FIRAT UNIVERSITY
VETERINARY FACULTY
HAZARDOUS WASTE MANAGEMENT

FIRAT UNIVERSITY VETERINARY FACULTY

PRINCIPLES OF HAZARDOUS WASTE MANAGEMENT

CHAPTER ONE

Purpose, Scope, Basis and Definitions

Objective

The purpose of these principles is to determine the rules necessary to protect human, animal and environmental health from hazardous wastes generated in Fırat University Faculty of Veterinary Medicine.

Scope

These principles cover the rules regarding the collection, transport, temporary storage, cleaning and disinfection of hazardous wastes generated as a result of education, research and clinical services at Fırat University Faculty of Veterinary Medicine and their delivery to licensed waste carriers.

Basis

Regulation on Control of Medical Wastes published in the Official Gazette dated 25 January 2017 and numbered 29959 and Regulation on Control of Hazardous Wastes dated 14 March 2005 and numbered 25755

Definitions

University Firat University
Faculty Faculty of Veterinary Medicine
Hazardous Waste Coordinator: Secretary of the Faculty of Veterinary Medicine
Hazardous Waste Unit Responsible: Responsible persons of the academic units specified in Annex 1
Medical Waste: Infectious wastes, pathological wastes and sharp-piercing wastes
Hazardous Waste: All hazardous chemicals and substances, medical wastes, experimental animals and other wastes of biological origin and radioactive wastes
Pharmaceutical: Any medicine or similar product used for human/animal health, controlled by health-related Laws where it is produced or imported
Genotoxic: Substance that causes damage or mutation in DNA
Cytostatic Chemical substance that inhibits cell growth
Cytotoxic: Chemical substance that kills the cell or stops its function

CHAPTER TWO

General Principles, Duties and Obligations

General Principles

The management of hazardous wastes generated within the boundaries of the Faculty is carried out in accordance with the following principles.

a) In the management and disposal of hazardous wastes, compliance with the provisions of the Environmental Law No. 2872 and the relevant Regulations is essential.

b) In the production and disposal of hazardous wastes, it is essential to minimise their harm to human, animal and environmental health.

Duties and Obligations

The Faculty Biosafety Commission is responsible for the management of hazardous waste. This Commission

a) Determining the difficulties encountered in the execution of the principles and producing solution proposals,
b) Periodically reviewing and updating the principles,
c) Organising trainings and information meetings,
d) Informing the senior management of the University about hazardous wastes and their management when necessary,

is responsible for their matters.

Faculty Hazardous Waste Coordinator is the secretary of the faculty and is responsible for the collection, temporary storage and disposal of hazardous wastes generated in the main buildings of the faculty and the Animal Hospital according to these principles.

Hazardous Wastes Unit Responsible; These are the persons in the Faculty Departments and animal hospitals reported in Annex-1. They are responsible for ensuring that hazardous wastes generated in the departments and clinics they are responsible for are collected according to these principles and taken by the relevant officials.

Faculty Biosafety Commission and Hazardous Waste Unit Officers are given in Annex-1.

CHAPTER THREE

Hazardous Wastes and Management

Hazardous Waste

General information on the classification of hazardous wastes is given in Annex 2.

Medical Waste and Codes

Within the framework of the "Regulation on General Principles of Waste Management" of the Ministry of Environment and Urbanisation, a 6-digit code system is used in waste codes. The first two digits of this coding system indicate the sector from which the waste originates. The second two digits detail the sub-heading of this sector and the last two digits give the code of the waste. Accordingly, code 18 is waste arising from human and animal health and/or research on these topics (excluding kitchen and restaurant waste not directly related to health). Medical wastes and codes in the main building of the faculty and animal hospital are given in Table 1.

