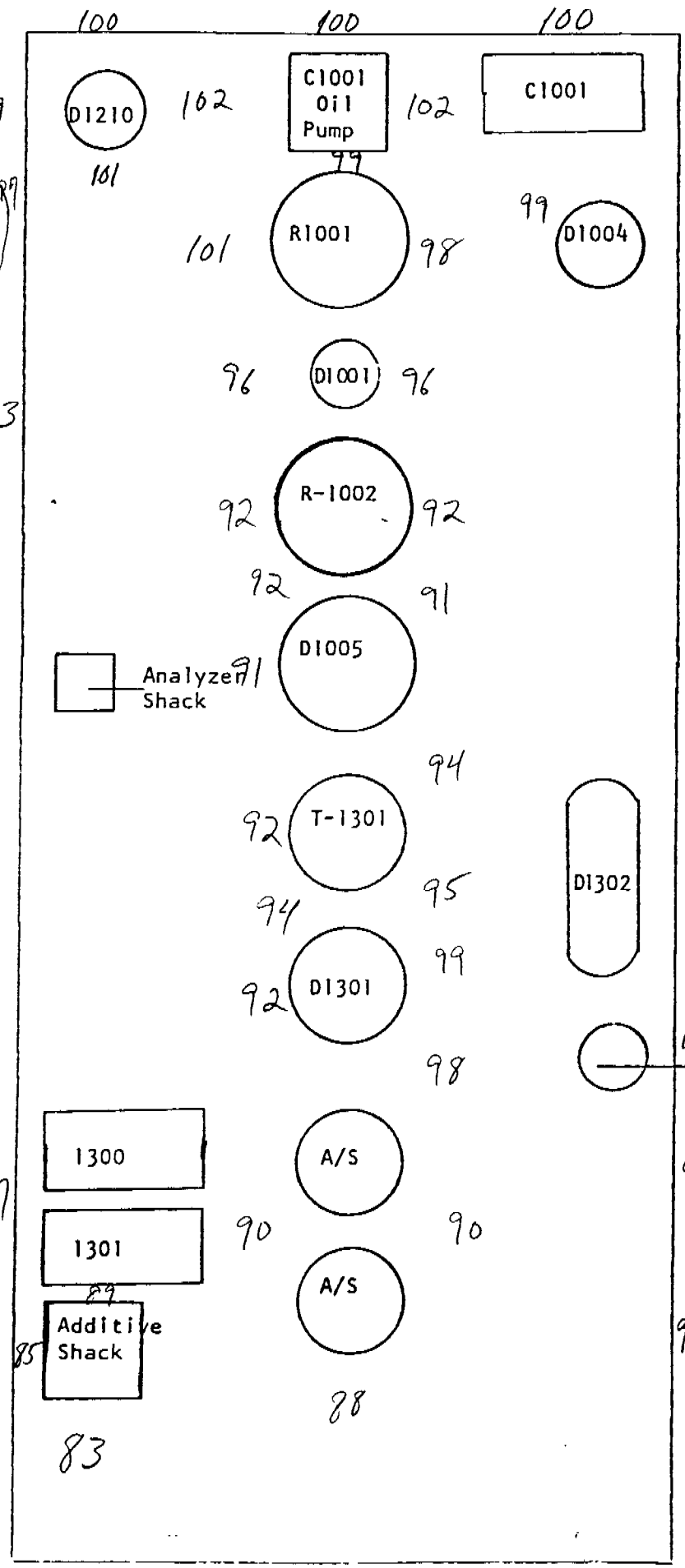


EXTRUSION MIDDLE DECK
(POWDER HOPPER & SHAKER DECK)





