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COMPANY FORTIS»

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"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"

Working project

Volume 1

General Provisions 173-WP-2024-F-AS

Architectural solutions  
173-WP-2024-F-AS

Chief Project Engineer

Qualification Certificate for Engineering and Construction Design AS  
№ 019809. Ministry of Regional Development, Construction, Housing  
and Communal Services of Ukraine. Attestation Architectural and  
Construction Commission.






Shelikhova V.

2024

Agreed:		
Deputy. Inv. №		
Signature & Date		
Inv. No. op.		

Аркцш АЗ

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Checked		Kovaleva A.						
Developed		Shelikhova V.						
Norm.control		Pyrov Y.						
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The project has been developed in accordance with current norms and regulations

Chief Project Engineer

(AS Certificate № 019809)








Shelikhova V.

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Взам. інв. №

Підпис і дата

Інв. № підл.

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# Architectural solutions

173-WP-2024-F-AS

Drawings

## 1 . General explanatory note

The municipal institution of the Ingul Lyceum of the Ingul Village Council of the Mykolaiv Oblast is a subject of educational activity aimed at the general education function.

The institution was founded in 1972. The educational process is carried out according to a universal profile.

With the beginning of the military aggression of the Russian Federation, the old premises of the PRU were hastily equipped as the simplest shelter to ensure a safe educational process in the institution. Due to the fact that the premises have not been used for a long time and no longer meet the current requirements and standards for the arrangement of civil defense premises, it is necessary to carry out current repairs of these premises.

The project of current repair of the basement of the Ingul Lyceum of the Ingul Village Council of the Mykolaiv Region provides for the solution of a number of problems and tasks:

- repair of PRU premises in order to improve their operational suitability (external entrances, floor coverings, finishing, door blocks, etc.), engineering equipment, engineering networks;
- arrangement of modern WCs for persons subject to shelter
- Arrangement of entrance and exit on the north side of the building for barrier-free access for people with disabilities.
- Improve the performance of the basement premises by replacing the internal networks of the basement, namely: electricity, electrical equipment, sewerage, water supply;
- supply and exhaust ventilation to improve operational requirements
- Elimination of leakage along the walls of the foundations from external precipitation from the damaged blind area and the rainwater system.






### 1.1. Initial data for design

Working project "Current repair of the anti-radiation shelter No. 52108 (group P4) of the Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region" is made on the basis of:

- Long-term contract 19 September 2023 registration number LTA/UACO/2023/47576/ FORTIS Engineering Company LLC/3/4/5 (1009321 ID), UNOPS internal file ID: UNOPS-RS-2023-G-002 dated 01 October 2023, project number assigned to UNOPS 24129-001;
- dimensional drawings;
- Technical Report

The project documentation is developed in accordance with the requirements of regulatory documentation:

- DBN B.2.2-12:2019 "Planning and development of territories";
- DBN V.2.2-3:2018 Buildings and structures. Educational Institutions
- DBN V.2.2-9:2018 Public buildings and structures. Basic Provisions
- DBN V.2.2-40:2018 Inclusiveness of buildings and structures
- DBN A.2.2-3-2014 Composition and content of design documentation for construction
- DSTU 9243.4:2023 System of design documentation for construction. Basic requirements for project documentation
- DSTU 9243.7:2023 System of design documentation for construction. Rules for the execution of architectural and construction working drawings
- DBN V.1.1.7-2016 Fire safety of construction objects

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CEP		Shelikhova V.B			05.2024			
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Developed		Pirov Y.A			05.2024			
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- DBN V.2.5-64:2012 "Internal water supply and sewerage. Part I. Design. Part II. Construction", Change 1;
- DBN V.2.5-67:2013 "Heating, ventilation and air conditioning";
- DBN V.2.5-23:2010 "Engineering equipment of buildings and structures. Design of Electrical Equipment of Civil Facilities";
- DBN V.2.5-56:2014 "Fire Protection Systems", Amendment 1;
- DBN V.1.2-7:2021 Basic requirements for buildings and structures. Fire safety
- DBN A 3.2-2-2009 "Labor Protection and Industrial Safety in Construction";
- Recommendations for the organization of shelter in the objects of the fund of protective structures of civil protection of personnel and children (pupils, students) of educational institutions (letter of the State Emergency Service dated 14.06.2022 No03-1870/162-2)

## 1.2. Brief description of the object

The building of the Ingul Lyceum with an anti-radiation shelter is located at the address: Mykolaiv region, Bashtanka district, Ingulka village, Sadovaya street, 49.

Coordinates: 47.196828, 32.227255

Plot with an area of 3,767 hectares (cadastral number 4820681200: 06: 032: 0019)  
Purpose: For the construction and maintenance of buildings of educational institutions.



Situational diagram.

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The climate is temperate continental. Winter is mild, with little snow with cloudy weather and frequent fogs. The snow cover is not stable. The duration without a frost period is 175 days. Summers are warm, in some years it is dry. Winds throughout the year are mainly northeasterly. Precipitation 430 mm/year

On the land plot there are: the building of the lyceum with basements, one of which is PRU No. 52108 (group P-4); boiler room; football field with stands, auxiliary and household facilities, gymnastics, playgrounds. The territory of the lyceum is fenced. There are 3 dispersed entrances to the territory of the institution.

The land plot with a façade overlooks the street. Garden. The territory is bounded from the east by a street – ul. Sportivna, bordered by private land plots from the west and north. The surrounding buildings are manor buildings.

Form of ownership – Communal property

Type of GSEI: Lyceum with primary school and gymnasium

According to the information on the training mode provided by the asset holder, the training is carried out in 2 shifts. The design capacity of the institution is the number: 560 students / 40 staff. Actual number of lyceum students:

No. p.p.	Pointer	And the change, persons
1	Grades 1-2	27 students
2	Grades 3-4	38 students
3	Grades 5-11	31 students
4	Full-time employees	19
	Total, persons	115

According to the accounting documents (card and passport), the building of the Ingul Lyceum has a built-in anti-radiation shelter No. 52108, group P-4, Kz-100, with a capacity of 440 people

#### The main technical characteristics of the object of inspection:

Salary No.	Metric name	Unit Measurement	Magnitude
1	PRU Building Area	m2	380,3
2	Construction volume of PRU	m3	874.69
3	Number of storeys:	floor	Basement
4	Degree of fire resistance		II

The main building structures of the object:

- The walls of the above-ground part are brickwork
- Walls/foundations of PRU made of rubble masonry

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- Floors made of prefabricated reinforced concrete hollow-core slabs with monolithic sections
- Floor PRU cement preparation

Engineering networks of the lyceum building:

- Water supply and sewerage – city network
- Heating – from a gas boiler room
- Power supply from DP

Existing PRU networks:

- WC for 1 cubicle (connected to the network).
- Water supply for technical needs
- Heating from electric heaters and UV
- Supply and exhaust ventilation in some rooms for shelter

### 1.3 Data of engineering and geodetic surveys

Complex engineering and geodetic surveys were carried out by FOP Nicolau G.V. in March-May of this year. According to the data of the operating organizations, a plan of underground and aboveground structures at a scale of 1:500 in the conventional marks of the 2001 edition, compatible with the topographic plan, was drawn up. In the study of aboveground/

Engineering and geological surveys were not carried out

According to the Report of Engineering and Geological Surveys 135-19-IG, carried out by FOP Kucherenko T.M. in 2019 (invalid in terms of validity), the site meets the following characteristics:

- according to DBN B.2.1-10-2009, section 9.1.4 the territory refers to the conditions of subsidence p.b when subsidence occurs from external load in the upper zone and dead weight of the soil in the lower zone of the base
- loess loam IGE-4 has subsidence properties under additional load, and from a depth of 5.0 m from its own weight of soil. The initial subsidence pressure is 1.00 kgf/cm<sup>2</sup>
- the main reason for the deformation of the building is the presence of heavy loess loam IGE-4 under the sole of the foundation, the density of the skeleton is 1.36 g/cm<sup>2</sup>. At the same time, it is strongly compressed under additional load and has low strength characteristics

category of complexity of engineering-geological conditions of the territory - II

### 1.4 Brief description of engineering networks

Engineering networks of the lyceum building:

- Water supply and sewerage – city network
- Heating is provided by our own gas boiler house, which is located in the surrounding area
- Power supply from DP. The connected power is 45.3 kW. Metering of the electricity used is carried out by metering devices.

Existing PRU networks:

- WC for 1 cubicle (connected to the network).
- Water supply for technical needs
- Heating from electric heaters and UV
- Electric lighting

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- Supply and exhaust ventilation in some shelter rooms, the power of the existing fans does not provide the necessary air exchange of the premises.

### 1.5 Climatic characteristics of the construction area

The climatic conditions of the site are characterized by the following parameters:

- Architectural and construction area – II, according to the architectural and construction climatic zoning of the territory of Ukraine.
- the estimated air temperature of the coldest five-day period with a provision of 0.98 is taken to be minus 25°C (DSTU-N B V.1.1-27:2010 Construction climatology);
- characteristic value of snow cover  $S_o = 870$  Pa (Appendix E DBN B.1.2-2:2006 System for ensuring the reliability and safety of construction objects. Loads and impacts. Design standards. Amendment No. 1);
- characteristic value of wind pressure  $W_o = 470$  Pa (Appendix E DBN B.1.2-2:2006 Loads and Impacts)

### 1.6 Information on construction stages and start-up complexes

Separate queues for major repairs are not provided. The robot will be carried out in stages.

The allocation of launch complexes is not expected.

The organization of restoration and repair work is defined as follows :

- Dismantling of brick partitions
- dismantling of plumbing fixtures and pedestal;
- dismantling of VC pipes
- dismantling of ventilation equipment;
- dismantling of electrical wiring, sockets and switches, lighting fixtures with preservation for reinstallation
- Dismantling of information boards and saving for reinstallation
- dismantling of the cement base of the floor, brick steps and pedestals to ensure a comfortable stay
- Dismantling of a concrete pit with a ladder and a metal canopy
- Partial dismantling of the blind area for the installation of a rainwater drainage system.
- Dismantling of the basement cladding, damaged cladding of the porch steps, cladding of the second pit with steps
- Collection of debris and debris formed during the dismantling of elements of the premises;
- Removal of garbage from the territory of the lyceum;
- Carrying out major repairs of the building in accordance with the project.

### 1.7 EIA materials, including data on all expected environmental impacts, their minimization and compensation

The construction object does not fall under the sanitary classification DSP-173-96 and does not need a regulatory sanitary protection zone.

There are no significant factors that affect or may affect the state of the environment.

Subject to the basic rules of fire safety, safety and labor protection and subject to the organization of proper operation, the occurrence of environmental emergencies is excluded.

The risk of environmental emergencies (explosion and/or fire) does not exceed the typical risk for populated cities of Ukraine.

Installation work is carried out without emissions of pollutants into the air. Noise impact during construction is temporary and only during working hours.

During operation, there will be a slight negative impact on the air environment. The microclimate, geological environment, soil, flora and fauna, social and man-made environment will not be adversely affected.

There is no impact of the designed object on the aquatic environment. The shelter is connected to centralized water supply and sewerage networks, which guarantees the safety of the planned activity for surface water.

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During the current repairs, the temporary factor of impact on the environment will be:

- waste generation during installation/dismantling of systems and wire laying; dismantling of asphalt and concrete pavement;
- exhaust gases of motor vehicles and construction equipment;
- Pollution of light fractions of dry soil during earthworks
- waste generation during dismantling/installation, repair work of PRU premises.

Waste in the process of construction and operation will be disposed of in accordance with the legislation of Ukraine.

Waste treatment during construction work should include the use and observance of:

- technological standards;
- general and special environmental requirements and measures based on existing environmental and sanitary-epidemiological norms and rules;

To reduce the negative impact on the environment due to improper management of construction waste, it is proposed to temporarily store waste in specially designated places.

Transportation of waste should be carried out in such a way as to exclude the possibility of their loss, the likelihood of accidents, harm to the environment, human health, economic and other facilities.

Solid household and construction waste generated during construction work is planned to be placed on a hard-surfaced site, in a specially designated place and special containers. All other waste must be collected, temporarily accumulated and exported for transfer to specialized organizations that have the appropriate license and ability to process and dispose of waste.

In addition, in order to reduce the impact of waste generated as a result of construction work, it is envisaged to introduce separate waste collection and transfer to specialized enterprises for the processing and disposal of waste in accordance with their class.

There is no impact on the man-made environment. There are no industrial facilities, monuments of architecture, history and culture near the area where the object is located. The operation of the facility does not create a man-made load on the environment.

### **1.8 Solutions for engineering preparation of the territory and protection of buildings and structures from dangerous natural or man-made factors**

The surface of the relief is planned in the process of economic activity, asphalted, partially built up, landscaped. The absolute elevation of the daytime surface of the earth within the design site is 47.81-49.39 m.

The project provides for the repair of the blind area along the walls of the PRU, the repair of the external rainwater system from the roof of the lyceum building, the installation of a drainage system of storm sewerage.

To protect against such natural phenomena as hurricane winds with heavy rains, snow drifts, snowstorms and icing, flooding, anti-corrosion protection of building structures is provided. It is arranged in accordance with DSTU V.2.6-145:2010 "Protection of concrete and reinforced concrete structures from corrosion", DBN B.2.6-98:2009 "Concrete and reinforced concrete structures". Metal elements that are in contact with the outside air are protected by an anti-corrosion coating in accordance with DSTU ISO 12944-3:2019 Paints and varnishes. Protection against corrosion of steel structures by protective paint and varnish systems. Works on the protection of metal structures and products are envisaged in accordance with the requirements of DSTU-N B V.2.6-186:2013

A domestic structure for life support that meets the requirements of the simplest shelter is being built to protect students and employees from emergencies.

At the next stage of design, it is proposed to provide for the duplication of local community warning signals in the premises of the modular structure. A signaling loudspeaker device is also installed outside the structure for notification within the collection radius.

### **1.9 Accessibility of the facility for people with limited mobility**

Taking into account that the project provides only for the repair of the existing premises of

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the existing PRU No. 52108 (group P4) of the Ingul Lyceum of the Ingul Village Council without interference with the load-bearing structures and the absence, at present, of persons with disabilities, it is proposed to implement a reasonable adaptation of the shelter to ensure the accessibility and safety of MGN in accordance with the requirements of DBN B.2.2-12: 2019 "Planning and development of territories" and DBN B.2.2-40: 2018 "Inclusiveness of buildings and structures. Basic Provisions".

One of the entrances (the width of the existing passage is 1.2 m) is being rebuilt to arrange an inclined lifting platform for the disabled

At the entrances and exits there are information and tactile plates. The steps at the entrances and exits to the shelter are marked with contrasting tapes. Information and tactile signs are also placed in the premises in the right places. A handrail in a contrasting color is attached to the walls along the evacuation route.

In the shelter, it is proposed to arrange a universal sanitary and technical room for the MNG.

It is proposed to cover pedestrian paths and floors of premises from materials that meet the standard strength characteristics and do not allow slipping

### 1.10 Fire safety. Basic Requirements

Fire prevention measures were carried out in accordance with DBN B.1.1-7-2016 "Fire protection. Fire Safety of Construction Objects" and DBN V.2.5-56:2014 "Systems against Fire Protection".

To ensure the safe evacuation of people, measures are taken to:

- creation of conditions for timely and unimpeded evacuation of people in the event of a fire;
- protection of people on evacuation routes from the effects of fire hazards.

In the semi-underground premises of PRU No. 52108 (group P4) of the Ingul Lyceum of the Ingul Village Council, there are two exits directly to the street, which are dispersed relative to the perimeter of the building.

The height in the clearance of emergency exits (doors) is 1.8 m, the width of the main exit is 1.2 m, where the width of one of the leaves of the door leaf is not less than 0.9 m.

External single-leaf metal doors, reinforced  $\Delta P=100$  kPa

Evacuation routes are decorated with non-combustible materials.

The conditional height of the structure is 11 m

The height of the PRU premises is 2.3 m.

The project provides for a fire alarm system and a type 2 evacuation control system.

In the premises of the shelter, it is recommended to install fire extinguishers of the following types (types may vary according to referral local fire services):

- room 4 - fire extinguisher vuglekislotny VVK-3,5 (OU-5)
- room 10 - carbon dioxide fire extinguisher VVK-1,4 (OU-2)
- room 2 - fire shield with a water-foam fire extinguisher VVP-6
- room 8 - fire extinguisher with water foam VVP-6
- the main room for sheltering 12 - 2 fire extinguishers of water-foam VVP-6

According to the current standards of labor protection in Ukraine, work at construction sites must be carried out in strict accordance with safety rules, which provide for the use of fire shields. A fire shield on a construction site allows you to quickly suppress a fire or smoke, minimizing fire damage, ensuring safe evacuation and saving human lives.

The fire shield on the construction site must meet the following requirements of fire safety rules (Ukraine):

- is placed in a clearly visible and accessible place for quick access to inventory;
- must not obstruct emergency and emergency exits;
- have a complete set provided by (fire shield) DSTU

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A fire shield on a construction site must have the following set of equipment:

- fire extinguishers of carbon dioxide or powder types at the rate of 10 kilograms of extinguishing composition per stand;
- scrap;
- hook;
- cone-shaped bucket;
- shovels of bayonet and scoop types;
- a tank for storing water or other quenching liquid with a volume of at least 0.2 cubic meters.

In addition, the stand can be equipped with a sand storage tank, carts for transporting equipment to the fire site and other devices. The sand container is a box painted red. The box can be open or have a top lid to protect the extinguishing agent from natural precipitation, debris and dirt.

### 1.11. Labor protection.

The set of works on the performance of work must be performed in accordance with the requirements for labor protection, regulated by the following regulatory documents:

- technical regulations of construction products (products). Approved by the Resolution of the Cabinet of Ministers of Ukraine dated 20.12.2006. №1764. (as amended on 03.05.2023);
- DSTU-N B A.1.1-81:2008 "Basic requirements for buildings and structures". Guidance on the application of the terms of the basic requirements for buildings and structures in accordance with the interpretative documents of Council Directive 89/106/EEC;
- DBN V.1.2-9:2021 "Basic requirements for buildings and structures. Safety and accessibility of operation";
- DBN V.1.2-14:2018 "General principles of ensuring the reliability and structural safety of buildings and structures";
- NPAOP 40.1-1.32-01 (DNAOP 0.00-1.32-01) Rules for the construction of electrical installations. Electrical equipment of special installations
- DBN V.2.5-23:2010 Engineering equipment of buildings and structures. Design of electrical equipment for civil facilities
- DBN V 1.1-7:2016 "Fire Safety of Construction Objects";
- DBN V.2.5-56:2014 "Fire protection systems", amendment 1
- DBN A.3.2-2-2009 Labor Protection and Industrial Safety in Construction;
- NPAOP 0.00-1.80-18 "Rules of labor protection during the operation of cranes, lifting devices and related equipment".

The general contractor is obliged, with the participation of the customer and subcontractors, to develop and approve labor protection and industrial sanitation measures that are mandatory for all organizations involved in the repair work.

Prior to the commencement of construction work, the customer or construction manager appoints a health and safety coordinator(s) at the construction stage.

One copy of the Preliminary information on the execution of construction works (Annex 2 to NPAOP 45.2-7.03-17 of the Minimum Requirements for Labor Protection at Temporary or Mobile Construction Sites (paragraph 3 of Section II) is placed by the customer or the construction manager in a place visible to all construction participants, located on the territory of the construction site, in case of its change, must be constantly updated.

Admission to the construction site of unauthorized persons or workers who are not engaged in work on this territory, as well as persons who are in a state of alcoholic, toxic or narcotic intoxication, is prohibited.

All persons on the construction site are required to wear protective helmets and high-visibility vests.

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Workers who have undergone special training with additional testing of knowledge of electrical safety rules (not lower than group 2) and fire technical minimum are allowed to weld. Re-briefing is carried out quarterly and before each work, targeted briefing and registration of results in a journal of the established form.

The content of harmful substances and dust in the air of the working area should not exceed the maximum permissible concentration in accordance with DSTU-N B A.3.2-1:2007, in case of short-term excess of dust concentration in the air of the working area, personal protective equipment is used.

Cleanliness, humidity, temperature, air velocity must comply with the standards established by DSTU-N B A.3.2-1:2007.

The illumination of the construction site, workplaces, work sites, driveways and passages must comply with the standards of DSTU B A.3.2-15: 2011.

Prior to the commencement of work, sources of industrial harmful factors (thermal radiation, emissions of toxic gases, vapors, dust, noise, vibration, etc.) must be identified and measures must be taken to eliminate or reduce them to the values allowed by current sanitary standards.

During the transportation of dust-forming materials to the immediate areas of temporary storage, special covering materials (awning) should be used and effective dust suppression measures should be provided in order to reduce the dispersion of materials. Loading, reloading and unloading of materials should be carried out with a minimum height difference and with the use of windscreens (if necessary). In turn, the transportation of dust-forming materials should take place packaged in sealed packaging or using covering materials (awning)

In order to improve labor protection during construction and installation works, it is necessary to provide for a number of measures:

- carry out strict control over the technical condition and serviceability of all mechanisms working on the construction site;
- constantly carry out operational control over the state of safety.

If damage to structures, structures or networks is detected in the process of work, it is necessary to invite specialists of the design organization to make a decision and adjust the project. Upon completion of the work, perform their acceptance in accordance with the established procedure with the registration of the relevant Acts of technical condition

### Noise

Work will only be carried out during normal weekday business hours. If it is necessary to carry out work that causes a higher level of noise pollution at night (more than 60 dB), residents of nearby houses will receive a corresponding notification at least 3 days before the start of such work. Where necessary, noise barriers will be installed. When performing work related to a high level of noise load, workers will be provided with personal protective equipment. The following possibilities for reducing the noise level are recommended:

- temporary restriction on the operation of certain types of equipment or the performance of certain types of work, especially the movement of trucks and other heavy mechanisms through populated areas;
- if possible, reduce project-related vehicular traffic through noise-sensitive areas.

Noise levels at workplaces should not exceed the permissible values of 80 dB DSN 3.3.6.037-99

Noise and vibration reduction is achieved through the use of modern technological and power equipment with low noise characteristics.

### Risk of fires and explosions

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Relevant fire safety standards and guidelines must be followed. Workers should receive regular training on what to do in the event of a fire and the use of fire extinguishers.

Thus, during the construction work of the facility, it is necessary to take measures to minimize the likelihood of emergencies, in particular:

- employees must comply with the internal labor regulations, fire safety rules. Smoking is allowed only in designated areas;
- in the dry season, waste is supposed to be moistened;
- the risks of accidental leakage of petroleum products and lubricants should be controlled and pallets should be used when overflowing to prevent leakage to the ground;
- use of machinery and equipment only in good condition

**Impact of the projected activity on the social sphere**

The potential consequences of the impact of the projected activity on the social sphere at the construction stage can be considered in the context of the following indicators:

- practice of social management;
- working conditions;
- economic environment;
- health and safety of the population;

Thus, the potential negative impact in the field of social management practice can be expressed as:

- an increase in the number of complaints from representatives of the local community living in the area of direct construction work due to higher levels of dust, noise, traffic violations due to construction works.

Thus, the potential negative impact in the field of compliance with working conditions can be expressed as:

- the use of construction equipment that does not comply with the instructions for its operation, non-compliance with the rules and standards of labor protection, improper briefings and, accordingly, improper control can cause situations related to injuries to workers and visitors to the construction site;
- the risk of occupational injuries among personnel increases;
- violation of working conditions of employees due to increased levels of noise, vibration and dust.

### 1.12 Main technical and economic indicators

1	Name of the construction object, its location	Current repair of the anti-radiation shelter No. 52108 (group P-4) of the Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region
2	Type of construction	Routine repairs
3	Total estimated cost of construction, including construction works, equipment, other costs	_____yew. UAH
4	Number of storeys	Basement
5	Degree of fire resistance	II
6	Built-up area	380,3
7	Power, capacity, Throughput	115 students, 19 employees. Total: 134 people
8	Total area	255.33
9	Area of premises for persons to be sheltered	196.88
10	Construction volume	874.69
11	Duration of construction (month)	3

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## 2. Architectural and construction solutions

### 2.1 General part

According to the task for the development of design and estimate documentation, approved by the Customer, the report on the inspection of the building of the anti-radiation shelter No. 52108 (group P4) of the Ingul Lyceum of the Ingul Village Council of the Mykolaiv Region, it is planned to carry out the following repair and restoration works:

- dismantling of brick partitions, door blocks
- dismantling of existing obsolete engineering networks and equipment of ventilation systems and a WC
- Dismantling of cement floor preparation, brick steps and pedestals
- Dismantling of a concrete pit with a ladder and a metal canopy for the arrangement of an inclined platform for MGN and barrier-free accessibility to the PRU
- Partial dismantling of the blind area for the installation of a rainwater drainage system.
- Dismantling of the basement cladding, damaged cladding of the porch steps, cladding of the second pit with steps, followed by restoration and improvement of waterproofing protection of structures and basements.
- Redevelopment of part of the premises for the arrangement of the proper number of WCs and a separate ventilation chamber.
- installation of a new electrical network, commissioning and installation of new electrical equipment, lighting and fittings;
- Installation of new steps to the basement and related structures
- Installation of a new floor slab with a waterproofing layer to protect against groundwater
- Overhaul of basement premises (repair of wall and ceiling finishing);
- Installation of new WCs, with the installation of a new drainage and sewerage system
- Replacement and installation of new door blocks, entrance groups and basement interiors;
- Arrangement of facilities for inclusive groups of the population

The adopted design solutions without changing the loads on the load-bearing structures do not violate the integrity of the load-bearing structures and do not affect the stability of the building as a whole.