Table 1. Waste types and codes

Codes	Waste
18.02	Wastes from Animal Research, Diagnosis, Treatment or Disease Prevention
18 02 01	Cutters (except 18 02 02)
18 02 02*	Wastes whose collection and disposal are subject to special treatment in order to prevent infection
18 02 03	Wastes whose collection and disposal are not subject to special treatment in order to prevent infection
18 02 05*	Chemicals containing hazardous substances or consisting of hazardous substances
18 02 06	Chemicals other than 18 02 05
18 02 07*	Cytotoxic and cytostatic drugs
18 02 08	18 Drugs other than 02 07

Management of hazardous waste in faculty units

As can be seen from the table, hazardous wastes in the faculty consist of medical wastes and chemical wastes. The collection, storage and delivery of these wastes to the licensed company for disposal will be carried out according to the following rules.

Medical Waste Management

- Medical waste will be disposed of in the orange coloured medical waste bins with the Medical Waste logo in all units and clinics. In these boxes, there will be a red coloured bag with the same logo and writings.
- Sharps will be disposed of in yellow coloured medical waste bins.
- The faculty has 2 medical waste temporary storage rooms, one in the main building and the other in the animal hospital.

- The personnel assigned by the Faculty Hazardous Waste Coordinator is responsible for the collection of medical waste.
- Medical hazardous waste collectors should use personal protective equipment and carry the wastes with orange plastic trolleys with Medical Waste Logo and should never touch the wastes with bare hands. Temporary storage area and equipment should be kept clean at all times, and necessary cleaning and disinfection should be carried out after the end of the process. Specifications of collection vehicles are given in Annex 3.
- When medical waste is collected from each department, the Medical Waste Commitment and Delivery Form given in Annex 7 is filled in by the hazardous waste unit responsible and signed by the parties. This form is then forwarded to the Faculty Hazardous Waste Officer for filing.
- Medical wastes are collected regularly on the days when the density of patients and students in the building is low, as determined by the hazardous waste coordinator. Apart from this, medical wastes are collected when necessary (risk of infection and putrefaction, etc.) regardless of a certain day and time.
- Medical waste is collected from the departments by following the route specified on the faculty sketch in Annex 4 and brought to the temporary waste storage and stored in the cooler.
- Medical wastes generated in the examination rooms, operating theatres, laboratories, hospitalisation and isolation units in the Animal Hospital are collected by following the route shown in Annex 4 and delivered to the temporary waste storage.
- Temporary waste storages have a cooling system inside, are made of materials suitable for washing and disinfection, have lockable doors, and are suitable for collection vehicles to enter.
- Cadavers necropsied in the Department of Pathology are disposed of by burial by the University Building Works Department according to the instructions given in Annex 5.

Chemical Waste Management

- Hazardous chemicals, cytotoxic and cytostatic drugs, materials contaminated with these drugs (such as serum, serum sets, needle tips), genotoxic and cytotoxic wastes, pharmaceutical wastes, wastes containing heavy metals are special types of wastes that pose a great risk to health and environmental safety. The management of such wastes requires that they be kept strictly separate from other wastes. For the accumulation and collection of these wastes, blue coloured, special chemical waste bins are used in the units.
- These bins are designed to prevent leakage of waste to the outside. Chemical wastes are considered hazardous waste if they have at least one of the following characteristics: toxic, corrosive (pH<2 and pH>12), flammable and reactive. Solid chemical wastes that do not have any of these characteristics are disposed with domestic wastes and liquid wastes are disposed to the sewerage system.
- Dangerous chemicals are stored in blue drums in the temporary storage area.

- When hazardous chemical wastes are received from each department, the Hazardous Material Waste Commitment and Delivery Form given in Appendix 8 is filled in by the Hazardous Waste Unit Responsible and signed by the parties. This form is then forwarded to the Faculty Hazardous Waste Officer for filing.

Removal of Hazardous Wastes from the Faculty

Chemical and medical wastes accumulated in temporary storage areas are periodically (usually once a week) or in case of need, the licensed company given below is contacted and taken from the warehouses by the company officials.

