**VOLUME 3**

**TECHNICAL SPECIFICATION**

**Small scale constructions for the needs of National Museum of Leskovac**

**LOT 1 – Setting up of an information center for visitors**

**LOT 2 - Lapidarium**

**INVESTOR:** National Museum of Leskovac

**OBJECT:** **Small scale constructions for the needs of National Museum of Leskovac**

**LOT 1 – Setting up of an information center for visitors - Activation of tourism through the setting up of an information center for attracting the tourist stream. This is the first phase of reconstruction of the permanent setting. In two architectural works, 8,000 years of history have been presented. The museum needs reconstruction and revitalization of the entrance and ground floor and creation of conditions for tourist presentation of the cultural heritage of the City of Leskovac with emphasis on better access of persons with disabilities.**

**LOT 2 - Lapidarium - an open-air museum, aims to show the rich history of Leskovac to local citizens and tourists through a permanent exhibition under the open sky. It is located around the existing National Museum building. The lapidarium and adjacent area will be used as a cultural center. The goal is to provide an interactive approach to artefacts that are part of the history of Leskovac since 8000 years. The project of adaptation of the museum square - lapidarium provides for the creation and installation of pedestals in the museum square, for exhibits from the collection of the National Museum. The reinforced concrete slabs are placed in groups, on the grassy surfaces of the museum square. They are different in size, which is conditioned by the dimensions and size of the exhibits.**

**CONSTRUCTION SITE**: National Museum of Leskovac ,Stojana Ljubića br. 2., 16000 Leskovac

**GENERAL TERMS FOR PERFORMING OF CONSTRUCTION AND CONSTRUCTION-FINISHING WORKS**

All items for estimated bill of quantities consider each work position to be unconditionally performed in a professional, precise way and with exceptional quality and according to approved drawings, technical description and description in this bill of quantities, technical terms and details from analysis for engineering physics, statistic calculation, details as well as later details of contractor, valid technical regulations, JUS and instruction of supervising authority and contractor, unless it is differently regulated in certain situation.

All regulations of these general terms as well as other general description are part of the contract signed by the investor and contractor.

All works and materials listed in the description of certain positions in this bill of quantities have to be included in offered contractors' price.

Negotiated prices are selling prices of contractors and they cover : all expenses for work, material with usual waste (unless the investor gets material for certain positions), inner and outer transport, scaffolding and formwork for works performing (unless they are calculated in this bill of quantities for certain work positions), water, light, fuels and lubricants and energy for machines, digging and filling of lime pit, warehouse for material storage, temporal construction premises, contractor management, social fees, all state and municipal taxes, contractor's profit and all other expenses regulated by valid regulations for forming of selling price of construction product and all expenses which resulted form certain work conditions defined as norms in construction engineering as well as terms mentioned in two items above.

The contractor does not have any rights to demand any additional payment for offered and negotiated price, unless it is specifically said that in certain position, some listed work is paid separately and it is not calculated in other position. Also, no fees or additional payment on negotiated price as increasing of standardized values from average standards in construction engineering will be accepted.

Billing and classification of performed works will be done according to average standards in construction engineering, which is compulsory both for the investor and contractor, unless it is differently signed in descriptions of certain positions in the bill of quantities.

Also, all descriptions from mentioned standards are compulsory for the contractor unless it is predicted differently in descriptions of certain positions or in general description.

General description given for one type of work and material binds contractor to perform all these works in certain positions according to this description no matter whether certain position appeals to general description, unless work descripiton is differently listed in that position.

All construction and construction-finishing works demand using appropriate work force and good materials which have to correspond to technical regulations, JUS and descriptions in positions in the bill of quantities.

For each material which is built in, the contractor has to submit test certificates to the supervising authority. In controversal situations related to quality, the samples will be delivered to the Institute for testing of materials, whose results are valid/applicable both for the investor and contractor. If the contractor uses and builds in bad material even though the Institute for testing of material has given negative results, the investor will order demolishing and all material damage from demolition will be at the contractor's expense. The contractor does not have any rights for reclamation and complaint to the resolution which is provided by the investor or construction inspection.

All materials for which the investor representative claims that it does not correspond to negotiated bill of quantities and prescribed quality, the contractor is obliged to remove it immediately from the construction site, and the investor will suspend work if the contractor tries to use it.

All construction and construction-finishing works demand using appropriate professional, qualified work force as it is calculated for certain work positions in average standards in construction engineering. The contractor is obliged to remove careless and unqualified worker from the construction site.

Prior to each work, the construction site manager is obliged to ask the investor representative on time for necessary explaination of plans and announcement for all works which are not sufficiently defined by the project analysis.

If the contractor performed certain works without previous consulting the investor, or he performed them contrary to given instructions according to a construction log book, i.e.contrary to calculated description, plans and given details, no justifications will be taken into consideration.

In this case, the contractor is obliged to order and remove everything at his own expense regardless the amount of performed work, and then, again at his own expense, to perform as it is calculated in plans, descriptions and details, unless these changes are approved by the investor.

If the contractor performs work in a a better and more expensive way than it is calculated, he does not have right to ask for an additional payment, if it is done on his own, without previously obtained permission or order from the investor representative via construction log book.

The contractor must maintain the object and whole construction site to be neat and competely clean, and after the finished works, before handing over the object, all holes, WC tank and holes from scaffolding, the contractor is obliged to fill in, ram and consolidate and to do this well so that later slumps do not appear.

For technical inspection and handover, the contractor must clean the whole object and construction site from rubble, excesive material, all means for work and additional objects.

All access ways to the object, plateau, stairs and paths, and floors in premises must be completely clean

Driveway and pavements which are damaged during works performing, also must be brought into valid state for technical inspection and handing over the object. All listed finishing works are not paid separately, because they have to be included into negotiated price.

Any possible damage, which can be made by the contractor during works perfroming within construction site or on neigbouring buildings, he is obliged to remove and bring them to their original condition at his own expense.

Special attention is drawn to the fact that contractor is the only person responsible for all the damage made by his careless and irresponsible work to neighbouring objects.

In case of constructive changes, as well as increasing, decreasing and cancellation/reversing of certain works from bill of quantities, new variations to the scope of construction works , the contractor is obliged to accept without complaint and limitations, and without right for compensation. Variations will be calculated according to negotiated prices.

In case there is a need for works which do not have negotiated price in the bill of quantites , the contractor i s obliged to get permission for them from the investor representative, establish the price and put this into a construction log book. The price for these works is determined based on the price list of all materials and work force, and the contractor is obliged to enclose it with the offer.

The contractor is obliged to coordinate the work of subcontractors who individually perfrom certain types of works, so that they do not make any damage to each other, and if this happens, he is obliged to regulate the elimination and damage compensation at the guilty side expense. Otherwise, expenses for damage ellimination will be paid by the contractor himself.

This is related to all interference and damages which can appear due to non-compliance of agreed order and deadlines for certain works performing. Supervising authority has a right to demand from the contractor to submit samples for inspection; then, the supervising authority will make a selection. Supply of these samples is not paid separately.

If the contractor needs to occupy neighbouring land and pavements besides the lot in order to organize the construction site or to storage the material, the contractor will get the permission from supervising authority i.e. the owner. All necessary expenses for this use will be contractor's and cannot be calculated for the investor.

The contractor is obliged to provide the investor with all confirmations at technical inspection which are foreseen by the law and regulations (setting the object at regulation line, connecting to energetic sources, water and sewerage network etc.) All expenses related to obtaining these documents are contractor's. The contractor is obliged to submit the confirmation for payment of spent water, electricity and other fees that he is charged with during performing of works.

Measurement book and construction log book will be written by the contractor based on valid lawful regulations; daily writing of all necessary data will be checked and signed on each page by the investor representative. In case of agreement 'under key', the contractor is obliged to perform previous check of the amounts given in the bill of quantities.

Special terms of the investors, existing technical and lawful regulations and complete analysis of technical documentation as well are also the constituent part of the agreement besides these general terms.

All works have to be performed with all necessary constructive parts completely impeccable according to the contractor's details.

Until the object is handed over to the investor, the contractor is responsible for everything on it and in case of any damage or malfunction, he is obliged to fix everything and bring it to a proper state.

During construction, the contractor is obliged to put in charge a highly qualified and professional expert who will be responsible for professional checking and accurate performing of all contractor's obligations.

For all works in the bill of quantities where formwork and scaffolding are necessary, the contractor is obliged to get them and solidly make them which is not paid separately but it is calculated into offered price of certain works.

All obligations in these general terms should be accepted by the contractor as a part of the agreement signed with the investor and he is obliged to accept them without any restrictions and to perform them without objections and complaints.

IMPORTANT:

All works must be implemented in accordance with investment design and corresponding standarts.

In case that in investment design - explanatory notes, bills of quantities, drawings, specifications, and everywhere in the documentation for tendering are set specific brand/mark, model, type, standard materials and products to be considered that whereas and equivalent.

The Contracting Authority does not require specific make, model, type, standard materials and products that will be in the works as long as you comply with the specifications of the designers and the essential requirements for building works.