### 2.2. Space-planning solutions

The current repair of the radiation shelter No. 52108 (group P4) of the Ingul Lyceum of the Ingul Village Council is designed to redevelop part of the premises in axes A-B / 2-3 for a more comfortable stay of children and lyceum staff during a dangerous situation.

The following premises are being equipped:

- Men's and women's WCs for 2 cabins each
- Universal sanitary and hygienic for LMG
- Technical rooms: switchboard and ventilation chamber supply and exhaust.
- Water and food storage facilities
- 4 rooms for the stay of people in times of danger with a total area of 196.88 m<sup>2</sup>.

Given that the existing floor in the premises is significantly uneven, the height difference from 100 to 300 mm is a decision to dismantle the cement preparation with the subsequent installation of a new slab on the ground.

1. Improved painting of Siltek Beton Pro in 2 times;
2. Deep permeability primer Ceresit CT17
3. Ceresit CN69 self-levelling compound - 10 mm
4. Reinforced concrete slab C12/ 15 W4 reinforced with mesh Ø5Vr1 cell 50x50 - 100mm;
5. Euroroofing material Technoelast EPP;

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- 6. Bituminous primer;
- 7. Concrete preparation C8/10-80mm;
- 8. Existing soil base;

Carrying out repair work with floor covering will allow to arrange high-quality conditions for the operation of the PRU premises, as well as provide protection from soil moisture. Otherwise, the operation of the premises, storage of equipment and inventory of the lyceum may lead to their damage or injury to people.

Based on the marks of the existing entrances and exits and the impossibility of interfering with the existing load-bearing structures, the project adopted a room height of 2.30 m.

The current repair project provides for the repair of the interior decoration of the basement premises, including wall and ceiling decoration.

Before starting repair work, it is necessary to level the surface of the walls.

General measures for the repair of wall decoration must be carried out in the following sequence:

- Dismantle the existing finishes (plaster, paint, etc.) from all basement walls
- Level the walls and prepare them for further plastering work
- Cover the surfaces with two layers of potting soil

After completing the preparatory work, the ceiling must be leveled under the finishing surface of the finish, covered with two layers of ordinary soil mortar and white water-based paint.

The use of an antiseptic soil solution should be used in places of soaking and mold infestation in place to remove the remnants of fungal contamination on the walls that could get into the microcracks of the surface, as well as to prevent the possible development of fungus on the new surface.

To ensure the protection of premises from possible penetration of groundwater or surface water after rain on the walls, it is proposed to use penetrating waterproofing such as Ceresit CR 90 (or equivalent). The walls should be covered with such a solution to a height of at least 1.8 m from the mark of the clean floor. Work should be carried out in accordance with the technical map and regulations for the work of materials, the main instructions are indicated in the notes on the drawings.

Carrying out repair work on interior decoration will not only improve the appearance of the PRU premises, but also protect the surfaces of walls and ceilings from mechanical destruction, negative environmental influences, corrosion, improve the overall microclimate inside the basement and prevent the appearance of fungus and mold.

The dimensions of the existing main entrance-exit to the shelter do not meet all the requirements to provide convenient access for people with disabilities. Therefore, it is proposed to dismantle the entrance structures and increase the size of the pit with a ladder for the installation of an inclined lifting platform for MGN. Taking into account the design features of such a design, as well as the need to ensure a normalized width of the passage, the designed staircase has a width of 1.8 m.

Another entrance-exit cannot be equipped to meet the requirements of DBN B.2.2-40:2018 "Inclusiveness of buildings and structures. Basic Provisions" and DBN V.1.1.7-2016 "Fire Safety of Construction Objects" without interference with the load-bearing structure (the width of the doorway is 0.7 m), therefore the project provides for the replacement of doors with external metal ones, reinforced and repair of damaged lining of the pit and stairs.

The scope of work on the current repair of the radiation shelter No. 52108 (group P4) of the Ingul Lyceum includes the repair of the blind area, which is adjacent to the outer walls of the basement along the premises and which are damaged as a result of the operation and installation of an improper external stormwater system.

The project proposes to repair the existing stormwater system by growing pipes to the blind area. In addition, to drain rainwater from the roof of the house, a project of an external drainage rainwater network with the installation of a separate filtration well has been developed.

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Partial dismantling/installation of the blind area in the place of arrangement of a new entrance-exit to the shelter and places of arrangement of rain receivers and connection to the network of the rainwater drainage system is designed.

PRU No. 52108 is additionally equipped with a diesel generator set near the shelter on the territory of the lyceum. The platform for installing the equipment is made of a monolithic reinforced concrete slab and is fenced with a metal fence with a cover.

### 3. Heating, ventilation and air conditioning

#### 3.1. Basic ventilation solutions

"Current repair of the anti-radiation shelter No. 52108 (group P-4) of the Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region" is to arrange ventilation of the civil defense shelter (basement).

Removal and supply of air to the room is carried out by individual air treatment units manufactured by Aerostar. This equipment is designed for general ventilation systems. Aerostar-50-30 units are of modular type. The modules are assembled manually. The unit includes:

- Noise absorber (exhaust part) SMN 50-30
- G4 efficiency class filter (exhaust part) SFB 50-30;
- SVV 50-30/25-2D type exhaust fan;
- Flexible insert SFI 50-30;
- Plate recuperator SR 50-30;
- Filter G4 efficiency class (inflow part) SFB 50-30;
- Air heater SEH 50-30-15.0;
- Supply fan type SVV 50-30/25-2D;
- Flexible insert SFI 50-30;
- Noise absorber (inflow part); SMN 50-30
- Fire valve FPD-120-50x30-O-M-220-T 2F S

The product is attached to the ceiling.

The operation of the Aerostar-50-30 air handling units is as follows:

- by utilizing heat from the exhaust air;
- bringing the supplied air to the parameters necessary to create comfortable conditions for visitors.

The integrated air treatment system consists of 2 levels of heat recovery from the exhaust air and heating levels. Their mode of operation depends on the temperature load mode. When the exhaust air passes through the plate heat exchanger, the heat of the exhaust air is utilized, followed by the transfer of heat to the supply air.

The unit is equipped with electric heating heaters, which constantly monitor the temperature sensor and provide the design temperature in front of the plate heat exchanger.

During the heating season, the electric heating heater works. The heater is designed to warm up the temperature that needs to be supplied to the room according to regulatory data.

An individual exhaust system is provided from the WCs. The air from the room is removed from the upper zone by means of exhaust anemostats.

The air taken from the upper zone of the room, passing through the recuperator, heats the supply outside air, and the air is heated to the required temperature in winter using an electric heater installed in the body of the supply and exhaust ventilation unit. In order to prevent

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the propagation of sound vibrations on the main air ducts, it is planned to install silencers. The removal and supply of air to the premises is carried out by means of regulating grilles.

The air from the room is removed from the upper zone and supplied to the upper zone of the room.

All sections of the air ducts of ventilation systems are made of galvanized sheet steel.

Installation of heating and ventilation systems should be carried out in accordance with DSTU-N B V.2.5 73:2013 "Guidelines for the installation of internal sanitary systems".

The list of ventilation units, the characteristics of ventilation systems and the main indicators according to the ventilation drawings are given on the general data sheet.

### 3.2. Power supply of heating and ventilation systems

To provide power supply to ventilation units, it is necessary to lay electrical cables of the required cross-section, which is indicated in Table No. 2, from the central switchboard, to each ventilation unit, which are indicated on the project diagrams in section OB and marked: PV1.

Cables must be non-combustible VVGng, or analogue, have a protective sheath (flexible metal corrugated sleeve, or corrugated sleeve made of PVC SUPER MONOFLEX 12ED, which is self-extinguishing).

In the floors, make passage nodes from a steel pipe, or use existing ones. Fix the corrugated sleeve with the cable threaded in it on clips with self-tightening clamps.

After laying the cable, remove the residue and connect it to the control panel of the ventilation unit.

The above-mentioned ventilation units have their own control panels, which are provided with protection against power drops, phase displacement, short circuits, and overloads. When connecting the cable to the control panel of the ventilation unit, the ends of the cable must be stripped and sleeve ends must be installed on them and crimped with a crimper

No p/p	Service Area	I'm named in the project	Name of equipment	Maximum consumption of kW summer/winter	Cable core cross-section, mm, copper / aluminum (Quantity, m)
1		PV 1	PV1 Aerostar-50-30 PV1 Aerostar automation kit	2/16,99 380V/3f/50Hz	

Note: The equipment will operate in a cyclic mode, respectively, the consumption of the installations in the summer will be about 1.99 kWh. At temperatures from -10C to -19C 11.99-16.99kW, respectively.

### 3.3. Basic heating solutions

The heating system with local heating devices in the premises of the building remains unchanged.

### 3.4. Fire safety

To ensure the fire safety of ventilation systems, the following measures are provided:

- shutting down ventilation systems in the event of a fire;

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- Normally open fire valves with electric drives of the company "Interconditioner" are supposed to be installed on general ventilation systems in front of the fire barrier or outside.

3.5. Energy saving

In order to save heat and electricity, it is envisaged:

- Supply and exhaust units are equipped with recuperators, which makes it possible to maximize the use of the heat of the exhaust air to heat the external supply air.

3.6 Maintenance of heating and ventilation systems

Maintenance of ventilation systems is carried out by the customer's repair services. Or by a contractor under a pre-agreed contract.

4. External storm sewer networks

4.1. General part

Project of external rainwater sewerage networks of the facility: "Current repair of the anti-radiation shelter No. 52108 (group P-4) of the Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region" on the basis of current state building codes:

- DBN V.2.5-75:2013 "Sewerage. External Networks and Structures";
- DBN B.2.2-12:2019 "Planning and Development of Urban and Rural Settlements".

The project has been developed in accordance with current regulations, rules and standards.

On-site networks of water supply, domestic and rainwater sewerage are developed on the general plan of the development site in accordance with the tasks of the developers of internal engineering networks.

4.2. Storm sewer network K2

The storm sewer system is designed to drain rain and melt water from the roof of the building.

Stormwater flows through a system of pipelines to filtration wells and is then filtered into the soil.

The network is designed from PVC pipes SN 8, DSTU B V.2.5-32:2007; Ø110x3.4,

Estimated amount of rainwater from the roof:

$$Q = k_R \cdot F \cdot r$$

$k_R=1$  is the risk ratio, which is determined in accordance with Table 18

DBN V.2.5-64: 2012 depending on the category of the designed drainage system;

F=579m2 is the total catchment area:

r is the minimum estimated rain intensity for a given area

$$r = \frac{k \cdot q_{20}}{10000}, \partial e$$

Q20 is the intensity of rain, l/s per 1 ha, for a given area lasting 20 minutes. determine according to Table A1. DBN V.2.5-75:2013 "Sewerage. External Networks and Structures".

Q20 – parameter equal to 102 l/s;

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K is the coefficient that takes into account the increase in flow and is determined according to Figure 1 DBN V.2.5-64: 2012 depending on the parameters n and B;

n is the degree indicator, which is determined according to Table A.1 DBN B.2.5-75:2013.

n is a parameter equal to 0.63;

B is a parameter that is determined by the formula

$$B = \frac{L^2}{i \cdot q_{20}^{1.5}} \text{ where}$$

L = 6.0 m is the length of the path of rainwater from the roof

i=0.14 is the average slope of the roof surface

$$B == 0.25 \frac{6^2}{0,14 \times 102^{1,5}}$$

K = 2,70,






Total amount of rainwater from the roof:

$$Q_{pok}==15.95 \text{ l/s}, \frac{2,7 \times 102 \times 579}{10000}$$

4.3. Occupational health and safety

Personnel who have been instructed on safety and labor protection are allowed to work with the equipment of water supply and sewerage facilities. Maintenance personnel in contact with effluents must work in overalls, which must be washed and disinfected periodically. Containers and wells must be equipped with metal staples or pellets. Work in the wells of underground utilities should be carried out by at least three people. Workers are given safety belts and ropes 2 m more than the depth of the wells. It is strictly forbidden to lower people into wells and containers that are not ventilated and not checked for gas contamination

Explanatory note

List of drawings of the main set																	
Sheet		Name										Notes					
1		General data (Beginning)															
2		General data (Continued)															
3		Measurement plan of the basement floor (1:100)															
4		Plan of dismantling work of the basement floor(1:100)															
5		Dismantling Scope Sheet															
6		Plan of installation work on the basement floor. (1:100)															
7		Section 1-1. List of decoration of premises, explication of floors, list of materials of partitions.															
8		Specification of Doorway Filling Elements															
9		Statement of the scope of work on the arrangement of slopes															
10		Layout of the foundations for partitions, concrete floor slabs. Nodes.															
11		Masonry plan for partitions from a gas block. Fragment of the plan in axes A-C/ 1/1-3. List and specification of jumpers. List of materials of partitions. Junctions of partitions to existing walls															
12		Hole filling unit in fire walls. Hole Finishing List															
13		Fragment 1. Arrangement of WC (1:50)															
14		Diagram of the location of holes in existing walls. Fragment of the plan in axes A-C/1/1-3 (1:100)															
15		Schemes for making holes in existing walls Details and sections. Specification of Hole arrangement Elements															
16		Fragment 2. Arrangement of a pit with a ladder (1:50)															
17		Fragment 2. A pit with a ladder. Reinforcement schemes, specification. (1:20)															
18		Fragment 2. Diagram of the attic. Diagram of the location of embedded parts of the attic. (1:50)															
19		Fragment 2. Scheme of racks and beams of the attic fence. Diagram of the load-bearing structures of the attic. (1:50)															
20		Fragment 2. Attic. Sections, specification. (1:50)															
21		Scheme of repair work of the blind area and plinth. Fragment of the plan of the lyceum building at the level of the blind area (1:100). Nodes of the basement and blind area (1:25)															
22		Layout of accessibility facilities for LMG (1:100) Wall handrail mounting diagram (1:5) LMG Equipment Specification															
23		Installation of railings on the stairs of entrances and exits to the shelter															
173-WP-2024-F-AS																	
"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"																	
Changes		Several.		Sheet		Dock.		Signature		Date							
CPE				Shelikhova V.								Stage		Sheet		Sheets	
Developed				Kovaleva A.								WP		1			
Checked				Shelikhova V.													
Norm.Control.				Pyrov Y.													
																	

Погоджено

Взам. інв. №

Підпис і дата

Інв. № підл.

Аркш A4

Погоджено:		
Зам. інв. №		
Підпис і дата		
Інв. № ор.		

Working project «Current repair of the anti-radiation shelter № 52108 (Group P-4) Ingul Lyceum of Ingul village council, at: st. Gasden, 49, c. Ingulka, Bashtanka district, Mykolaiv region» made on the basis of :

- Long-term contract from 19 september 2023 year registration number LTA/UACO/2023/47576/FORTIS Engineering Company LLC/3/4/5 (identifier 1009321), UNOPS Internal File Identifier: UNOPS-RS-2023-G-002 from 01 october 2023 year, project number appointed by UNOPS 24129-001;
- dimensional drawings;
- technical report ;

The project documentation is developed in accordance with the requirements of regulatory documentation:

- DBN V.8.2.2-4:2018 Buildings and structures. Preschool education institutions
- DBN V.2.2-9:2018 Public buildings and structures. Basic Provisions
- DBN A.2.2-3-2014 Composition and content of project documentation for construction
- DSTU 9243.4:2023 Project documentation system for construction. Basic requirements for project documentation
- DSTU 9243.7:2023 Project documentation system for construction. Rules of execution Architecturally-construction working drawings
- DSTU B V.2.6-49:2008 Stair railing, balconies and roofs, steel
- DSTU A.2.2-12:2015 Energy Efficiency of Buildings
- DBN V.1.1.7-2016 Fire safety'construction projects
- DBN V .2.6-220:2017" Coating of buildings and structures ";
- DBN A 3.2-2-2009 " Occupational Health and Safety in Construction ";

When developing a set of drawings, the following natural conditions are taken into account:

climatic region - II;

characteristic value of snow load - 870 Pa ;

characteristic value of wind load - 470 Pa ;

winter outdoor temperature - minus 23 ° C ;

standard freezing depth - 0,6 m ;

The building is heated;

Degree of fire resistance - II;

minimum permissible value of heat transfer resistance of enclosing structures for windows  $\lambda=0,7\text{m}^2\cdot\text{K}/\text{W}$ , doors  $\lambda=0.6\text{m}^2\cdot\text{C}/\text{V}$ ;

Brief description of the object:

The building is located at: st. Gasden, 49, c. Ingulka, Bashtanka district, Mykolaiv region;

Year of construction: r.

Exterior walls of the building (aerial part): ceramic brick walls - 510mm,

PRU Walls (plinth and foundations): rubble masonry;

Floor structures: reinforced concrete slabs

Flooring construction: concrete Preparation

Door: external - metal/ wood, internal - metal/ wood

Projected part of the building: basement.

For a legend 0,000 accept the level of the clean floor of the first floor

All materials, that are used in the project, comply with Sanitary-hygienic and fire safety standards. for fire hazard indicators above G2, B2, D2, T2 and flame spread index not more 10 must have positive conclusions of the state Sanitary-epidemiological expertise Ministry of Health of Ukraine;

Floors are designed in accordance with the requirements of DBN B.2.2-9:2018 "Buildings and structures. Public buildings and structures. Basic Plots";

Main types of work and structures, for which acts are drawn up for the closure of concealed works, acts of intermediate acceptance of critical structures according to Appendix H DBN A .3.1-5:2016 "Organization of construction production".

\*\* \* The project is allowed to replace the equipment and materials specified in the specification with similar ones in their technical parameters.

\*\* \*\* This project was developed in accordance with the recommendation of the SES of 14.06.2022 No. 03-1870/162-2 on the organization of the simplest shelter. In accordance with the Decree of the Cabinet of Ministers of Ukraine № 406 dated June 7, 2017 these works on repair of the basement do not require obtaining permits.






OCCUPATIONAL HEALTH AND SAFETY DURING REPAIR WORK

A set of works on repair work must be performed in accordance with the requirements for labor protection, regulated by the following normative documents:

- DBN A.3.2-2-2009 Occupational Health and Safety in Construction;
- NAPB A.01.001-2014 Fire safety rules in Ukraine;
- NPAOP 0.00-1.80-18 «Health and safety rules during the operation of cranes, lifting devices and the corresponding equipment».

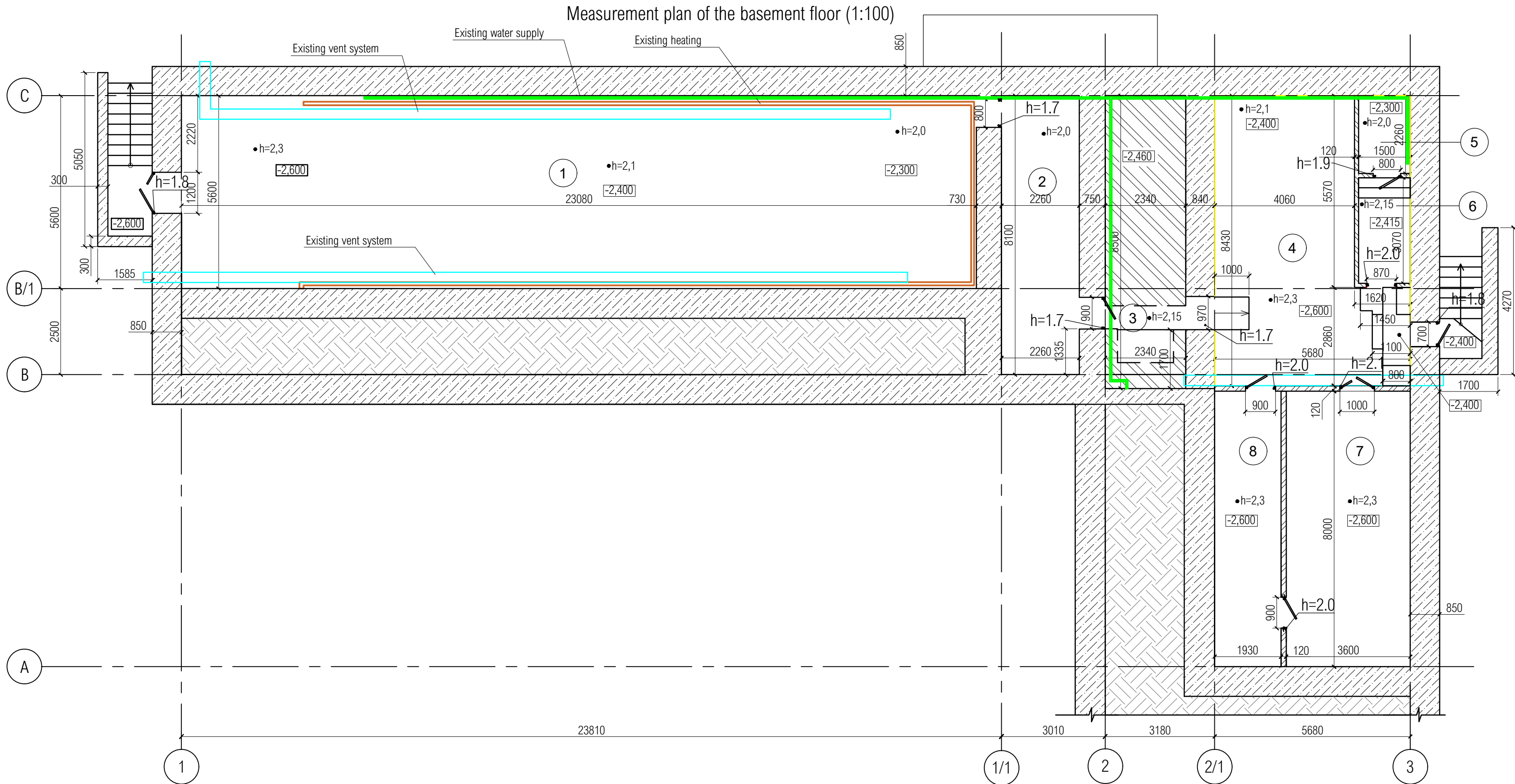
WARNING! Arrangement of the entrance group, floor and also holes, should be carried out only in dry weather to prevent wetting of the base under the foundation and its subsequent subsidence, which can lead to the destruction of the external walls. At the time of construction work, the area of installation of the entrance group, floor and holes should be additionally protected from the influence of the environment with canopies with drainage. The sequence of work is carried out in accordance with the section of the WEP, which is developed by the general contractor before the start of work

- Construction-installation work should be carried out in strict compliance with safety rules in accordance with DBN A.3.2-2-2009 "Occupational health and safety industrial safety in construction".
  - Materials and products, which are used, must have a sanitary-hygienic conclusions, fire safety certificates, certificate of conformity, if it's provided for by regulatory documentation and comply with state standards..
  - List of types of work, for whom it is necessary to draw up acts for concealed work, and acts of intermediate acceptance critical structures:
- Concrete works:
- Installation and Preparation of formwork for concreting.
  - Installation of reinforcement products and embedded parts.
  - Execution of welding works.
  - Performance of anti-corrosion protection with the extent permitted.
  - Arrangement of shrinkage and temperature joints in structures.
- Kam'for example, in the case of:
- waterproofing'(a) to the extent permitted by the provisions of this t;
  - Reinforcement of cams'(a) to the extent permitted by the provisions (walls, piers)
  - Stacking in cam'(a) to the extent permitted by the provisions of this convention, the secretary-general shall ensure that the contracting t, their anti-corrosion protection;
- Floor:
- Preparing the base for floors;
  - Arrangement of each layer of the floor;
  - Adoption of ready-made floor structure
- Wall decoration, ceiling:
- Arrangement of the base for wall decoration, ceiling (availability of protection of premises from precipitation; waterproofing, thermal and sound insulation, mounted embedded products);
  - Arrangement of each element of wall decoration, ceiling.
  - Adoption of ready-made wall structure, ceiling
- Door Arrangement:
- Preparation of the opening and slopes for the installation of door blocks (vertical and horizontal alignment; straightness of openings; perpendicularity of the corners of the opening; quality of the surface of the opening in the area of abutments of doors to the walls of buildings, strength of adhesion of the plaster layer);
  - Installation of mechanical fasteners (correct location of the load-bearing and auxiliary support pads-substrates, compliance of fasteners project);
  - Arrangement Heat, soundproofing of the abutments of door blocks to the walls of houses (types of insulation materials, compliance with technological time limits intervals, other technological nuances and features, general view of the insulation);
  - Arrangement of thresholds;
  - Installing door pasts, accessories;
  - Acceptance of ready-made structure and doors
- Internal Sanitary-technical work:
- Preparation of , channels and furrows for laying pipelines in them and installing Sanitary- technical devices.
  - Ensuring correct slopes, pipe bending, installation sanitary-technical devices.
  - Execution of welded to the extent permitted.
  - Installation of fittings, safety devices, automation control-measuring instruments.
  - Taking Sanitary-technical devices and systems
- Metal structures
- Preparation of places of support and fastening of steel structures to foundations, walls supports, including geodetic verification of their compliance of the actual position of the design (in plan and height) drawing up an executive scheme.
  - Execution of weld.
  - Performance of anti-corrosion protection of welded to the extent permitted.
  - Acceptance of ready-made metal structures.
- Excavation works
- Arrangement of earthworks, embankments and backfills in pits and trenches.
  - Arrangement of layer-by-layer soil compaction (achieving design density, the thickness of each deposited and compacted layer, etc.).
  - Determination of the level and nature of groundwater.
  - Implementation of protective measures during construction on settling and swelling soils, in the swamps.
  - Drainage arrangement.
  - Removal and use for remediation of the fertile soil layer.
  - Implementation of measures to fix soils.
- Installation of electrical installations
- Arrangement of trenches and bases for the installation of cables.
  - Arrangement of cable laying in the trench.
  - Arrangement of cable couplings.
  - Installation of protective coating of cables.
  - Checking the wires of lighting networks laid along the walls and in the furrow under the plaster.
  - Grounding and zeroing arrangement.
  - Acceptance of the finished design of electrical installations.
  - Note. If necessary, other types of work can be formalized with such acts.