Contact Details: Elazığ Malatya Road Merkez District Sarıçubuk Village Mevkii Elazığ Municipality Medical Waste Sterilisation Plant Merkez/Elazığ

PRECAUTIONS AND ACTIONS TO BE TAKEN IN CASE OF ACCIDENT

- Personnel in charge of collecting medical waste are obliged to take the necessary measures to prevent waste spillage. If necessary, the waste bag should be supported with a second or even a third bag to ensure tightness. If medical waste is accidentally spilled into the dustbin, transport area or storage area, it should be condensed with wood shavings and placed in a medical waste bag. Contaminated surfaces should be disinfected with appropriate disinfectant (chlorine and chlorine compounds, phenolic compounds, hydrogen peroxide, etc.). In case of injury that may occur during the collection and transport of medical waste, the person should immediately apply to Fırat University Research Hospital under the supervision of the Faculty Hazardous Waste Officer.
- These issues should be reported to the Faculty Waste Management Officer and Fırat University Faculty of Veterinary Medicine Biosafety Commission. In addition, such accidents are recorded by the Medical Waste Officer by preparing an "Accident Report" (Annex-6).

Record Keeping and Reporting

The Biosafety Commission has been appointed to plan training programmes on the management of hazardous wastes throughout the Faculty, to carry out records, to evaluate applications and to submit opinions to the Dean's Office. The Commission meets regularly, examines records, prepares audit reports and makes necessary improvements for identified problems. "**Waste Management Unit Officers**" have been assigned in accordance with the letter of the Dean of the Faculty of Veterinary Medicine dated **14.03.2024** and numbered **E-31578891-609-457254** dated **14.03.2024** for the coordination of waste management in the units, on-site collection and sorting of wastes and management of the registration process within the unit. The list of responsible for this assignment is given in Appendix 1.

APPENDICES

ANNEX 1. BIOSAFETY COMMITTEE

Prof. Dr. Kazım ŞAHİN	Dean
Prof. Dr Aydın SAĞLIYAN	Department of Surgery
Prof. Dr. Kezban ŞAHNA	Department of Virology
Prof. Dr. Ahmet ATEŞŞŞAHİN	Department of Pharmacology
Prof. Dr Hakan KALENDER	Department of Microbiology
Prof. Dr Cihan GÜNAY	Department of Surgery
Prof. Dr Muhterem AYDIN	Department of Obstetrics and Gynaecology
Prof. Dr. Mehmet ÇALICIOĞLU	Department of Food Hygiene and Technology
Prof. Dr. Necati TİMURKAAN	Department of Pathology
Prof. Dr. Ali Said DURMUŞ	Assistant Dean - Department of Surgery
Assoc. Prof. Dr Emre KAYA	Department of Biochemistry
Research Assistant Hakan BAĞ	Reporter

Fırat University Faculty of Veterinary Medicine Waste Management Unit Responsible	
Unit Supervisor	**Unit Name**
Assoc. Prof. Dr Gökhan Kürşat İncili	Food Hygiene and Technology Department, Application Classrooms and Research Laboratories
Dr Mehmet Caliskan	Veterinary Diagnosis and Analysis Laboratories
Assoc. Prof. Dr Emre Kaya	Department of Biochemistry, Application Classes and Research Laboratories
Prof. Dr. Lecturer Burcu Karagülle	Department of Microbiology, Application Classes and Research Laboratories
Assoc. Prof. Dr Hasan Abaylı	Department of Virology, Application Classes and Research Laboratories
Dr. Lecturer. Mehmet Hanifi Yalçın	Department of Histology and Embryology Research Laboratories
Assoc. Prof. Dr Şeyma Özer Kaya	Research Laboratories of the Department of Fertilisation and Artificial Insemination
Prof. Dr Zeki Erişir	Department of Genetics, Application and Research Laboratories
Prof. Dr Aydin Saglayan	Faculty of Veterinary Medicine Animal Hospital
Prof. Dr. Gülcihan Şimşek	Department of Animal Husbandry Research Laboratories
Dr Burak Karabulut	Department of Pathology, Research Laboratories and Necropsy Hall
Prof. Dr. Lecturer Prof. Dr. Gözde Arkalı	Department of Physiology, Application Classes and Research Laboratories
Assoc. Prof. Dr. Betül Baygeldi	Department of Anatomy, Application Classes and Research Laboratories
Dr Fatih Ahmet Korkak	Department of Pharmacology and Toxicology Application Classes and Laboratories
Dr Mehmet Can Uluçeşme	Department of Parasitology, Application Classrooms and Research Laboratories
Assoc Prof Seda Iflazoglu Mutlu	Department of Animal Nutrition and Nutritional Diseases, Application Classrooms and Research Laboratories
Dr Eren Polat	Animal Hospital Sterilisation Unit
Murshid Yilmaz	Administrative units
Technician Mehmet Atlı	Animal Hospital Radiology Unit