**TECHNICAL DESCRIPTION – LOT 1 – SETTING UP OF AN INFORMATION CENTER FOR VISITORS**

Removal of obstacles for persons with disabilities and investment maintenance of the halls in National Museum Leskovac, at KP 5418, KO Leskovac

Investor: The National Museum of Leskovac Object: The National Museum Leskovac - Hol Type of technical documentation: IDP conceptual design Designer: Vladan Nikolic PR Workshop for design and design AFREESTUDIO Niš, Studenička 48 Responsible designer: Vladan Nikolić, B.Sc. Eng. arh. License number: 300 F538 07

**GENERAL**

The National Museum of Leskovac is composed of two wings of the floors Po + P + 1 + Pk and Po + P + 3. It was built as a free-standing building. It is located at KP 5418, KO Leskovac, at the corner of Stojan Ljubic Street and Pana Djukic street. The building was built in 1974 and was upgraded in the early 1980s. More recently, a gallery space has been added to the ground floor on one of the wings of the building. The building has three entrances: the main one from the street Stojan Ljubic, the entrance to the gallery from Pana Djukic Street and the official / economic entrance from the yard. The central hall is accessed through the entrance porch from Stojan Ljubic Street. The hall extends over two floors and contains a central staircase leading to the gallery on the first floor of the building. The entrance and central hall area has not been renovated since the construction of the building. Materials and interior equipment are worn out. There are no adequate and functional contents necessary for the functioning of a modern museum, as well as adequate toilets for visitors. Access to the facility for people with disabilities is disabled, as there is no pedestrian ramp. Also, there is no connection between the central lobby and the gallery space.

**FUNCTION**

A newly-designed solution in functional terms implies the construction of a ramp for people with disabilities, which allows unobstructed access to the entrance porch and to the entrance into the building. The lobby space is restructured with minimal interventions in terms of providing space with information desk and ticket sales, a souvenir shop, a bar counter and a space for rest of visitors. The central hall provides access to the area where the toilets (female and male) are located together with a toilet intended for persons with disabilities. The same space is connected with the newly projected communication with the gallery space, located on the ground floor of the second wing of the museum building. The gallery on the first floor of the central hall is already dedicated to a new permanent exhibition on the floor of the museum.

**CONSTRUCTION**

The structural system of the building is skeletal, with reinforced concrete pillars and beams. Interlocking construction is small in the "Standard" system. The inner staircase of the central hall of the building is reinforced with concrete, with treads placed on two parallel cranks. The newprojected solution does not include interventions and changes in the constructive system of the object. In the outer part, the extension of the pedestrian ramp is anticipated, in accordance with the provisions of the rule book on technical accessibility standards.

**CURRENT MATERIALIZATION**

At present, all the interior walls of the central hall are painted with painted mortar and partially coated with veneered panels. The ceilings are plastered on a cane, smooth and they are dyed. The floor of the entrance porch and the central hall, is covered with natural stone plates, whose surface is damaged by long-term use. The carpentry is made of aluminum, various structures, since it has been installed on several occasions. Mechanisms and fittings of the carpentry are worn out, and the degree of breathing does not correspond to the needs of the energy efficiency of the building. The staircase fence is made of steel profiles, with glass filling and wooden grips. The partition walls in the part of the building, which relies on the hall, are of brick thickness d = 12.0cm and of plasterboard boards. The walls in the sanitary nodes are covered with degraded ceramic tiles, and sanitary devices are not at the required level for this type of facility.

**THE NEWLY PROJECTED MATERIALIZATION**

The floors of the entrance porch and the central hill, made of natural stone, are renewed and sanitized. Before the renovation, the replacement of damaged plates from natural stone is made, using wages that are disassembled from the intermediate staircase. The plates are carefully stowed and placed on a layer of cement mortar. After that, a detailed calibration of the surface of the floor and of the natural stone is done, removing the surface layer of the stone. After calibration, surface grinding and polishing are carried out. Protection of the stone surfaces with liquid wax or liquid silicone depends on the surface position (external, internal). The staircase of the central hall, treads and foreheads are covered with granite ceramics, with the installation of steel "stainless steel" moldings. The floor of the pedestrian ramp is paved with anti-slip relief granite ceramics. A part of the walls, according to the project, is plastered with plasterboard panels, floating and coloring, in the tone according to the designer's choice. On a project defined wall surfaces, a network of artificial greenery, a "green wall", is set up in the quality required for this kind of object, non-flammable, according to the designer's choice. Ceilings are coated with plasterboard, plating and paint. On one part of the ceilings there is processing of existing concrete beams and slabs, with coloring in tone according to the designer's choice. The entrance aluminum portal and toilet windows are made according to the details of the project, from aluminum profiles laminated in tone RAL 7016. Glazing is a double pack of glass 6 + 15 + 6mm, filled with argon. Interior glass is "satinato"style. The toilet doors are made of MDF-covered PVC foil, according to the designer's choice. With the existing aluminum fixed portals of the central hall, the glazing is replaced with a double glass package of 6 + 15 + 6mm, filled with argon. Aluminum moldings are also installed on the inside. The space for sale of souvenirs has a segmental glass door, of 5 glass panels, 69 cm wide and 250 cm high, of 8mm of thickness. The door has a guide built into the ceiling and a complete mechanism and silicone blades.

The staircase fence is made of laminated glass fixed in the aluminum profile of the enclosure, in the "ELEGANT" system, type chosen by the designer. The fence is placed on a patchwork made of lightweight reinforced concrete and anchored in the existing reinforced concrete treads. Concrete elements and outer parts of the treads are plastered, coated and painted according to the details of the project. In newly-designed toilets, the existing walls, after the plastering of old tiles, are plastered with cement mortar. After making the elements of impregnated plaster cast carton plates, and before installing granite ceramics, the waterproofing of floors and walls up to a height of 30cm is done. The insulation is made of elastic acrylic waterproofing coating Saniflex (or similar) in two layers, according to the manufacturing technology prescribed by the

material manufacturer. All angles and fractures to be ensured with a 12cm tape. All penetrations through the cement screed and the intermediate structure are provided using a permanently elastic sealant of InduFlex, or the similar products. Floors and walls, up to a height of 240cm, are coated with granite ceramics, placed on a building glue. Aluminum moldings are installed on the outer corners. The toilet cabins are made of light barriers for sanitary cabins (manufacturer "NISSAL" or similar in quality and design). Construction made of aluminum profiles anodised in silver tone, on appropriate pins and filling of Al sandwich panels, in color of aluminum profiles.

**NEW OPREME EQUIPMENT**

The interior of the hall is equipped with countertops and shelves made of chipboard, veneered media and other necessary fittings and mechanisms, in accordance with the details from the project. Some elements have a grid of steel boxed profiles. The production is done in accordance with the project, in the workshop, and the assembly and installation of the elements of the interior is done after all the construction and craft labors. Purchase of the standard equipment is done according to the details from the project and the positions of the precondition and calculation of the labors.

**THE ILLUMINATION**

Built-in lighting for halls and toilets is planned, in the form of LED lamps type Philips DN060B LED18S. Above the counter, the hanging lamps are DUKE 1XGU10 CHROME, or similar- up to the designer's choice. In the project designated places, the lengths are 2m long, set with power supplies and reflector lamps type ST740T-1xLED16.2W / 17S / 930 / 1650lm / 3000K, Philips Lighting, or similar in type and quality according to the designer's choice. The existing central hall chandelier is dismantled, cleaned and processed according to the details of the project. Re-assembly of processed chandeliers is done on the project's intended position.