						173-WP-2024-F-AS			
						"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"			
Changes	Several.	Sheet	Dock.	Signature	Date				
CPE		Shelikhova V.				Stage		Sheet	Sheets
Developed		Kovaleva A.							
Checked		Shelikhova V.				WP		2	
						General data (continued)			
Norm.control.		Pyrov Y.							



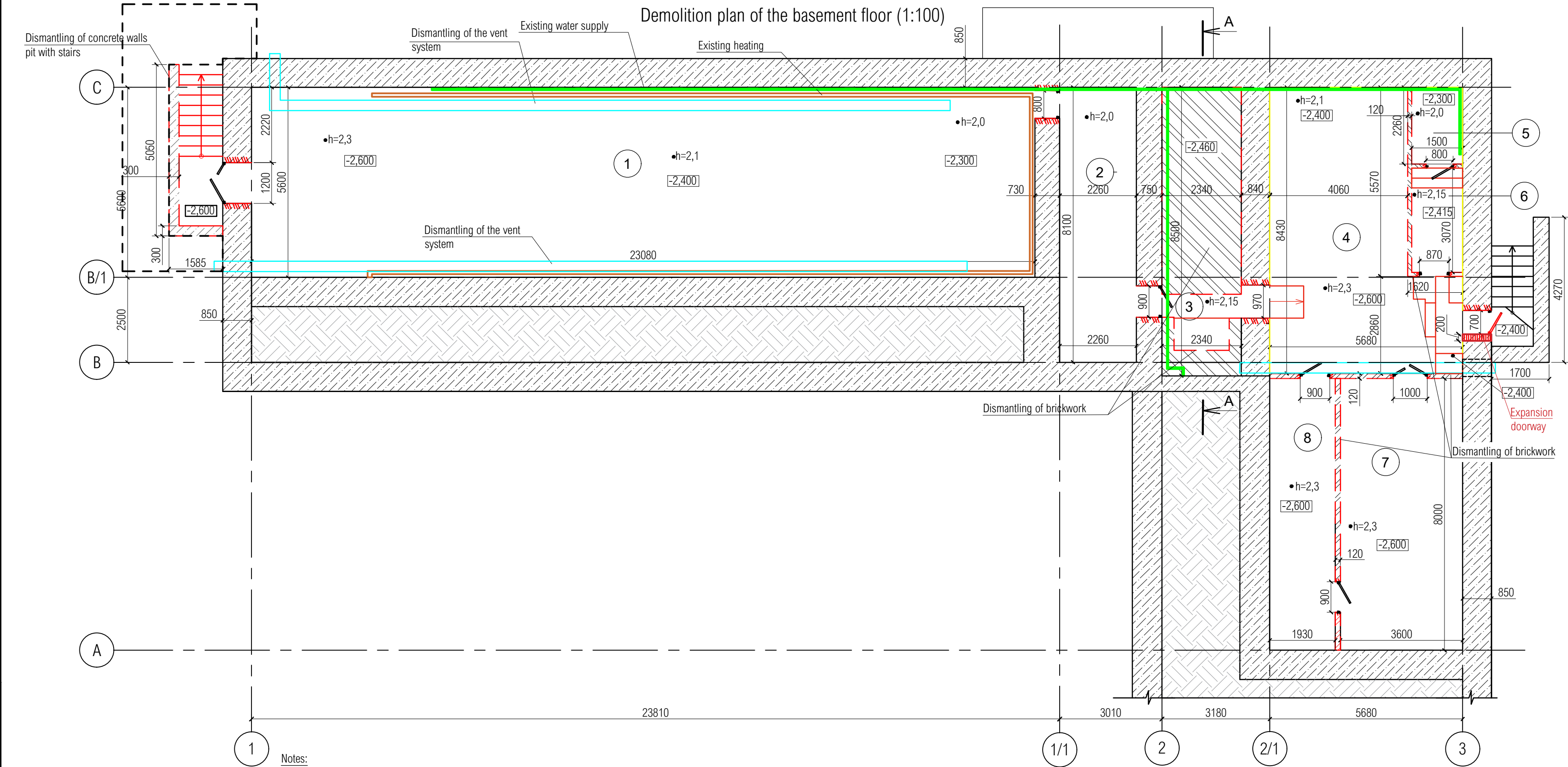
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Інв. № ор.					



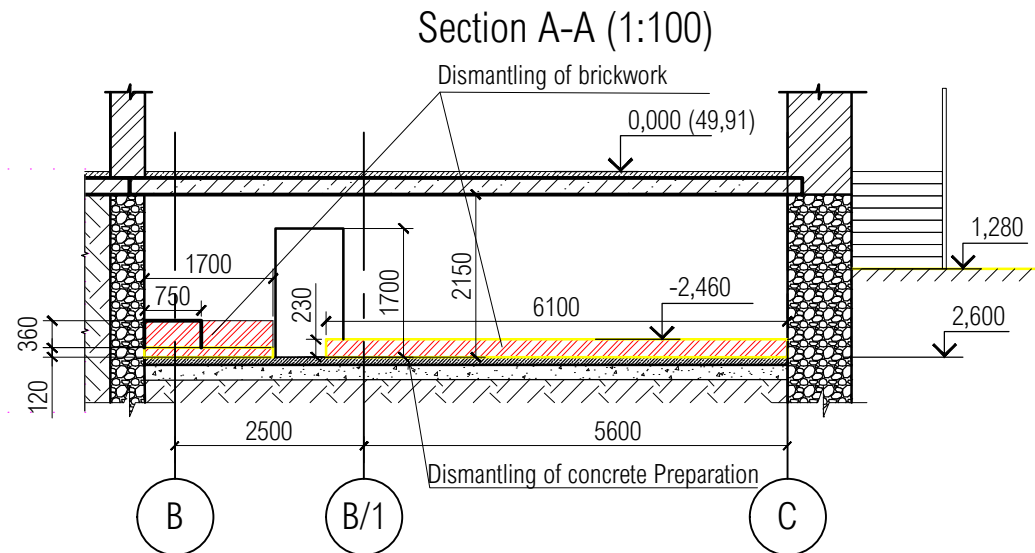
Explication of premises			
Room Number	Name	Area, m <sup>2</sup>	Note.
1	Room	129,24	
2	Room	18.30	
3	Room	19.88	
4	Room	38.85	
5	WC	3.39	
6	WC	4.60	
7	Room	28.80	
8	Room	15.42	

						173-WP-2024-F-AS			
						"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"			
Changes.	Several.	Sheet	Dock.	Signature	Date				
CPE		Shelikhova V.				Stage		Sheet	Sheets
Developed		Kovaleva A.				WP		3	
Checked		Shelikhova V.							
Norm.Counter.		Pyrov Y.				Measurement plan (1:100)			

Погоджено:	
Зам. інв. №	
Підпис і дата	
Інв. № ор.	



Explication of premises			
Room Number	Name	Area, m <sup>2</sup>	Note.
1	Room	129,24	
2	Room	18.30	
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4	Room	38.85	
5	WC	3.39	
6	WC	4.60	
7	Room	28.80	
8	Room	15.42	








- Attention!**  
**Procedure for expanding the doorway:**
1. dismantling of doors, moldings.
  2. dismantling of plaster from the inner and outer walls for 0.6-1.0 m along the perimeter of the opening.
  3. check the length of the lintel above the doorway.
  4. to provide information for making a final decision on slot expansion.
  5. after confirmation of permissible work on widening the opening - dismantle the specified part of the wall. The size of the slot after dismantling works 900x1800 (h)

- Legend:
- dismantling the partition;
  - dismantling of existing doors;
  - punching/ enlargement of the slit;
  - Dismantling the vent. system;
  - expansion of the doorway;

- Notes:
1. All work must be carried out in accordance with the requirements: DBN A.3.1- 5: 2016 Organization of construction production, DBN A.3.2-2-2009 System of labor safety standards.. Occupational health and safety in construction. Basic Provisions (NPAOP 45.2-7.02-12)
  2. All dimensions must be inspected and specified by the site contractor.
  3. This project envisages the following works:  
3.1. Internal repair work:
    - providing ventilation for the shelter, installation of a ventilation room;
    - restoration of interior decoration of premises;
    - replacement of damaged doors;
    - finishing of door jambs;
    - ensuring accessibility for LMG
    - dismantling of brick partitions and installation of new gas-block partitions;
    - dismantling of lighting fixtures, switches, rosette;
    - dismantling of the existing ventilation system
    - dismantling of cement floor preparation with excavation

- Continuation Notes:
- dismantling of the brick pedestal in the toilets, steps from the floor;
  - dismantling of brick partitions and steps;
  - dismantling of plumbing fixtures;
  - dismantling of the power supply;
  - dismantling of information plates and boards with preservation
  - 3.2. Exterior repair work:
    - restoration of basement decoration and blind Area
    - repair of the drainage system in the Area of the shelter Arrangement and the installation of a drainage rainwater system
    - dismantling of the pit with a ladder in axes 1/B-C with the installation of a new one with a lifting platform for LMG
    - restoration of the decoration of the pit with stairs to the basement №2

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Changes.	Several.	Sheet	Dock.	Signature	Date					
CPE		Shelikhova V.						Stage	Sheet	Sheets
Developed		Kovaleva A.						WP	4	
Checked		Shelikhova V.								
						Plan of dismantling work of the basement floor(1:100)				
Norm.Control.	Pyrov Y.									

Погоджено:

Зам. інв. №

Підпис і дата

Інв. № ор.

mark.	Name	Unit of measure	Amount
Room No1 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	15.38
	Excavation of the floor soil (leveling)	m³	28.34
	Dismantling of lime-cement plaster with wall painting	m²	122.67
	Dismantling water-based ceiling paint	m²	129.24
	Dismantling of metal doors 1.2x1.8(h)m	pcs/m²	1/2,16
	Dismantling of ventilation pipes	m.p.	58,9
Room No1 (power)			
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	6.00
	Dismantling sockets	piece.	17.00
	Dismantling switches	Piece.	3.00
Room No2 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	1.46
	Excavation of the floor soil (leveling)	m³	7.34
	Dismantling of lime-cement plaster with wall painting	m²	38.54
	Dismantling water-based ceiling paint	m²	18,30
	Dismantling wooden doors 0.9x1.7 (h)m	pcs/m²	1/1,53
	Dismantling the wooden door frame 0.8x1.7 (h)m	pcs/m²	1/1.36
Room No2 (power)			
	Dismantling sockets	piece.	3.00
	Dismantling switches	Piece.	3.00
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	3.00
Room No3 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	1.59
	Excavation of the floor soil (leveling)	m³	4.97
	Dismantling of brick podium h-230mm	m³	3.28
	Dismantling of lime-cement plaster with wall painting	m²	43.43
	Dismantling water-based ceiling paint	m²	19.88
	Dismantling of brickwork h-360 mm	m³	1.23
Room No3 (power )			
	Dismantling sockets	piece.	3.00
	Dismantling switches	Piece.	3.00
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	3.00
Room No4 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	3.24
	Excavation of the floor soil (leveling)	m³	8.80
	Dismantling of lime-cement plaster with wall painting	m²	26.96
	Dismantling water-based ceiling paint	m²	39.44
	Dismantling of metal doors 0.7 x 1.8(h)m	pcs/m²	1/1,26

mark.	Name	Unit of measure	Several.
	Dismantling the brick partition	m³	3.12
	Dismantling the stairs	m³	0.20
	Розширення дверного прорізу	m³	0.31
Room No4 (power)			
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	3.00
	Dismantling sockets	piece.	3.00
	Dismantling switches	Piece.	3.00
Room No5 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	0.28
	Excavation of the floor soil (leveling)	m³	1.34
	Dismantling floor tiles	m²	3.40
	Dismantling of lime-cement plaster with wall painting	m²	7.52
	Dismantling water-based ceiling paint	m²	3.40
	Dismantling wooden doors 0.8x1.9 (h)m	pcs/m²	1/1,52
Room No5 (power)			
	Dismantling sockets	piece.	1.00
	Dismantling switches	Piece.	1.00
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	1.00
Room No5 (water supply)			
	Dismantling the toilet	piece.	1.00
	Dismantling the sink	Piece.	1.00
	Dismantling the faucet	Piece.	1.00
	Dismantling of PVC pipes with a diameter of 50 mm	m.p	1.50
	Dismantling of PVC pipes with a diameter of 110 mm	m.p	0.50
Room No6 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	0.37
	Excavation of the floor soil (leveling)	m³	1.84
	Dismantling floor tiles	m²	4.60
	Dismantling of lime-cement plaster with wall painting	m²	6.60
	Dismantling water-based ceiling paint	m²	4.60
	Dismantling the wooden door frame 0.87x2 (h)m	pcs/m²	1/1,74
	Dismantling the stairs	m³	0.14
Room No6 (power)			
	Dismantling sockets	piece.	1.00
	Dismantling switches	Piece.	1.00
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	1.00
Room No7 (power)			
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	4.00
	Dismantling sockets / switches	piece.	1 / 1

mark.	Name	Unit of measure	Several.
Room No7 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	2.31
	Excavation of the floor soil (leveling)	m³	2.89
	Dismantling of lime-cement plaster with wall painting	m²	26.68
	Dismantling water-based ceiling paint	m²	28,8
	Dismantling of metal doors 1.0 x 2.1(h)m	pcs/m²	1/2,1
	Dismantling of a brick partition 120mm	m³	2.01
Room No8 (finish)			
	Dismantling of the existing building. floor preparation (800 mm)	m³	1.33
	Excavation of the floor soil (leveling)	m³	1.44
	Dismantling of lime-cement plaster with wall painting	m²	22.80
	Dismantling water-based ceiling paint	m²	15,42
	Dismantling wooden doors 0.9x2 (h)m	pcs/m²	2/1,8
Room No8 (power)			
	Dismantling sockets	piece.	2.00
	Dismantling switches	Piece.	2.00
	Dismantling of LED luminaires, l = 1.2 m with preservation for re-installation	piece.	2.00
Porch No1			
	Dismantling of concrete walls, stairs and pit platform	m³	3.70
	Dismantling of the metal structures of the canopy with preservation	kg.	100
Dismantling the interior door jamb trim			
	Dismantling of interior door jambs, lime-cement plaster, 750mm wide	m²	0.55
	Dismantling of interior door jambs, lime-cement plaster, width 670 mm	m²	2.60
	Dismantling of interior door jambs, lime-cement plaster, width 690 mm	m²	2.76
	Dismantling of interior door jambs, lime-cement plaster, width 780 mm	m²	3.14
Power supply			
	Dismantling the power supply	m.p.	100.00
	Dismantling of information plates with preservation	piece	4.00
Water supply			
	Dismantling of PVC pipes with a diameter of 20 mm	m.p	19.00

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"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"

Stage

Sheet

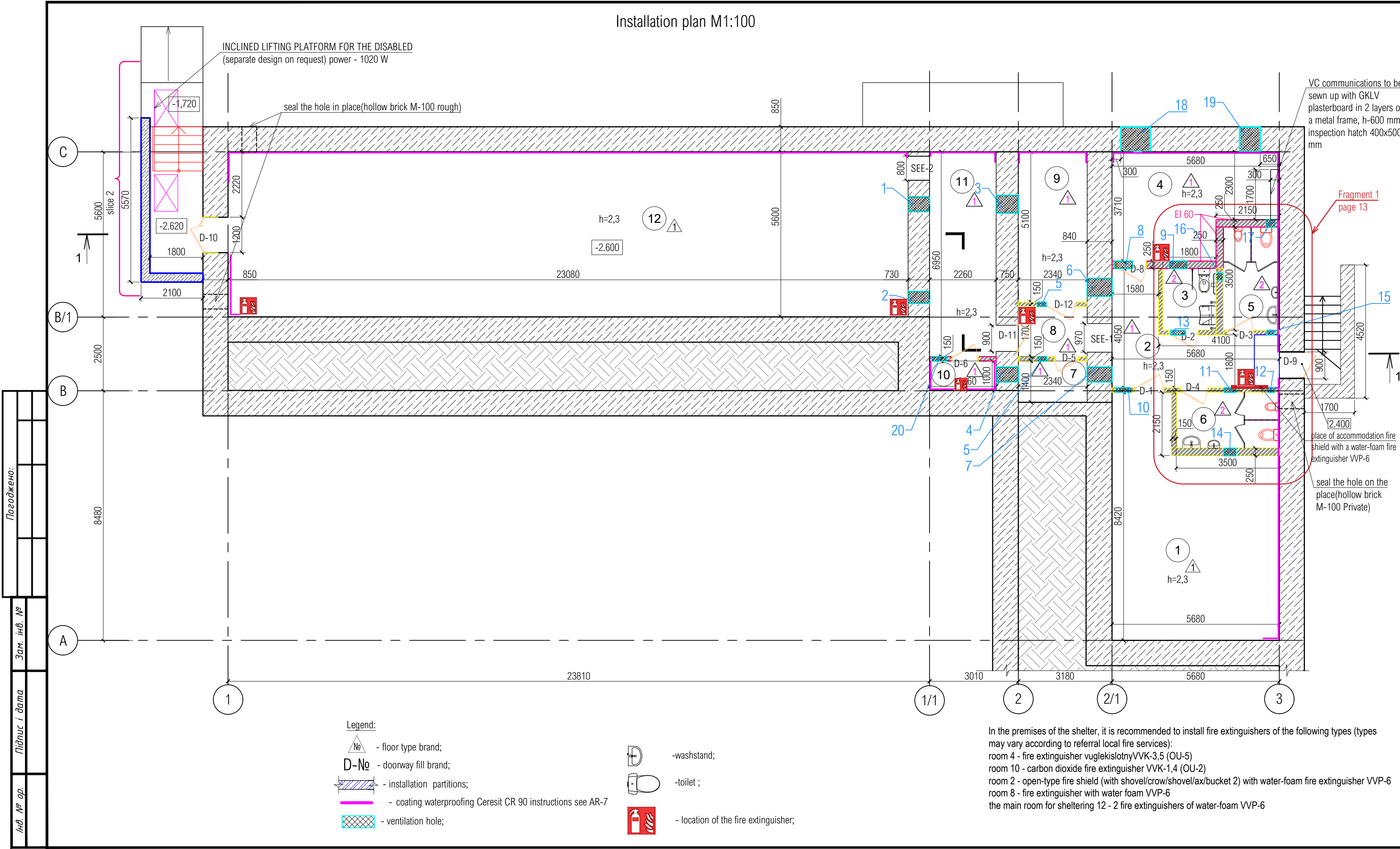
Sheets

WP

5

Dismantling Scope Sheet










Explication of premises				
Room Number	Name	Area, m <sup>2</sup>	Execution Note.	
1	Premises for persons to be sheltered	39.98		
2	Corridor	13.79		
3	Universal sanitary and hygienic for LMG	3.78		
4	Ventilation	18.05		
5	Women's WC	6.66		
6	Men's WC	6.66		
7	Water and food conservation facilities	3.28		
8	Corridor	3.98		
9	Premises for persons to be sheltered	11.93		
10	Switchboard room	2.26		
11	Premises for persons to be sheltered	15.71		
12	Main room	129.25		
Total Area		255.33		
Estimated Area		196.88		

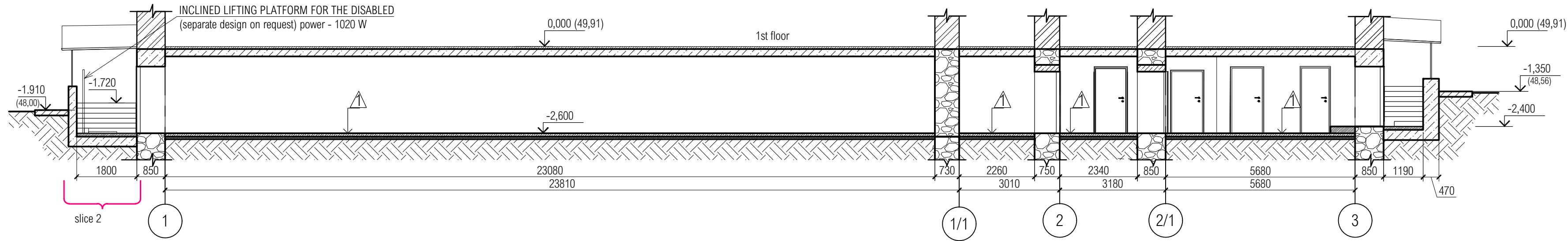
- Notes:
- All work must be carried out in accordance with the requirements: DBN A.3.1- 5:2016 Organization of construction production, DBN A.3.2-2-2009 System of Occupational Safety Standards. Occupational Health and Safety in Construction. Basic Provisions (NPAOP 45.2-7.02-12)
  - All dimensions must be checked and specified by the on-site contractor.
  - Designs for the arrangement of openings and openings, see. sheet. AS 11-12.
  - For a list of room decorations, see. sheet. AS 8.
  - Specification of lintel elements, for a list of materials for walls and partitions, see. sheet. AS.
  - The color solution for the decoration of the premises should be agreed with the management of the institution (asset holder).
  - Work with materials should be carried out in accordance with the regulations for the work of materials. Preparation of the base is carried out in accordance with requirements of DSTU-N B A.3.1-23:2013 and DSTU-N B V.2.6-212:2016. The substrate must be dry, durable and dust-free, dirt, oil, fats, wax and paint residues. Fragile layers need to be removed.
  - The floor of all rooms must be resistant to the use of disinfectants, slip class R9.
  - Requirements for finishing materials for walls and ceilings: fire hazard indicators higher than G2, B2, D2, T2 and have certificates of conformity in accordance with the building codes of Ukraine and in accordance with the "Sanitary regulations for institutions general education".
  - Work with materials should be carried out in accordance with the regulations for the work of materials and technical maps and according to "Sanitary regulations for institutions general education".
  - Pipelines should be laid in an open way, cover with thermal insulation, close with protective boxes (see. CAB Section).
  - In places where utilities pass through walls and partitions, having a fire resistance limit, need perform refractory sealing.
  - The hole filling unit is typical and corresponds to the technical example, in the case of the united states if for example, in the case of, what is the certificate forged in Ukraine.
  - Types of technical parameters (between moisture, size, intelligence, etc.) must be accepted in accordance with the relevant Certificate of Compliance and Regulations from a Hilti fire safety equipment. Works on the installation of fire protection of penetrations of engineering networks, construction joints, blind holes it is recommended to carry out the mounting device if for example, in the case of if you, how have permission to carry out the (a) to the extent permitted by the provisions of this convention, the special training.
  - Openings in the walls, partitions with a cross-section of less than 100x100mm for the passage of pipelines of VAC sections, ES punch in place according to the drawings of the relevant sections.
  - Preparation of metal surfaces should be carried out in accordance with Table. 29 Snip 2.03.11-85 Protection of building structures against corrosion. Perform anti-corrosion protection of metal structures, prime in two layers with GF primer-021 -6,33m<sup>2</sup>. Total thickness of the paintwork, including soil, must be at least 120 microns.

Hole Table								
No on the plan	Designation	Quantity	Wall thickness, mm	Mark from the bottom of the plate, mm	Dimensions		Note	
					Height, mm	Width, mm		
1	Ventilation	VAC	1	730	-250	400	500	rubble masonry, existing
2	Ventilation	VAC	1	730	-250	300	400	rubble masonry, existing
3	Ventilation	VAC	1	750	-250	400	600	rubble masonry, existing
4	Ventilation	VAC	1	750	-250	300	500	rubble masonry, existing
5	Ventilation	VAC	2	250	0	200	300	gas block
6	Ventilation	VAC	1	840	-350	400	600	rubble masonry, existing
7	Ventilation	VAC	1	840	-250	300	500	rubble masonry, existing
8	Ventilation	VAC	1	250	0	400	600	gas block
9	Ventilation	VAC	1	250	0	400	600	gas block
10	Ventilation	VAC	1	150	0	300	500	gas block
11	Ventilation	VAC	1	150	0	200	400	gas block
12	Ventilation	VAC	1	150	0	-	Ø125	gas block
13	Ventilation	VAC	1	150	0	200	400	gas block
14	Ventilation	VAC	1	250	0	200	400	gas block
15	Ventilation	VAC	1	150	0	-	Ø125	gas block
16	Ventilation	VAC	1	250	0	-	Ø125	gas block
17	Ventilation	Q&C	1	250	0	-	Ø200	gas block
18	Ventilation	Q&C	1	850	-250	500	700	rubble masonry, existing
19	Ventilation	Q&C	1	850	-250	500	1000	rubble masonry, existing
20	Ventilation	Q&C	1	150	0	300	400	gas block

						173-WP-2024-F-AS			
						"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"			
Changes	Several	Sheet	Dock	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.					WP	6	
Developed		Kovaleva A.							
Checked		Shelikhova V.							
						Plan of installation work on the basement floor (1:100)			
Norm.control	Pyrov Y.								