ANNEX 2. CLASSIFICATION OF COMPETENT WASTE

Within the framework of the "Regulation on Control of Medical Wastes" of the Ministry of Environment and Urbanisation, the wastes generated at Fırat University Faculty of Veterinary Medicine are categorised as follows, taking into account the requirements of veterinary medicine and public health.

1. Medical Waste

A. Infectious Waste

Wastes whose handling and disposal require special procedures to prevent the spread of infectious agents include Blood, blood products and all other body fluids; human tissues, organs, anatomical parts, autopsy materials, placenta, fetus and other pathological materials; gloves, drapes, sheets, bandages, plasters, tampons, swabs and similar wastes contaminated with such materials; air filters retaining bacteria and viruses; laboratory cultures and culture stocks of infectious agents; cadavers of infected experimental animals and any material that has come into contact with infected animals or their waste; waste from animal health services

B. Sharps Waste

Injectors, syringes and all other subcutaneous application needles, lancets, scalpels, knives, IV set needles, surgical suture needles, biopsy needles, intracaps, broken glass, ampoules, slide-lamellas, broken glass tubes and petri dishes, which may cause sticks, punctures, abrasions and injuries.

C. **Pathological** Waste

Waste including tissues, organs and body parts and body fluids generated during surgery, autopsy and similar medical interventions originates from places such as operating theatres, anatomy dissection rooms and autopsies. This includes amputated limbs, cadavers of experimental animals used in biological experiments and organic materials such as placenta. Such wastes are among the medical wastes that require special attention and sensitive management.

D. Pharmaceutical Waste

Used gloves, hoses, bottles and boxes containing expired or no longer used, damaged, spilled or contaminated medicines, vaccines, serums and other pharmaceutical products and their residues.

E. Genotoxic Waste

Pharmaceutical and chemical substances that can cause mutation on cell DNA, carcinogenic or abortion in humans or animals; cytotoxic (antineoplastic) products used in cancer treatment and wastes containing radioactive materials and body excretions such as urine and faeces of patients treated with such agents.

2. Chemical Waste

A. Heavy Metal Containing Wastes

Wastes containing mercury, cadmium, lead in or within instruments and equipment such as thermometers, blood pressure measuring instruments and radiation protection panels used in medical fields such as treatment, diagnosis or experimental research in the units.

B. Radioactive Wastes

Waste containing radioactive material is collected and removed according to the provisions of the Turkish Atomic Energy Authority legislation.