**Annex 1 – Bill of quantities**

**LOT 1 – Setting up of an information center for visitors**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bill of quantities -SURVEY AND ESTIMATE OF WORKS RELATED TO Project - removal of barriers for persons with disabilities and investment maintenance of the hall of the National Museum in Leskovac, at Cadastral plot No 5418, cadastral municipality Leskovac** | | | | | | | | | |
| Positio n No | | Description of proposed works | | unit | | | | quantity | |
| **1.00** | | **EARTHWORKS** | | | | | |  | |
| 1.01. | | Excavation of the ground due to onstruction of the foundations for the pedestrian ramp/wheelchair ramp and "Tesla's" antenna. Mechanical excavation of soil for footings/shallow founndation and foundations for wheelchair ramp, at depth 0-2 m soil class II.Earthworks include remove a part of the concrete track and the existing slab with mounted "Tesla's" antenna . During the works, setup a fence around the construction site \*60m2, which will be removed after the completion of the ramp for the disabled/wheelchair ramp. Calculation per m3 | |  | | | |  | |
|  | |  | | m3 | | | | 14,00 | |
| **2.00** | | **DESIGN FOR DISASSEMBLY AND DEMOLITION** | | | | | |  | |
|  | |  | |  | | | |  | |
| 2.01. | | Remove existing cladding Remove the cladding of the existing walls, made of veneered panels and knauf. Arrange the veneered panels within the construction site. Collect the build waste, take it out, load it on a truck and dispose to the city landfill/disposal facility. Calculation per m². | |  | | | |  | |
|  | |  | | m² | | | | 40,00 | |
| 2.02. | | Disassemble the chandelier. Carefully dismantle the existing entrance hall chandelier and arrange it due to restoration steps. The price covers a temporary auxiliary scaffold. Calculation per piece. | |  | | | |  | |
|  | |  | | unit | | | | 1 | |
| 2.03. | | Removing the reed battens ceiling structure. Separate usable material and arrange. Collect the build waste, take it out, load it on a truck and dispose to the city landfill/disposal facility. During remodeling, carefully cover the door of other exhibition rooms with PVC foil. The position also includes the use of lightweight scaffolding. Calculation - m2 of ceiling structure | |  | | | |  | |
|  | |  | | m² | | | | 207,00 | |
| 2.04. | | Disassembling the air conditioner. Disassembling the outdoor air conditioning unit, carefully dispose due to assemble and reassemble the outdoor air conditioning units, setup according to the project. | |  | | | |  | |
|  | |  | | kom. | | | | 2 | |
| 2.05. | | Demolition of 7cm brick partition walls and other lightweight materials. Removing the walls includes demolishing heads of door frames, lintels and all the wall coverings. Collect the build waste, take it out, load it on a truck and dispose to the city landfill/disposal facility. The price covers auxiliary scaffolding structure without the apertures . Calculation per m². | |  | | | |  | |
|  | |  | | m² | | | | 108,00 | |
| 2.06. | | Dismantle existing floors. Cautiously dismantle the existing floor of the intermediate hall staircase, due to reuse natural stone slabs. Clean dismantled stones of OPC mortar and stack them within the construction site. Calculation per m². | |  | | | |  | |
|  | |  | | m² | | | | 10,00 | |
| 2.07. | | Remove floor and wall ceramic tiles including mortar. Clean the mortar joints and clamps, clean the joints to a depth of 2 cm, and the surface of the brick using steel brushes.Collect the build waste, take it out, load it on a truck and dispose to the city landfill/disposal facility. The price doesn't cover the apertures Calculation per m² of broken area. | |  | | | |  | |
|  | |  | | m² | | | | 24,00 | |
|  | | "Dismantling of sanitary devices and accessories. Dismantle sanitary devices and accessories and take them to a landfill up to 15 km away, at the choice of the investor. Estimate cost per piece." | |  | | | |  | |
| Washbasin with siphon and faucet | | kom. | | | | 1 | |
|  | | Toilet bowls | | kom. | | | | 2 | |
|  | | Toilet Cisterns and pipes | | kom. | | | | 2 | |
| 2.09. | | Dismantling of the portal. Dismantling of aluminum windshield portals and the entrance hall bracket, overall dimensions 770x250x220cm. The position also includes the removal of the porter's lodge laminate in. The price also includes auxiliary scaffolding construction. Estimated cost per piece. | |  | | | |  | |
|  | |  | | kom. | | | | 1 | |
| 2.10. | | Disassemble windows of the entrance hall fixed portals. Cautiously dismantle the glass and set up on spot determined by the investor. There are 12 apertures (8 holes measuring 268x184cm and 4 holes measuring 134x184cm). The price includes anauxiliary scaffolding structure. Estimated cost for the complete position. | |  | | | |  | |
|  | |  | | kom. | | | | 1 | |
| 2.11. | | Dismantling the stair railing. Carefully dismantle the existing stair railing and hall gallery of, approximately, 18m lenght. Arrange the material at a place determined by the investor. Calculation in a lump sum, for a complete position/site. | |  | | | |  | |
|  | |  | | pauš. | | | | 1 | |
| 2.12. | | Disassembly and reassembly of "Tesla antenna". Careful disassembly of the Tesla antenna model from Colorado Springs and its disposal for reassembly. Mounting the antenna on the intended pedestal with anchors, with all the necessary actions and the necessary material. Calculation per piece of the complete position. | |  | | | |  | |
|  | |  | | kom. | | | | 1 | |
| 2.13. | | Disassemble windows. Existing windows measuring 205x132cm and 205x184cm, dismantle and dispose at the place provided by the investor. Calculation per piece. | |  | | | |  | |
|  | |  | | kom. | | | | 1 | |
| **3.00** | | **VARIOUS VENEER MASONRY WORKS** | | | | | |  | |
| 3.01. | | Make smooth-finish lightly reinforced cement screed 3-5 cm thick, as a base for floor covering. Before applying the screed, clean and wash the screed substrate. Make the mortar for the screed with sifted gravel "unit", scale 1: 3. Reinforce it with rabic knitting, placed in the middle of the layer. Scrub the upper surface of the screed and take care of till it hardens. Calculation per m². | |  | | | |  | |
|  | |  | | m² | | | | 45,00 | |
| 3.02. | | Smash/deconstruct a brick partition wall due to construct door openings and ventilation openings in toilets. Carefully demolish parts of the wall so as not to scatter the wall mass. Collect the rubble, take it out, load it on a truck and take it to the city landfill. The price includes support. Drill holes in the toilets to install pipes with a diameter of 11 cm. Calculation per wall. | |  | | | |  | |
|  | |  | | m² | | | | 2,88 | |
| 3.03. | | Walling of window openings with/using bricks Walling of window openings with bricks in extension mortar in the ratio 1: 2: 6. Before masonry steps on the existing wall, dampen the hoses for transportation. Wet the brick with water before installation. Masonry should be done in the correct style, and the joints should be cleaned to a depth of 2 cm after the masonry is finished. The price also includes an auxiliary scaffolding. Calculation per m3 of each auditory. | |  | | | |  | |
|  | |  | | m3 | | | | 1,00 | |
| 3.04. | | Plastering brick and concrete walls with two layers cement mortar The position refers to the walls in the toilets and the side surfaces of the concrete pedestrian ramp. Plastering with cement mortar in a ratio of 1: 3 in two layers. Before plastering, clean and spray the surface with rare cement milk. The first layer, primer, should be worked within the ratio of 1: 3 cement mortar, layer thickness up to 2 cm from sifted gravel, "unit" and cement. Stir the mortar constantly so that the cement laitance does not separate. Apply the mortar over the substrate and cut to better accept the second layer. The second layer, size 1: 3, should be prepared with fine and clean sand, without the admixture of sludge and organic matter. Sift by wetting and ironing with small sieves. Plastered surfaces must be flat, without fractures and waves, and the edges must be sharp and straight. Wet the mortar to prevent rapid drying and "burning". Calculation per m² of plastered surface . | |  | | | |  | |
|  | |  | | m² | | | | 35,00 | |
| 3.05. | | Plastering the parapet of concrete stairs with two layers extension mortar . Before plastering, clean and spray the surface with milk. The first layer, primer, should be applied with an extension mortar up to 2 cm thick from sifted gravel, "unit" and slaked lime, aged for at least 30 days. Dissolve the lime in water and strain it through a thick sieve, so that there is no "popping" and add a dry mixture of cement and sand. Stir the mortar constantly so that the lime milk does not separate. Apply the mortar over the wet substrate and cut to better accept the second layer. It is necessary to install a rabic net at the junction of the existing stair treads with the new parapet. Prepare the second layer with fine and clean sand, without impurities, sludge and organic matter. Sift by wetting and ironing with small sieves. Plastered surfaces must be flat, without fractures and waves, and the edges must be sharp and straight. Wet the mortar so that it does not dry quickly and "burn out". Calculation per m2 of plastered area. | |  | | | |  | |
|  | |  | | m² | | | | 25,00 | |
| 3.06. | | Installation of ventilation openings. Installation of pipes with a diameter of 11 cm on the toilet walls of in the prescribed manner, with the installation of a protective mesh and grille on the outside and a decorative grille inside the installation of ventilation openings. Installation of pipes with a diameter of 11 cm in | |  | | | |  | |
|  | |  | | kom. | | | | 4 | |
| 3.07. | | Production and installation of brackets for radiator masks. The brackets are made of steel bottles 4 mm thick, dimensions 3.5x36cm, made according to the drawing from the project. A hook was cut at the place where the mask was hung. The flakes are buried and anchored in the parapet wall. The flasks are minced and painted twice with black varnish. | |  | | | |  | |
|  | |  | | kom. | | | | 28 | |
| **4.00** | | **CONCRETE WORKS** | | | | | |  | |
| 4.01. | | Production of reinforced concrete foundations and ramp columns for people with disabilities, brand MB 30. Reinforce the foundations according to the project, details and static calculation. Concreting should be done over previously scattered gravel with a layer thickness of 20 cm and a layer of lean concrete with a thickness of 5 cm. Install and care for concrete in accordance with regulations. The price includes reinforcement and a gravel buffer. Calculation per m3. | |  | | | |  | |
|  | |  | | m3 | | | | 2,50 | |
| 4.02. | | Production of AB slab of the pedestrian ramp/wheelchair ramp Production of reinforced concrete slabs of the ramp for the disabled/wheelchair ramp, MB 30. Make the formwork with supports and reinforce the slabs according to the project, details and static calculation. Install and care for concrete in accordance with regulations. Make the connection with the AB plate in front of the entrance by placing steel anchors. The price also includes payment, supports, anchors and reinforcement. Calculation per m3. | |  | | | |  | |
|  | |  | | m3 | | | | 3,00 | |
| 4.03. | | Construct reinforced concrete stair railings . Production of reinforced concrete fence to the height defined by the project, MB 30. Make formwork with and reinforce the fence with mesh Q 188. Install and care for concrete according to regulations. Make the connection with the AB step by placing steel anchors in each step of the step and in the intermediate platforms. The price also includes payment, supports, anchors and reinforcement. Calculation per m3. | |  | | | |  | |
|  | |  | | m3 | | | | 1,00 | |
| 4.04. | | Production of reinforced concrete lintel. The lintel has a cross section of 25x20 cm, brand MB 30. Make the formwork and reinforce the lintels according to the details and static calculation. Install and care for concrete in accordance with regulations. The price also includes formwork, supports, reinforcement and auxiliary scaffolding. Calculation per m1 of door lintel. | |  | | | |  | |
|  | |  | | m1 | | | | 1,60 | |