Погоджено:	
Зам. інв. №	
Підпис і дата	
Інв. № ор.	

Cut 1-1



Explication of flooring

Room number	Floor type	Floor scheme and floor type by series	Floor element data (name, thickness, base, etc.)mm	Area m2	Notes
1,2,4,7-12	1		1. Improved painting of Siltek Beton Pro for 2 times; 2. Deep permeability primer Ceresit CT17 3. Ceresit CN69 self-leveling compound - 10 mm by Ceresit CT 17 primers; 4. * Reinforced concrete slab C12/ 15 W4 reinforced with mesh Ø5Vr1 cell 50x50 - 100mm; 5. * Euroroofting material Technoelast EPP; 6. * Bituminous primer; 7. * Concrete Preparation C8/10-80mm; 8. * Existing soil base;	238,34	
3,5,6	2		1. High-elastic waterproofing PROOFLEX VA-33, Siltek; 2. Deeply permeable primer Ceresit CT 17; 3. Ceresit CN69 self-leveling compound - 10 mm by Ceresit CT 17 primers; 4. * Reinforced concrete slab C12/ 15 W4 reinforced with mesh Ø5Vr1 cell 50x50 - 100mm; 5. * Euroroofting material Technoelast EPP; 6. * Bituminous primer; 7. * Concrete Preparation C8/10-80mm; 8. * Existing soil base;	16.87	

\* - about'for example, in the case of the united states of america, the united states. Sheet AS-10

List of room finishes. Area, m<sup>2</sup>

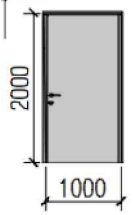
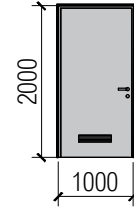
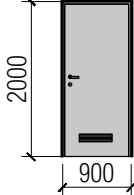
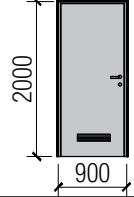
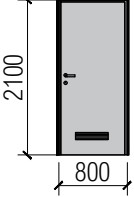
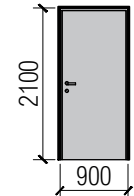
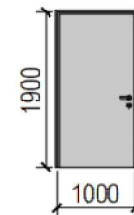
Name or number of the premises	Type of decoration of interior elements				Notes
	Ceiling	Area	Walls and partitions	Area	
1-11	Ceresit CT17 primer; Cement-polymer putty Ceresit CT-29 2mm; Ceresit CT17 primer; Improved Ceresit painting IN-53 for 2 times;	125.96 m <sup>2</sup>	Ceresit CT17 primer; C/P mixture - 10 mm on a plaster mesh; Cement-polymer putty Ceresit CT-29 3 mm; Ceresit CT17 primer; Improved Coloring Ceresit IN-53 for 2 times;	308.47 m <sup>2</sup>	Premises No. 1, 2, 4-6, 9-11 : Vertical waterproofing of external walls with cement-polymer mastic Ceresit CR 90 - 2.5 mm, at a height of h-1.8 m from the existing coating: 48.0 m <sup>2</sup>
12	Ceresit CT17 primer; Cement-polymer putty Ceresit CT-29 2mm; Ceresit CT17 primer; Improved painting of Ceresit IN-53 in 2 times;	129,25 m <sup>2</sup>	Ceresit CT17 primer; C/P mixture - 10 mm on a plaster mesh; Cement-polymer putty Ceresit CT-29 3 mm; Ceresit CT17 primer; Improved Coloring Ceresit IN-53 for 2 times;	128,17 m <sup>2</sup>	Room No. 12 Vertical waterproofing of external walls with cement-polymer mastic Ceresit CR 90 - 2.5 mm, to a height of h-1.5 m from the existing coating: 47.61 m <sup>2</sup>
Partial repair of floor slabs (ceiling 12% of the area) with mixture Ceresit CD 25 t-30 mm (see notes sheet.6)				30,63 m <sup>2</sup>	
Gypsum plastering of GKL communications in 2 layers on a metal frame				1.71 m <sup>2</sup>	

Notes:  
Instructions for installation of screeds:  
1. Before starting work, it is necessary to determine the level of the finishing screed of the basement floor, taking into account all the layers of the floor covering and align them to one mark.Instructions for the installation of coating waterproofing of the basement floor:  
2.1 Preparation of the base is carried out in accordance with DSTU-N B A.3.1–23:2013 and DSTU-N B V.2.6–212:2016.  
2.2 The base must be firm and level. Clean the surface from dust, influxes, oil stains and other substances, that reduce adhesion. Small irregularities and fragile Areas of the base need to be removed. The substrate should be flat and rough. All Outer Corners Footprint smooth, and round the inner ones with a radius of at least 3 cm. Before Use Ceresit CR 90 the surface should be moistened, not allowing the appearance of a solid water film. Installation is carried out in this order: first, apply a layer of coating waterproofing, in a thin layer on moisture, but do not wet the surface evenly, in one direction, no gaps. The following layers are applied, following the method «wet wet».  
2.3. The applied layer must be protected from rapid drying. For reliable operation, a freshly Arranged waterproofing layer protect against mechanical damage, by Arranging a finishing layer of plaster. Before completing the work, you should check application and make sure, that the required layer thickness has been achieved Ceresit CR 90.  
3. The color solution for the decoration of the premises should be agreed with the management of the institution (balance changer).  
4. It is allowed to replace the equipment and materials specified in the specification with similar in their technical parameters.  
5. Installation of concrete floor slab and foundations for partitions look. AS drawings-10  
6. Repair of floor slabs as necessary on site: cleaning of fittings with metal brushes, priming and restoration of protective a layer of beams and floor slabs with a fine-grained repair and restoration mixture Ceresit CD 25 t-30 mm.

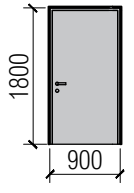
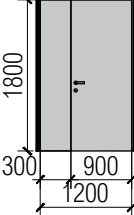
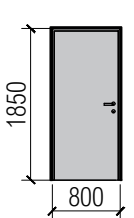
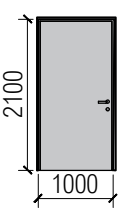
							173-WP-2024-F-AS		
							"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"		
Changes.	Several.	Sheet	Dock.	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.					WP	7	
Developed		Kovaleva A.							
Checked		Shelikhova V.							
							Section 1-1 . List of decoration of premises, explication of floors		
Norm.Counter.	Pyrov Y.								








Specification of Doorway Filling Elements

Poses	Denomination	Name	Quantity per floor				Weight units, kg	Notes
			Basement	1st floor	2nd floor	General ly:		
D-1		Metal-plastic, single-leaf doors with opening dimensions 1000x2000(h)mm, rotary, blind, non-threshold, right opening DPOd 1.0 - 2.0 By G BP K R	1	0	0	1		with a padded stool on both sides, the handle is pressurized on both sides with a mortise lock (burglary resistance class not lower than 2) with a key, two visible hinges,
D-2		Metal-plastic, single-leaf doors with opening dimensions 1000x2000(h)mm, rotary, deaf with ventilation grille 432x95mm, non-threshold, left opening DPOd 1.0 - 2.0 Po G BP K L	1	0	0	1		the handle is pressurized on both sides with a mortise lock with a key, two visible hinges.
D-3		Single-leaf metal-plastic doors with opening dimensions 900x2000(h)mm, rotary, deaf with ventilation grille 432x95mm, non-threshold, right opening DPOd 0.9 - 2.0 Po G BP K R	1	0	0	1		pressure handle on both sides with mortise lock with key, hinges visible two pcs
D-4		Single-leaf metal-plastic doors with opening dimensions 900x2000(h)mm, rotary, blind meadows with a ventilation grille 432x95mm, non-threshold, left opening DPOd 0.9 - 2.0 Po G BP K L	1	0	0	1		
D-5		Single-leaf metal-plastic doors with opening dimensions of 800x2100(h)mm, rotary, blind with ventilation grille 432x95mm, non-threshold, right opening DPOd 0.8 - 2.1 Po G BP K R	1	0	0	1		the handle is pressurized on both sides with a mortise lock with a key, two visible hinges.
D-6		Single-leaf metal fireproof doors with opening dimensions 900x2100(h)mm, rotary, deaf, with threshold, right opening DMP EI45 Od 0.9 - 2.1 Po G V2 R	1	0	0	1		fire door, EI 45, with padded latch on both sides, push handle on both sides with mortise lock (burglary resistance class not lower than 2) with key, hinges visible three pcs
D-8		Single-leaf metal fireproof doors with opening dimensions 1000x1900(h)mm, rotary, with threshold, deaf, left opening DMP EI60 Od 1.0 - 1.9 Po G V2 L	1	0	0	1		fire door, EI 60, with padded latch on both sides, push handle on both sides with mortise lock (burglary resistance class not lower than 2) with key, hinges visible three pcs

Specification of Doorway Filling Elements

Poses	Denomination	Name	Quantity per floor				Weight units, kg	Notes
			Basement	1st floor	2nd floor	General ly:		
D-9		Steel external reinforced single-leaf doors with opening dimensions 900x1800(h)mm, rotary, deaf, with threshold, left opening DStOd 0.9 - 1.8 P G K L	1	0	0	1		with a padded butt on both sides, the push handle is on the USK 1919 bar on both sides with a cylinder-type mortise lock (burglary resistance class not lower than 2) with key, hinges reinforced 25mm visible three pcs., overhead door closer, with anti-panic system, with threshold 20mm., reinforced Δ P=100 kPa. See the notes of item 2
D-10		Steel external reinforced double-leaf doors with opening dimensions 1200x1800(h)mm, rotary., deaf, with threshold, right opening DStDD 1.2 - 1.8 On G K R	1	0	0	1		
D-11		Metal-plastic internal, single-leaf doors with opening dimensions of 800x1850(h)mm, rotary, deaf, non-threshold, left opening DPOd 0.8 - 1.85 Po G BP K L	1	0	0	1		with a padded stool on both sides, the handle is pressurized on both sides with a mortise lock (burglary resistance class not lower than 2) with a key, hinges visible two pcs. overhead door closer
D-12		Metal-plastic internal doors, single-leaf with opening dimensions of 1000x2100(h)mm, rotary, deaf, non-threshold, left opening DPOd 1.0 - 2.1 Po G BP K L	1	0	0	1		with a padded stool on both sides, the handle is pressurized on both sides with a mortise lock (burglary resistance class not lower than 2) with a key, hinges visible two pcs.

- Notes:
- For this sheet, see. together with the sheet 6.
  - The size of the door is indicated in the dimensions of the openings of the walls and partitions. The size of external reinforced doors in the world can be reduced due to structural features
  - Doors are made by a specialized organization after control measurements of building openings in kind tand must meet the requirements of DSTU EN 14351-1:2020, DSTU B V.2.6-77-2009, DBN V.2.6-31:2021.
  - Color of metal-plastic profile, accessories - white.
  - For door blocks, provide thresholds with a height of no more than 20 mm.
  - Door blocks must be supplied as a set, fully prefabricated: locking devices installed, insulating, sealing gaskets, closing mechanisms and finished finishes according to specification.
  - Emergency Exit Devices, hinges and emergency opening devices, installed in the entrance doors on the evacuation routes of people must answer EN 179, EN 1125, EN 1935, EN 13633 or EN 13637. Door, designed for evacuation routes, must be declared by the appropriate class according to the table 2 DSTU EN 14351-1:2020.
  - Schematics of door blocks are shown from the opening side.
  - The installation seam of the junction must meet the requirements of DSTU-N B V.2.6-146:2010 «Guidelines for the design and installation of windows and doors».
  - Work with materials should be carried out in accordance with the regulations for the work of materials. Preparation of the base is carried out in accordance with the requirements of DSTU-N B A.3.1-23:2013 and DSTU-N B V.2.6-212:2016. The substrate must be dry, durable and dust-free, dirt, oil, fats, wax and paint residues. Fragile layers needs to be deleted.
  - The color solution for the decoration of the premises should be agreed with the management of the institution (balance changer).
  - It is allowed to replace the equipment and materials specified in the specification with similar in their technical parameters.

						173-WP-2024-F-AS			
						"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"			
Changes.	Several.	Sheet	Dock.	Signature	Date				
CPE		Shelikhova V.				Stage		Sheet	Sheets
Developed		Kovaleva A.				WP		8	
Checked		Shelikhova V.							
Norm.Counter.		Pyrov Y.				Specification of Doorway Filling Elements			








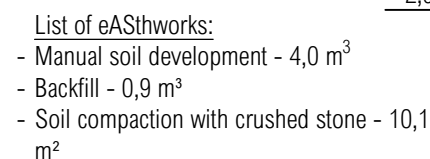
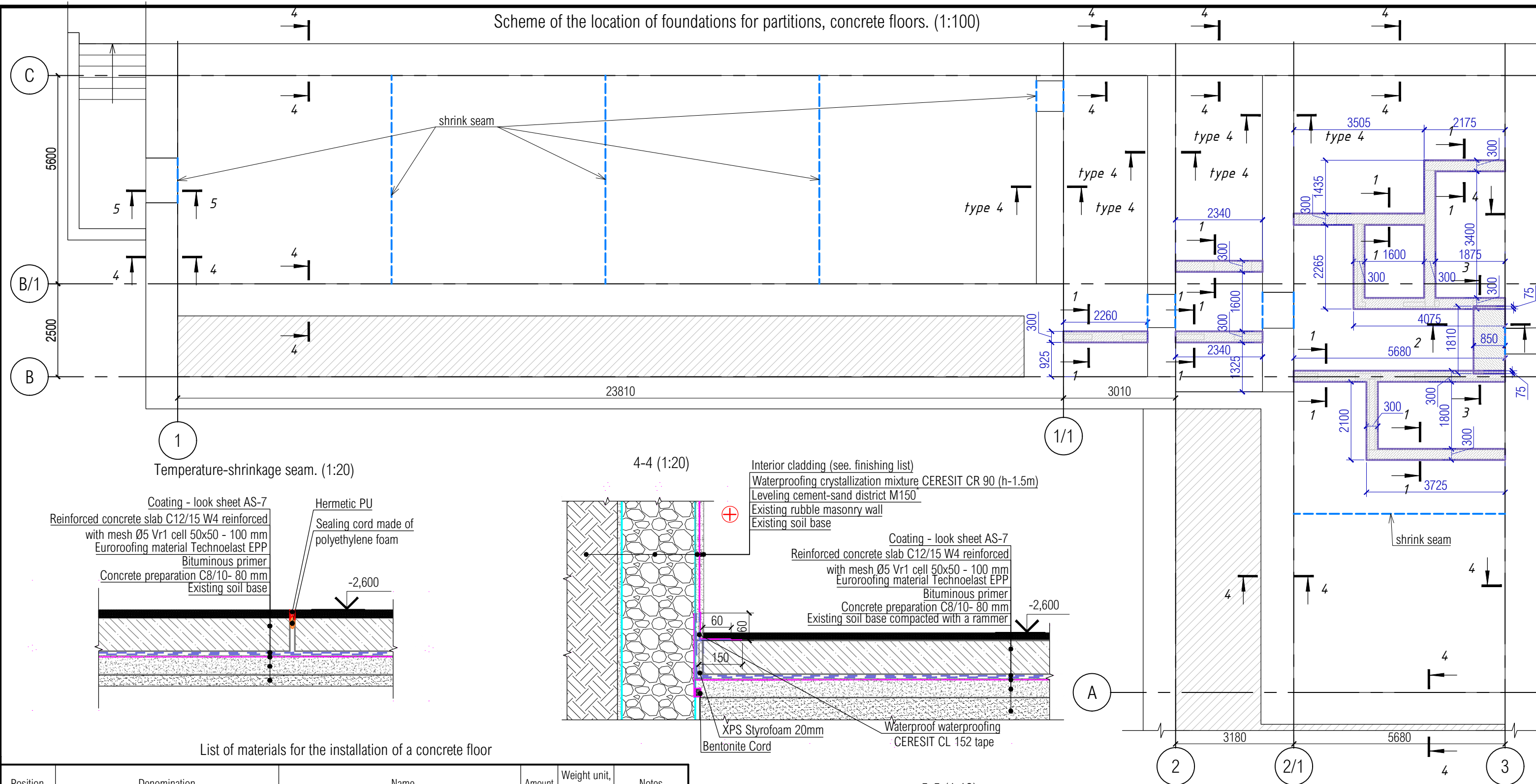
Statement of the scope of work on the Arrangement of slopes

nop/n	Name	Unit of measure	Quantity
	Internal door jambs:		
	Installation of internal door jambs with a width of 70 mm.		
	Ceresit CT-17 priming;	m²	2.06
	Arrangement of plaster punches (external);	m.p.	29.40
	C/N plaster 10 mm;	m²	2.06
	Cement-polymer putty Ceresit CT-29 2 mm;		
	Ceresit CT17 primer;		
	Improved painting of Ceresit IN-53 in 2 times;		
	Installation of internal door jambs with a width of 170 mm.		
	Ceresit CT-17 priming;	m²	1.66
	Arrangement of plaster punches (external);	m.p.	9.80
	C/N plaster 10 mm;	m²	1.66
	Cement-polymer putty Ceresit CT-29 2 mm;		
	Ceresit CT17 primer;		
	Improved painting of Ceresit IN-53 in 2 times;		
	Installation of internal door jambs with a width of 650 mm.		
	Ceresit CT-17 priming;	m²	3,12
	Arrangement of plaster punches (external);	m.p.	4,80
	C/N plaster 10 mm;	m²	3,12
	Cement-polymer putty Ceresit CT-29 2 mm;		
	Ceresit CT17 primer;		
	Improved painting of Ceresit IN-53 in 2 times;		
	Installation of internal door jambs with a width of 670 mm.		
	Ceresit CT-17 priming;	m²	3,02
	Arrangement of plaster punches (external);	m.p.	4,50

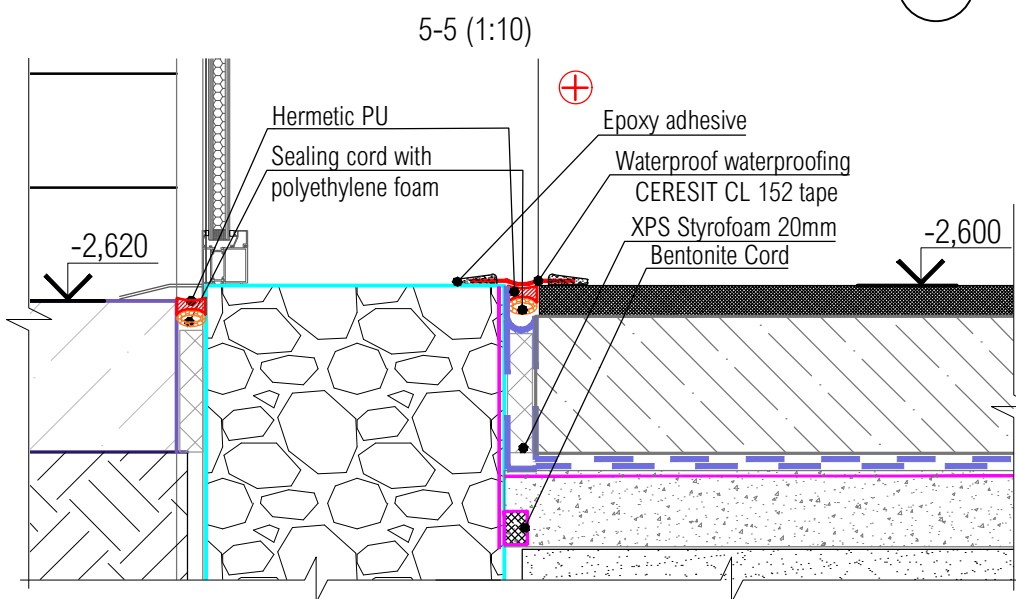
	C/N plaster 10 mm;	m²	3,02
	Cement-polymer putty Ceresit CT-29 2 mm;		
	Ceresit CT17 primer;		
	Improved painting of Ceresit IN-53 in 2 times;		
nop/n	Name	Od. Measurement	Quantity
	Installation of internal door jambs with a width of 840 mm.		
	Ceresit CT-17 priming;	m²	3,92
	Arrangement of plaster punches (external);	m.p.	4,67
	C/N plaster 10 mm;	m²	3,92
	Cement-polymer putty Ceresit CT-29 2 mm;		
	Ceresit CT17 primer;		
	Improved painting of Ceresit IN-53 in 2 times;		
	Installation of internal door jambs with a width of 750 mm.		
	Ceresit CT-17 priming;	m²	6,97
	Arrangement of plaster punches (external);	m.p.	9,30
	C/N plaster 10 mm;	m²	6,97
	Cement-polymer putty Ceresit CT-29 2 mm;		
	Ceresit CT17 primer;		
	Improved painting of Ceresit IN-53 in 2 times;		

Погоджено:			
Зам. інв. №			
Підпис і дата			
Інв. № ор.			

						173-WP-2024-F-AS						
						"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"						
Changes.	Several.	Sheet	Dock.	Signature	Date			Stage	Sheet	Sheets		
CPE		Shelikhova V.						WP	9			
Developed		Kovaleva A.										
Checked		Shelikhova V.				Statement of the scope of work on the Arrangement of slopes						
Norm.Counter.	Pyrov Y.											








Position	Denomination	Name	Amount	Weight unit, kg	Notes
		Concrete Preparation C8/10- 80 mm, m³	20.13		
		Bituminous primer with installation on the walls min-160 mm, m²	312.64		
		Euroroofing material according to the type Technoelast EPP 2 layers with installation on the walls min-160 mm, m²	625.28		
		Reinforced concrete slab C12/15 W4 - 100mm, m³	25.16		
		grid Ø5 BP1 with cell 50x50, m²	251.64	2.75 kg/m2	692.01 kg/m²
		Bentonite cord 10x20 mm, m/p	205		
		XPS polystyrene foam 20 mm, m²	167		
		Waterproof waterproofing tape type CERESIT CL 152, m/p	167		
		Hermetic PU, m/p	29.75		
		Polyethylene foam sealing cord Ø50mm, m/p	29.75		



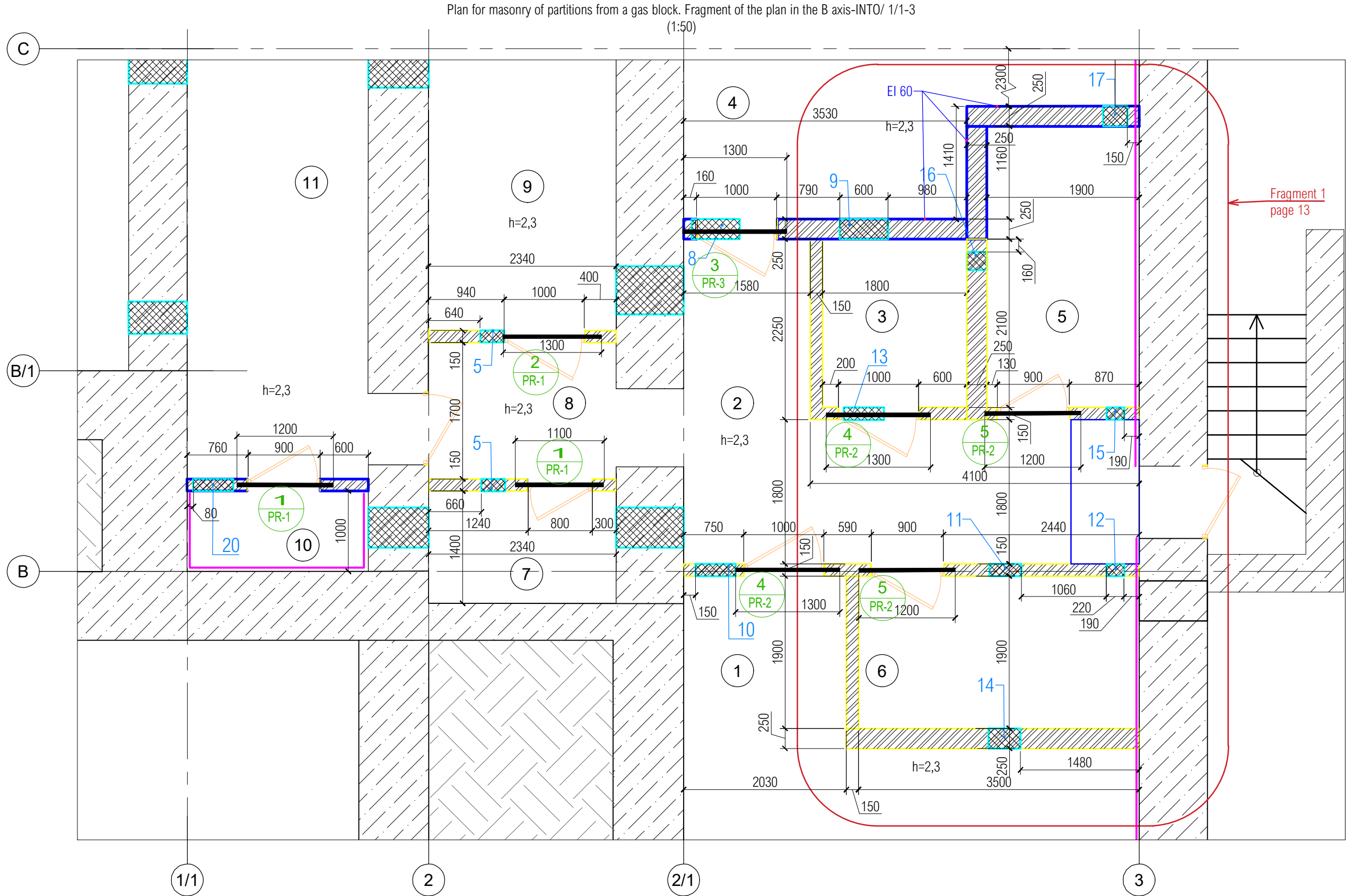
- Notes:
1. For this sheet, see, together with the autonomous republic of crimea. 11
  2. All work must be carried out in accordance with the requirements: DBN A.3.1-5:2016 Organization of construction production, DBN A.3.2-2:2009 System of Occupational Safety standards.. Occupational health and safety in construction. Basic Provisions (NPAOU 45.2-7.02-12)
  3. Work with materials should be carried out in accordance with the regulations for the work of materials. Preparation of the base is carried out in accordance with the requirements of DSTU-H B AND.3.1-23:2013 and DSTU-N B V.2.6-212:2016.
  4. Specify all dimensions and marks on the spot.
  5. WITH connection of individual rods of working reinforcement to perform overlapping without welding, minimum fly fishing value for rods Ø10 - 400 mm. No more than one section should be joined 50% rods.
  6. Backfill should be carried out with local soils, layers on the 0.3 m s compaction coefficient k(a) to the extent permitted =0.94 by DSTU-N B V.2.1-28:2013.
  7. Before starting work, you need to determine the level of the finishing screed floors of the basement, taking into account all layers of flooring and align them to one mark.