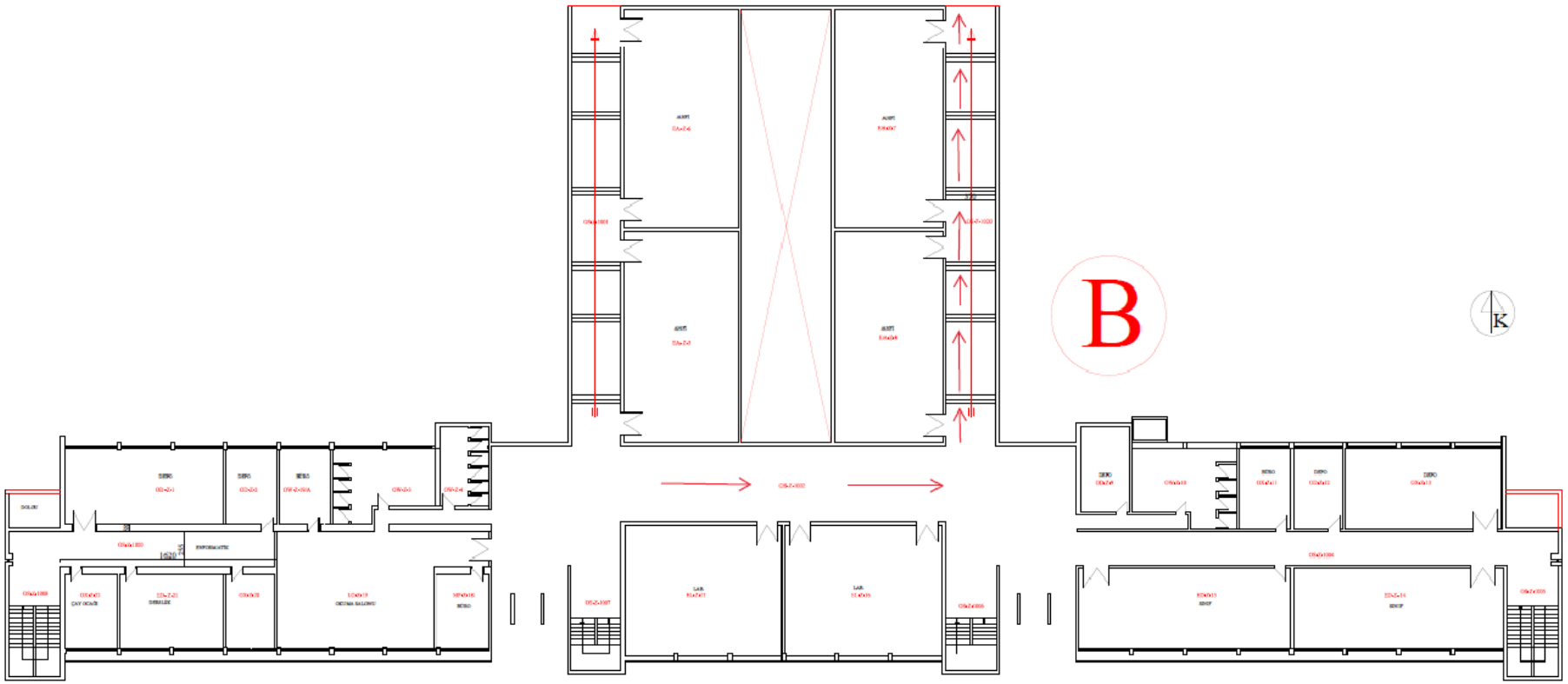
ANNEX 3. Characteristics of the tools and equipment used in the collection and transport of medical waste

Medical Waste Bag: Special bags that must be resistant to risks such as tearing, puncture, explosion and transport must be used in the collection of medical waste. These bags should be made of original medium density polyethylene raw material, leak-proof, double bottom stitched and gusset-free. These red bags with a double layer thickness of 100 microns in total must have a weight carrying capacity of at least 10 kg. They must have "International Biohazard" emblem and "**CAUTION MEDICAL WASTE**" warning on both surfaces. These bags must be filled to a maximum of 75% of their volume and the mouths must be tightly closed. Bags at risk of leaking liquid medical waste must be placed in a second bag to ensure complete sealing. Compressing or transferring medical waste to other bags should never be done.

Medical Waste Box: These are orange coloured plastic boxes with a lid and the Medical Waste logo on it. Boxes used for sharps waste are yellow in colour.