| 4.05. | | Construct concrete staircase. Construct of reinforced concrete staircase, MB 20. Make formwork with supports and reinforce slabs according to the project, details and static calculation. Install and care for concrete in accordance with regulations. Make the connection to the AB plate by placing steel anchors. The price also includes payment, supports, anchors and reinforcement. Calculation per m3. | |  | | | |  | |
|  | |  | | m3 | | | | 1,70 | |
| **5.00** | | **LOCKSMITH WORKS** | | | | | |  | |
| 5.01. | | Ramp railing for people with disabilities/railing for wheelchair ramp Production, transport and installation-installation of sloping and straight ramp fences for the disabled h = 90cm, from steel box profiles according to details, with priming 2x and enamel paint 2x with pre-work. Calculation per kg of completely executed construction. | |  | | | |  | |
|  | |  | | kg | | | | 363,00 | |
|  | |  | |  | | | |  | |
|  | |  | |  | | | |  | |
| **6.00** | | | **JOINERY /CARPENTERY WORKS** | | | | |  | |
|  | | |  |  | | | |  | |
|  | | | NOTE: 1. Egger plywood is used in the design of the designer's choice, in the price class up to 3600 dinars, or identical design and quality of another manufacturer. 2. Counters, wall coverings, radiator grilles and all positions from the IPA project are considered through Elements 01-11 | | |  | |  | |
| 6,01 | | | Item/element 01 Procurement of materials, production and installation of radiator grille elements. The element consists of a frame made of 36mm thick plywood, overall dimensions 603x30x115cm. The joints of the horizontal and vertical are gerured. The frame has four aluminum ventilation grilles. Inside the frame, in the places of the radiator, the elements of the mask with perforation treated with aluminum moldings are mounted. These elements of the mask are mounted on steel bottles anchored to the wall. Between the radiators, shelves are placed - cabinets, of different dimensions with doors and partitions inside. Cabinet doors open on pressure,equipped with an adequate mechanism. It is necessary to use quality certified hardware. Each locker has a lock. ABS edging is used. Measures taken on the construciton site. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.02. | | | Element 02 Procurement of materials, production and installation of radiator grille elements, with cabinet. The element consists of a frame, shelves, wall cladding and cabinets made of plywood 18 and 36 mm thick, with a door made of plywood 18 mm thick and the upper part with a laminated glass door of purchase dimensions 360x45x250cm. The joints of the horizontal and vertical are gerured. The frame has four aluminum ventilation grilles. Inside the frame, a mask element with perforation treated with aluminum strips is mounted in the places of the radiator. This element of the mask is mounted on a four-sided steel bottle anchored to the wall. The cabinet consists of a lower part3.3.1. Cabinet doors have aluminum handles for opening and a lock. Inside the cabinets, there are shelves that have the possibility of adjusting the position vertically. It is necessary to use quality certified hardware. ABS edging is used. Measures taken on the spot. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.03. | | | Element 03 Procurement of materials, production and installation of radiator grille elements and wall cladding. The element consists of a frame made of 36mm thick plywood, with overall dimensions of 228x30x115cm and a cladding with overall dimensions of 80x30x220cm. The joints of the horizontal and vertical are gerured. The frame has four aluminum ventilation grilles. Inside the frame, in the places of the radiator, the elements of the mask with perforation treated with aluminum moldings are mounted. These elements of the mask are mounted on steel bottles anchored to the wall. A cupboard is placed next to the radiator, with doors and partitions inside. Cabinet doors open on pressure and are equipped with an adequate mechanism. It is necessary to use quality certified hardware. The locker has a lock. ABS edging is used. Measures taken on the spot. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.04. | | | Element 04 Procurement of materials, production and installation of radiator grille elements. The element consists of a frame made of 36mm thick plywood, overall dimensions 190x30x115cm. The joints of the horizontal and vertical are gerured. The frame has four aluminum ventilation grilles. Inside the frame, in the places of the radiator, the elements of the mask with perforation treated with aluminum moldings are mounted. These elements of the mask are mounted on steel bottles anchored to the wall. ABS edging is used. Measures taken on the spot. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.05. | | | Item 05 Procurement of materials, production and installation of radiator grille elements. The element consists of a frame made of 36mm thick plywood, with overall dimensions of 240x30x115cm. The joints of the horizontal and vertical are gerured. The frame has four aluminum ventilation grilles. Inside the frame, in the places of the radiator, the elements of the mask with perforation treated with aluminum moldings are mounted. These elements of the mask are mounted on steel bottles anchored to the wall. ABS edging is used. Measures taken on the spot. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.06. | | | Item/Element 06 18 and 36 mm thick plywood window counter and panel on a steel substructure with wheels. The steel substructure is made of box profiles 20.20.2.5 and 30.30.2.5mm. It plasticizes to dark gray. A lament with drawers is placed under the pump. It has four wheels, aluminum handles and a side-mounted lock. ABS edging is used. The overall dimensions of the parts of the counter are 145x70x95cm and 40x52x62cm. Measures taken on the spot. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.07. | | | Item/Element 07 Fixed part of the countertop made of plywood 18 mm thick, overall dimensions 40x70x95cm. ABS edging is used. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.08. | | | Item/Element 08 Procurement of materials, production and installation of the counter, dimensions 370x50x115cm, with an exhibition glass case. The counter is made of plywood 18 + 18mm, with four cabinets in the lower part, each of which has a double door with a lock. The counter lining is gerured. ABS edging is used. The glass cabinets in the upper part are made of laminated glass 3.3.1, they have four glass doors with a lock that open onto the statue. The background of these showcases is lined with black plush canvas. In the front part, the counter is covered with gypsum board attached to the side wall. It is necessary to use quality certified hardware. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.09. | | | Item/Element 09 Procurement of materials, production and installation of a museum display case, dimensions 286x50x220cm, with a pedestal made of steel box profiles 50.50.3mm and 50.30.2,5mm coated with 18mm plywood. ABS edging is used. The two sides of the display case are made of laminated glass 4.4.1. The glass is fixed with metal strips with sealing rubber, on the upper and lower side. On the shorter side are glass doors with the necessary hardware and lock. It is necessary to use quality certified hardware. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.10. | | | Item/element 10 Procurement of materials, production and installation of a radiator grille measuring 270x30x115cm, with the same characteristics as Element 03. Next to the grille is a frame for the entrance to a permanent installation, made of 36mm thick plywood. The dimensions of the frame are 198x30x225cm. ABS edging is used. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| 6.11. | | | Item/Element 11 Procurement of materials, production and installation of 36mm plywood door frames, overall dimensions 190x40x225cm. ABS edging is used. Calculation per piece. | | |  | |  | |
|  | | |  | | | kom. | | 1 | |
| **7.00** | | | **CERAMIC AND FLOORING/PERMANENT COVER** | | | | |  | |
| 7.01. | | | Procurement and production of waterproofing of wet nodes. Insulation is made of elastic acrylic waterproofing coating Saniflex (or similar) in two layers, with a rise of 30 cm to the wall surface, all according to the designer's details as well as consumption and manufacturing technology prescribed by the material manufacturer, Schomburg, or similar. Secure all corners and fractures with Aso Dicht tape 12 cm wide. Ensure all penetrations through the cement screed and the mezzanine structure by using a permanently elastic sealant InduFlex VK60 / 60 - Schomburg, or similar. Measures taken on the spot. Calculation per m² of floorspace. | |  | | |  | |
|  | | |  | | m² | | | 24,00 | |
| 7.02. | | | Procurement and installation of wall granite ceramics, on glue, in the toilet up to a height of 240 cm. Covering the walls up to a height of 240 cm with granite ceramics, at the designer's choice, on glue of the appropriate type for this type and dimension of tiles. Lay the tiles according to the open joint system. For joint thickness of 2 mm, use plastic crosses, and grout with the appropriate waterproof joint compound from the manufacturer "Henkel", in the color chosen by the designer. If necessary, sand the edges of the tiles by hand. Install vertical and horizontal aluminum moldings at the corners. Coated surfaces must be flat and vertical. Grout and clean the installed tiles with sawdust. The price also includes the purchase of tiles. Calculation per m². Measures taken on the construction site. | |  | | |  | |
|  | | |  | | m² | | | 93,00 | |
| 7.03. | | | Laying toilet granite floor tiles, using glue. Covering the floors with granite ceramics, at the designer's choice, on an adhesive of the appropriate type for this type and dimension of tiles. Lay the tiles according to the open joint system. For joint thickness of 2 mm, use plastic crosses, and grout with the appropriate waterproof joint compound from the manufacturer "Henkel", in the color chosen by the designer. Prepare the substrate beforehand and lay it flat. Clean the installed tiles with sawdust. The price also includes the purchase of ceramics. Calculation per m², doesn't include auditories Measures taken on the spot. | |  | | |  | |
|  | | |  | | m² | | | 24,00 | |
| 7.04. | | | Procurement and installation of floor granite ceramics and ceramics should be done on the fronts, steps, steps and part of the floor in front of the toilet.  Coating part of the floor, front and treads of the steps with granite ceramics would be in the price class up to 2400 dinars without VAT, or similar according to the designer's choice, on glue of the appropriate type for this type and dimension of tiles. Lay the tiles according to the joint-on-joint system. Prepare the substrate beforehand and lay it flat. At the junction of the forehead and the tread, place a metal strip Schluter SCHIENE STEP, or similar at the choice of the designer. Clean the installed tiles with sawdust. The price also includes the purchase of ceramics. Calculation will be done per m². Measures will be taken on the spot. | |  | | |  | |
|  | | |  | | m² | | | 54,00 | |
| 7.05. | | | Restoration and rehabilitation of natural stone floors. Before repairing, replace the damaged natural stone slabs, using webs that have been dismantled from the intermediate landing of the staircase. Carefully cut the slabs and place them on a layer of cement mortar. Perform a detailed calibration of the floor surface and plinth made of natural stone, ie. removing the surface layer of stone. After calibration, the surface is sanded and polished. Protect stone surfaces with liquid wax or liquid silicone, depending on the position of the surface (outer, inner). The position also includes the processing of a plinth 15 cm high. Calculation per m². Measures taken on the spot. | |  | | |  | |
|  | | |  | | m² | | | 184,00 | |
| 7.06. | | | Flooring with anti-slip relief granite ceramics I class. Procurement and installation of anti-slip granite ceramics ramps for people with disabilities, on construction glue intended for exterior use. Calculation per m². Measures taken on the spot. | |  | | |  | |
|  | | |  | | m² | | | 18,00 | |
| 7.07. | | | Procurement and installation of metal moldings as stair treads. Cut the metal strip 3 cm high, strap it and fix it on the seam of the ceramic floor and the parapet of the stair railing. Calculation per m1. Measures taken on the spot. | |  | | |  | |