Position	Denomination	Name	Amount	Weight unit, kg	Notes
1		Ø10 A400s DSTU 3760:2019 L=m.p.	124,0	0,617	76,51
		Concrete C16/20, W4, m³	3,1		

						173-WP-2024-F-AS				
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Ism.	Am.par.	Letter	No. Doc.	Signature	Date					
CPE		Shelikhova V.						Stage	Sheet	Sheets
Developed		Pyrov Y.						WP	10	
Checked		Shelikhova V.								
Norm.Control.		Kovaleva A.								

Scheme of the location of foundations for partitions, concrete floor slab. Nodes.								
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Legend:

- installation partitions;
- coating waterproofing Siltek VP-35 h-2.3 m
- ventilation hole;
- Doorway Number
- Jumper Number

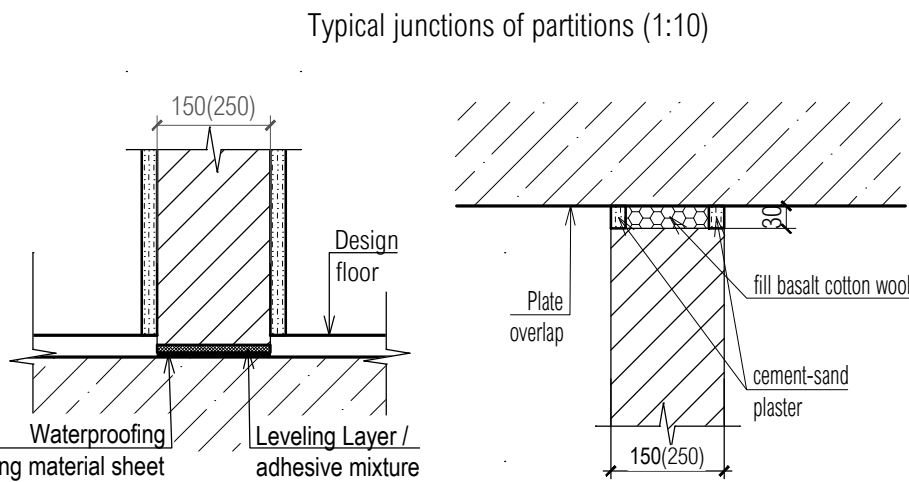
Notes:

- When masonry partitions, perform longitudinal reinforcement with two rods, the first, and every 3 rows starting from the first. Reinforcement is to be attached to existing walls using a reinforcing rod. 2, inserted into a pre-drilled hole on the/(a) to the extent permitted by the provisions of this t, expandable.
- Masonry work should be carried out in accordance with the instructions of DBN V.2.6-162:2010 "Stone and decorative stone structures. Basic provisions "and DBN A.3.2-2-2009 "Labor protection and industrial safety in construction".
- The color solution for the decoration of the premises should be agreed with the management of the institution (balance changer).
- It is allowed to replace the equipment and materials specified in the specification with similar ones in their technical

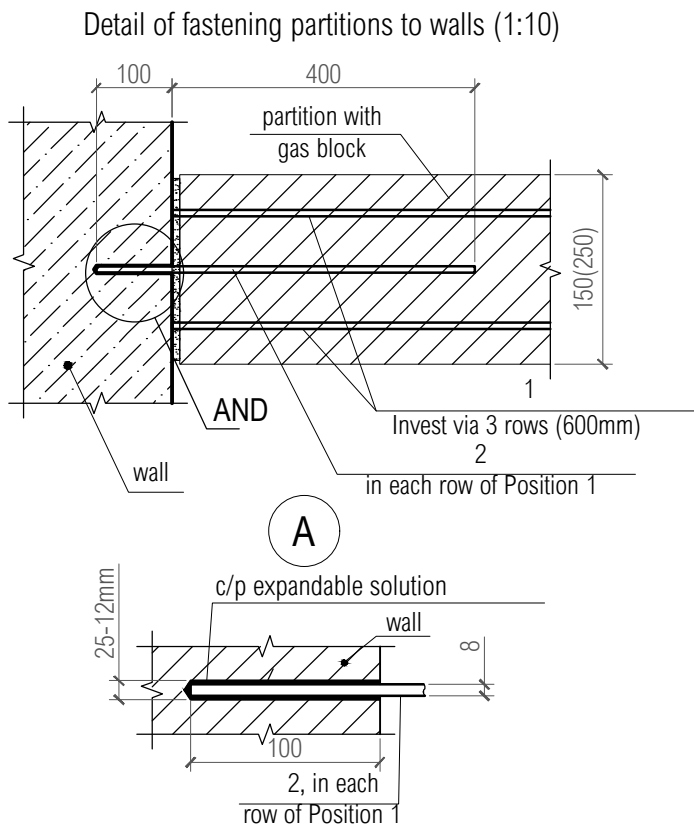
parameters.

- Lintels should be laid on a layer of cement-sandmortar M100
- All metal structures must be primed in one layer with GF primer-021 and covered with two layers of enamel PF-115. Total thickness of the paintwork, including soil, must be at least 55 microns.
- Perform anti-corrosion protection of metal structures in accordance with DSTU ISO 12944-:2020 "Paints and vASnishes. Protection against corrosion of steel structures by protective paint and varnish systems". Surfaces of metal structures, to be prepared for painting, must not have burrs, welding spatter, burnouts, residues flux. Cleaning of surfaces from oxides should be carried out by shot blasting or mechanical using abrasive wheels or sandpapers.
- Openings in the walls, partitions less 100x100mm for the passage of pipelines , AEROPLANE punch in place according to the drawings of the relevant sections.

Explication of premises			
Room Number	Name	Area, m <sup>2</sup>	Execution r. Note.
1	Premises for persons to be sheltered	39.98	
2	Corridor	13.79	
3	Universal sanitary and hygienic for LMG	3.78	
4	Ventilation	18.05	
5	Women's WC	6.66	
6	Men's WC	6.66	
7	Water and food conservation facilities	3.28	
8	Corridor	3.98	
9	Premises for persons to be sheltered	11.93	
10	Switchboard room	2.26	
11	Premises for persons to be sheltered	15.71	



List of openings			
reply.	Slot size (b x h)	Designation	Notes
1	800x2100	Door	
2	1000x2100	Door	
3	1000x1900	Door	
4	1000x2000	Door	
5	900x2000	Door	



Jumper Specification					
Position	Denomination	Name	Several.	Weight unit, kg	Notes
1		L50x50x5 DSTU 2251:2018 L=m.p.	19,8	3,77	74,65
2		-5x50 DSTU 8540:2015 L=m.p.	3,6	1,96	7,1
		General priming of GF-021 and painting of PF-115, m2	4,3		

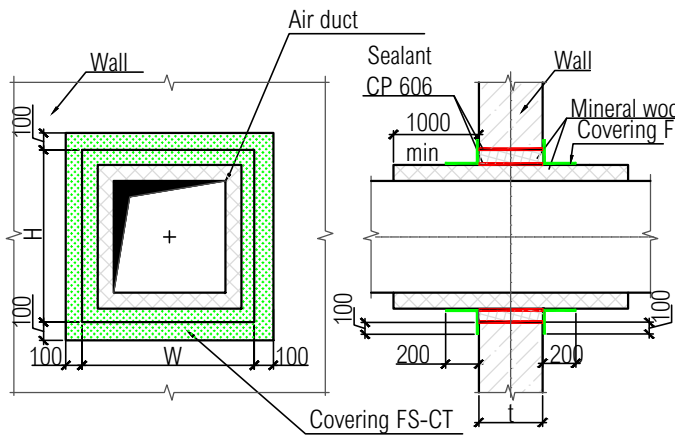
Hole Table								
No on the plan	Designation	Quantity	Wall thickness, mm	Mark from the bottom of the plate, mm	Dimensions		Note	
					Height, mm	Width, mm		
5	Ventilation	VAC	2	250	0	200	300	gas block
6	Ventilation	VAC	1	840	-350	400	600	rubble masonry, existing
7	Ventilation	VAC	1	840	-250	300	500	rubble masonry, existing
8	Ventilation	VAC	1	250	0	400	600	gas block
9	Ventilation	VAC	1	250	0	400	600	gas block
10	Ventilation	VAC	1	150	0	300	500	gas block
11	Ventilation	VAC	1	150	0	200	400	gas block
12	Ventilation	VAC	1	150	0	-	Ø125	gas block
13	Ventilation	VAC	1	150	0	200	400	gas block
14	Ventilation	VAC	1	250	0	200	400	gas block
17	Ventilation	Q&C	1	250	0	-	Ø200	gas block

List of jumpers	
Position	Sketch
PR-1	
PR-2	
PR-3	

Bill of materials for partitions					
Poses	Denomination	Name	Unit of measure	Quantity	Note
	DSTU B.V.2.7-61:2008	Gas silicate blocks D400 600x200x150 on a solution for blocks Ceresit CT 20	m³	8.05	
	DSTU B.V.2.7-61:2008	Gas silicate blocks D400 600x200x250 on a solution for Ceresit CT 20 blocks	m³	6.56	
1	DSTU 3760:2019	Ø8 A400s, L=263.28 m.p.	kg	104.0	
2	DSTU 3760:2019	Ø8 A400s, L=500mm	pcs/kg	48/ 9.5	
		Min. cotton wool like Izovat 30	m²	6.18	
		Roofing material 1 ball	m²	6.18	

173-WP-2024-F-AS					
"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashlanka district, Mykolaiv region"					
Changes:	Several.	Sheet	Dock.	Signature	Date
CPE				Shelikhova V.B.	
Developed				Kovaleva A.V	
Checked				Shelikhova V.B.	
Masonry plan for partitions from a gas block. Fragment of the plan in axes B-B/ 1/1-3/. List and specification of jumpers. List of materials of partitions, Junctions of partitions to existing walls					
Norm.Counter.	Pirov Y.A				
				Stage	Sheet
				WP	11
				Sheets	

Node of passage of rectangular communications through walls with the use of fire protection coating and sealant



Covering CFS-CT (CP 670) applied to the surface of cotton wool, partially on the elements of engineering networks (at a distance of 200mm from sinking planes) and building structures (perimeter 100 mm wide penetrations for air ducts and 15 mm for others communications) by spreading or painting with two successive layers to form a dry layer of at least 0.7mm.

Sealing of penetrations of uninsulated air ducts:

it is necessary to pre-mount a layer of non-combustible mineral cotton wool thickness  $\geq 40$  mm and density  $\geq 80$  kg/m<sup>3</sup> in plane penetration and at a distance of 1000 mm from the plane of penetration from its both sides. The sealant is applied around the perimeter of the slabs with mineral wool, in the city of contact with a fire barrier or an enclosing structure. The sealant is applied according to the perimeter of engineering networks at the point of contact with mineral wool Stove. The typical seam width is 1 mm, and can increase in the presence of cavities. Seam depth sealant is equal to the thickness of the penetration.

Hole Table

No on the plan	Designation		Quantity	Wall thickness , mm	Mark from the bottom of the plate, mm	Dimensions		Note
						Height, mm	Width, mm	
8	Ventilation	VAC	1	250	0	400	600	gas block
9	Ventilation	VAC	1	250	0	400	600	gas block

List of materials for fire sealing, ventilation penetration

Name	Unit of measure	Quantity
Ceresit CT-17 priming	m <sup>2</sup>	4,3
Cement-polymer putty Ceresit CT-29 3 mm		
Primer Ceresit CT17		
Improved painting of Ceresit CT-42 in 2 times		
Hilti CP 606 sealant (capsule 310ml)	m <sup>2</sup>	2.4
Mineral wool insulation rockwool KLIMAFIX 40/6000/1000 24ROL/PAL CIG	m <sup>3</sup>	1.5
Fire Coating Hilti CP 670 (4l bucket)	m <sup>2</sup>	1.76

Notes:

- This sheet should be considered together with the sheet. AP-11, with VAC section.
- The hole filling unit is typical and corresponds to the technical solution, which is certified in Ukraine.
- The relevant technical parameters must be taken in accordance with the requirements of the Hilti Certificate of Conformity and the Hilti Fire Protection Regulations.
- It is recommended to carry out work on the installation of fire protection of penetrations of engineering networks, construction seams, blind holes installation organizations that have permission to perform this type of work and have undergone special training.
- Holes in walls, partitions less than 100x100 mm for the passage of pipelines of sections WS, VAC, ES should be punched in place according to drawings of the relevant sections.

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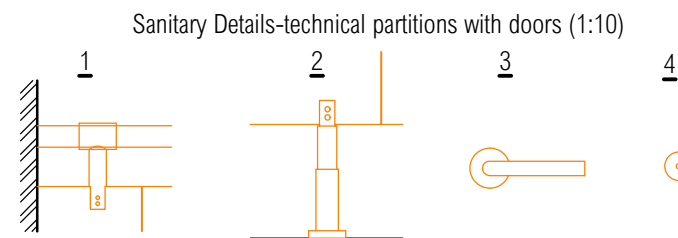
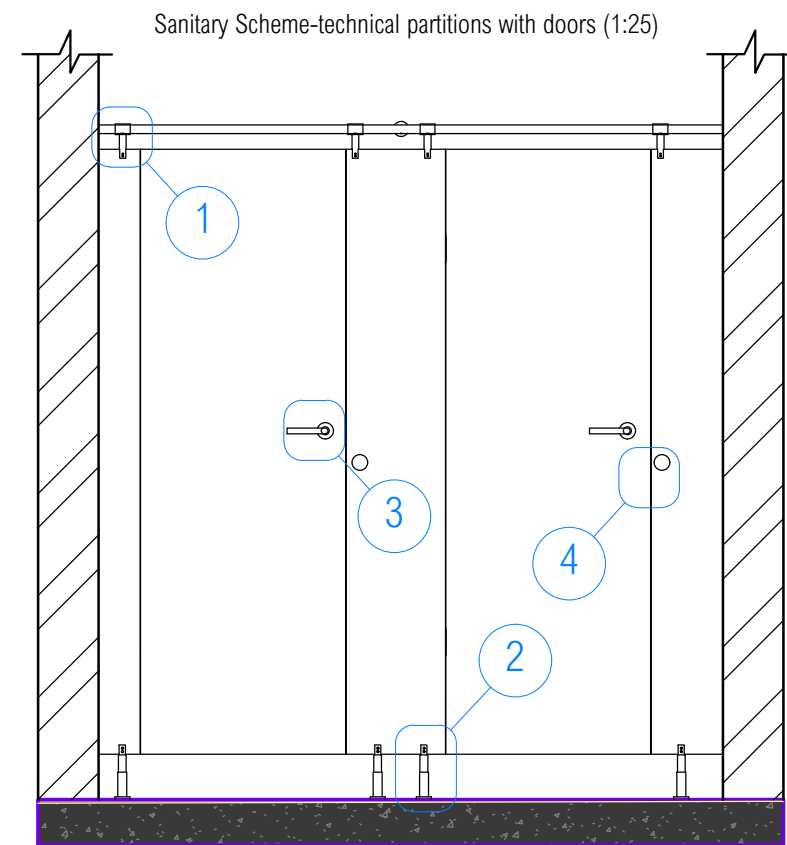
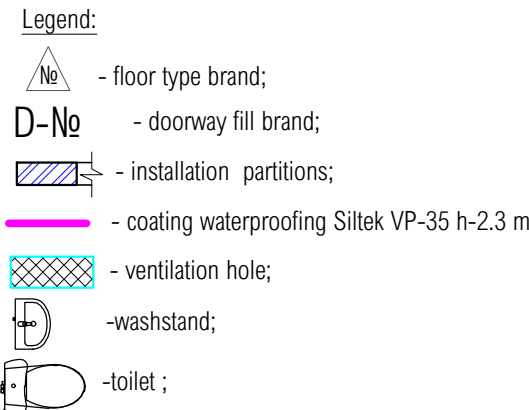
"Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region"

Changes.	Several.	Sheet	Dock.	Signature	Date
CPE		Shelikhova V.B.			
Developed		Kovaleva A.V.			
Checked		Shelikhova V.B.			
Norm.Counter.		Pirov Y.A.			

Hole filling unit in fire walls. Hole Finishing List

Stage	Sheet	Sheets
WP	12	

**FORTIS**



- Note:**
1. The color solution for the decoration of the premises should be agreed with the management of the institution (balance changer).
  2. Work with materials should be carried out in accordance with the regulations for the work of materials. Preparation of the base is carried out in accordance with the requirements of DSTU-N B A.3.1-23:2013 and DSTU-N B V.2.6-212:2016. The substrate must be dry, strong and cleaned from dust, dirt, oil, fats, wax and paint residues. Fragile layers need to be removed.
  3. San.technical partitions are made and completed in full at the factory
  4. Installation of Sanitary.technical devices to the brick wall with the help of a chemical anchor Hilti HIT-HY 170, using a pin HIT-V- (M8), with mesh sleeve HIT-SC(16). Places and method of fastening depending on the brand san.technical device. Work should be carried out in accordance with the technological map.
  5. It is allowed to replace the equipment and materials specified in the specification with similar in their technical parameters.
  6. Wash basins for adults should be mounted at a height 800mm from the floor, for children - 700mm.
  7. Toilets for LMG should be placed at a height not lower than 450mm and not higher 600mm from floor level, and handrails to them at a height 850-950mm.
  8. Bathrooms for LMG must be equipped with an emergency (worrisome) alarm and warning system taking into account the b axis with visual and hearing impairments. The alarm actuator must provide for the possibility of human use of it, who sits in a wheelchair (on the toilet or using the shower, which has fallen and or lies in any-what place.
  9. Devices for opening and closing doors , as well as horizontal handrails , handles, leverage, cranes and buttons of vASious appASatus must be installed at a height of more than 1, 1 m and not less than 0,85 m from the floor. Cranes mixers should be of the lever type.
  10. Decoration of premises see sheet. 7.
  11. For the specification of the holes, see. sheet. 6
  12. Height of door cuts - 2,0 m from theMarkof the clean floor
  13. Specification of plumbing partition elements see. WS section

nop/ n	Name	Unit of measure	
	Equipment for universal Sanitary and hygienic equipment. for LMG (note. 3)		
1	Mirror for people with inclusivity 700x500mm with an adjustable angle of inclination. The mirror frame is made of stainless steel, anti-vandal and resistant to corrosion and rust. Fastening to the wall with a stainless steel deck. Mount at a height of 10001200 mm from the floor.	pcs	1
2	Double folding handrail with wall mounting, size 738x230 mm, D pipe 32 mm. Material: stainless steel, anti-corrosion coating, gloss color, wall mounting.	pcs	1
3	Handrail with wall mounting in the toilet straight size 610mm, D pipes 32mm, material stainless steel, anti-corrosion coating, chrome color, wall mounting.		2
4	Handrail for the washbasin wall two supports for the disabled, size 692x82 mm, D pipes 38 mm, material stainless steel, anti-corrosion coating, chrome color, wall mounting.	pcs	2
5	Holder (hook) for crutches and canes stainless steel 60 X 200 mm in the bathroom for the disabled, elderly DK-01	pcs	1
6	Soap Dispenser	pcs	1
7	Papal towel holder	pcs	1
8	Toilet Paper Holder	pcs	1
9	Call for help button	pcs	1
10	Faucet with hygienic shower, stainless steel material, anti-corrosion coating, wall mounting.	pcs	1
	Equipment for bathrooms (note. 5-6)		
11	Soap Dispenser	pcs	4
12	Papal towel holder	pcs	2
13	Toilet Paper Holder	pcs	4

As vertical as possible-axial load on the product holder (no lateral offset) before 120 kg.

Poses.	Denomination	Name	Od. Vim.	Several	Notes
PWP1		Sanitary partition laminated LDSP 25mm, EcoLight with a profile system on connectors, with a door on 2 hinges with a plastic handle with a latch, on legs	m²	4,8	25*1200x2000(h). 2pcs.
PWP2		Sanitary partition laminated LDSP 25mm, EcoLight with a profile system on connectors, with a door on 2 hinges with a plastic handle with a latch, on legs	m²	7,6	25*1900x2000(h). 2pcs.