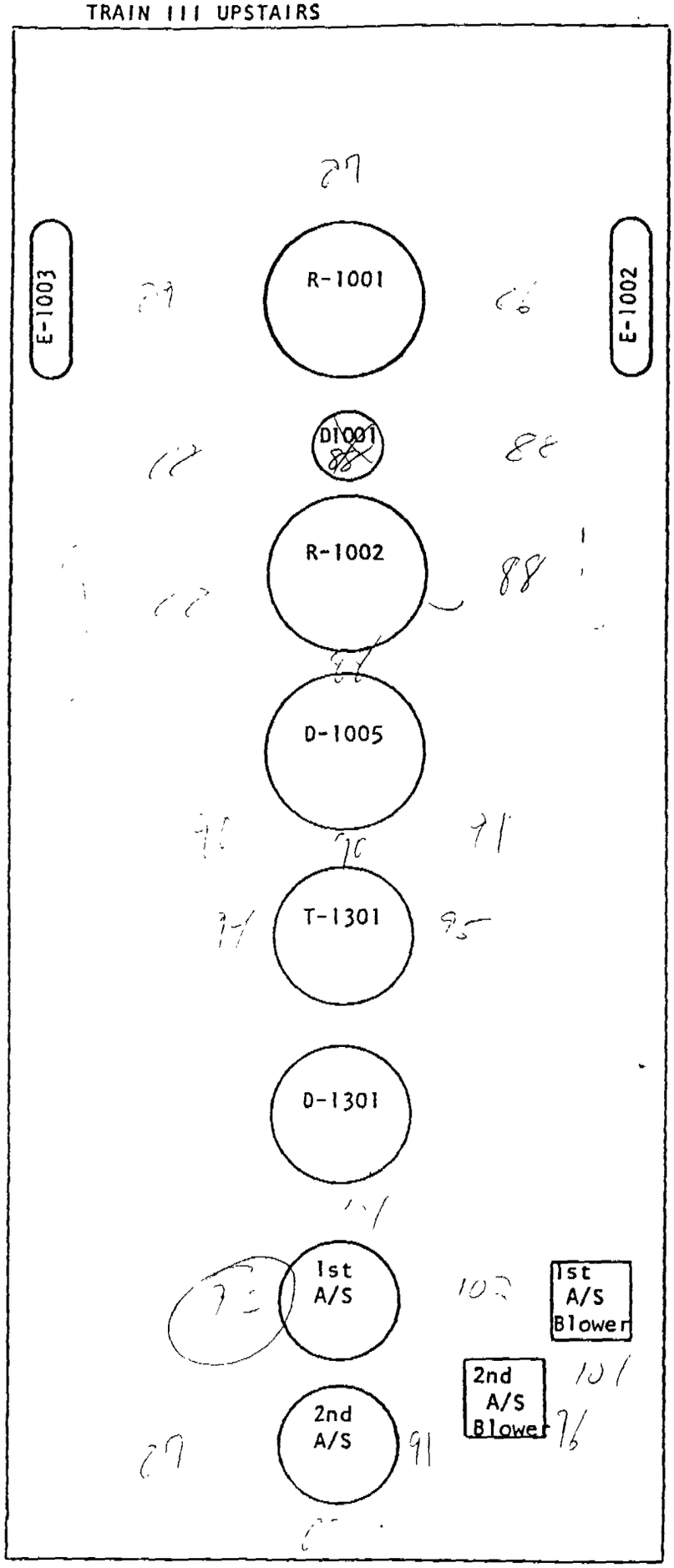
TRAIN III DOWNSTAIRS



9-26-85
MDR
B&K sound level meter Type 2219
calibrated @ 94dB(A)
(A)
B&K S/N 975023