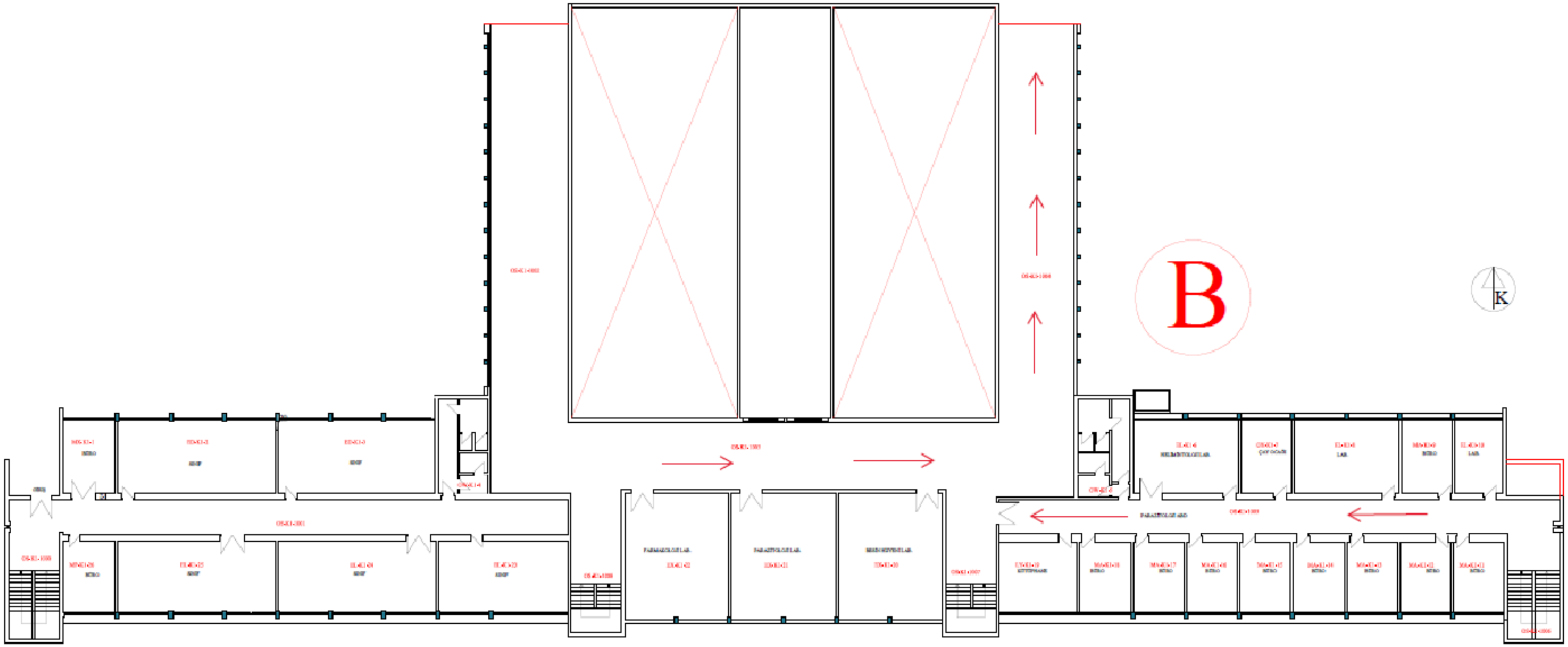
Medical Waste Collection Trolley: It is a wheeled trolley made of plastic, orange in colour, with biohazard logo, special for medical waste collection operations. These trolleys are not used for transporting domestic waste.

ANNEX 4.



VETERİNER FAKÜLTESİ ZEMİN KAT

SINIF (M2)	1110
LABORATUAR (M2)	—
BÜRO (M2)	207
DİĞER (M2)	1257
TOPLAM ALAN (M2)	2582



VETERİNER FAKÜLTESİ 1. KAT

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LABORATUAR (M2)	[illegible]
BÜRO (M2)	[illegible]
DİĞER (M2)	[illegible]
TOPLAM ALAN (M2)	[illegible]