|  | | |  | | m1 | | | 34,00 | |
| **8.00** | | | **DRY ASSEMBLY WORKS** | | | | |  | |
| 8.01. | | | Procurement and installation of gypsum-cardboard partition walls - KNAUF W112, or appropriate - double coating of gypsum-cardboard moisture- resistant boards with a thickness of d = 1.25cm on a single metal substructure thickness, total thickness 10cm. Provide for the installation of metal L profiles on the corners of the walls. Calculation per m² of procured and installed gypsum-cardboard construction and accompanying equipment, with the necessary construction of scaffolding. Measures taken on the spot. | |  | | |  | |
|  | | | Wall 10 cm thick | | m² | | | 10,00 | |
|  | | | Wall thickness 10cm - moisture-resistant boards | | m² | | | 52,00 | |
| 8.02. | | | Procurement and installation of gypsum plasterboard installation walls - KNAUF W116, or corresponding to another manufacturer - double coating of gypsum plasterboard moisture-resistant boards thickness d = 1.25cm on a double metal substructure thickness d = 15cm, total thickness 20cm, without filling with stone wool (or similar ). Provide for the installation of metal L profiles on the corners of the walls. Calculation per m² of procured and installed gypsum-cardboard construction and accompanying equipment, with the necessary construction of scaffolding. Measures taken on the spot. | |  | | |  | |
|  | | |  | | m² | | | 4,00 | |
| 8.03. | | | Covering the ceiling of the living room with gypsum plasterboard 12.5 mm thick, with the production of a steel substructure, Knauf D112 system, or corresponding from another manufacturer. Double substructure made of load-bearing and prefabricated galvanized profiles CD 60x27mm directly attached to the load-bearing ceiling and covered with plasterboard, according to the project and manufacturer's instructions. Treat the compositions with smoothing compound and bandage tapes according to the designer's instructions. The price also includes scaffolding. The position implies the removal of smaller parts of the existing ceiling for the needs of fixing the substructure and making concealers in certain places for LED lighting. Calculation per m2 of installed area. | |  | | |  | |
|  | | |  | | m² | | | 106,00 | |
| 8.04. | | | Production of a suspended ceiling with a steel substructure and coating with gypsum plasterboard 12.5 mm thick, Knauf D112 system. Make a double substructure from load-bearing and prefabricated galvanized profiles CD 60x27 mm fastened with hangers to the load-bearing ceiling and cover with plasterboard, according to the project and the manufacturer's instructions. Treat the compositions with smoothing compound and bandage tapes according to the designer's instructions. The price includes the production of inspection openings and scaffolding. Calculation per m2 of installed surface. Production of a suspended ceiling with a steel substructure and cladding with gypsum plasterboard 12.5 mm thick, Knauf D112 system. Make a double substructure | |  | | |  | |
|  | | | Lowering height 65-120cm | | m² | | | 39,00 | |
|  | | | Moisture-resistant panels - lowering height 20cm | | m² | | | 34,00 | |
| 8.06. | | | Production of wall metal substructure and double coating with gypsum plasterboard 12.5 mm thick, Knauf W625 system, or equivalent. The total thickness of the lining is 60-200mm. Metal substructure made of galvanized CW 100 profiles, according to the project and manufacturer's instructions. Then lay and fasten two layers of drywall. Treat the compositions with smoothing compound and bandage tape, according to the designer's instructions. The price also includes scaffolding. Calculation per m2 of installed area. | |  | | |  | |
|  | | |  | | m² | | | 80,00 | |
| 8.07. | | | Procurement and installation of lining of artificial greenery, GREEN WALL 3D JUNIPERUS UV, or appropriate at the choice of the designer, resistant to UV radiation. Calculation per m2 of installed area. | |  | | |  | |
|  | | | rocurement and installation of sliding doors in the "Knauf Pocket Kit" system, or similar from another manufacturer, dimensions 120/210 cm. Calculation per piece for completely assembled doors, with all necessary accessories and materials. Procurement and installation of sliding doors in the "Knauf Pocket Kit" system, or similar from another manufacturer, dimensions 120/210 cm. | | m² | | | 45,00 | |
| 8.08. | | |
|  | | | .Procurement and installation of aluminum two- channel curtain rod without mask. The position also implies the possible use of light scaffolding. Calculation per m1. | | kom. | | | 1 | |
| 8.09. | | |
|  | | | Procurement and installation of panel curtains measuring 2015x250cm. The curtain is installed in the plasterboard ceiling. Canvas color chosen by the designer. Calculation per m2. | | m1 | | | 7,00 | |
| 8.10. | | |
|  | | |  | | m2 | | | 5,25 | |
| **9.00** | | | **PAINTING WORKS** | | | | |  | |
| 9.01. | | | Smoothing and painting of finely existing and plasterboard walls and ceilings. Sand all surfaces, plaster as needed, neutralize, impregnate and coat the dispersion putty twice. Painting with acrylic paint twice in the places indicated in the interior design, in the tone chosen by the designer, and based on the tone map of the paint manufacturer. All necessary materials (procurement and transport) are provided by the contractor. Calculation per m² of painted wall together with scaffolding. Measures taken on the spot. | |  | | |  | |
|  | | | Dark color chosen by the designer | | m² | | | 115,0 | |
|  | | | White colour | | m² | | | 490,0 | |
| 9.02. | | | Finishing the ceiling type "Standard". Cleaning of concrete beams and slabs and compressor painting with concrete paint in the tone chosen by the designer. Carefully clean all concrete surfaces with a steel brush and repair any damage with construction glue. Paint with the selected color until the surface is completely covered. Calculation per m² of painted surface together with scaffolding. Measures taken on the spot. | |  | | |  | |
|  | | | Treatment of concrete girders and parapet walls of the internal stair railing with kulirplast. Cleaning of concrete stair supports and kulirplast processing of smaller granulation in white color. Pre-carefully clean all concrete surfaces with a steel brush and repair any damage with construction glue. Calculation per m² of surface together with scaffolding. Measures taken on the spot. | | m² | | | 82,00 | |
| 9.03. | | |
|  | | |  | | m² | | | 91,00 | |
| 9.04. | | | Painting of existing fixed portals with metal paint. After dismantling the glass, clean the existing frames of the fixed portals mechanically and chemically from all deposits and impurities. Perform fine sanding of the surface, and painting with paint intended for aluminum, in the tone of RAL 7016. Calculation per m1 of profile, together with scaffolding. | |  | | |  | |
|  | | |  | | m² | | | 97,00 | |
| **10.00** | | | **ALUMINUM AND GLASS CUTTING WORKS** | | | | |  | |
| 10.01. | | | Aluminum entrance portal.  Procurement and installation of an entrance portal with double doors will be made of aluminum profiles from the Alumil M50 system, RAL 7016, or another manufacturer, with overall dimensions of 740 x 250cm.  It is consisted of load-bearing vertical and horizontal aluminum profiles with, thermal break width, 50 mm and depth in the vertical direction of 150 mm and in the horizontal direction of 50 mm. The glass package is mounted on the outside using special profiles 50 mm wide, which are covered with cover profiles 50 mm wide and 16 mm deep. The door on the portal is from aluminum profile with thermal break. The door handles go the entire height of the door, in a design chosen by the designer.  The side parts between the portal and the walls must be made of steel box profiles lined with alubond in the color RAL 7016. Inside these boxes, should be placed 15 cm thick mineral wool. The dimensions of these elements are 16 x 16 x 250 cm. The overall dimensions of the portal with side edging are 770 x 250cm. The portal is glazed with glass package 3.3.1 (outside) + 15 + 6 mm, with internal low-emission glass. Calculation will be done per piece. | |  | | |  | |
|  | | |  | | kom. | | | 1 | |
| 10.02. | | | Glazing of existing fixed portals with installation of decorative moldings. Double glazed glazing 6 + 15 + 4 (mm). The inner glass is low emission. Place the thermal glass on stainless steel coasters (lead, wood, plastic material) during installation. Putty with a suitable plastic putty, the metal frame of the thermo glass must not be visible. It is necessary to procure and install new aluminum decorative moldings, at the choice of the designer, on the inside of the portal. Calculation will be done per month. | |  | | |  | |
|  | | |  | | m² | | | 47,0 | |
| 10.03. | | | Internal aluminum glazed door portals with doors. Production, transport and installation of internal portal from Al profiles, plasticized in RAL 7016 tons. Construction without thermal break. Glass glazing 3.3.1 mm. Match the cross-sectional shape of the profile with the entrance portal. The price includes complete hardware (hinges and locks). Material, workmanship, details, fittings in everything according to the manufacturer's technology, and with the approval of the designer and supervision. Calculation will be done per month. | |  | | |  | |
|  | | |  | | m² | | | 12,0 | |
| 10.04. | | | Procurement, production and installation of a glass fence should be done in the ELEGANT AL50 system, or equivalent. The fence consists of 74 steel matt chrome glass girders anchored in the concrete parapet of the fence and tempered glass panels, 12 mm thick, with a total area of ​​35 m 2. Position implies all the necessary material. Calculation will be done per m[[1]](#footnote-1) of a completely installed fence. | |  | | |  | |
|  | | |  | | kom. | | | 1 | |
| 10.05. | | | Procurement and installation should be made of interior doors.  MDF wing covered with PVC foil of the designer's choice. Calculation will be done per piece of door. | |  | | |  | |
|  | | | 90x220 | | kom. | | | 4 | |
|  | | | 100x220 | | kom. | | | 1 | |
| 10.06. | | | Procurement and installation of light partitions for sanitary cabins. Construction made of aluminum profiles anodized in silver tone, on appropriate legs. Filling of Al sandwich panels d = 10mm in the color of aluminum profiles. Cabin door equipped with mechanisms necessary for opening and locking. Hardware according to opening schemes, installation according to the manufacturer's recommendations. Opening according to the scheme. Production and details in everything according to the manufacturer's technology, with the prior consent of the designer. Calculation per m² of installed partitions. Measures taken on the spot. | |  | | |  | |
|  | | |  | | m² | | | 10,50 | |
| **11.00** | | | **SELECTED SERIAL EQUIPMENT** | | | | |  | |
|  | | | Procurement, transport and installation according to the defined disposition of the selected serial equipment, all in accordance with the project and with the prior consent of the designer and the supervisory body. Calculation per piece. Take measures for certain fixed equipment on the spot. | |  | | |  | |
| 11.01. | | | Half armchair. Similar to the DANAE / L7 armchair, frame dimensions 75x48x63cm. The legs are made of solid beech. Leg color chosen by the designer. The seat part is metal with molded polyurethane foam. Upholstery chosen by the designer, from the manufacturer's catalog. | | kom. | | | 8 | |
| 11.02. | | | Club table The legs are made of solid beech. Leg color chosen by the designer.. | | kom. | | | 2 | |
| 11.03. | | | Office chair. Approximate dimensions 113x60x45cm. Type, colors and materials chosen by the designer from the manufacturer's catalog.. | | kom. | | | 4 | |
| 11.04. | Bar chair Similar to the chair 9230 BST, frame dimensions 106x48x51cm. The legs and seat are made of solid beech. Leg color chosen by the designer, from the manufacturer's catalog | | | | | | kom. | | 4 |
| 11.05. | Air curtain of the front door. Procurement and installation of Olefini RS-38 air curtain, for door width 200 cm. The housing is built- in, intended for installation in suspended ceilings. The device has a remote control and Door switch. Calculation per piece. | | | | | | kom. | | 1 |
|  |  | | | | | |  | |  |