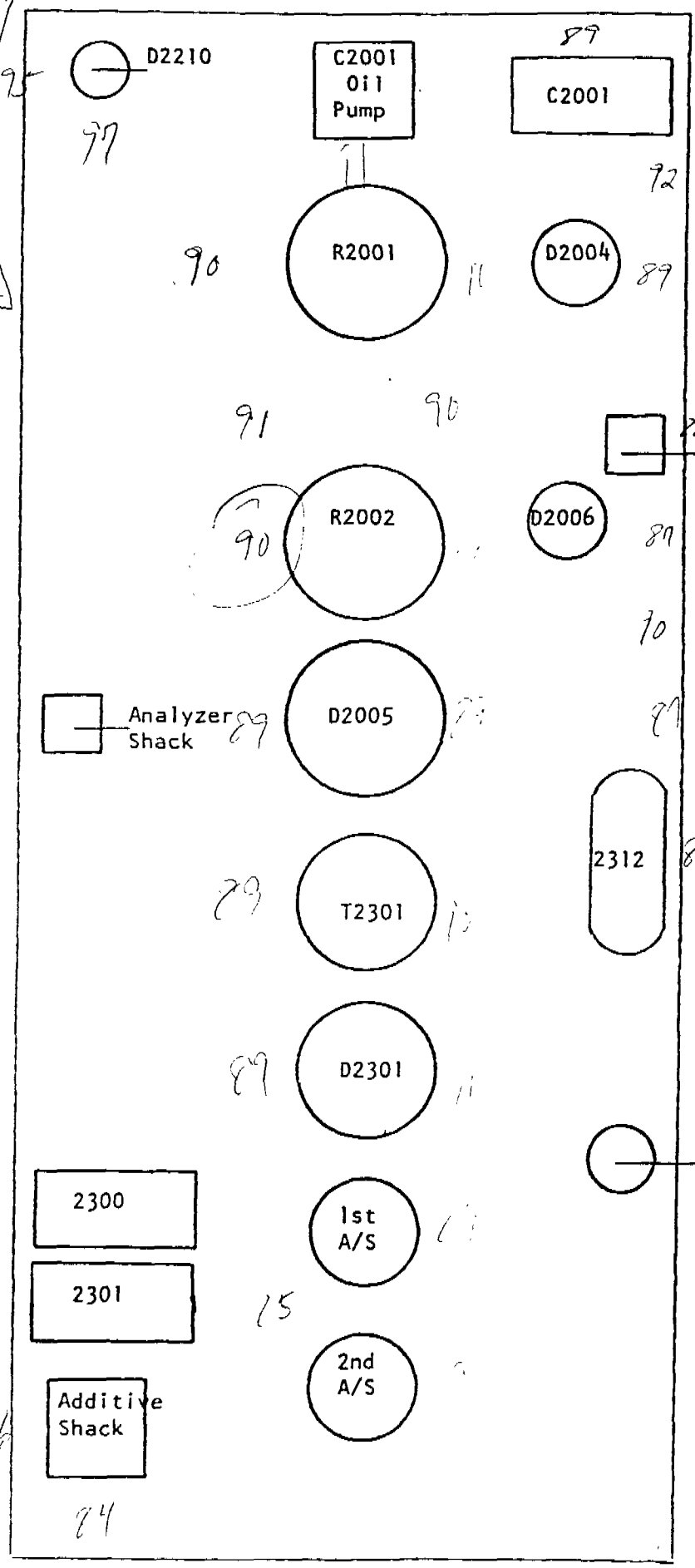
DO 081769
CONFIDENTIAL

TRAIN III UPSTAIRS



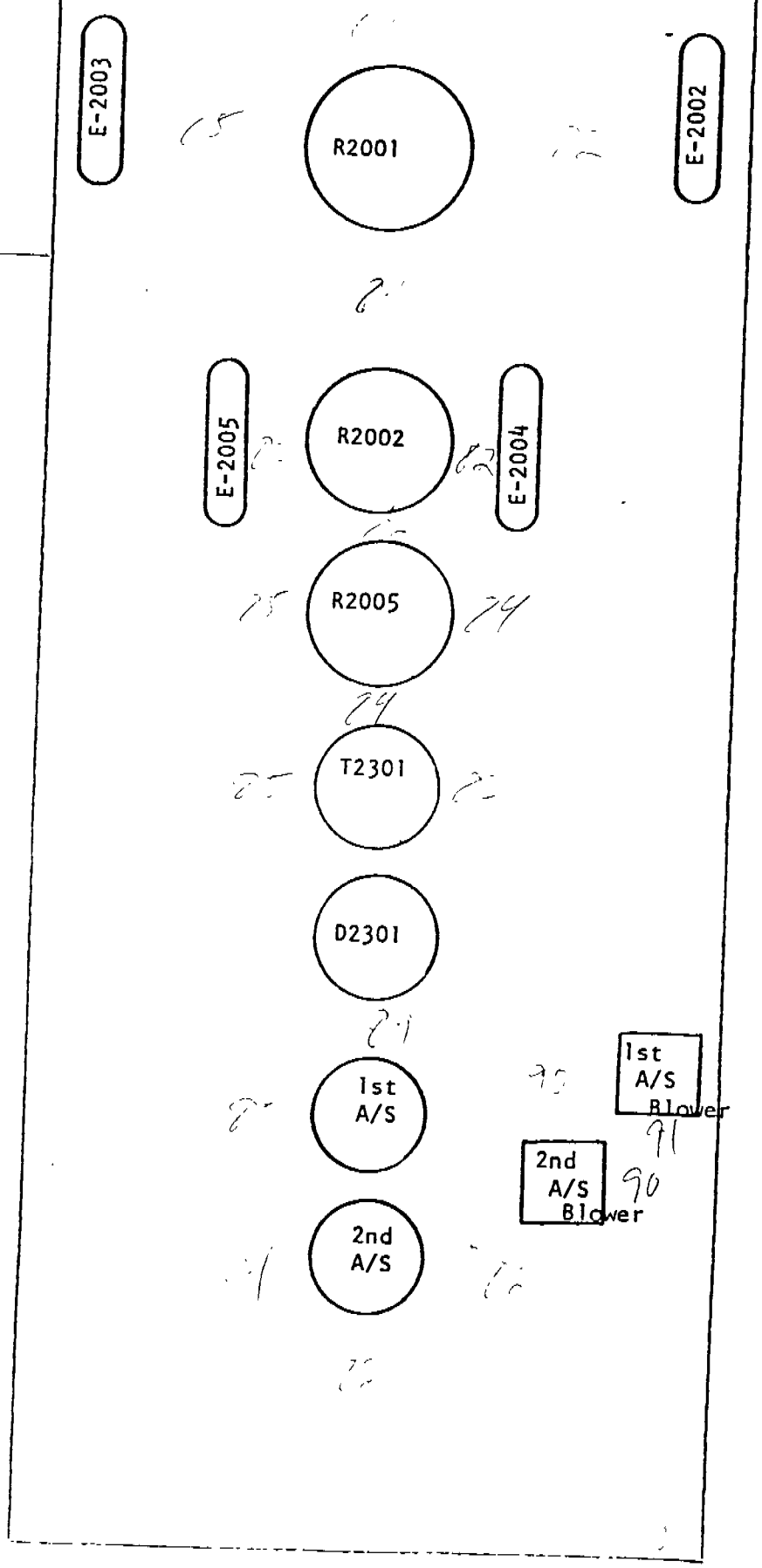
DO 081770
CONFIDENTIAL

TRAIN IV DOWNSTAIRS

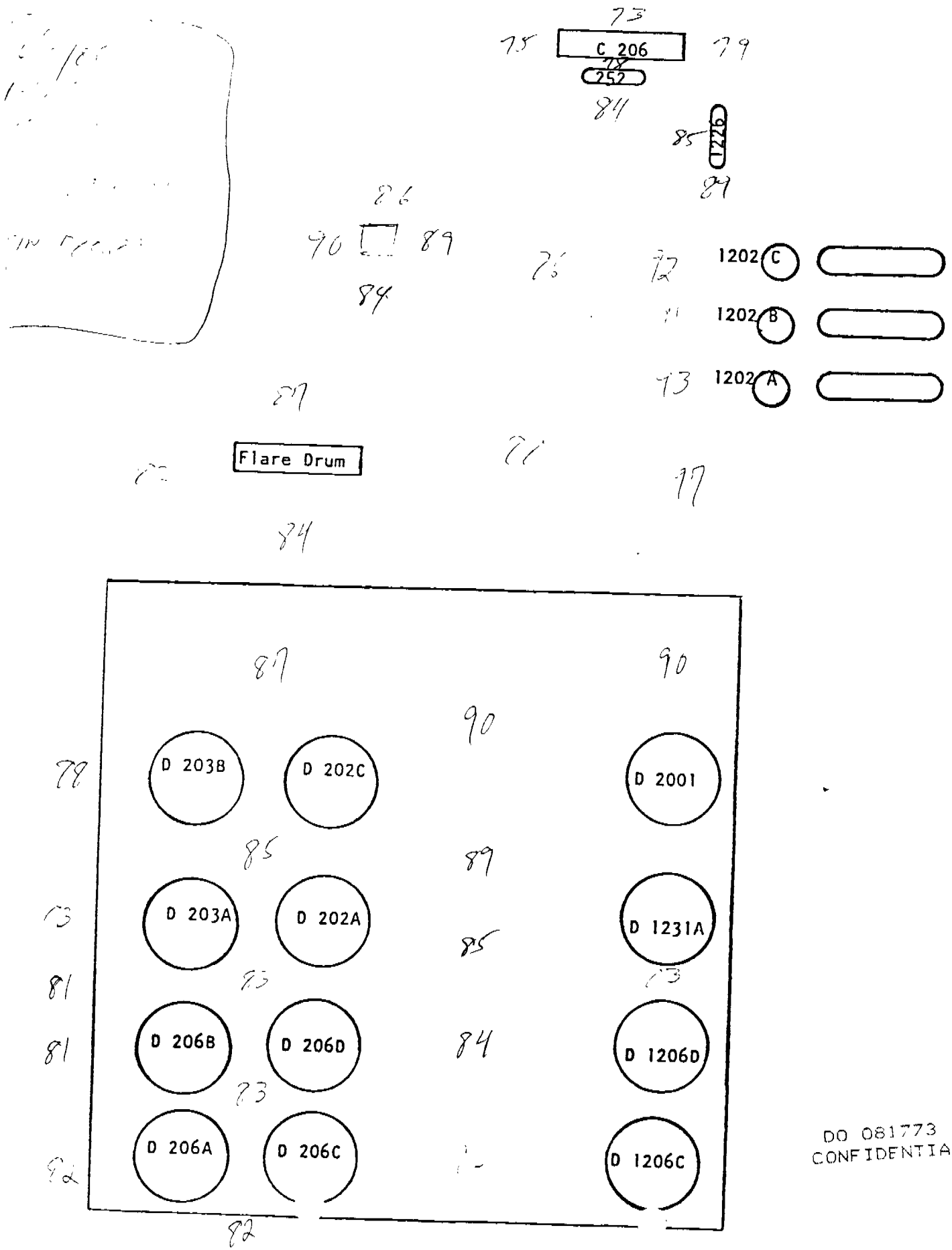


DO 081771
CONFIDENTIAL