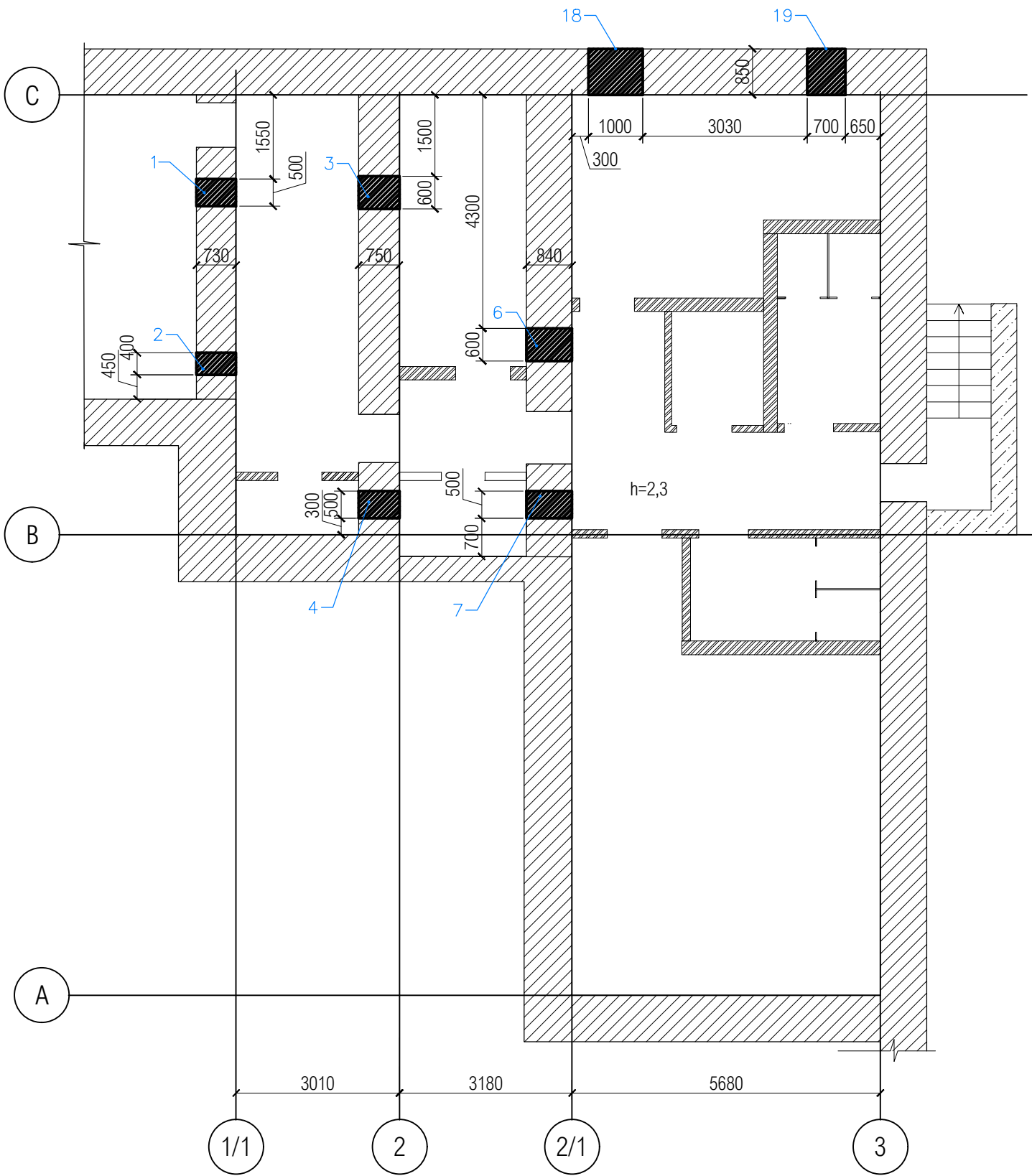
						173-WP-2024-F-AS		
						*Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of Ingul village council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region*		
Changes.	Several.	Sheet	Dock.	Signature	Date			
CPE		Shelikhova V.B.				Stage		Sheets
Developed		Kovaleva A.V.				WP		13
Checked		Shelikhova V.B.						
Norm.Count.	Pirov Y.A.					Fragment 1. Arrangement of WC 		



Diagram of the location of holes in existing walls. Fragment of the plan in axes A-B/1/1-3  
(1:100)








Hole Table

No on the plan	Designation		Quantity	Wall thickness , mm	Mark from the bottom of the plate, mm	Dimensions		Note
						Height, mm	Width, mm	
1	Ventilation	Q&C	1	730	-250	400	500	rubble masonry, existing
2	Ventilation	Q&C	1	730	-250	300	400	rubble masonry, existing
3	Ventilation	Q&C	1	750	-250	400	600	rubble masonry, existing
4	Ventilation	Q&C	1	750	-250	300	500	rubble masonry, existing
6	Ventilation	Q&C	1	840	-350	400	600	rubble masonry, existing
7	Ventilation	Q&C	1	840	-250	300	500	rubble masonry, existing
18	Ventilation	Q&C	1	850	-250	500	700	rubble masonry, existing
19	Ventilation	Q&C	1	850	-250	500	1000	rubble masonry, existing

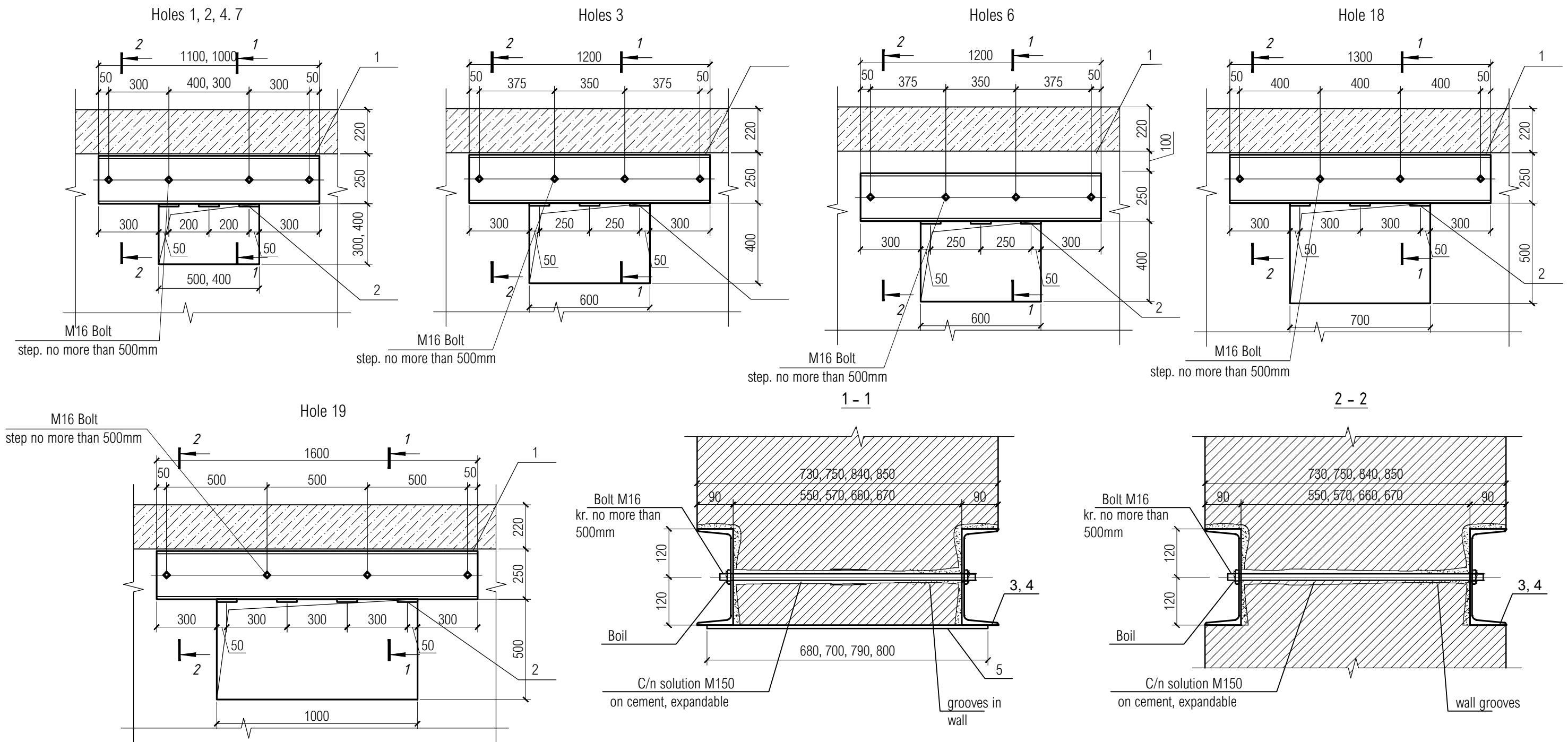
Technical instructions for the Arrangement of holes

- Making holes is a technically complex process, which requires strict adherence to design solutions and appropriate qualifications performers. Therefore, only organizations should be allowed to perform work, who have the appropriate license after they have developed the project execution of work in accordance with current standards.
- All work should be carried out under the direct supervision of a responsible engineering and technical worker of a construction organization. In his absence on site, all work on the arrangement of holes should be stopped..
- Work on the installation of new and dismantling of existing structures should be carried out in accordance with the requirements of DBN B.2.6-162:2010. "Kam'(a) to the extent permitted armokam'for example, in the case of", DBN V.2.6-163:2010 Steel Structures. Design standards., production and installation.
- Only power tools may be used for masonry. Do not use pneumatic tools or use impact fracture methods (sledgehammers, crowbars, etc.).
- Arrangement of openings in the load-bearing internal and external walls of rubble stone with a thickness of 750 and 850 mm to carry out in the following sequence:
  - Turn off the wiring.
  - For the entire period of the opening arrangement, the wall at the place of the opening must be completely unloaded from the weight of the overlying floor floor. From below, support the floor slabs with telescopic racks, on which to lay trees on top beams. Rack are installed in two rows in increments of 1 m.
  - On both sides of the wall at the level of the top of the projected opening, cut with a power tool (for example, "grinder") grooves (depth, dimensions fittingsto the extent permitted by the provisions of this scheme)
  - Within the cut grooves by size, indicated in the diagram, drill through holes d 19 mm for studs
  - Clean the grooves from debris, rinse with cement milk.
  - Perform spraying cement-sandmortar on cement M150, expandable, on the vertical surface of the grooves.
  - Install channels with pre-made holes d 19 mm fortemporary fasteners to the design position, fasten with pins. The space between the mets. structures and masonry to fill with plastic.-sand. solution M150 on cement, expandable.
  - After, how the cementmortar will set, tighten the nuts on the studs.
  - Weld the nuts with electric welding to prevent unwinding.
  - Through 4-5 days after the installation of channels-jumper cut through with power tools (for example "grinder") projected hole, avoiding shock impacts. Weld the linings to the channels in the design position.
  - Dismantle the temporary frame.

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Інв. № ор.					


						173-WP-2024-F-AS			
						«Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region»			
Ism.	Am.par.	Letter	No. Doc.	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.					WP	14	
Developed		Pyrov Y.							
Checked		Shelikhova V.				Diagram of the location of holes in existing walls. Fragment of the plan in axes A-B/1/1-3 (1:100)			
Norm.Control.		Kovaleva A.							

Schemes for the Arrangement of holes



1. Technical instructions for the Arrangement of holes see. sheet 14
2. All metal structures must be primed in one layer with GF primer-021 and covered with two layers of PF enamel-115. Overall Thickness paintwork, including soil, must be at least 55 microns.
3. Preparation of metal surfaces before painting should be carried out in accordance with DSTU ISO 12944-:2020 "Paints and varnishes. Corrosion protection of steel structures with protective paint and varnish systems". Surfaces of metal structures, to be prepared for painting, must not have burrs, welding spatter, burnouts, flux residues. Cleaning of surfaces from oxides should be carried out by shot blasting or mechanical tools using abrasive wheels or sandpapers.

Position	Denomination	Name	Amount	Weight unit, kg	Notes
3		Channel. 24 DSTU 3436-961 L=m.p.	19,2	24,0	460,8
5		- 8x100 DSTU 8540:2015 L=m.p.	18,7	6,28	117,45
		M16 bolt, with nut and stud, pcs	32		
		General priming of GF-021 and painting of PF-115, m2	16,6		
		Concreting of channel deepening, concrete C12/15, m3	0,5		

						173-WP-2024-F-AS			
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Ism.	Am.par.	Letter	No. Doc.	Signature	Date	CPE Developed Checked	Stage	Sheet	Sheets
							WP	15	
						Schemes for making holes in existing walls Sections. Specification of device elements holes			
Norm.Control.		Kovaleva A.							

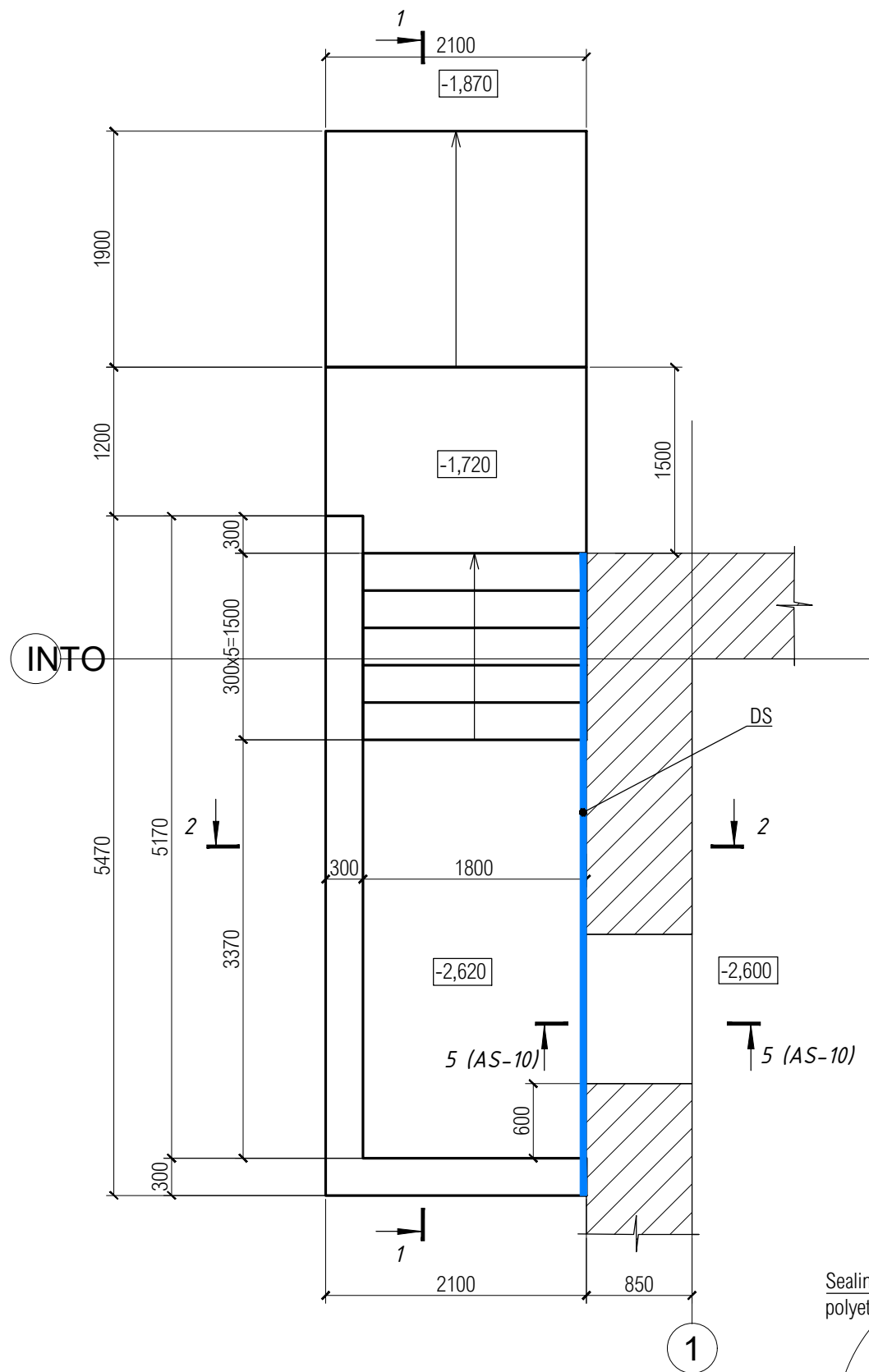
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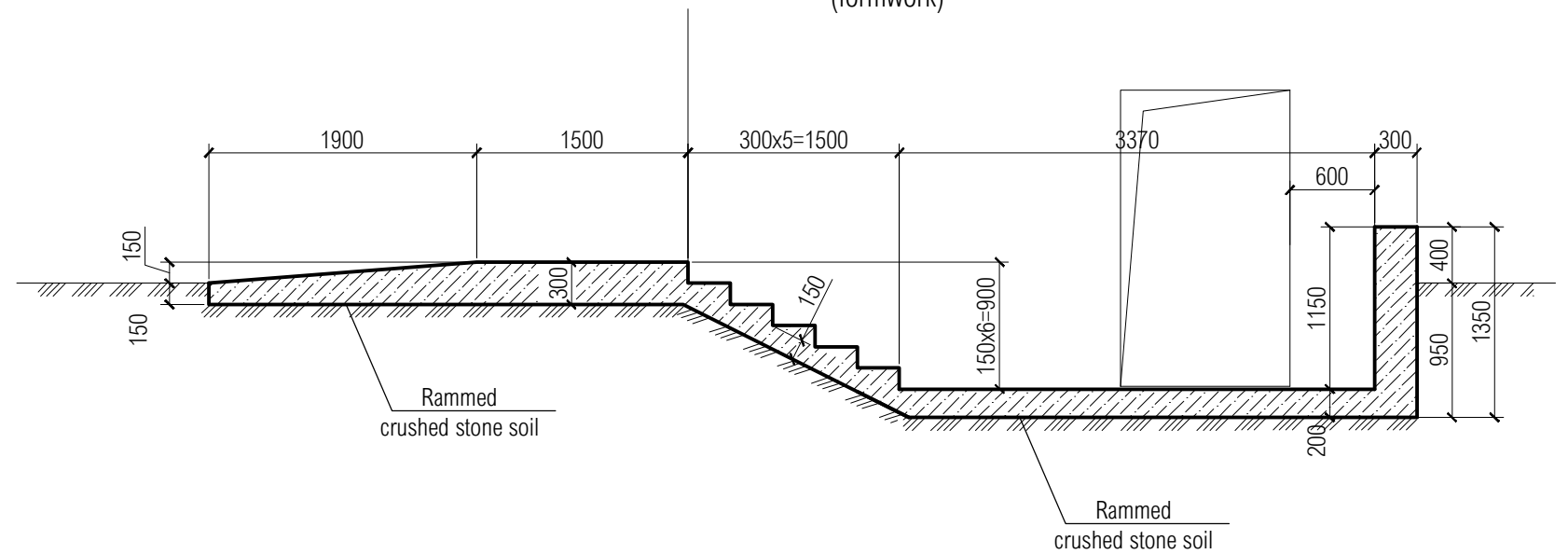
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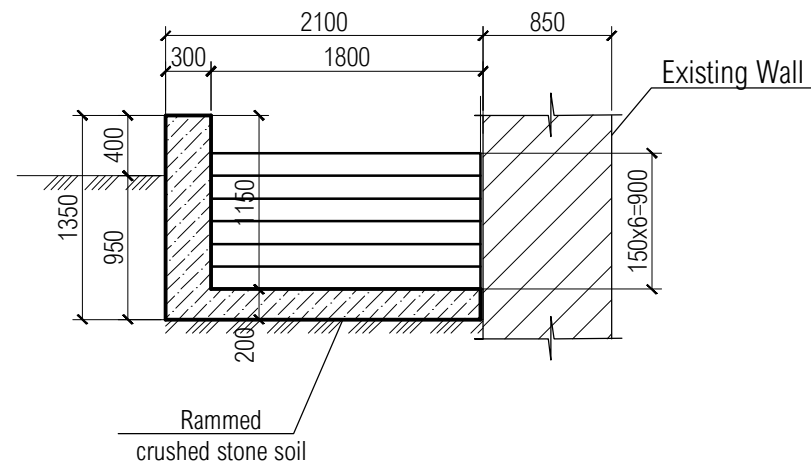
Slice 2. Scheme of the pit with stairs



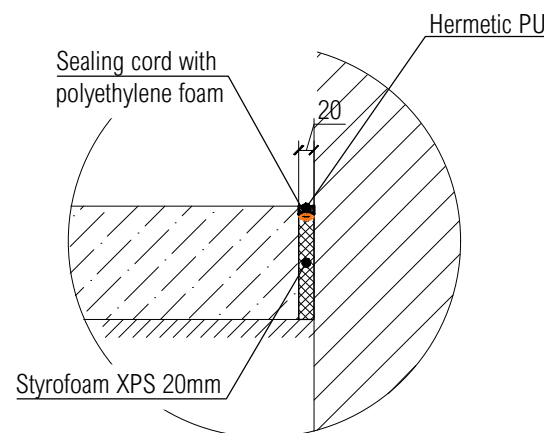
1 - 1  
(formwork)



2 - 2  
(formwork)



Junction to existing structures.  
Expansion joint



1. For this sheet, see. together with sheets AS-6, AS-17.
2. Specify all dimensions and marks on the spot.
3. All Surfaces, coat compressible with soil hot bitumen for 2 times.
4. Connection of individual rods of working reinforcement perform overlapping without welding, minimum value fly rod fishing Ø10 - 400 mm, Ø8 - 350 mm. In one cross-section should be joined no more than 50% rods.
5. Backfill should be carried out with local soils, layers on the 0.3 m with compaction coefficient k(a) to the extent permitted =0.94 per DSTU-N B V.2.1-28:2013. In the absence of local soils compact the base with crushed stone faction 20-40mm.

						173-WP-2024-F-AS			
						«Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region»			
Ism.	Am.par.	Letter	No. Doc.	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.					WP	16	
Developed		Pyrov Y.							
Checked		Shelikhova V.							
Norm.Control.		Kovaleva A.				Fragment 2. Arrangement of a pit with a ladder (1:50)			

**FORTIS**

Format A3(2A4)



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Інв. № ор.

Position	Sketch
2	
4	

- List of earthworks:
- Manual soil development - 5,2m<sup>3</sup>
  - Backfill - 1,3m<sup>3</sup>
  - Soil compaction with crushed stone - 19,2 m<sup>2</sup>
  - Waterproofing - hot bitumen coating 2 times - 7,4 m<sup>2</sup>

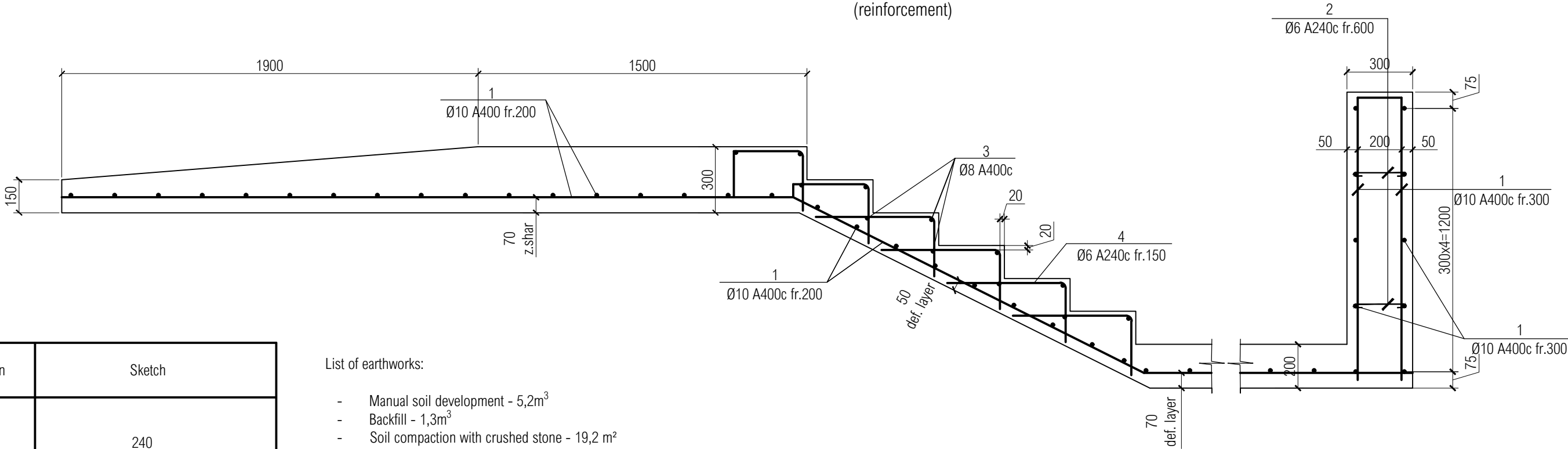
- Arrangement of expansion joints:
- Extrusion Polystyrene Foam 20mm - 1,5 m<sup>2</sup>
  - Polyethylene foam sealing cord - 7.80 m<sup>2</sup>
  - Hermetic PU - 7.80 m<sup>2</sup>

Specification of pit elements with stairs

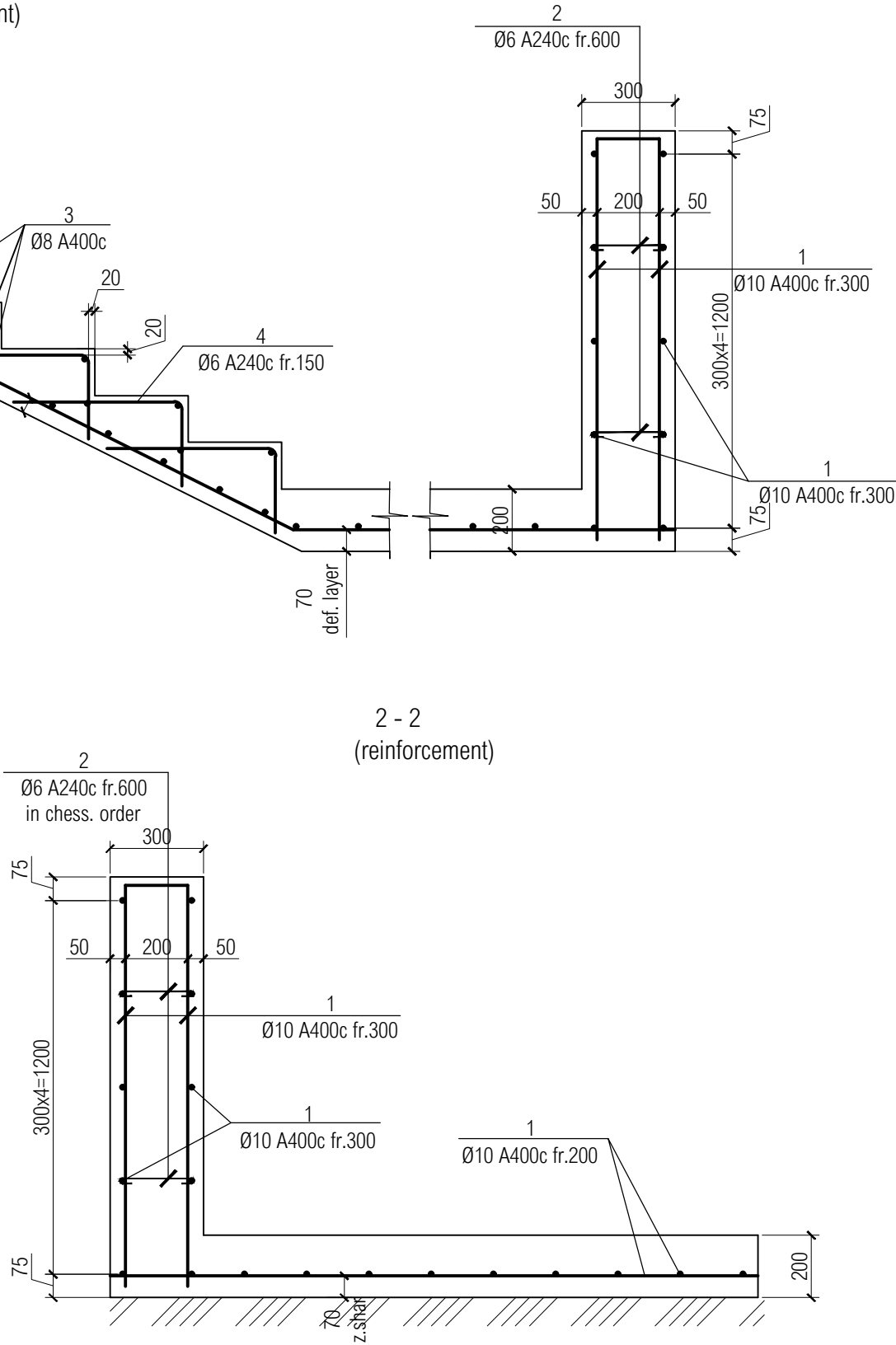
Position	Denomination	Name	Amount	Weight unit, kg	Notes
1		Ø10 A400c DSTU 3760:2019 L=m.p.	266,0	0,617	164,12
2		Ø6 A240c DSTU 3760:2019 L=400	102	0,09	9,18
3		Ø8 A400c DSTU 3760:2019 L=m.p	25,2	0,395	9,95
4		Ø6 A240c DSTU 3760:2019 L=810	78	0,18	14,04
		Concrete cl C16/20, m3	7,0		

- For this sheet, see. together with sheets 16, 18-20
- Specify all dimensions and marks on the spot.
- WITH'connection of individual rods of working reinforcement perform overlapping without welding, minimum fly fishing value for rods Ø10 - 400 mm, Ø8 - 350 mm. No more than one section should be joined 50% rods.
- Backfill should be carried out with local soils, layers on the 0.3 m with compaction coefficient k(a) to the extent permitted =0.94 by DSTU-H B INTO.2.1-28:2013. In the absence of local soils, compact the base with crushed stone faction 20-40mm.