B

VETERİNER FAKÜLTESİ 2 KAT

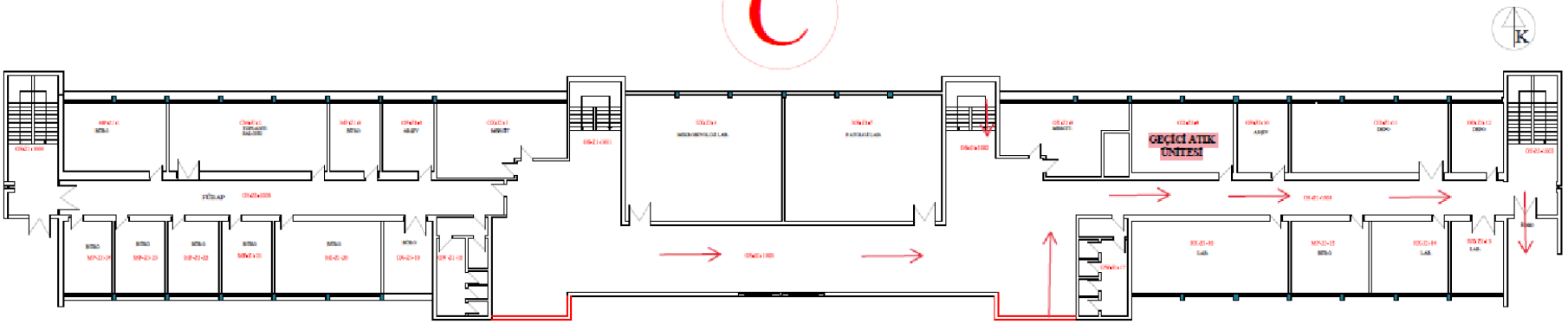
BİNA (M2)	-
LABORATUAR (M2)	577
BÜRO (M2)	138
DİĞER (M2)	867
TOPLAM ALAN (M2)	1805

B

VETERİNER FAKÜLTESİ 3. KAT

SINIF (M2)	-
LABORATUAR (M2)	354
BÜRO (M2)	336
DİĞER (M2)	772
TOPLAM ALAN (M2)	1890

C



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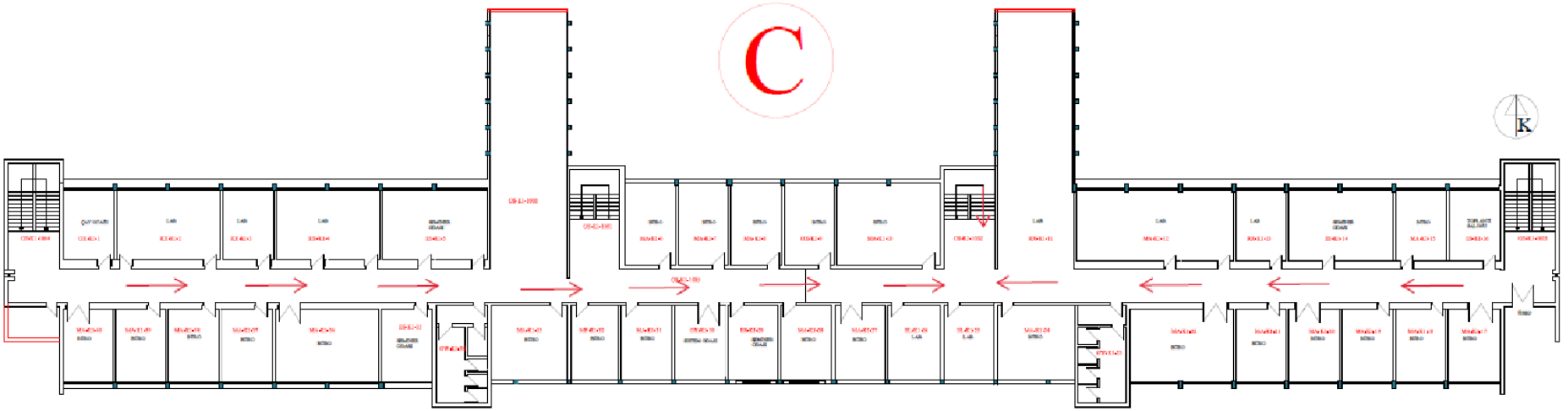