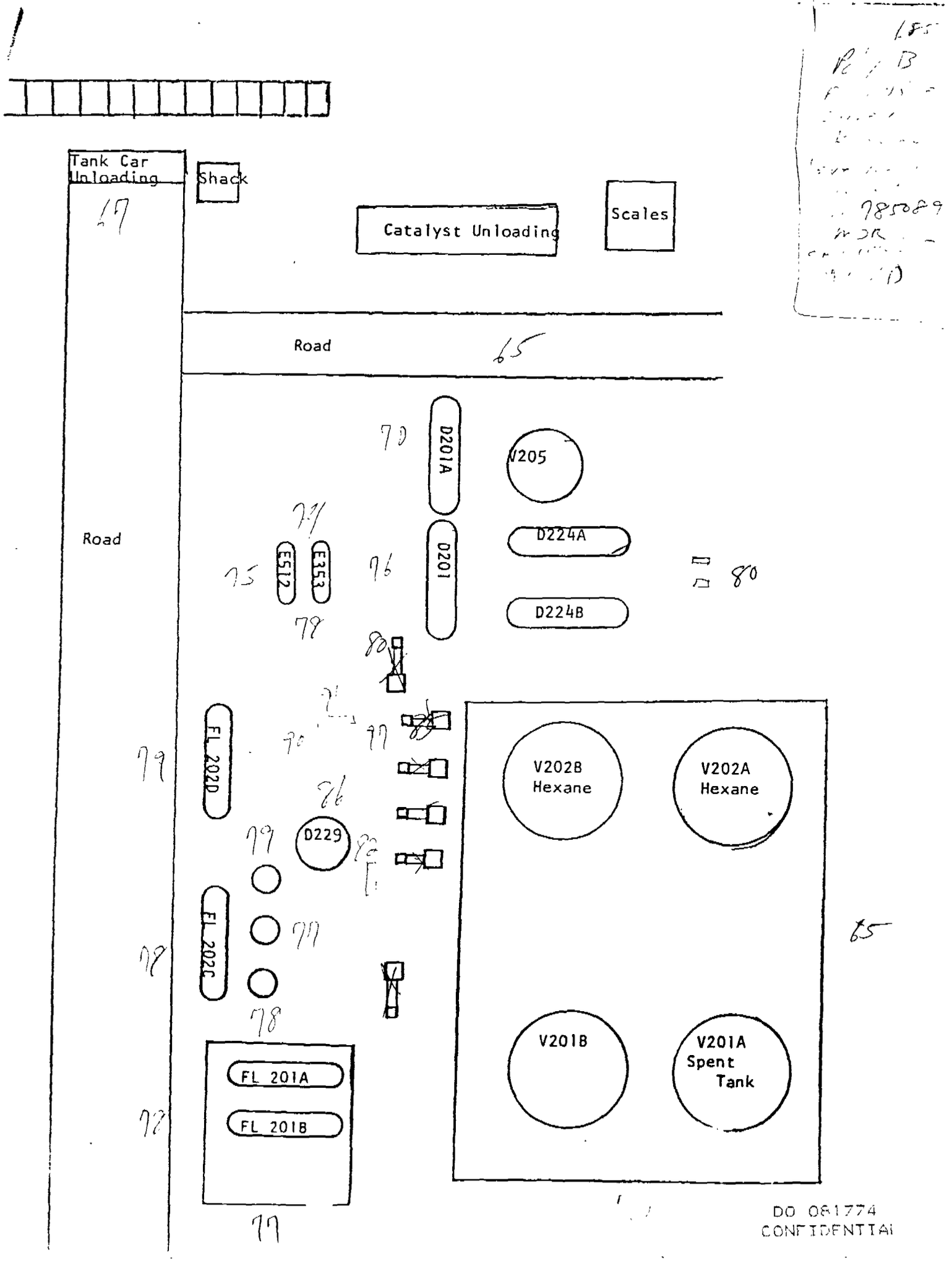
TRAIN IV UPSTAIRS



DO 081772
CONFIDENTIAL



DO 081773
CONFIDENTIAL



DO 081774
CONFIDENTIAL