1 - 1  
(reinforcement)



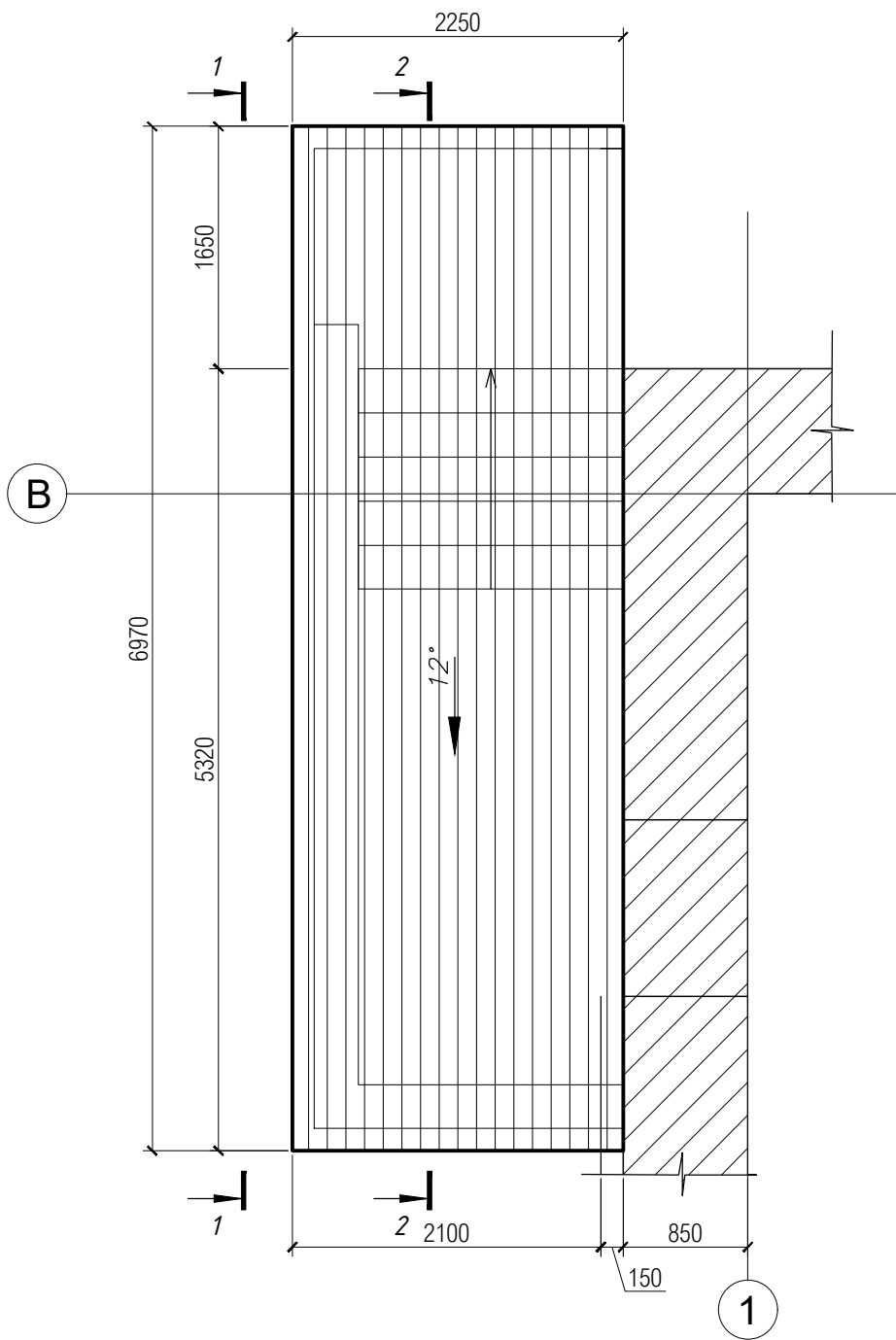
2 - 2  
(reinforcement)



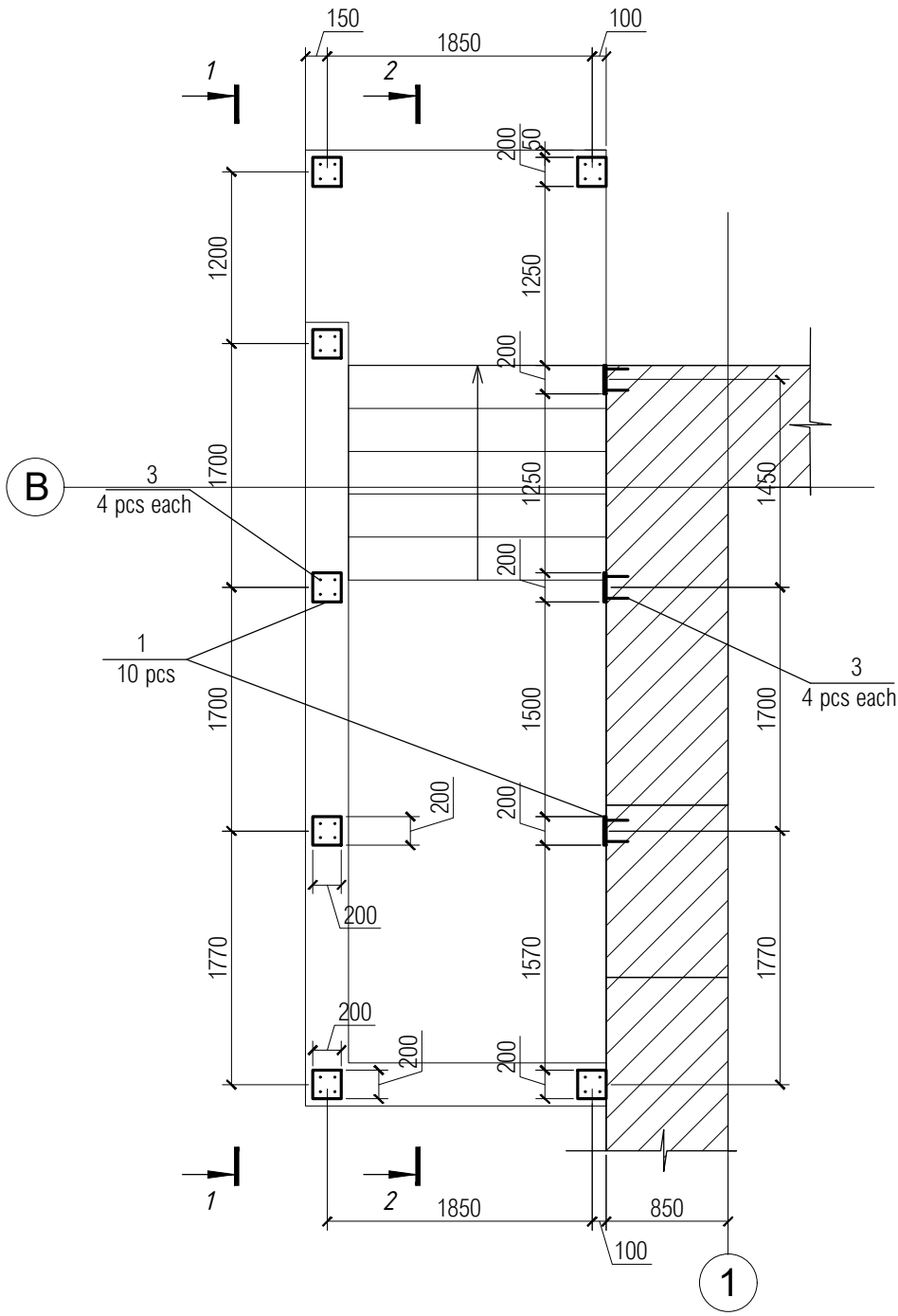
						173-WP-2024-F-AS			
						«Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region»			
Ism.	Am.par.	Letter	No. Doc.	Signature	Date	CPE Developed Checked	Stage	Sheet	Sheets
							WP	17	
						Fragment 2. A pit with a ladder. Reinforcement schemes, specification. (1:20)			
Norm.Control.		Kovaleva A.							

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Зам. інв. №					
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Інв. № ор.					






Diagram of the attic



Layout of embedded parts attic

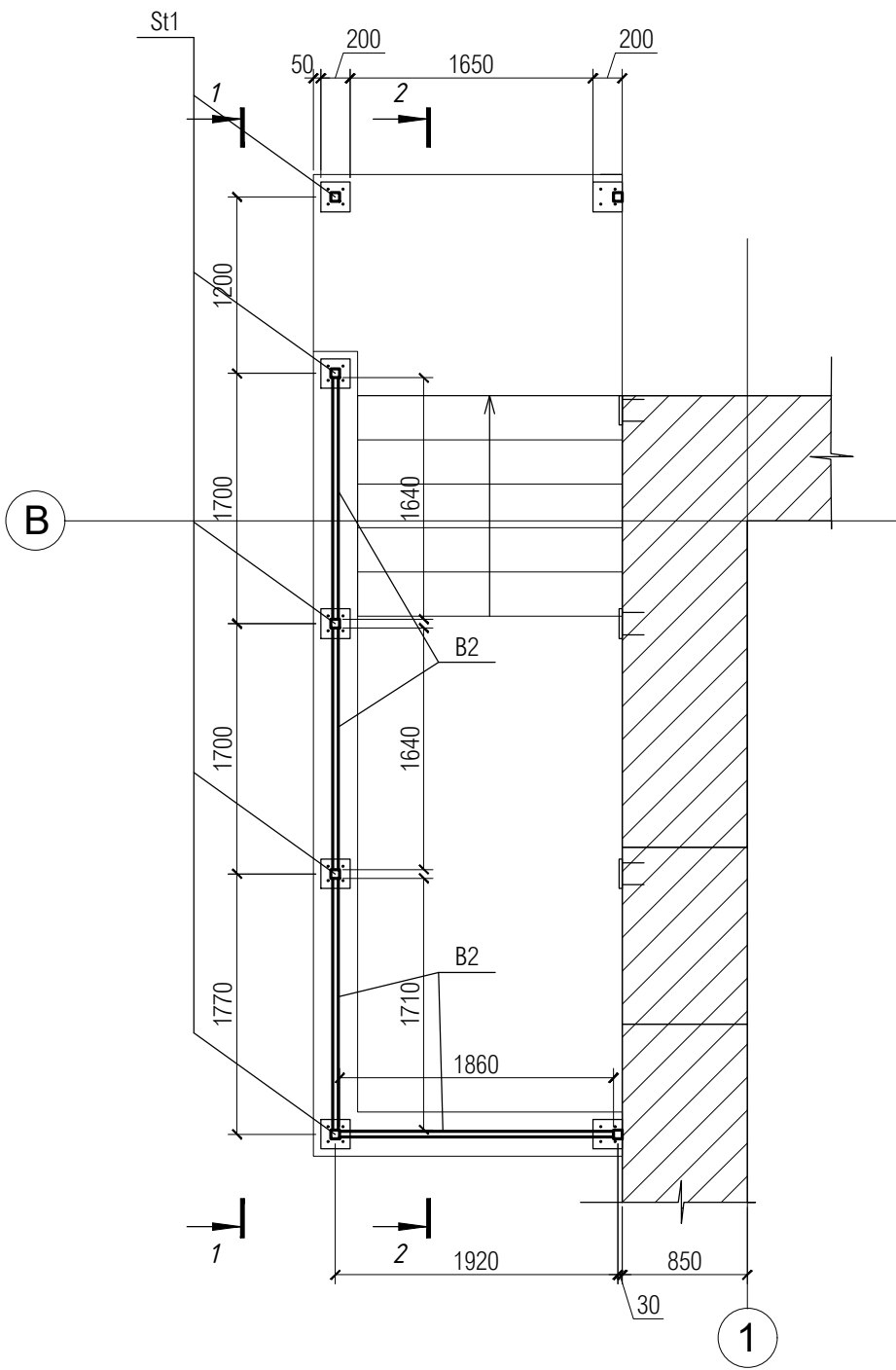


1. This sheet look with sheets AS-6, AS-16
2. Plug the pipes with a sheet  $t=5\text{mm}$ .
3. Mounting with welding joints. Installation welds must be made in accordance with DSTU 2456-94. Welding thickness (legs) welds uncalculated and unspecified in the project should be taken to the minimum according to the table 16.1 DBN V.2.6-198-2014.
4. Perform anti-corrosion protection of metal structures in accordance with DSTU ISO 12944-:2020 "Paints and vASnishes. Corrosion protection of steel structures with protective paint and varnish systems".
5. All metal structures must be primed in one layer with GF primer-021 and covered with two layers of PF enamel-115 .Overall Thickness paintwork, including soil, must be at least 55 microns.
6. Preparation of metal surfaces before painting should be carried out in accordance with Table. 10 DSTU V.2.6-193-2013. Surfaces of metal structures, what to be prepared for painting, must not have burrs, welding spatter, burnouts, flux residues. Cleaning surfaces from oxides produce with shot blasting or mechanical tools using abrasive wheels or grinding skins.

						173-WP-2024-F-AS			
						«Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region»			
Ism.	Am.par.	Letter	No. Doc.	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.					WP	18	
Developed		Pyrov Y.							
Checked		Shelikhova V.				Fragment 2. Diagram of the attic. Layout embedded parts of the attic. (1:50)			
Norm.Control.		Kovaleva A.							

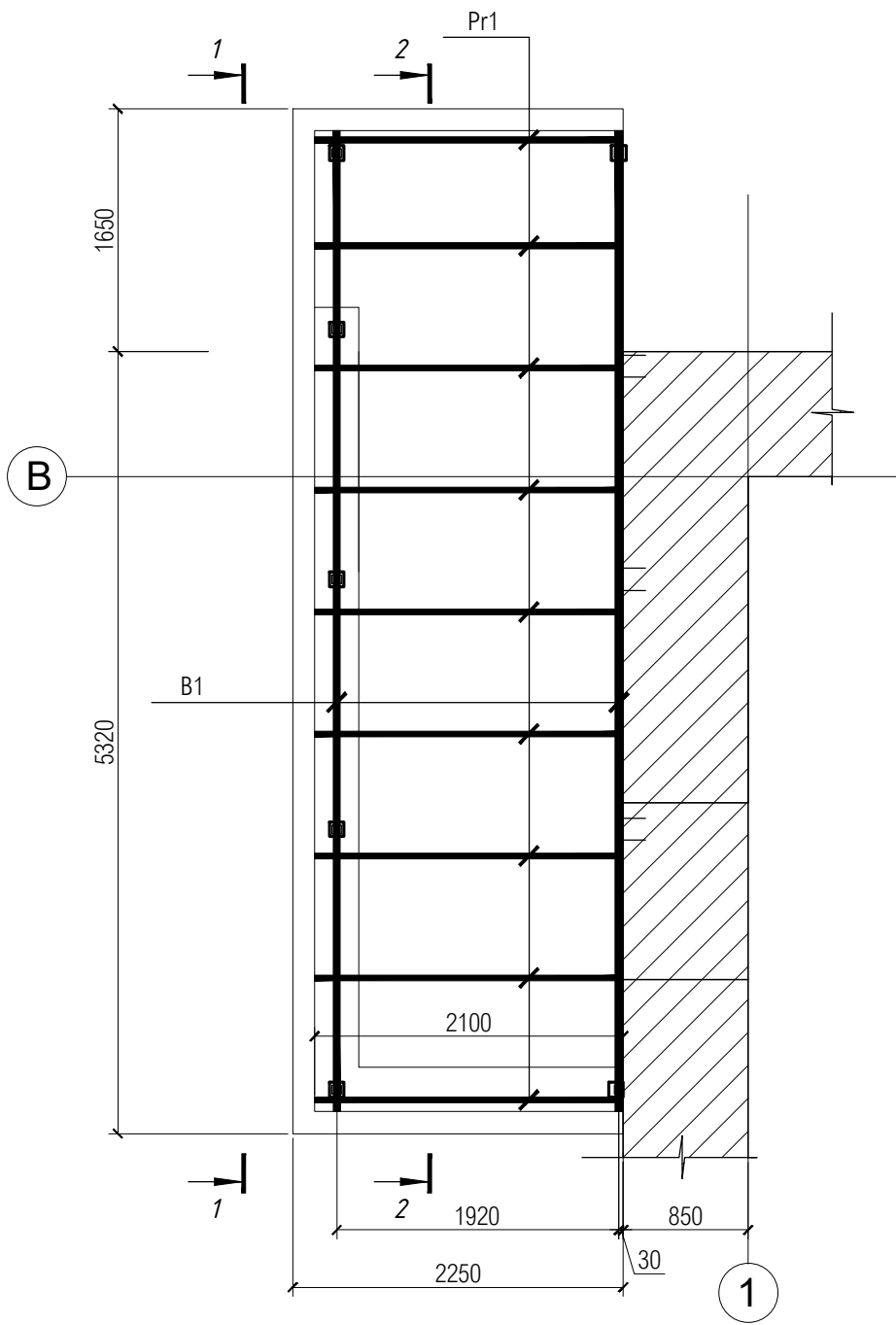
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




Scheme of racks and beams of the attic fence

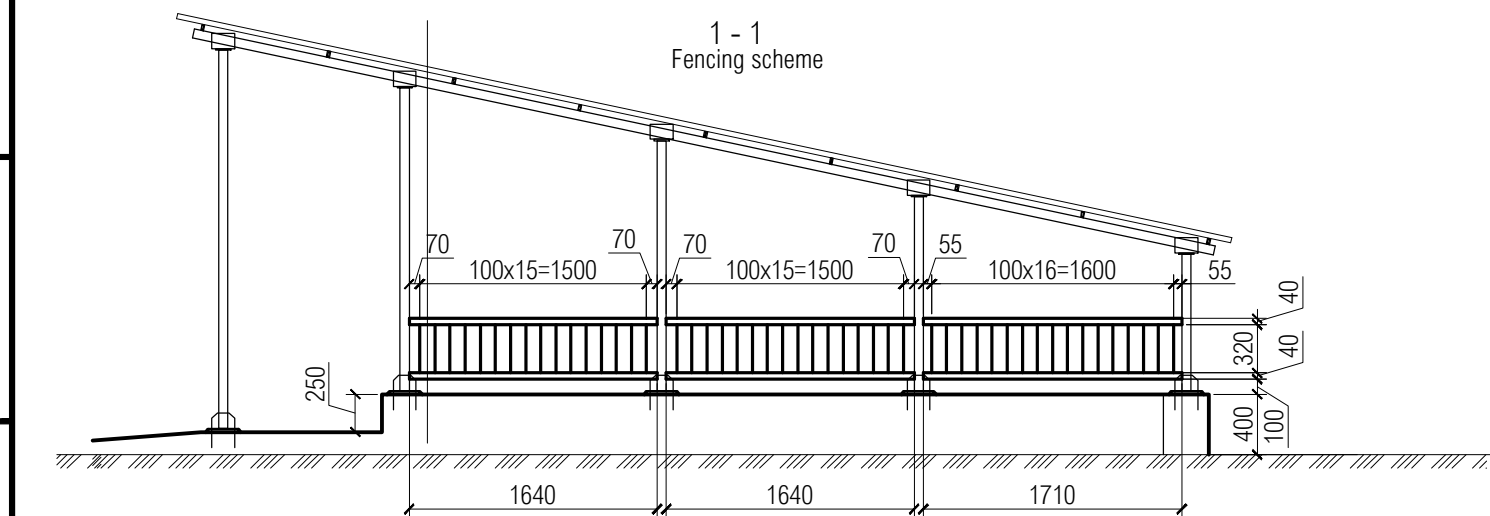


1. For this sheet, see. together with sheet AS-18
2. Plug the pipes with a sheet  $t=5\text{mm}$ .
3. Mounting with welding joints. Installation welds must be made in accordance with DSTU 2456-94. Welding thickness (legs) welds uncalculated and unspecified in the project should be taken to the minimum according to the table 16.1 DBN V.2.6-198-2014.
4. Perform anti-corrosion protection of metal structures in accordance with DSTU ISO 12944-:2020 "Paints and varnishes. Corrosion protection of steel structures with protective paint and varnish systems"
5. All metal structures must be primed in one layer with GF primer-021 and covered with two layers of PF enamel-115 .Overall Thickness paintwork, including soil, must be at least 55 microns.
6. Preparation of metal surfaces before painting should be carried out in accordance with Table. 10 DSTU V.2.6-193-2013. Surfaces of metal structures, what to be prepared for painting, must not have burrs, welding spatter, burnouts, flux residues. Cleaning surfaces from oxides produce with shot blasting or mechanical tools using abrasive wheels or grinding skins.

Scheme of load-bearing structures of the attic








						173-WP-2024-F-AS			
						«Current repair of anti-radiation shelter № 52108 (group P-4) Ingul Lyceum of the Ingul Village Council, at the address: st. Sadova, 49, Ingulka village, Bashtanka district, Mykolaiv region»			
Ism.	Am.par.	Letter	No. Doc.	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.					WP	19	
Developed		Pyrov Y.							
Checked		Shelikhova V.							
						Fragment 2. Scheme of fence posts and beams attic. Diagram of the load-bearing structures of the attic. (1:50)			
Norm.Control.		Kovaleva A.							

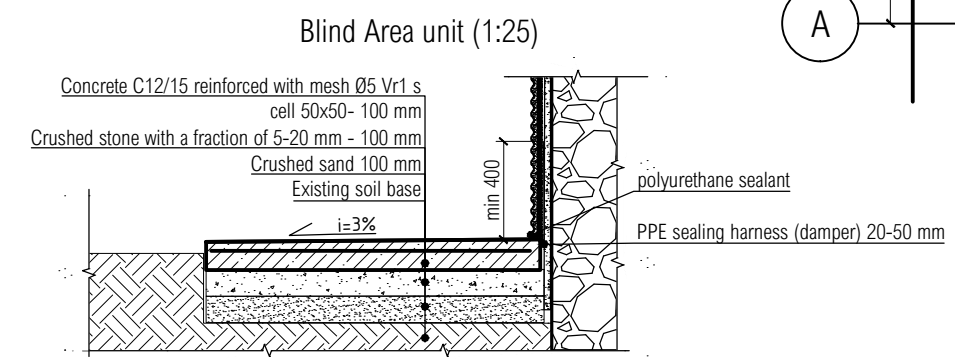
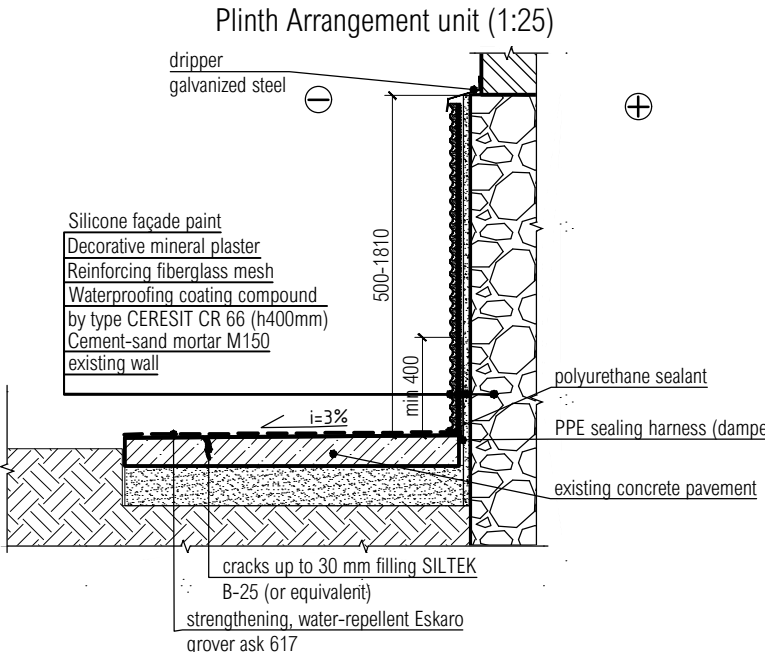
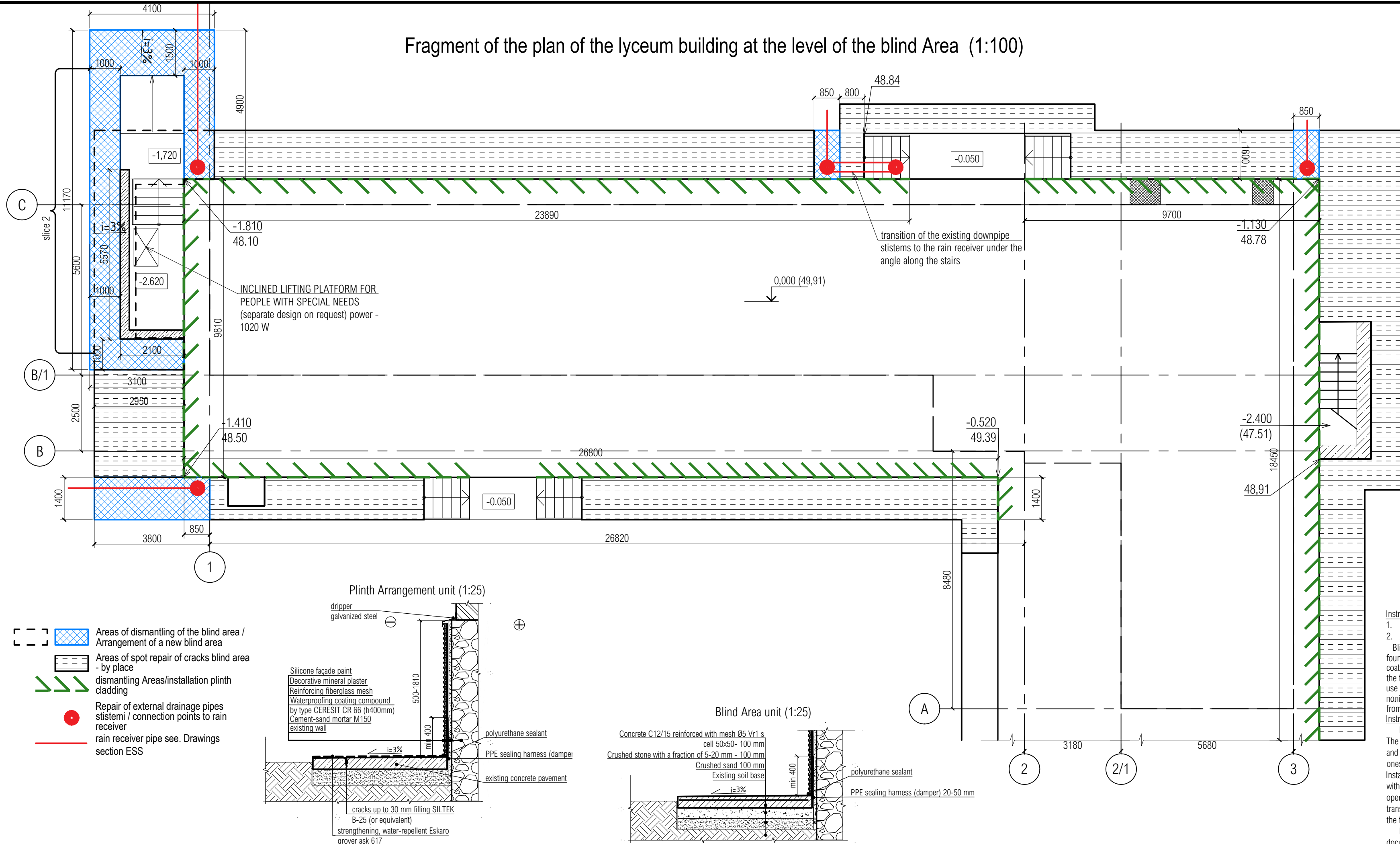


Position	Denomination	Name	Amount	Weight unit, kg	Notes
St1		Tr. 60x60x3, DSTU 8940:2019 L=m.p.	11,73	5,25	61,58
B1		Tr. 60x60x3, DSTU 8940:2019 L=m.p.	13,8	5,25	72,45
B2		Tr. 40x40x3, DSTU 8940:2019 L=m.p.	13,36	3,36	44,9
Pr1		Tr. 40x20x3, DSTU 8940:2019 L=m.p.	18,9	2,42	45,74
Og1		Apt.16 DSTU 4746:2007 L=320mm	68	0,64	43,52
1		-8 DSTU 8540:2015, kg.	29,5		
2		-5 DSTU 8540:2015, kg.	17,4		
3		Spacer anchor M12 L=115	40		
		General priming of GF-021 and painting of PF-115, m2	12,4		
		Profiled sheet NS-35 with polymer coating 0.45mm, m2	16,1		
		Roofing seal 380mm, m.p.	5,5		
		Bituminous sealant 280ml, pcs	1		

- 
- Seal abutment
- Sealant  
on bituminous  
basis
- Roofing seal
- 100

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Ism.	Am.par.	Letter	No. Doc.	Signature	Date			
CPE		Shelikhova V.					Stage	Sheet
Developed		Pyrov Y.					WP	20
Checked		Shelikhova V.						
Norm.Control.		Kovaleva A.				Fragment2. Attic. Sections, specification. (1:50)		





Statement of the scope of dismantling works			
№	Name	Unit of measure	Quantity
	Dismantling of the existing concrete blind area (100 mm)	m <sup>2</sup> / m <sup>3</sup>	24.85 / 2.49
	Manual excavation of the soil for the blind area	m <sup>3</sup>	4.97
	Dismantling of the plinth cladding (cement plaster)	m <sup>2</sup>	107,95
	Dismantling of stair cladding (cement screed)	m <sup>2</sup>	6.19
	Dismantling of pit wall cladding (cement plaster)	m <sup>2</sup>	12,65

Statement of volumes of the basement arrangement				
Position	Name	Unit of measure	Quantity	Note
	Cement-sandmortar C 12/15 - 20-30 mm	m <sup>2</sup>	107,95	
	waterproofing coating compound by type CERESIT CR 66 (h400mm)		43.93	
	Ceresit CT17 primer;		107,95	
	Reinforcing Fiberglass Mesh		107,95	
	Decorative mineral plaster of Siltek S-17 type		107,95	
	Ceresit CT17 primer;	m.p.	107,95	
	Silicone façade paint for 2 times;		107,95	
	Galvanized drip on the plinth (low tide) 400mm on quick-assembly dowels (pitch 0.9m)	m.p.	87.85	
	PPE sealing hASness (damper) 20-50 mm	m.p.	91.00	
	polyurethane sealant of the type CERESIT CS 51	m.p.	91.00	

Specification of Elements of External Drainage System				
Position	Name	Unit	Quantity	Note
	Downpipe 100 mm L=2 m (RAINWAY 130) white	Piece.	5	
	Double-sleeve bend 67° 100 mm (RAINWAY 130) white		4	
	Single-ft bend 67° 100 mm (RAINWAY 130) white		4	
	100mm Pipe Bracket (RAINWAY 130) white		14	
	PVC pipe 160x4.7x1000 SN 8		2	
	PVC elbow 160/45°		1	
	Fasteners for PVC pipes 160		2	

Instructions for the installation of the blind Area:

- After arranging the sand base, tamp with a thombosse.
- After arranging the crushed stone base, tamp with a thombosse.

Blind Area is carried out along the perimeter of the building, with a slope of 3% (pavement widths), which ensures the drainage of water from the foundation walls. Installation Blind Areas should be carried out in this order: Before starting work on the arrangement of the blind area, apply a layer of coating waterproofing to the wall. Along perimeter in the trench, a compacted base of sand and gravel is laid on the compacted soil. As a finishing flooring, the following is used reinforced concrete screed (the depth of laying the mesh is 40 mm, Arranged on clamps). In addition to the above information on the use of the waterproofing mixture, when working with it, you should be guided by the current regulatory документацію на улаштування полімерцементної водоізоляції. If the material is used in conditions not specified in this data sheet, you must carry out the test yourself or seek advice from the manufacturer.

Instructions for plinth installation:

Preparation of the basis is carried out in accordance with DSTU-N B A.3.1-23:2013 and DSTU-N B V.2.6-212:2016. The substrate should be dry, firm, and even. Clean the surface from dust, sags, oil stains and other substances that reduce adhesion. Small irregularities and fragile Areas of the base must be removed. The substrate should be flat and rough. All outer corners should be smoothed out, and round the inner ones with a radius of at least 3 cm. Before using Ceresit CR 65, the surface should be moistened, preventing the appearance of a solid water film. Installation it is performed in this order: first apply a layer coating waterproofing, a thin layer on moisture, but not wet surface evenly, in one direction, without gaps. The following layers are applied following the wet-on-wet method. Done The layer must be protected from rapid drying. For reliable operation, protect the freshly Arranged waterproofing layer from mechanical damage, by installing a finishing layer of plaster. Install the drip on the transition between the façade and the plinth. Low tide the drip is installed in the form of a dividing strip between the Area of the façade and the basement of the foundation part of the building.






In addition to the above information on the use of the waterproofing mixture, when working with it, you should be guided by the current regulatory documentation for the installation of polymer-cement waterproofing.

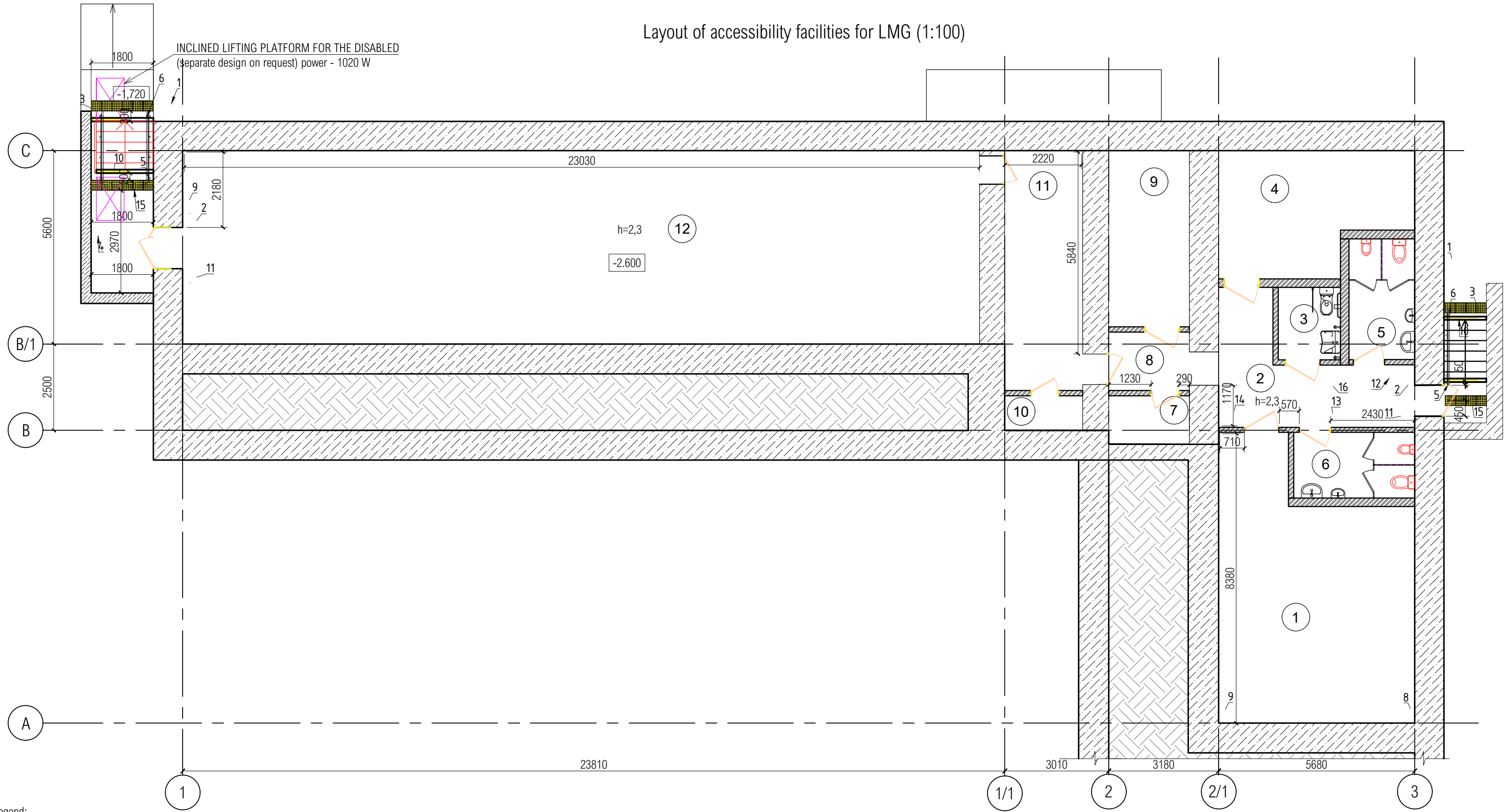
Statement of volumes of paving arrangement				
№	Name	Unit of measure	Quantity	Note
	Concrete B 12 / 15 - 100 mm	m <sup>3</sup>	2.93	
	grid Ø5 Vr1 with cell 50x50	m <sup>2</sup> / kg / m <sup>2</sup>	29.36 / 165.88	
	Crushed stone with a fraction of 5-20 mm - 100 mm	t	4.40	
	Compacted Sand - 100 mm	m <sup>3</sup>	2.93	
Repair of existing blind area				
	Repair compound type SILTEK B-25 Ceresit CT 17 30 mm primer (filling three Splinters, Splinters)	m <sup>2</sup>	1.29	(10% of the blind Area)
	reinforcing water-repellent coating like EskASo grover ask 617	m <sup>2</sup>	128.78	

List of volumes of arrangement of steps and walls of the pit				
Position	Name	Unit of measure	Quantity	Note
	Stairs	m <sup>2</sup>		
	Ceresit CT17 primer;		6.19	
	CERESIT CN 83 - 10-30 mm		6.19	
	waterproofing coating compound by type CERESIT CR 66 (1 layer)		6.19	
	Ceresit CT17 primer;		6.19	
	Facade paint Siltek Beton Pro for 2 times;		6.19	
	Walls	m <sup>2</sup>		
	Ceresit CT17 primer;		12.65	
	leveling cement-sandmortar M150		12.65	
	waterproofing coating compound Type CERESIT CR 66		12.65	
	Ceresit CT17 primer;		12.65	
	Reinforcing Fiberglass Mesh		12.65	
	Decorative mineral plaster of Siltek S-17 type		12.65	
	Ceresit CT17 primer;		12.65	
	Facade paint Siltek Beton Pro for 2 times;		12.65	

Notes:

- The project provides for the repair of cracks in the damaged blind Area.
  - Remove debris from the damaged Area.
  - Level the surface.
  - Pour the composition into the crack.
  - Cover with waterproofing mastic.
- Work with materials should be carried out in accordance with the regulations for the work of materials and technical maps and in accordance with the "Sanitary Regulations for education". Preparation of the base is carried out in accordance with the requirements of DSTU-N B A.3.1-23:2013 and DSTU-N B V.2.6-212:2016. The base should be cleaned of dust, dirt, oil, grease, wax and paint residues. Fragile layers need to be removed.
- The project allows for the replacement of equipment and materials specified in the specification with similar ones in their technical parameters.

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Changes.	Several.	Sheet	Dock.	Signature	Date		Stage	Sheet	Sheets
CPE		Shelikhova V.B.					WP	21	
Developed		Kovaleva A.V							
Checked		Shelikhova V.B.							
						Scheme of repair work of the blind Area and plinth. Fragment of the plan of the lyceum building at the level of the blind Area (1:100). Nodes of the basement and blind Area (1:25)			
Norm.Counter:	Pirov Y.A								



Legend:

— attaching the wall rail ;

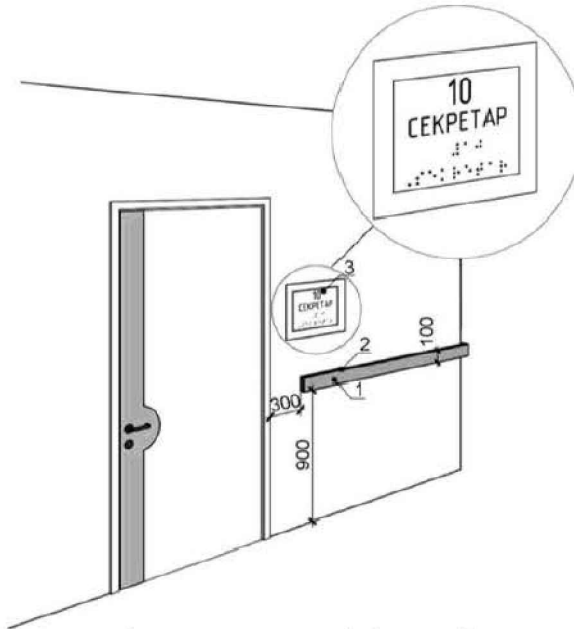
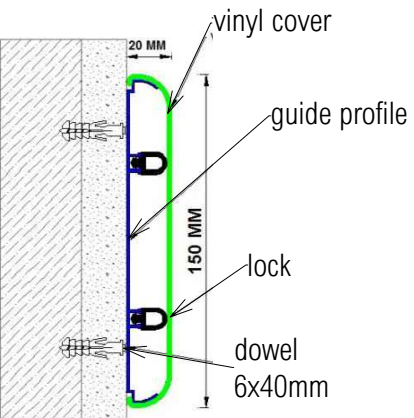
Low mVACility group Equipment Specification

Pose s	Denomination	Name, brand	Od. Measur ement	Quanti ty	Note
1		Plates for the designation of protective structures of civil protection (60x50 cm)	piece.	2	
2		Tactile information plate "Direction of travel"	piece	2	Set at a height 1,2-1,5 m.
3		Tactile information plate "Stairs"	piece	4	Set at a height 1,2-1,5 m.
4		Tactile information plate "Lift for LMG"	piece	1	Set at a height 1,2-1,5 m.
5		Tactile information signs on handrails. To provide information to a blind person when moving along the handrail.	piece	2	
6			piece	2	
7		Tactile information boASd with the name of the premises and Braille.	piece.	5	At a distance of 0,3 m. from the entrance from the side of the door leaf opening, at a height of 1,2-1,5 m.
8		Tactile information plate "Accessibility for visually impaired groups of the population"	piece	1	
9		Information plate	piece.	2	
10		Contrast marking of stairs 0.05 m on the horizontal section, 0.03 m on the vertical section.	m.p.	6.1	
11		Tactile information sign "Stairs"	piece.	2	
12		Tactile information sign "WC for women"	piece.	1	
13		Tactile information sign "WC for men"	piece.	1	
14		Tactile Classroom Information Plate	piece.	2	
15		Tactile indicators polyurethane on self-adhesive (slabs 0.3x0.3m)	piece.	21	






Low mVACility group Equipment Specification

Pose s	Denomination	Name, brand	Od. Measur ement	Quanti ty	Note
16		tactile information guide h -150 mm	m.p.	50.12	

Mounting diagram of the information guide.  
Bumper boASd for walls (1:5)

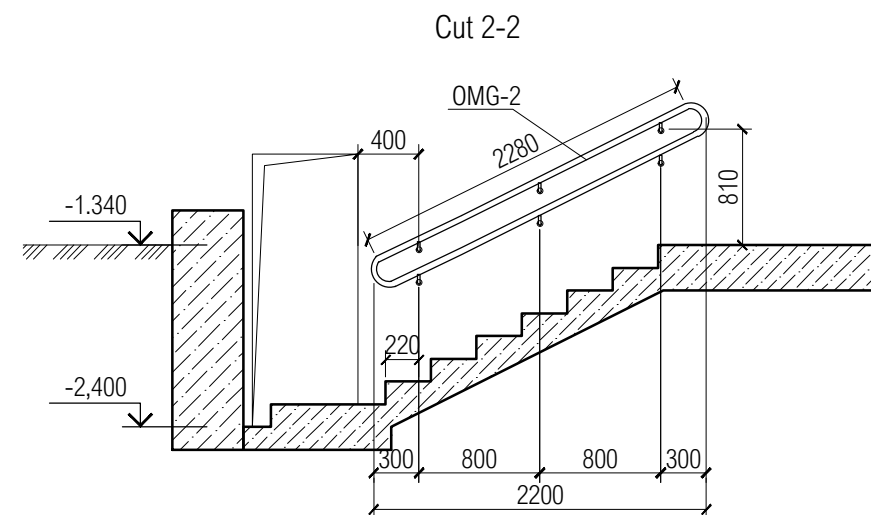
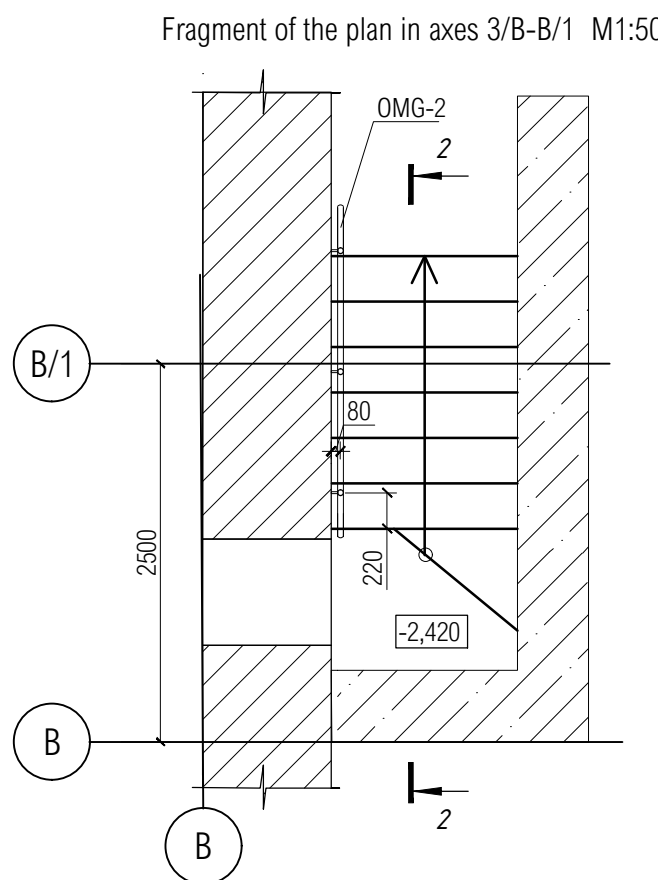


- information guide
- tactile information label
- tactile information plate that doubles, (a) to the extent permitted by the provisions of this t in the tactile form of flat-printed text and Braille

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Changes.	Several.	Sheet	Dock.	Signature	Date				
CPE		Shelikhova V.B.				Stage		Sheet	Sheets
Developed		Kovaleva A.V.				WP		22	
Checked		Shelikhova V.B.							
						Layout of accessibility facilities for LMG (1:100) Wall handrail mounting diagram (1:5) LMG Equipment Specification			
Norm.Control.		Pirov Y.A							







Інв. № ор.	Підпис і дата	Зам. інв. №	Погоджено:		



Notes:

1. The handrail fastening element is factory-made - 12piece. Processing: polymer coating black mat RAL 9005,
2. Recommended spacing between mounts: 800-1000 mm
3. Specify all dimensions and marks on the spot.
4. Perform anti-corrosion protection of metal structures in accordance with DSTU B V.2.6-193: 2013 "Protection of metal structures from corrosion".
5. Factory with mechanized welding joints.
6. Welding of steel structures must be carried out according to the technological regulations developed at the enterprise in the form of standards or special technological instructions, flow charts, etc., that take into account the features and state of production.
7. Welding of structures must be carried out on the basis of certified technologies in accordance with DSTU EN ISO 15613:2016.
8. Thickness (legs) welds should be taken according to the thinnest thickness of the welded element
9. All metal structures must be primed in one layer with GF primer-021 and covered with two layers of PF enamel-115. Overall Thickness paintwork, including soil, must be at least 120 microns.
10. Surfaces of metal structures, to be prepared for painting, must not have burrs, welding spatter, burnouts, flux residues. Clean surfaces from oxides by shot blasting or mechanical tools using abrasive wheels or sandpapers.
11. Painting the PF surface-115 per 2 times - 0,33 m<sup>2</sup> RAL 9005

Position	Denomination	Name	Quantity	Weight units, kg	Notes
		OGM-1			
1		Pipe 38x2 DSTU 8943:2019, L=m.p	5.06	1.78	9.01
3		Countersunk dowel 10x80mm, pcs	18		
		Attaching the handrail (ready-to-use item), pcs	6		
		Ogm-2			
1		Pipe 38x2 DSTU 8943:2019 L=m.p	5.06	1.78	9.01
3		Countersunk dowel 10x80mm, pcs	18		
		Attaching the handrail (ready-to-use item), pcs	6		

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CPE		Shelikhova V.B.				Stage		Sheet	Sheets
Developed		Kovaleva A.V				WP		23	
Checked		Shelikhova V.B.							
Norm.Counter.	Pirov Y.A					Installation of railings on the stairs of entrances and exits to the shelter		