**TECHNICAL DESCRIPTION – LOT 2 – LAPIDARIUM**

In the previous period, on the pavement area in ul. Kosta Stamenkovic in Leskovac, from the building of the National Theater to the building of Elektrodistribucija, reconstruction and parterial arrangement of the sidewalk was performed. The arrangement of sidewalks and pedestrian surfaces was carried out. The project also foresees the arrangement of space in front of the National Museum building, as one of the dominant objects in this move. Considering the recent reconstruction of the National Museum building, and in accordance with the very purpose of the facility, a plateau was arranged in front of the building, at the corner of Stojan Ljubic and Pana Djukic Street. The edited plateau is adapted to the function of the building and the space, with the partial retention of the existing greenery, removal of visual obstacles for the opening of the facade of the building,

and with the introduction of new seating, gardening, sculpting etc. On the central part of the plateau there is a space for accommodation of museum exhibits. The plateau is paved with vibration-pressed plates with the sole purpose of paving the public surfaces of this type. The Nivelet solution is adapted to the levels of existing roads and surrounding facilities. The project of adaptation of the museum square - lapidarium foresees the creation and installation of posters in the museum square, for exhibits from the National Museum collection. The reinforced concrete slabs are placed in groups, on the grassy surfaces of the museum square. They are different in size, which is conditioned by the dimensions and size of the exhibits. The exception is an exhibit in the central part of the square, which will be placed in, for this, left and intended for the circular space during the pavement of the square. The treatment of posters is in the artificial artificial stone. Each of the posters will be illuminated by appropriate and appropriate underground lighting, which is defined by the project of electrical installations.

**Annex 2 – Bill of quantities**

**LOT 2 – LAPIDARIUM**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| pos. | Description of job | ms | amount |
| **I** | **Ground labor** |  |  |
|  | When filling the ground, gravel and similar materials must be free of foreign matter. If the subsoil is excavated, the soil is stabilized and filled with gravel or concrete MB 10. If the work is performed in unfavorable weather conditions, the contractor must take complete measures for the protection of all ground works. Protective measures must last as long as there is a need for them. The protective measures implemented in this way do not affect the already agreed price of the labor. The calculation is done by the unit of measure indicated for each position of the labors. The unit price of labor includes the development of a complete job position (material procurement, transport, installation, measures for the protection of works and workers, all horizontal and vertical transmissions, necessary formwork, as well as maintenance of the landfill for the entire period of discharging soil and other operations necessary for quality work execution . This description is an integral part of each individual job position description and does not exclude the application of the provisions of the norms and applicable regulations in construction in this field. | | |
| 1 | **Demolition of existing concrete,of thickness 10-15 cm outside the building of the National Museum.** The position implies demolition of concrete, loading and removal to the landfill. Calculation per m2. | m2 | 10,00 |
| 2 | **Manual excavation of material up to 1.15 m** deep for the production of concrete posters for exhibits. Perform the excavation manually according to the drawings and given angles. Roll the sand off the carts, load it on the truck and take it to the city dump. Calculation per m3 of excavated land. | m3 | 8,00 |
| 3 | **Addition of tampon layer from gravel materia**l 0-63 mm in a layer of average thickness d = 10-15 cm on the part below the floor. The price includes: material procurement, delivery, disassembling and fine planning, compaction by vibration with the necessary water wetting up to the required compaction Ms = 50 MPa. Calculation per m3. | m3 | 7,00 |
| 4 | **Supplementation of the buffer layer on the sidewalk next to the building of the Museum of crushed stone aggregate** 0-31 mm in a layer of average thickness d = 10 cm. The price includes: procurement of materials, driveway, manual disassembly and fine planning, compaction by vibration with the necessary water wetting up to the required compaction Ms = 50 MPa. Calculation per m2. | m2 | 106,00 |
| **II** | **Concrete labors** |  |  |
|  | All labors must be carried out according to approved drawings, technical description and General Conditions, solidly and professionally with appropriate qualified and skilled labor and under expert supervision. The works should be carried out with the full application of modern mechanization intended for this type of work. The quality of concrete must be appropriate as well as in accordance with the applicable regulations governing this type of work. Only concrete that meets the prescribed conditions can be built in. The sample for proving the quality of concrete is taken at the site-in parallel with the installation of concrete. The constructor must provide the conditions for the concrete to be properly installed. The concrete mass shall be installed exclusively with a pervibrator in layers not exceeding 50 cm. After removing the formwork, the concrete must be nourished, watered according to the outside temperature, at least three days. During higher or lower temperatures than prescribed, it is necessary to take concrete measures to protect concrete. Protections must last as long as needed. Measures of protection are especially related to the construction, transport, installation and maintenance of concrete. The protective measures taken in this way do not affect the already agreed prices of works. When it is placed in the formwork, the concrete must be protected from any kind of earthquake during binding. Concrete surfaces must be straight, without "nests" and segregation, of the required shape. However, if there are minor damages to the untied concrete surfaces, they must be protected immediately with a 1: 3 cement mortar from a gravel. The coating must be clean, completely stable, of the required dimensions, it must be of the required geometric shape, horizontal, vertical, hair, circular or as required by the graphic documentation. The payment must be broken and supported by usury according to the purpose, and in accordance with the existing regulations. All reinforcement works should be carried out with appropriate expert work force with the full application of modern tools and machinery intended for this type of work. All materials used, concrete steel, bonding material, etc. must be of prescribed quality, and to possess attests. Concrete steel must be mechanically assembled. The calculation of concrete works is done on the unit of measure indicated for each position of work, (procurement of materials, transport, , protection measures, necessary formwork and other operations) that are necessary for the quality performance of the labor. This description is an integral part of each individual job position described, and does not exclude the application of applicable regulations and norms in construction in this field. | | |
| 1 | **Procurement, transport and installation of concrete MB 30 for concrete track near the building of the Museum,** 10 cm thick. Panel reinforced with mesh reinforcement Q 84. Calculation per m3 according to the description of the works and details from the graphic documentation. Armatures are included in the price. | m3 | 11,00 |
| 2 | **Procurement, transport and installation of Concrete MB 30 for concrete reinforcement for the installation of stone exposures** in the appropriate formwork. To reinforce postaments according to details from the graphic documentation and description. Armatures are included in the price. Calculation per m3 | m3 | 8,00 |
| **III** | **Other labors** |  |  |
| 1 | **Production of posters in staped artificial stone with a fraction of white gray stone petals, as a permanent decorative coating.** Clean the substrate, wash it and sprinkle it with 1: 1 cement milk, stacked with sharp sand, layer thickness 4-5mm. Through the syringe, apply a layer of cement mortar, a grunt, a scale of 1; 3 thicknesses 1.5 to 3 cm arranged with a sharply sanded "unit". Remove the artificial stone mixture from cement, crushed aggregate. The ratio of a mixture of 1, 2 cement and aggregate. The finishing layer, artificial stone applied in a thickness of 1.5-2 cm. When the layer dries out a little, make a sweep. After the artificial stone is sufficiently dried and cured, after 5 to 7 days, the final surface treatment is done by stitching. According to the existing socket, mark and process the straps and towels and grind with sandpaper, and the other surfaces will be stowed according to the instructions of the Investor and Supervisor of the Projector. Calculation per m2, cultivated area, according to the fore description. Note - the dimensions of the posters, namely the height of the same, are above the terrain, are given the surfaces that are processed in the manner described above. | | |
| 1.3.1. | **postament dim.335/120/25 cm** | m2 | 6,30 |
| 1.3.2. | **postament dim. 130/100/25 cm** | m2 | 2,45 |
| 1.3.3. | **postament dim. 65/45/15 cm** | m2 | 0,63 |
| 1.3.4 | **postament dim. 100/45/15 cm** | m2 | 0,89 |
| 1.3.5 | **postament dim. 40/40/15cm (2 pcs)** | m2 | 0,80 |
| 1.3.6 | **postament dim. 45/40/15 cm (2 pcs)** | m2 | 0,87 |
| 1.3.7 | **postament dim.80/85/20cm** | m2 | 1,34 |
| 1.3.8 | **postament dim. 100/75/20 cm** | m2 | 1,35 |
| 1.3.9 | **postament dim. 80/70/20 cm** | m2 | 1,16 |
| 1.3.10 | **postaments for the tower** | m2 | 2,65 |
| 2 | **Coating of circular reinforced concrete posters, 130 cm in diameter and height above the ground area of ​​20 cm,** covered with terracotta structure according to the designer's choice. Finish the postament with a cement mortar with the unit. The grund must be flat and sufficient, if necessary, if the terrazzo is not poured immediately. Make a mixture of terrazzo made of white cement, a smaller aggregate of roughly cubic shape and water, the mixture size is 1: 2. Mix the mixture with water and add water. Cover the bed with a mixture of terracotta, minimum thickness of 2 cm, well packed and smooth. Protect the final layer of teracks from scooping, running, sunbathing, if necessary, with water, until it is unloaded. At the earliest seven days after spillage, rub with a rough grinder, until the clean surface of the aggregate emerges, and wash with clean water. Visible holes, furrows and the like fill with a whale made of white cement and white marble flour. After three days, after the hardening of the whale, the bedding is ironed with various fineness grinders, until the smooth and smooth surface of the uniform shine is obtained. If the holes or furrows appear, repeat the whole procedure. Upon completion of the finest grinding, wash the bedding two times with the addition of detergent and dry. After drying, terrazzo is coated with flax oil or wax solution in gasoline and rubbed cloth. Calculation per m² of sprayed terracotta. | m2 | 7,00 |
| 3 | **Purchase, transport and installation of the outdoor exhibition cabin.** The exterior of the exterior booth is made of stainless steel prochromic boxes and L profiles. The base and the roof part are made of boxed profiles 50x50x3 square shaped with dimensions 1500x1500 mm. Side verticals are made of L profile 50x50x5, height 2000 mm. The cabin is anchored and embedded in the concrete on the floor. The cabin is on three sides and on the roof part lamiglass glass d = 5.5.1 or tempered glass d = 10mm. From the fourth side of the cabin, two-sided doors of a total dimension of 1500 x 2000 mm have been made with corresponding hinges and locks. The stainless steel is in the mat as well as the door fittings. In the upper and lower zone of the cab, leave the room for ventilation, according to the graphic attachment. Carry out the cabin in everything according to the given detail and the manufacturer's instructions. Calculation per piece. | piece | 1,00 |
| 4 | **Purchase, transport and installation of chromium plates with a thickness of 1 mm, with text,** dimension 27/30 cm - pieces 3, 24/30 cm - pieces 2, 15/30 - pieces 1, 21/30 cm, 15/30, 9/30 ). The position includes cutting of the chromium board, processing, grinding, preparation for plastification, engraving in the installation. Method of final processing, background color and font selection, installation and installation method according to the designer's instructions. Calculation per m2 of treated area | m2 | 0,60 |
| 5 | **Procurement, transport and installation of 1 mm thick chromium plates, with text,** 15 cm in width and 35 cm in length, to be placed on a concrete slab at an appropriate angle, in addition to the exposed glass cabinet, the connection with the bedding with the appropriate two-component adhesive. The position includes cutting of the chromium board, processing, grinding, preparation for plastification, engraving in the installation. Method of final processing, background color and font selection, installation and installation method according to the designer's instructions. Calculation per piece. | piece | 1,00 |
| 6 | **Supply, transport and installation of brass anchors, diameter Ø10 cm.** The surface of the anchor before gluing should be slightly cut. Treat the ankers in a special brushing technique or as directed by an expert in the field of museology. If there is damage to objects during the installation of the anchor, due to the presence of hair on certain objects, restore the damage to natural materials (aggregate and stone) with identical and similar materials of which the monument is. The labor should be carried out with expert supervision, consultation and assistance of experts and consultants from the Museum. Calculation by m1. | m1 | 48,00 |
| 7 | **Procurement, transport and installation of brass anchors, diameter Ø 12 cm.** The surface of the anchor before gluing should be slightly cut. Treat the ankers with a special technique with a brush or as directed by an expert from the coastal museology. If there is damage to objects during anchoring, because of the presence of hair on certain objects, restore damage to natural materials (aggregate and stone) with identical and similar materials from which it is mentioned. The works should be carried out with expert supervision, consultation and assistance of experts and consultants from the Museum. Calculation by m1. | m1 | 2,00 |
| 8 | **Purchase, transport and installation of steel supports made of boxed HOP 50/50/4 mm** for the installation of stone slabs, on concrete floors with an angle of 15 degrees. At the end of the brackets, install a corner construction made of L profile 100/100/5 mm which ensures the stability of stone clips. Build and install carriers according to the given detail. Ideally the joints and welds are cleaned and sanded. Before installing, clean them of corrosion and dust, grind and melt. Apply ipregnation, basic color and lay the construction. After installation, repair the base color, pre-pick and paint and paint twice. The color is anthracite gray RAL 7016 or similar to the request of the Investor. Calculation per kg. | kg | 95,00 |
| 9 | **Procurement, transport and delivery of TENAX cleaner BRIO ACTION 2 or similar for cleaning of stone exhibits.** Before installing the stone exhibit, it is necessary to clean them and then protect them with the appropriate coating. Cleaning of the exhibits is carried out by experts from the Museum. Calculation by pcs. | piece | 1,00 |
| 10 | **Procurement, transport and delivery of stone implements TENAX IMPREGNATOR AGER 5 or similar.** Impression of stone exhibits is carried out by experts from the Museum. Calculation by pcs. | piece | 1,00 |
| 11 | **Supply, transport and application of two-component, thick, epoxy stone adhesive, with very fast drying effect, high power of adhesion, type of adhesive RIVO 15 or similar,** with the assistance and coordination of professionals in the field of museology. Existing exhibits will be cleaned of dust and all deposits. After cleaning, upgrade the damaged parts of the exponent, if the hair appears during the preparation of the anchoring items and then apply the adhesive. With the recommendation that the ankers are a little clipped before being stuck in the stone. The adhesive must be applied with the coordination of a professional from the Museum. For this type of bonding, the fineness of the final piece should be checked after a month. Calculation by pcs. | piece | 5,00 |
| 12 | **Creation and installation of info board made of steel sheet thickness of 0.6 mm, mounted on steel boxes 40/40 /3.** Ideally the lines and welds should be cleaned and sanded. Before installing, clean them of corrosion and dust, grind and melt. Apply ipregnation, basic color and set. After installation, repair the base color, pre-pick and paint twice. The color is anthracite gray RAL 7016 or similar to the request of the Investor. After installation, place the prohrom board with engraved text on the infopane and tighten it with an adhesive screw. Info board to detail from graphic documentation. The price includes all preparatory actions for building the foundation for the installation of info board in advance. Info board to be built and installed according to the given detail. Calculation per piece. | piece | 10,00 |
| 13 | **The stone exhibits should be carefully loaded, transported and placed on pre-prepared concrete floors.** One of the exhibits to be anchored for concrete floors, pre-prepare, carefully drilling anchor holes using two-component thick epoxy adhesive, high adhesion for mixed adhesion - metal-stone, stone-concrete. Make sure that the exhibits are not damaged when installing an anchor. The entire process of preparing exhibits for setting up and just setting up exhibits should be done according to the instructions, assistance and coordination of the consultant and experts from the Museum. Medium transport distance up to 1 km. Calculation by piece of laid stone exhibit. | piece | 15,00 |
| 14 | **Removing and re-assembling an existing floor lamp at the height of a circular concrete floor under pitos, with accompanying cabling and preparatory actions.** Calculation by pcs | pieces | 1,00 |
|  |  |  |  |
| 16 | **Procurement, transport and installation of aluminum work platform.** A working platform of type ZARGES, KrRAUSE or the appropriate one, is calculated to install the projector. It is designed for fast use and safe stand-by: switches to compact sizes and quickly sets itself up. • Work platform with a large surface area of ​​0.60 x 2.50 m. • Peripheral enclosures for maximum safety. • Simple height adjustment according to self-locking, ladder principle, allows you to reach different heights from only one work platform. • Height adjustment can be controlled by one person. • Easily assembled for transport and storage. • Stabilizers for moving with stable adjustable heights for stability and for leveling uneven floor / floor surfaces. • There is no need for ballast for indoor use (42915). • Two sizes with adjustable height from 1.25 m to 2.46 m or 1.81 m to 3.58 m platform height. • Scale category 3 (can be loaded up to 200 kg / m²) according to DIN EN 1 004. Mandatory delivery of certificates and scaffold certificates. The creation of grounding for the work platform to be predicted. Calculation per piece, complete. | pieces | 1,00 |
| 17 | **Procurement, transport and placement of bushes with grass.** Set bushes with grass to roll it and fasten it. Fuge between blocks of busen filled with soil with a little grass seed. The law is regularly watered and for the first time manually mowed. Calculation per m2. | m2 | 290,00 |
| 18 | **Procurement, transport and installation of mobile screen for screenings** (films, 3D mapping, virtual display of collections ...), with stand. Dimension 510x322 / 500x312, 16/10, front projection, suitcase, Type PLANAFOLD, MW SCREENS or appropriate. Calculation per piece, all set. | piece | 1,00 |
| 19 | **Supply and delivery, mobile floor** projector stand, capacity 10kg, height adjustment 77-87cm. Type PFS, S-BoX or appropriate. Calculation per piece. | piece | 1,00 |
| 20 | **Procurement and transport, folding tables,** dimensions 160 / 80cm, with metal structure of the legs and a MDI board. Manufacturer Blazeks or appropriate. Calculation per piece. | piece | 5,00 |
| 21 | Purchase and transport of chairs for visitors to the museum square where video projections, children's workshops, concerts, promotions, exhibitions will be held. Dimension 81.5 / 49 / 40cm, foldable metal chromed construction, 4 chromated legs, seat and backrest made of polypropylene. Type Revolution, or KENDO, manufacturer Blazeks or appropriate. Calculation per piece. | piece | 40,00 |
| **IV** | **Electrical installation work on decorative lighting** |  |  |
| 1 | Excavation of the opening and installation of a protective housing of the lamp, equivalent to the type of TERA midi, which is supplied with the lamp, according to the mounting detail, which includes the hole excavation smoke. Φ360x600 mm, with a drainage layer of rice or gravel, height 150 mm. Fill the space between the housings and holes with the concrete mark MB 20, and use the "T" pvc coupling for connection of the input / output cables or install the IP 67 protection circuit. The price includes the construction works and the before mentioned material and equipment. | pieces | 16,00 |
| 2 | Geodetic marking of the cable route, excavation and loading of a 40x80 cm trench in the lot of III category. After the excavation of the trenches, it is necessary to deliver and dip the small sand into a ditch of 20 cm thick; dip the first layer of l0 cm before laying the cable and another layer of l0 cm after laying the cable. As a result of this wrapped cable, deliver and install a PVC warning tape at 0.3 m and another one at a height from 0.5m on unregulated terrain. After that, fill the trench with fine gravel with pouring in layers of 20cm. After trenching, the surplus of the land is taken to the landfill, and the trench will be brought to its original state. All comet with dismantling and re-assembling the tiles on work on the works where they are located by project. | m | 90,00 |
| 3 | Delivery and laying in already excavated trench, PP00-Y type 3 x 2.5 mm2 type cable from the existing cable leads and connections made in the green surface to the newly illuminated lamp and between the lamps. The average length of the cable is 5m. Connections will be made between the lamps according to the principle of the input outlet, where the feed cable, 50 mm in length, larger than the height of the hole, is required before the luminaire opening is made. All set with connection in lamps. | pieces | 16,00 |
| 4 | Delivery and laying, on 10 cm over the cable, PVC reinforcing tape. All set. | m | 90,00 |
| 5 | Delivery and laying, through the pillar, from the araldite plate to the lamp on the top of the pillar, type PP00-Y 3x2,5mm2. All set with connection of the planned lamp, its mounting and manufacturing of the holder, if necessary. | m | 10,00 |
| 6 | The luminaire is similar to the type and features such as TERRA MIDI 16 / LED / Tilt / NW / 6326 / Medium beam / 16481m / 21 W / 350mA, which is intended for illumination of museum exhibits that are mounted on corners of the terrain. All set with accessories, connection and processing. Mounting under the cannons. | pieces | 4,00 |
| 7 | Lighting and installation of lamps intended for illumination of museum exhibits that are mounted on the ground corners are similar to the type and characteristics of TERRA MIDI 16 / LED / Tilt / NW / 6327 / Wide beam / 16481m / 21 W / 350mA. All set with accessories, connection and processing. Mounting at 40cm from the ceiling. | pieces | 12,00 |
| 8 | Delivery of LEDs of small dimensions of the spherical shape with 3 LED sources of warm white color and collimators that provide an eccentric distribution of light intensity with an angle of scattering 2 \ 10 "and a maximum intensity of 442 cd. The optical block of lamps consists of high-efficiency diode with a total power of 5 W, on a 350 mA drive current. The position includes all the necessary accessories for fixing the lamp on the wall. The luminaire consists of: A body of light made of aluminum alloy, stained with electrostatic powder coating. The optical part of the luminaire, which is inside the lamp body and made up of three High Reversing LED light sources of power of 3 xl, 2W. Lamp protector made of thermally and mechanically reinforced glass. Lamp holder made of stainless steel, integrated with the luminaire, which allows the installation of a luminaire on a flat surface in any position. The mounting system allows you to rotate the body of the luminaire and adjust it in two levels (from -130o to + 130o and Oo to 360o). Mechanical resistance to toughened-glass corrosion protection IK07, in accordance with IEC-EN 62262. Mechanical protection of the luminaire (optical part) IP67, and parts with IP66 switching device in accordance with IEC-EN 60598. The lamp should have an electrical insulation class II, in accordance with IEC-EN 60598, with cable length lm. Dimensions of the luminaire are approx. 80 mm (96 mm) x 115 mm (diameter (length) x height with carrier). Similar to the type and characteristics of the ENYO / 3 WW LED / 6087 Narrow + RAL lamp. All kit with connection to existing cable and commissioning. | pieces | 4,00 |
| 9 | To deliver the installation of a luminaire intended for illumination of museum exhibits that are mounted on the corners of the terrain luminaire is similar to the type and characteristics SCULPdot 16 LED / NW / 5124 / Narrow beam / 2976 Im / 35W / | pieces | 1,00 |
| 10 | Delivery and installation of a lamp for lighting a glass showcase. Type and characteristics of luminaire similar to LIMARK 2 1M / 6268 / NW / No lens / 1200lm / 10W / With output connection, with Counter-Plug. Connection cable and required cable, material connection for regular connection (,, T ,, pvc coupling) principle of input-output. | pieces | 8,00 |
| 11 | Inspection of performed labors involving grounding, insulation resistance and resistance of loops of power lines, control measurements of achieved light at least in 2 points of the budget field and a statement of the performed measurements with expert opinion on fulfilled protection conditions. All set. | pieces | 1,00 |
|  | **Electrical installation work on decorative lighting:** |  |  |
|  |  |  |  |
|  | **A. TECHNICAL DESCRIPTION OF THE EQUIPMENT FOR THE VIDEO CONTROL SYSTEM** |  |  |
|  |  |  |  |
| 1 | Transport, Procurement and Installation - P2P Network Video Recorder for 8 Maximum Resolution IP Cameras 8 Mpix Recording up to 200Mbps, H.265 / H.264, maximum resolution of 8 megapixels, 1 HDMI output, 1 VGA output, output resolution up to 3840 × 2160, possibility of connecting up to 2 SATA hard drives of maximum capacity total of 12TB, 2 USB ports (1 USB3.0), 4 alarm inputs, 2 relay outputs, Internet monitoring, software for smart mobile phones. similar to the type of Dahua NVR-4208-4KS2. Calculation per piece. | pieces | 1,00 |
| 2 | Procurement, transport and installation - Hard disk 6TB SATA III 3.5 ", Intellipower, 64MB similar to WD60PURZ type. Calculation per piece | pieces | 1,00 |
| 3 | 3 megapixels day / night network camera in IP67 bullet case, D-WDR, 3DNR, 1/3 '' 3MP CMOS chip with progressive scanning H.264 / H.264H / MJPEG compression, maximum resolution 2304x1296 (3MP) at 20fps and 1920x1080 (1080p) in 25fps, ICR filter, automatic white balance control, automatic gain control, 3D noise reduction, built-in megapixel motorized lens 2.7 ~ 12mm, minimum 0 lux light, maximum range 60 meters IC, ONVIF support, 12VDC / PoE power supply, SD card slot up to 128Gb, ​​P2P function similar to Dahua type IPC-HFW2320RP-ZS-IRE6 | pieces | 4,00 |
| 4 | Supply, transport and installation - Waterproof wall mounting for cable and connector installation during IP66 installation, material: aluminum, dimensions: (WxDxH) 134mm x 134mm x 55mm, temperature: -40ºC ~ 60ºC similar to Dahua PFA122 type. Calculation per piece. | pieces | 4,00 |
| 5 | Supply, transport and installation - 4 ports industrial POE switch 1 \* 100/1000 Base-X, 1 \* 10/100/1000 Base-T, 4 \* 10/100 Base-T, Total ≤60W, PoE protocol: IEEE802.3af, IEEE802.3at, Rectifier 53VDC, Operating temperature: -30 ℃ ~ 65 ℃, Dimensions: 150mm × 100mm × 30mm similar to Dahua PFS3106-4P-60. Calculation per piece | pieces | 1,00 |
| 6 | Procurement, transport and installation - SFTP cable kat. 7+ (no halogen), tested up to 900MHz, Delta / EC & 3P & GHMT certified. Calculation per meter. | m | 200,00 |
| 7 | Procurement, transport and installation - SFTP RJ45 Module cat. 7. Calculation per piece. | pieces | 8,00 |
| 8 | Procurement, transport and installation - Hoseless hose fi24. Calculation per meter. | m | 50,00 |
| 9 | Procurement, transport and installation - SFTP Cat. 6 Patch cable, 24AWG, 1m. Calculation per piece | pieces | 9,00 |
|  | **B. DESCRIPTION OF WORKS FOR THE VIDEO CONTROL SYSTEM** | | |
| 9 | Instalation, connection and programming of NVR recorders. The price includes the installation of a hard drive in the same | pieces | 1 |
| 10 | Mounting, connecting, programming and positioning IP cameras. The price includes the installation of the appropriate mounting connector | pieces | 4 |
| 11 | Installation and connection of industrial PoE switch | pieces | 1 |
| 12 | Laying of SFTP cat. 7. The cable passes into the positioned flexible pipes, from the PoE switch to the chamber position of one conductor. The price includes the installation of halogen-free moving pipe | pieces | 250 |
| 13 | Installation of the RJ45 module at the ends of SFTP conductors | pieces | 8 |
| 14 | Set up the patch cable and connect it to the active equipment. 4 cables connect from module to camera, 4 cables from modules at the other end to PoE switch and one of PoE switch to NVR device | pieces | 9 |
| 15 | Functional testing, commissioning of the system and user training for system management. The price includes the issuing of complete documentation provided for by the Law on Private Security as well as the valid rulebookx | pieces | 1,00 |

1. [↑](#footnote-ref-1)