VETERİNER FAKÜLTESİ 1. KAT

C

VETERİNER FAKÜLTESİ 2. KAT

ANNEX 5. INSTRUCTIONS FOR THE BURIAL OF NECROPSY MATERIAL, cadavers and/or TISSUES

1) Necropsy material, cadavers and/or tissues will be buried in pits prepared by the Responsible Veterinarian and the Faculty Secretary in an area designated by the Responsible Veterinarian and the Faculty Secretary, separately isolated from medical waste and household waste storage area upon the request of the relevant Department Head.
2) The area where medical wastes will be buried will be away from underground and surface water sources from which drinking, domestic and irrigation water is supplied, from areas with high flood risk, from areas with landslide hazard. The bottom of the pit shall be at least 5 metres above the highest level of groundwater.
3) For this purpose, a 2x2x2 m pit will be dug. Quicklime will be poured on the bottom of this pit.
4) Entry and exit of people and animals to the site will be prevented. For this purpose, the site will be surrounded by a wire fence at least 1.5 m high and 5x5 m in size and buried at least 20 cm into the soil, and the pit will always be covered with a cover made of wire mesh. Warning signs labelled "Attention! Medical Waste Storage Area" will be hung on the wire fence.
5) Drainage channels will be opened at the edges of the site to prevent rainwater from entering the warehouse. For this purpose, there will be a drainage channel at least 30 cm deep around the area to be fenced.
6) Medical wastes will be buried quickly without waiting. After the daily storage process is finally completed in the pit, the wastes will be covered with quicklime.
7) When the distance between the top level of the stored medical waste and the surface is approximately 1 m, quicklime will be poured on it and then covered with soil.
8) In order to prevent the bags from disintegrating, the pit will not be compacted with construction machinery before it is completely filled and closed.
9) After the storage process is finally completed, a slope will be given on the embankment in order for the rainwater to leave the storage body in a short time.

ANNEX 6. Hazardous Waste Accident

Report Title, Name-Surname:

Signature:

HAZARDOUS WASTE ACCIDENT REPORT	
Place and date of incident	
How the incident occurred	
Relevant staff	
Action taken	
Waste Collection Officer	
Medical Waste Officer	
(Required explanations);	

ANNEX 7.

MEDICAL WASTE DELIVERY AND COMMITMENT FORM

Department: .....

Medical wastes should be sorted (separated) by the waste generating units in accordance with the provisions of Article 10 of the "Regulation on the Control of Medical Wastes" published in the Official Gazette dated 25.01.2017 and numbered 29959 in accordance with the provisions of Article 10 of the "Regulation on the Control of Medical Wastes" published in the Official Gazette dated 25.01.2017 and numbered 29959, as specified below and placed in the temporary medical waste storage, and hazardous wastes (chemicals) should be separated according to the principles of the "Waste Management Regulation" published in the Official Gazette dated 02.04.2015 and numbered 29314 and placed in the hazardous waste storage by placing them in the necessary containers.

Medical Waste

a) Infectious Waste ( ) **b)** Sharps Waste ( ) **c)** Pathological Waste ( )

The medical waste produced by our unit was separated as stated above and placed in waste bags/packages and placed in the temporary medical waste storage on the campus of our Faculty. There is no harm in delivering to the medical waste sterilisation facility. ..../..../....

Delivering Unit Supervisor: **Personnel Receiving**

It's called:

Surname:

Title:

Signature:

ANNEX: 8

HAZARDOUS WASTE DELIVERY AND COMMITMENT FORM

Department:.....

Hazardous (chemical) wastes should be separated according to the principles of "Waste Management Regulation", placed in the necessary containers, labelled and placed in the hazardous waste storage.

Hazardous Waste

a)Liquid Hazardous Waste ( ) **b)** Solid Hazardous Waste ( )

The hazardous (chemical) waste produced by our unit was placed in the necessary containers and placed in the temporary hazardous waste storage of our Faculty. There is no harm in delivering the relevant hazardous waste to the disposal unit. ...../...../.....

Delivering Unit Supervisor: **Personnel Receiving**

It's called:

Surname:

Title:

Signature: