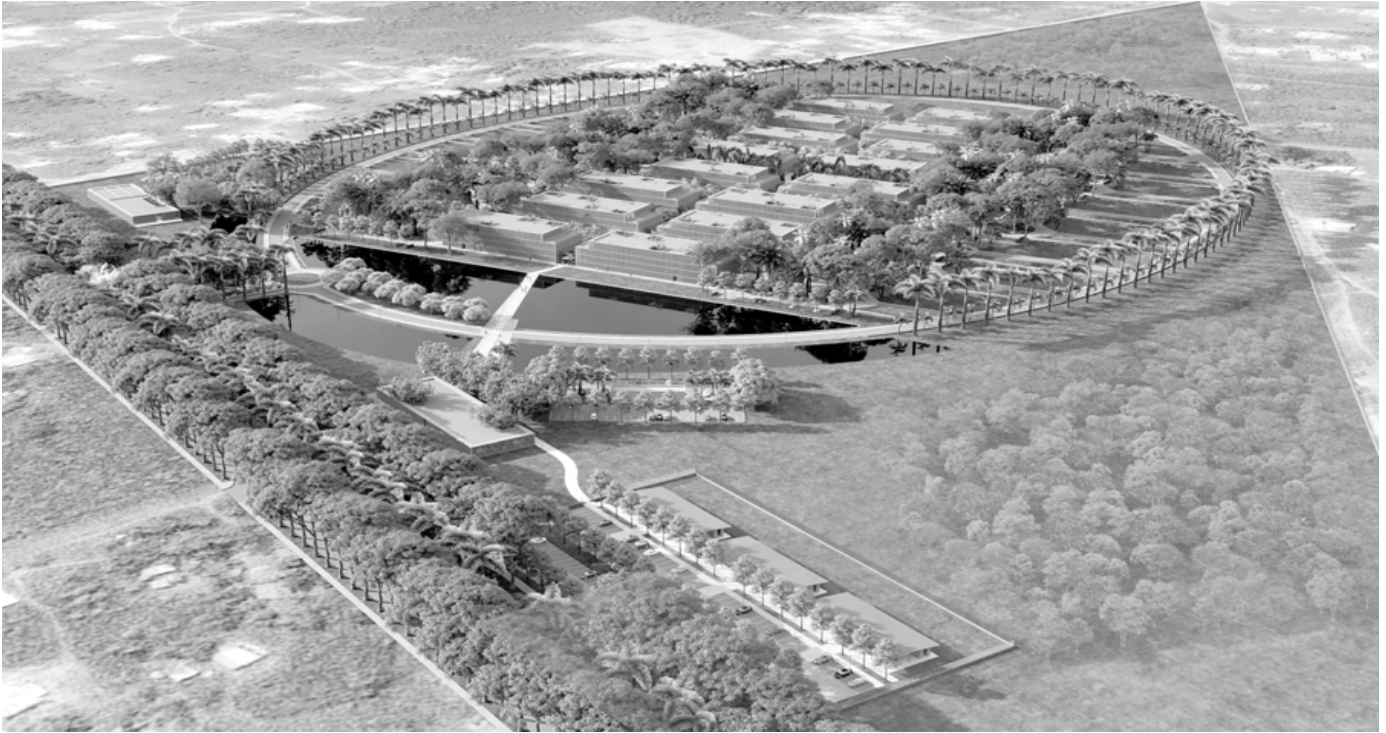


CITE ADMINISTRATIVE



CITE ADMINISTRATIVE I

CONTRACTOR:

MINISTRY OF THE FRAMEWORK OF LIFE AND DEVELOPEMENT DURABLE



PRÉSIDENCE DE LA RÉPUBLIQUE DU BÉNIN



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1. GENERAL HYPOTHESES

1.1 GENERALITES

1.1.1 Purpose - definition of the project

The purpose of these Specific Technical Specifications is to define all the work to be carried out as part of the construction of the Administrative City of Cotonou in Benin.

The project consists of the construction of:

- A set of office buildings
- A restaurant
- A conference center
- A maquis
- A medical center
- Technical rooms
- Various works on the site (basin, footbridge, fence, etc.)

The project is defined by the plans and documents attached to the file, and in particular:

- Architect plans
- Structural principle plans
- The CCTP.

The company is required to be aware of all C.C.T.P. to ensure consistency between the work of all lots. The realization of all the works defined at its expense in this description or in the description of the other lots is its responsibility.

The company is required to be fully aware of the extent and nature of its obligations. It is required to have taken all the precautions and carried out all the necessary investigations to assess them. It performs all the work relating to its specialty, even if these have been omitted or insufficiently described in the contractual documents.

The plans provided with the file are indicative, the company must carry out, using a design office, all technical studies, plans, calculations. All sections on plans are given for information only, no added value will be accepted for modification of squarings and depths.

In the event of contradiction with the architectural plans, the latter must be taken into consideration with adaptation of the structure if necessary.

In case of contradiction between rooms, thermal or acoustic calculations will prevail.

No added value will be accepted if the request does not explicitly emanate from the client or the project manager.

1.1.2 Phases of implementation

The companies' offers are deemed to have been established for the execution of the work within the deadlines set on the execution schedule: in particular, all the constraints linked to the means to be implemented (personnel, supervision, materials, study deadlines and approval by the Control Office and by the general contractor, manufacturing and supply times, etc....) to meet compliance with the various execution times defined on this schedule.

Offers from companies must take into account the constraints related to the organization of the site.

1.1.3 Fixed price

The price offers submitted by the contractors are deemed to be of a fixed rate.

Consequently, contractors are required to assess all the specific performance constraints that may result from this contract.

As the proposals are of an absolute flat-rate nature, only the modifications (additions or deletions of work) requested by the Client and Project Manager, and ordered by service order, may give rise to a modification of the fixed price, in addition or less.

1.1.4 Site maintenance

The site must be kept in a constant state of cleanliness and perfectly in order. This applies to work and storage areas, as well as cantonment areas and staging areas.

Each company is responsible for the removal and evacuation of its rubble up to the waste dumpster set up by the Structural Work (see CCAP).

1.1.5 Order of Precedence

Regarding the DTUs and standards referred to above, it is here clearly specified that in the event of a discrepancy between the specifications, prescriptions below of this CCTP, and those of the above documents, the order of precedence will be that stated. to the "Book of Special Administrative Clauses".

1.1.6 Health and safety

The measures relating to health and safety will be implemented in accordance with the CCAP, the P.G.C. and the PPSPS that companies must establish.

1.1.6.1 Protection of structures

Each company will have to ensure the protection of its works and will remain responsible until the reception of the works of the damage which would be brought there.

1.1.6.2 Personal protection

The structural work company will have to put in place collective protections to the right of the hoppers and the edges of floors. The P.P.S.P.S. respective of all the other trades must specify the methods of maintenance and / or final removal of the safety devices put in place by the shell.

The structural contractor will provide all collective protection measures necessary to prevent accidents, (in particular against the risk of falling from a height, the risk of a sheet spilling, the risk of crushing, of collisions or those due to handling.), such as the design of the facade elements directly forming the final guardrails, height of the parapets, sizing of the elements to be handled, systematic incorporation of sockets and lifting hooks, reservations at the edge of pre-slabs for guard installation - provisional body, ...

1.1.7 Holes and reservations

In the partitions, each state building will do its business with the holes and reservations necessary for the execution of its work.

In reinforced concrete and masonry structures, holes and reservations of any size will be carried out by the Structural Work company, provided that a detailed plan of the reservations has been provided to it in good time by the body of state concerned. , according to the schedule established by the Project Management at Holes and reservations less than 5 cm will be made by the requesting lots themselves.

1.1.8 Hole plugging and reservations

In the concrete: the hole plugs will be caulked by the structural work company, respecting the degree CF of the wall traversed. For any reservation that is unnecessarily requested, it is the company requesting the hole that will ensure the plugging, while respecting the desired aspect of the wall and its degree CF.

1.1.9 Consistency of the work

The services and works provided for in this lot include:

- Site installations according to the Cahier des Clauses Techniques Communes (CCTC),
- The in situ location of the works,
- Calculations and plans, supply, manufacture and implementation of all the works
- Preparatory work,
- Reservations, establishment of incorporations and links with other trades defined in the CCTC
- The protection of existing ones,
- Tests and controls,
- Requests for prior authorization.

In addition, the following provisions are due by the Contractor, without this list being exhaustive, before, in progress and after execution of the work:

- Any scaffolding and platform subsection allowing the access necessary for the installation of works, as well as the safety of the installation sites (see PGC SPS),
- General cleaning of dirt due to the execution of the work,
- Repairs to any damage caused to installations buried in the ground, or incurred by those which could not have been detected before the start of the work or which would have been detected with insufficient precision.

The Contractor is responsible for ensuring the complete realization of the works of this lot, and his services include the necessary ancillary work resulting from the detailed studies, even if this work is not shown on the plans and documents.

1.1.10 Documents to provide

In view of the engineering mission, the plans and structural details appearing in the consultation and contract documents are in no way execution plans and should not be considered as such. The dimensions are provided for information only, subject to those compulsory for architectural reasons.

The Contractor must draw up himself all the execution, detail, workshop and site plans necessary for the perfect definition and execution of the works.

The execution plans will be subject to the approval of the Project Manager and the technical controller, before the start of any work, accompanied by all supporting calculation notes.

This business study must include the following documents: (non-limiting)

- The calculation hypothesis note with the list of normative texts and the date of their last edition,
- Load descents,
- Justification of climatic effects,
- Sizing calculations for concrete and reinforcement sections,
- Formwork execution drawings in PDF and DWG format, reinforcements and heavy masonry,
- Workshop and site plans (prefabrication, etc.),
- Technical data sheets for materials and approval,
- Representative samples necessary for the decision-making of the Project Manager,
- 3D digital models (BIM) in Revit or IFC 2x3 format.
- All plans must be provided in PDF and Dwg format.
- Before acceptance of the works, the Contractor must provide the Contracting Authority with all the plans and digital models actually executed with the mention DOE, in accordance with CCAP requests.

Note: The visa mission is not a mission to check all the documents provided by the Company.

1.1.11 Summary of reservations

Is the responsibility of the GO Company:

- Summary of reservations in concrete and masonry structures, in collaboration with
- Participation in the synthesis unit for the setting of reservations vis-à-vis the reinforcement main,
- Editing coordinated plans,
- The realization of the corresponding execution plans (see chapter above).

1.1.12 Financial implications of "General"

The contractor's price includes all the financial implications that could result from the indications made in the Administrative Documents of the file, including the C.C.A.P and the CCTC, to which the contractor will refer.

1.1.13 Responsibility of the contractor

The contractor will always remain responsible for the materials he uses.

It will be up to him to choose the materials and products best suited to the various criteria imposed by the requirements of the site, including in particular:

- Installation indoors or outdoors,
- Nature and type of materials meeting the requirements of use,
- Special conditions encountered for the site,
- Compatibility of materials with each other.

For the materials and products offered by the project manager, the contractor will be contractually bound to ensure that they meet the various criteria above.

Otherwise, he will make the observations in writing to the contractor that he deems useful. The project manager will then make the decisions on this matter.

1.1.14 Required acoustic performance

The sound insulation required for the operation corresponds to compliance with the regulations in force. The characteristics and performances to be respected are listed in the Acoustics manual attached to the file, if applicable.

If a contradiction is identified between the CCTP and the "Acoustic Notices" file, the company should provide the most penalizing service and will submit any adaptation to the project management.

1.1.15 Cleaning

The Company will have to completely clean the premises as its work progresses. Waste of unused materials, packaging and other rubble will be removed from the site.

1.1.16 Variants

Variants are possible.

If the Company proposes modifications, these must receive the agreement of the Client, the Client and the Technical Controller. This alternative solution includes the cost of any impact on other trades as well as all subsequent study costs.

In any case, they must not call into question the architectural definition, both in terms of the finished appearance and the functionalities.

The variants must be limited to the choice of construction methods, without affecting the other trades (ex: prefabricated elements instead of poured in place, or vice versa, coated concrete blocks instead of poured concrete, etc.).

1.2 SPECIAL SERVICES

1.2.1 Layout - layout

IMPLANTATION

The structural contractor has, at his own expense and under his own responsibility, by a surveyor approved by the Project Manager, the layout of the structures according to the plans given to him and the instructions given to him. possibly given by the Project Manager.

TRACING

The Structural Work contractor must, by virtue of the incorporation into his own works of equipment or materials supplied by other trades, all the necessary tracings.

However, it is up to the holder of the lot providing the light partition service, the tracing of his own works; the tracings carried out by reference to templates will be carried out if the templates are provided by the interested trades.

All facings protection measures will be taken in the case of concrete left exposed.

LEVEL LINE

At each level and in all premises, the level mark must only be beaten, on the walls and plaster at one meter from the level fixed for each finished floor, by the structural contractor, in order to avoid errors which may result from the layout by another contractor, errors for which the author remains responsible. If the level line is erased, the Structural Work contractor must draw it again and at his expense, as many times as necessary.

1.2.2 Finishing

FLOOR CLEANING

The Contractor of the Big Work lot is required to regularly clean the floors, at his own expense, to rid their surface of waste plaster, mortar and debris from his work, as well as general cleaning of dirt due to the execution of its work.

FINISHING

- Before reception

The Company is required to ensure itself, before acceptance, the proper completion of its work and for its part to carry out the related finishes and adjustments.

To this end, the Company will nominate to the Project Manager the journeyman (s) made available to an agent chosen from among the Company's staff to complete the work in due time.

In the event of failure or gross negligence on the part of the Company, the Project Manager may put it in default by simple registered letter, to have within 48 hours, to undertake, continue and complete the finishing work of its works. After this period without the formal notice having received effect, the Employer may entrust this work to any other Company of its choice, at the expense and risk and on behalf of the Company considered to be in default, without prejudice to any damages that may be claimed from it.

- After reception

Once acceptance has been pronounced and during the contractual warranty period, the Company must repair any construction imperfections revealed by the commissioning of the work.

1.2.3 Protection and prevention of accidents

Attached to the consultation file is the PGC drafted by the coordinator in charge of the operation; this document is contractual and defines the principles to be implemented to ensure work safety.

The Company must comply with the security regulations in force. In particular, it must:

Put in place all the devices ensuring the safety of the site, public roads and private roads.

Set up guards for all interventions on public roads.

Do not load trucks on public roads unless specific authorizations have been obtained.

Provide and install safety signs on the road, at work site exits, after obtaining the authorization of the competent administration.

The Contractor will be exclusively responsible for all accidents of whatever nature from the date of the service order to start work. He must have an Insurance Policy covering his civil liability.

It must also comply with the text approved on June 11, 1980, by the NATIONAL TECHNICAL COMMITTEE OF BUILDING AND PUBLIC WORKS INDUSTRIES, concerning accident prevention and hygiene measures, as well as regulatory measures under Title VI of the Decree of January 8, 1965.

1.2.4 Knowledge of the premises

The Company is supposed to have entered its market with full knowledge of the facts. In particular, he is well known:

- The land and its own subjugations, according to the established soil report, attached to this consultation and whose conclusions the company confirms has taken into account.
- The constraints relating to neighboring properties,
- The terms of access to the site,
- The possibilities and difficulties of parking traffic,
- The constraints of the administrative regulations in force relating to security on the domain public,
- The preliminary investigation of the concessionaire and security services,
- The decree of the building permit,
- The prescribed sound insulation in noise zones.

No error or omission can exempt it from performing all the work of its profession or be the subject of a request for a price supplement. It expressly and definitively waives any claim or action on this subject.

1.2.5 Quality management

The quality assurance plan, submitted to the Project Manager during the preparation period, contains in particular:

- The detailed and nominative organization chart of the site,
- The organization of internal control,
- Description of implementation methods and materials and equipment used by type book,
- Description of controls and their organization,
- Critical points and stopping points,
- Treatment of non-conformities.

1.2.6 Limits of benefits

The holder of this lot must before the start of his studies contact other companies to settle all the interface details between the different techniques: these regulations will be made taking into account the CCTC interface specifications

Especially :

Incorporation of metallic platinum or frame shoe.

- TCE supply,
- Implantation TCE,
- TCE pre-sealing,
- GO installation and caulking.

Reservations for siphons or pipes for elevation:

- TCE supply,
- GO reservation,
- TCE installation and caulking.

Sheaths in banchés:

- GO reservation,
- TCE installation,
- GO Caulking,
- TCE supply.

Casting sleeves:

- TCE supply unless otherwise specified,
- Pose GO,
- Implantation TCE.

In the masonry:

- TCE supply,
- TCE installation,
- TCE caulking including reinstatement of CF required.

Hoppers and reserves in walls (including sawing or coring necessary in the existing parts):

- Implantation TCE,
- GO reservation,
- Caulking in the thickness of the slab or GO wall,
- Screed and TCE finish.

In any case, the CCTC takes precedence over the previous distribution.

NOTE:

Are the responsibility of this lot, in general, all caulking of reservations and holes.

2. DESIGN ASSUMPTIONS - BASIS OF CALCULATIONS

The structures are designed within the framework of regulatory texts.

2.1 DOCUMENTS DE REFERENCE

In general, the standards, DTU, professional recommendations and CSTB Cahier published on the date of signature of the contract set the conditions for the quality and use of materials, as well as the design rules for structures, as well as all documents contained in the REEF.

All French and European standards and in particular (non-exhaustive list):

- NF P11-301: Execution of earthworks,
- NFP 14-305: Agglomerates - Concrete interjoists of common and light aggregates for floors with prefabricated joists,
- P 15 Series Standards - Binders; with in particular:
 - o FD P 15-010: Hydraulic binders - User guide for cements,
 - o NF EN 197-1: Cement - Part 1: composition, specifications and compliance criteria for common cements.
- P 18 series standards - Concrete, aggregates; with in particular:
 - o FD P 18-011: Concrete - Definition and classification of chemically Recommendations for the formulation of concrete,
 - o NF EN 206-1: Concrete - Part 1: specification, performance, production and amendments,
 - o NF EN 206-9: Concrete - Part 9: additional rules for self-consolidating concrete,
 - o NF P18-503: Concrete surfaces and facings - Identification elements,
 - o NF P18-504: Concrete -

Professional recommendations:

- From the National Union of Masonry,
- From the National Union of Joints and Facades.

Calculation rules: BAEL 91

The DTU and NF DTU, and, in particular (non-exhaustive list):

- DTU 13.2 : Deep foundation work for buildings - Parts 1 and 2: Paving -
- DTU 13.3 Design, calculation and execution - Parts 1, 2, 3 and 4: Shallow
- DTU 13.11 foundations - CCT and CCS
- DTU 13.12 : Rules for the calculation of shallow foundations:
- DTU 14.1 Casing work - Parts 1 and 2
- NF DTU 20.1: Building works - Masonry works of small elements - Parts 1-1, 1-2, 2, 3 and 4
- DTU 20.12 : Masonry structural work of roofs intended to receive a coating waterproofing - CCT and CCS
- NF DTU 20.13: Partitions in masonry of small elements - Parts 1-1, 1-2, 2, and 3
- DTU 21 : Building works - Execution of concrete structures
- DTU 22.1 : Exterior walls in prefabricated panels of large dimensions of the plate type solid or ribbed in ordinary concrete - Parts 1, 2 and memento
- DTU 23.1 : Concrete shuttering walls
- NF DTU 23.2: Building works - Floors with prefabricated hollow core concrete slabs - Parts 1-1, 1-2, 2, and 3
- NF DTU 23.3: Building work - Frames made of industrialized concrete elements - Parts 1-1, 1-2, 2, and 3
- NF DTU 26.1: Building work - Mortar plastering work - Parts 1-1, 1-2 and 2
- NF DTU 26.2: Building work - Screeds and slabs based on hydraulic binders - Parts 1-1, 1-2 and 2
- DTU 26.2 / 52.1: Installation of insulating underlays under screed or floating slab and under floor tile

- DTU 27.1 : Building works - Production of coatings by spraying mineral wools: Production of with binder - Partings 1 and 2
- DTU 27.2 : Production of coatings by spraying pasty products - Parts 1 and 2
- DTU 43.1 : Sealing work on flat roofs with load-bearing masonry elements and: Building work - pitched roofs - Sealing of facade joints by applying sealants
- DTU 44.1 : Sealing of facade joints by applying sealants
- Parts 1, 2 and 3

This list is in no way exhaustive and all work will be carried out in accordance with the official reference documents, currently published in the REEF in particular.

2.2 CHARGES

2.2.1 Permanent loads

The self-weights taken into account for the calculation of the various construction elements are not lower than those defined by rules NFP 06-001.

As an indication, the permanent loads will be at least the following:

Vertical loads:

- Partitions (except masonry): 50 daN / m² mini,
- Heavy partitions: real weight according to plans,
- Sealed tile th. 8 cm: 150 daN / m²,
- False ceiling + lighting: 50 daN / m²,
- Self-protected sealing: 30 daN / m²,
- Zinc cover + voligeage: 30 daN / m²,
- Steel tray + Waterproofing: 30 daN / m²,

2.2.2 Operating expenses

The overloads taken into account for the calculation of the various construction elements are not lower than those defined by rules NFP 006-01.

In addition, the charges specified on the architect's plans and technical packages will be taken into account.

The free overloads below are understood to be outside the self-weight of the structures and equipment placed on the ground or suspended (the corresponding weights of these will be communicated in due time to the structural work company by the contractors ensuring their installation. implemented).

In the event of a contradiction with one of the reference documents, the most penalizing charge will be These elements must be taken into account in the company's offer.

As an indication, the operating overloads will be at least the following:

Operating overloads:

- o The overload values are:
 - Circulations: 350 daN / m²
 - Landscaped offices: 350 daN / m²
 - Sanitary: 250 daN / m²
 - Restaurant : 250 daN / m²
 - Conference center: 500 daN / m²
 - Technical local : 500 daN / m²
 - Archives, reserves: 500 daN / m²

- Roof inaccessible: 100 daN / m²
- Accessible roof: 300 daN / m²
- Horizontal circulation Ground floor, stairs, hall, public access areas, boiler room, TGBT, central room air treatment: 500 daN / m²,

NOTE: some loads may be higher than the standard in accordance with the operation program.

2.2.3 Climate actions

The regulations will comply with the texts, standards and characteristics in force in Benin.

As an indication, the charges due to climatic actions:

- Vent : 80kg/m²

2.3 CRACKING

The parts of structures located in covered and closed premises, not subject to condensation are considered to have little harmful cracking.

Parts of structures exposed to bad weather or to condensation are considered to have harmful cracking.

Parts of structures exposed to sea water or marine atmosphere are considered to have very damaging cracking.

2.4 FIRE STABILITY AND FIRE RESISTANCE OF STRUCTURES

The different stabilities below are obtained by coating the steels and calculation and will comply with all the safety instructions attached to this file.

For information :

- For office buildings: SF: 1H - CF: 1H
- For the car park: SF: 1:30 - CF: 1:30

2.5 DEFORMATIONS

For these verifications, the arrows are evaluated according to the regulations in force or by the "Professional Rules" method.

Limitation of arrows:

- In quasi-permanent combinations: deflection $\leq L / 250$ for the appearance or general functionality of structure ;
- In quasi-permanent combinations: deflection $\leq L / 500$ if the deformations are likely damage the surrounding structural elements (partitions, tiles, etc.).

Limitation of « Professional rules », harmful arrow taking into account the loading process:

- Range ≤ 7 m: $L / 500$;
- Range > 7 m: $1.40 \text{ cm} + (L-7 \text{ m}) / 1000$ [cm] with L in m.

Exceptions for which the admissible deformation is more restrictive:

- Consoles

2.6 CONCRETE

2.6.1 Composition

The composition, dosage and specification of the concrete will comply with standard NF EN 206.1 depending on the exposure and resistance class of each type of structure.

2.6.2 Exposure class

According to the standard, the concrete exposure class will be:

- Exposure class for absence of risk of corrosion or attack: X0,
- Exposure class for the risk of corrosion by carbonation: XC,
- Exposure class for the risk of corrosion by chlorides other than those in seawater: XD,
- Exposure class for the risk of corrosion by chlorides in seawater: XS,
- Exposure class for freeze-thaw attack: XF,
- Exposure class for chemical attacks: XA.

2.6.3 Resistance class

The minimum resistance class of structures will be C30 / 37 unless the calculation justifies higher classes. It will be up to the company holding this batch to find out about the local availability of the concrete class resulting from its calculations, or failing that, to propose to the MOE a different dimensioning of the supporting structure so as to guarantee the MOA a durability of the works in accordance with the rules of Art.

2.6.3.1 Aggregates

The composition of the aggregates will be determined by a particle size study to the results of which the company will be required to comply from one end of the site to the other.

The company will submit the composition of the concrete to the Project Management and the control office. The latter determined by a particle size study to the results of which the company will be required to comply from one end of the site to the other. The plant must receive approval from the Control office.

The components must be particularly clean. They must come from stable rocks, ie unalterable to air, water and frost. They must receive the opinion of the control body.

The 5/25 and 15/25 gravel will be crushed and perfectly washed river gravel. The 0/5 sands will be river or crushed, free of any trace of earth or clay (NFP 18.001 and 18.301).

The aggregates can be rounded or angular, but the use of sand or gravel with high proportions of flat grains (platelets or needles) is prohibited.

2.6.3.2 Adjuvant - Cement

The use of additives or water repellents in concrete is subject to the approval of the Project Management and the Control Board.

In the event that, exceptionally, the contractor wishes to use high initial strength cement (HRI 315/400), in particular to accelerate formwork stripping, the authorization must be requested from the Project Management, and if necessary, this cement would be used without a price increase.

No added value will be allowed regardless of the quality of the cements to be chosen (for example, cement resistant to aggressive or selenitic water).

The type of cement used for buried structures will be chosen according to the level of aggressiveness of the environment (soil and groundwater). Chemical tests should be carried out at the expense of this batch to determine the aggressiveness rate.

2.7 REINFORCEMENTS FOR REINFORCED CONCRETE

2.7.1 Characteristics of steels

The steels to be used must comply with the requirements of the regulations in force.

Shades retained by the Project Manager:

- H.A Fe 500 steels,

- Welded mesh according to homologation sheets.

They will meet the specifications of NFA 35.015 and 35.022 standards

They will be perfectly calibrated, without straws, burns or blisters. The bars will be free of all earthy, oily soils and all traces of paint or loose rust.

Welds are, in principle, prohibited, except with the formal agreement of the Project Manager and the inspection office, depending on the weldability indicated on the identification sheets of approved concrete steels.

2.7.2 Embedding

The steels must be coated according to the required fire resistance, and will be calculated in accordance BAEL based on exposure and defined cracking.

The steel coverings of the supporting structures of a casing will comply with DTU 14.1 casing.

The coating will not be less than the following values:

- Foundation works and exterior works subject to bad weather: 3cm,
- Internal or sheltered from bad weather: 2 cm,
- Structures subjected to sea air or chemical attack: 5 cm.

2.7.3 Reinforcement supports

The reinforcement supports must prevent any movement of the reinforcement during the installation of the concrete clamping.

Their number and distribution depend on the orientation of the formwork, their own strength and deformability, the weight of the reinforcements to be supported and the method of concreting.

They must be such that their presence in no way diminishes the quality of the work. For the choice of the material constituting these supports, account will be taken in particular:

- The degree of aggressiveness of the environment,
- Exposure of the facings to bad weather,
- The required fire resistance of the component.

2.7.4 Crosses

Unless there is a technical reason imposed by the calculation of the forces to be taken into account in concrete structures, depending on the stresses to which they are subjected, all shaped steels (high-adhesion bar or mild steel) will be delivered crossed to prevent the risk of impalement. The company will ensure this recommendation with its design office.

2.8 FORMWORK

The joints between formwork panels must be sufficiently tight so as not to let any laitance escape.

The concrete facing must respect the following requirements:

- Absence of false plumb and misalignment according to D.T.U
- Lack of segregation in the concrete facings
- Quality of finish allowing the painter to perform the services he owes.

The vertical or horizontal walls which would present too important defects, just like those whose defects would be likely to compromise a little to the resistance, will be refused, demolished and rebuilt.

Mold release oil

It will be of good quality and sprayed without excess for:

- Avoid chalking of the facings,
- Avoid staining concrete, either by accumulation or by chemical reaction.

It will be such as to allow, without special constraints, the application of thin plaster or the various usual paints and wallpapers, without risk of stains, detachment or subsequent decompositions.

The use of form release oil is accepted on condition that for all the parts intended to be coated, the beneficiary of this lot will inquire with the painter if there is no contraindication for the use of the oil which he uses having regard to the nature of the coating or the finishing paint.

Note: The choice of mold release oil is crucial and will require full-scale testing to ensure the concomitant effects of the concrete itself and the oil used.

2.9 SIDING OF CAST-IN-PLACE CONCRETE

In accordance with article 5.21 of D.T.U 21 and article 3.9 of D.T.U 23.1, four types of facings:

- Simple facing,
- Ordinary siding,
- Current facing,
- Neat facing.

In addition, the neat cladding is itself subdivided into three classes in accordance with article 52 of fascicle 65A:

- Simple facing,
- Fine facing,
- Ornate facing.

The facings must be free of any product that could interfere with the adhesion of plasters, paints, water-repellent coatings or others that could show traces.

All leveling, sanding and film coatings that are necessary to obtain an acceptable finish are due but must be validated by the Project Management both on the product used and on the appropriateness of its use.

It is the same for the straightening of edges, in particular those of columns, beams, tables, arches.

In order to be more precise on the condition of the concrete facings, this lot should take into account the following criteria.

The facings are defined according to the prescriptions of standard NFP 18.503 supplemented by the following data.

The condition of the facings applies to the surfaces of precast or cast-in-place concrete structures. The facings of the structures correspond to the visible faces after stripping or construction, whether they are seen or hidden in the final phase (backfill for example).

The surface appearance of concrete is characterized by the criteria of Flatness, Texture and Color.

To simplify the indications of standard NFP 18.503, six types of facings are defined according to the types of structures:

- | | |
|--|------------------------|
| - Type 1 - Foundation and mass cast in full excavation | P (0) E (0,0,0) T (0) |
| - Type 2 - Basic facing | C (1) E (1,1,0) T (0) |
| - Type 3 - Ordinary facing | C (1) E (1,1,1) T (1) |
| - Type 4 - Regular facing | (2) E (2,2,2) T (2) |
| - Type 5 - Neat facing | (3) E (3,3,3) T (3) |
| - Type 6 - Special facing (Factory-made) | P (4) E (4,4,4) T (4). |

2.9.1 Flatness (P)

Flatness is measured using a 2.00 m ruler and 0.20 m ruler. For each class of facing, the measurements must not reveal any defect in the facing greater than the limit values indicated below:

P (0) Flatness criterion not taken into account	
P (1) Ordinary facing DTU 21	15/6 mm 8/3 mm 5/2
P (2) Standard facing DTU 21 / Single Booklet 65	mm 3/1 mm
P (3) Neat siding DTU 21 / End of Issue 65	
P (4) Special facing DTU 21	

Type of facings	FLATNESS SIDING Quality	Flatness local overall reported to the rule of 2m	Local flatness overall related to the rule of 2m	Features of the epidermis and appearance tolerance
Ordinary (p1)	May be suitable when the facing is hidden or when the wall is intended to receive a facing plaster traditional thick	15 mm	6 mm Individual surface bubbles <3 cm ² . Depth <5mm Maximum extent bubble clouds 25% Bones and plucked Rectified and erected	Uniform and homogeneous. Pebble nests or sandy areas patched up. Flush balips by grinding.
Current (p2)	Correspondent, eg. at works likely to receive finishes paper classics painted or paintings for a preliminary filling and the application of a coating garnishing	7 mm	2 mm	Same as facing ordinary
Neat (p3)	Suitable for the same uses as facing running, but its best finishing makes it possible to limit possible coating and requires only a lower preparation. It is suitable for works intended for external display.	5 mm	2 mm	Same as facing ordinary, but the extent of bubble clouds being reduced to 10% and coated garnishing to predict by the painter (0.6 kg / m ² approximately)

2.10 TEXTURE (E)

Characterize the finish by setting quality levels for each of the criteria:

General in appearance, characterized by the average bubbling distributed over the entire surface considered, concentrated bubbling zones (bubble cloud), localized defects.

The average bubbling is judged against a reference scale defining a bubbling level:

- E(0,x,x) Average bubbling criterion not taken into account
- E(1,x,x) Scale 7 – Max. per bubble 3 cm² - Depth 5 mm - <10%
- E(2,x,x) Scale 5 - Max. per bubble 1.5 cm² - Depth 3 mm - <5%
- E(3,x,x) Scale 3 - Max. per bubble 0.3 cm² - Depth 2 mm - <2%
- E(4,x,x) Scale 1 - Max. per bubble 0.1 cm² - Depth 1 mm - <1%

The concentration of bubbles is characterized by a percentage and represents a concentration relative to an average bubbling according to the same bubbling scale, greater than the values defined above:

- E(x,0,x) Average bubbling concentration criterion not taken into account
- E(x,1,x) Ordinary and current facing DTU 21 < 25 % < 10 %
- E(x,2,x) Neat facing DTU 21
- E(x,3,x) Particularly neat facing DTU 21 <5%

- E(x,4,x) Special facing < 1 %

The maximum area of a localized defect, measured in square centimeters, results from the product of a by an observation distance expressed in meters and defined below:

- E(x,x,0) Localized fault criterion not taken into account
- E(x,x,1) Multiplier coefficient = 5– Observation distance = 10 m
- E(x,x,2) Multiplier coefficient = 4– Observation distance = 5 m
- E(x,x,3) Multiplier coefficient = 3– Observation distance = 2 m
- E(x,x,4) Multiplier coefficient = 1– Observation distance = 1 m

2.10.1 Tint (T)

The hue is assessed by reference to a gray scale defining seven levels:

- T(0) Color criterion not taken into account
- T(1) Hue difference limited to four gray levels
- T(2) Hue difference limited to two gray levels
- T(3)/(4) Hue difference limited to one gray level

2.11 TOP SIDES OF THE SLABS

2.11.1 Definition of facings

There are 4 types of facings, the characteristics of the surface condition of which are defined as follows:

D1 – Surface brute	Intended to receive a thick coating such as screeds, paving, thick tiles sealed on a bed of sand, requiring a reserve thickness of the order of 5 cm and more No special requirements are required for the surface finish
D2 - Running surface	Regular obtained by surfacing with a rule or a helicopter
D3 - Neat surface	Idem D2 facing, but intended to receive, by direct bonding, thin deformable floor coverings subject to smoothing (at the expense of the applicator) with a product approved for consumption limited to 2.5 kg / m ² maximum; Above this value, sanding will be required.
D4 - very neat surface (by sanding if necessary)	Intended to receive a floor paint, a resin coating

2.11.2 Tolerances on the surface finish

They are defined by the following criteria:

- Horizontality: The measuring instrument is a ruler 2.00m in length, equipped with a level at air bubble. One end of the rule is held in contact with a point on the floor; the rule being horizontal, we measure the cumulative difference in level inside a room.

- Flatness: There are three types of complementary measurements, each characterizing flatness on a different scale:
 - o The deflection of the slab is measured under a rule 2.00 m long.
 - o We measure the deflection of the slab under a rule 0.20m in length.
 - o The height of local protrusions and grain

Type	Horizontality		Flatness		
	Height difference under 2m rule	Cumulative height difference within a room	Under 2m rule	0.2m rule	Height of protrusions
D1	10mm	15mm	10mm		
D2	6mm	9mm	10mm	3mm	1mm
D3	5mm	7.5mm 6mm	7mm	2mm	1mm
D4	4mm		5mm	1mm	

2.12 MORTARS - PLASTERS - SCREEDS

2.12.1 Composition

2.12.1.1 Sand:

Its geometric, physical and chemical characteristics must comply with standard NFP 18.301 with a particle size of 0.08 / 3 mm. The sand must be clean and not contain any material that could cause effervescence. The use of sea sand is prohibited.

2.12.1.2 Water:

The water used for mixing must meet the requirements of standard NF P 18.303.

Binding dosage:

Designation	Binder dosage	Destination
M1	350 kg of CMII	Masonry binder
M2	400 kg CMI 42.5 or special binders for plaster	Cement plaster
M3	450 kg CMI 42.5 ou CMII 42.5	Screeads
M4	600 kg CMII 42.5 for 1 m3 of dry sand sieved granulo 0/3	Waterproof level

The weight of the binder is given for 1 m3 of dry sand.

2.12.2 Masonry assembly mortars

For traditional mortars, composition, dosage and application in accordance with DTU 20.1.

The adhesive mortars will be the subject of a technical opinion from CSTB or of specifications validated by a technical control.

2.12.3 Facing mortars for masonry

For traditional plasters that do not have to ensure waterproofing under hydrostatic pressure, composition, dosage and application in accordance with DTU 26.1.

For traditional plasters having to ensure a seal under hydrostatic pressure, composition, dosage and implementation in accordance with DTU 14.1

Thin monolayer coatings and crystallizations will be the subject of a technical opinion from CSTB or of specifications validated by a technical inspector.

They allow one or two passes to be coated in one coat 10 to 12 mm thick, with no waiting time. They must perform the waterproofing function.

Unless otherwise indicated in the description, the finish of non-decorative plasters will be smoothed in DTU 26.1 The finish of the decorative plasters will conform to the architectural plans.

2.12.4 Mortars for screeds

Composition, dosage and installation in accordance with DTU 26.2 according to the UPEC classification of the premises (P2, P3: premises with low demands; P4: premises with moderate demands; P4s premises with high demands).

The minimum thickness is 4cm. The surface finish must be fine and regular. The slope methods and connections to the floor drains are the responsibility of this lot.

2.13 MANUFACTURING AND APPLICATION OF CONCRETE

The on-site production of concrete should be avoided.

In the event that the company uses an approved BETON CONTROLE supplier, the latter will only be accepted after consulting the inspection body. The Project Manager or the control office may refuse the proposed supplier.

In all cases, the holder of the structural work contract remains solely responsible vis-à-vis the client for the characteristics of the concrete used.

The concrete and the additional mortars, possibly carried out on the site, will be prepared with equipment that takes up little space but allows mechanical preparation ensuring perfect mixing.

The dosage of binder and the particle size of the aggregates used must be subject to the approval of the inspection office and be displayed at the place of manufacture.

The site will be equipped with equipment to ensure precise and monitored dosages as well as easy control. The company will plan to test each router before casting with a slump test and will carry out samples for each router to be crushed in the laboratory.

Since controls may be requested by the Project Manager or the control office, without prior demonstration, the material necessary for taking samples must be available on site.

No excess water for ease of installation will be tolerated. The use of concrete constituents presenting a risk with regard to the alkali reaction is prohibited.

2.13.1 Transport of concrete and placement:

Concrete must be transported and placed by machinery that maintains its good quality and avoids segregation. Transport and waiting times on the site will be reduced to the strict minimum, in order to guarantee the technical characteristics of the concrete. If the duration is too long, the project manager may require the demolition of the concrete structures concerned and their reconstruction: the financial impact of this work being the responsibility of the company.

Concrete clamping by vibration is recommended for reinforced concrete.

2.13.2 Vibration

Internal vibration is mandatory for the following structures:

- Slabs and beams,

- Poles,
- Bearing walls,
- All works for which controlled concrete is prescribed.

The vibration frequency of the devices must be adapted to the granulometry of the concrete, as well as to its consistency, by preliminary tests. The needles used must be quiet

External vibration on formwork can only be applied when it is not possible to use internal vibration.

2.13.3 Pouring stop

In principle, there will be no interruption in the pouring of concrete for the same structure (post, wall, floors, etc.).

In the event that some reruns become mandatory following a normal interruption, the parts will be cleaned in rough reruns, in order to make the gravel protrude. This will be transplanted if necessary and the old concrete will be wet long enough before it comes into contact with the fresh concrete.

Repairs of pouring can be done as a priority by using slip but can also be carried out by increasing the dosage of the first layer of concrete in contact with the recovery surface by reducing if possible the diameter of the coarse grain.

In case of too intense rain or sun, the concrete will be kept sheltered until it has hardened sufficiently.

The formwork and concrete will be kept wet for a certain time, to ensure the setting in good conditions.

The watering will be done in such a way that it does not have the effect of deteriorating the surface layer of the concrete.

A layout plan must be established for this purpose before execution. The contractor must ensure the seam of the concrete joints by waiting reinforcement determined and arranged according to the nature and importance of the stresses.

2.14 FALL HEIGHT

Concrete must not fall freely from a height greater than 2 meters.

However, top-filling of molds for posts, walls or walls is authorized under the following conditions:

- The drop height does not exceed 3.00m,
- The molds are waterproof and fit on a base,
- The vibrator should treat both the lower and upper layers.

2.15 PRECAUTIONS REGARDING WITHDRAWAL

The contractor must take all necessary precautions to limit, as much as possible, the effects and consequences of the withdrawal. In particular, the particle size composition and the water content of the concretes will be studied with a view to reducing the shrinkage as much as possible: the reinforcement will be determined and arranged so as to oppose shrinkage cracks as much as possible; the concrete will be protected from desiccation during its setting in periods of high heat; joints will be made whenever possible.

During installation, the temperature of the concrete must be less than 45 ° C.

For high-shrinkage concretes (self-consolidating concrete in particular) and for large-sized cast-in-place floors, the company will limit the effects of shrinkage either by creating structural joints, or by pouring the structures in alternating bands, or by single casting with peripheral shrinkage strip.

A methodological note will be sent to the project manager for approval before execution.

2.16 PARKING

The manufactured concrete blocks used for the construction of interior and exterior partitions will not contain any defect, such as cracking, deformation or tearing, their faces will be flat and their edges rectilinear.

They will meet NFP 13 and 14 standards.

The masonry will be assembled in accordance with the DTU and the rules of the art. Their flatness respecting the rules of the documents in force.

Only blocks admitted to the NF mark will be accepted. Their manufacture will take place at least 28 days before their implementation.

The concrete blocks intended to remain visible will be repointed after assembly of the wall, with visible vertical and horizontal joints, drawn with iron and filled to all their thicknesses.

Resistance class B 80, or, as indicated on the drawings.

All the blocks implemented must be marked, in order to facilitate checks.

2.17 STORAGE OF WALLS AND FLOORS

The company must deliver, bare and level requested, the supports (walls and floors) intended to receive the sealed coverings, screeds or plasters of any kind, as well as all the walls that must remain visible.

2.18 ARASES

The levels will be determined according to the finished levels indicated on the plans and technical documents, attached to this D. C. E.

2.19 NUS

All bare walls and partitions must be stopped according to the different coatings intended for them.

2.20 CONDITIONS OF SUBSTRATES

The company of this batch must deliver the substrates very clean, free of all waste and materials of any kind whatsoever, likely to swell or cause reactions on the dressing or application mortars, or prevent their adhesion.

The company will pay particular attention to the removal and absolute cleaning of projections and stains of oil, grease, etc.

2.21 MATERIAL TESTS

2.21.1 Tests on samples

The tests will be carried out by a laboratory or a specialized testing center approved by the Inspection Office, in proof of the quality of the products offered for the approval of the Project Manager and the Inspection Office.

Exceptionally, except for ready-mixed concrete, the latter may exempt the contractor from his tests if he can produce, at the same time as their presentation, results of recent tests of the same products, carried out for another operation but under the same conditions as those specified above.

Likewise, a supply benefiting from a duly identified controlled brand (in particular large-scale manufactured products such as cements and steels) may be provided, by the Project Manager and the control office, from preliminary tests, if their provenance is assured.

2.21.2 Tests during the work - general case

The tests will be carried out under the same conditions as above, to verify the conformity of the products delivered to the approved samples.

At the start-up and during the execution of the works, the number and frequency of these tests will be fixed by the inspection office, case by case, by reference, whenever possible, to the rules set by the standards, documents unified technical documents or any other general documents.

The contractor will give all useful instructions to the laboratory or to the organization in charge of the tests so that the reports are sent as soon as possible to the following persons or organizations:

- The Project Manager,
- The Technical Controller,
- And for information: the Client.

He will constitute and keep to this day, in the temporary offices reserved for the Project Manager, a file of all the results of the tests carried out, to be classified according to the summary report model for each category which will be given to him.

2.21.3 Tests during the work - special cases

Without having a limiting nature, these tests are specified below for the most common cases:

* Concrete (for reinforced concrete)

Regardless of the samples requested by the technical inspector for tests carried out on his behalf, the contractor will be responsible for the samples, preparation, conservation and transport of the test pieces necessary for the compression tests on cylinders (Ø 16 cm - Ht 32 cm) which will be carried out on its own account, by a laboratory approved by the control office.

In addition to the samples and tests prior to the acceptance of the proposed composition, the samples and tests during the work will be carried out at the request of the Project Manager or the control office, in his presence or any person designated by him, at the rate of 3 per mixer truck for 7-day or 28-day tests (ie 3 specimens per test).

The results must comply with the admissible stresses taken into account in the calculations.

In case of insufficient results, the Client or the control office may prescribe additional tests and / or "in situ" checks by sclerometer survey. These tests and / or verifications will be the responsibility of the contractor.

In the event of observed heterogeneity of the materials supplied, the Project Manager or the inspection office may also prescribe simple but frequent tests to identify the material to ensure that the desired homogeneity is respected.

The table below indicates, for a site suitably equipped and subject to regular checks, the two conditions that must be met simultaneously by the results of compressive strength at 28 days measured on three cylindrical specimens of 200 cm² section. and double the height of the section diameter.

Characteristic value Fc 28 and MPA	20	25	30
Arithmetic mean of the 3 Results in MPA	24	31	37,5
Minimum value of 3 Results in MPA	21,5	26,5	32,7

The frequency of these tests is on average 1 test for 10 m³ of concrete

2.21.4 Pachometer soundings:

These surveys, carried out by a qualified operator (in principle a representative of the technical inspector), will be the responsibility of the contractor, at the rate of an operator's shift of 3 hours per month.

They will relate to all parts of the works, whatever they may be, designated by the Project Manager or the control office, to check:

- The position of the reinforcements,
- The concrete cover thickness.

They will relate, for example, to the cantilevered elements (balcony slabs) and the facings exposed to bad weather (beams forming a band on the facade, exterior walls, prefabricated elements, etc.). This list is not exhaustive.

2.21.5 Manufactured concrete blocks:

The tests will be provided for by standards NF P 14.301 (heavy aggregate concrete) and 14.304 (light aggregate concrete). The frequency of these tests will be one verification every month during the period of delivery to the site.

2.21.6 Other tests - Self-checking tests:

The company is subject to leaktightness tests for buried pipes, whether they are evacuation ducts, ducts or buried ventilation ducts where applicable.

Before the construction of the buried networks, the company will present the definition and the test program Project Manager or at the Control Office.

The SECUREL files concerning the corresponding tests will be given to the Project Manager and to the Control as soon as the tests are carried out and before any pouring of the concrete slab.

A camera check will be carried out at the end of the "Hull" work.

The company's own checks will also be compulsory for all parts of the structures concerned by this project.

The self-checking procedure as well as the self-checking sheets must be subject to the approval of the technical controller.

2.22 LEVEL LINE

The N.G.B. will be engraved and sealed on a fixed terminal and maintained throughout the duration of the site by the structural contractor. It will be traced whenever necessary and at each request from other companies. To draw this level line, the company will use a product that is not visible under paint-type coatings.

See Book of Common Technical Clauses

2.23 PROTECTION OF WORKS

The company holding this lot will have to ensure the protection of all the works and will remain responsible until the reception of the works, of the damage which would be done there.

2.24 TOLERANCES

2.24.1 Shuttering concrete walls (DTU 23-1 and DTU 21)

Criteria	Tolerances
Thickness	+/- 0,5 cm
Maximum distance between two walls which must be superimpose, with e = smallest wall thickness	Less than mini (e / 15; 2 cm)

Verticality: deviation if e is the wall thickness	Less than mini (e / 15; 2 cm; 0.5cm / m high)
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2.24.2 Concrete slab

Criteria	Tolerances
Thickness	+/- 0,5 cm
Misalignment at the joints (For prefabricated slabs)	Less than 3mm
Level	+/- 1cm from the level of the floor

2.24.1 Allowable tolerances of the structural work for the installation of joinery

According to DTU 20-1, chapter 5-1

The state of the surfaces of the support faces of the applied rebates and support tables must allow the application of the gasket and its sealing.

2.24.2 Tolerance of flatness and surface finish of masonry

According to DTU 20-1, chapter 5-2

2.25 IMPLEMENTATION OF MATERIALS

Each of the materials will be implemented according to the rules of the art, without the need to specify them, in accordance with their technical opinions and specifications

2.26 SOIL STUDY

A soil reconnaissance campaign was carried out by the National Center for Testing & Research in Public Works. A G2 PRO report is attached to the file. The holder of this lot must be aware of it and take into consideration all the conclusions of the geotechnical engineer and the specifics of the site before submitting an offer which will be deemed to include all the data from this study.

2.27 HYDROLOGY

There is no hydrogeological report in the file, however during coring carried out in April 2018, the water table was spotted at a depth of 0.10m.

3. SITE INSTALLATION

3.1 SIGNALING AND SITE ACCESS

The Company will have to supply and install all regulatory signs at the accesses and around the site (site prohibited to the public, wearing of helmets compulsory, etc.), as well as all temporary signs and protection, having received the agreement of the services of roads and security.

The Company must also ensure satisfactory access to the site. If necessary, it will have to provide for the installation of temporary structures and their removal as well as the restoration at the end of the work. It will implement the protection mechanisms for V.R.D. existing in the immediate vicinity of the entrance to the site as well as around the site.

Any observed deterioration of the V.R.D. existing structures will require immediate repair at the expense of the Company.

The installation of advertising panels by the Company remains subrogated with the agreement of the Client.

In addition, this service involves the daily cleaning of public accesses for the removal of sludge, dirt, etc.

3.2 GENERAL ORGANIZATION

Before setting up the site installations, the Contractor must submit to the SPS Coordinator, the OPC and the Project Manager a general site installation plan which will specify the location of the various temporary constructions and accessories to be established. as :

- Worksite office, refectory (s), sanitary facilities, material storage stores and materials, fixed workshops, etc ... for 50 to 60 people on average
- Water connections, connection to EU-EV networks, electricity, telephone, tracks access from the public domain to the cantonment and the site, fences, etc....
- the parking areas for vehicles of site personnel, the parking areas for other site stakeholders, representatives of the Client, the Client's Representative, if applicable, Project Manager (including BET), OPC, SPS Coordinator, Technical Controller) etc ... the parking areas for construction vehicles, delivery or storage areas, washing area (or areas), rubble storage areas, worksite fencing, worksite sign.
- Site lifting equipment (as well as their power supply, if applicable) must also be schematized on this plan.

This subjection includes:

- The display in the site office of the general site installation plan and the information of all those working on the site,
- Regular maintenance (as much as necessary) of the access roads defined above, fences, parking areas, etc ...
- The organization of public or private traffic routes, in consultation with the community local organization, the organization of parking for residents and staff involved in the work and the organization of site supplies and removals (hours, routes, etc.) in order to limit the inconvenience caused to residents.

In the organization of the site, attention will be paid to favoring traffic lanes in order to limit as much as possible the number of maneuvers of trucks and machinery.

This Site Installation Plan will be given to the Project Manager in 1 copy and to the SPS Coordinator in 3 copies in native paper and digital format and PDF.

3.3 ALLOCATION OF COSTS

Site installation, rental, and folding costs are the responsibility of the Contractor of this lot for the entire duration of the site, and are clearly identified in the breakdown of the overall price.

Only the consumption and maintenance of the installations are to be distributed among the various companies according to a pro rata account, the management of which falls under this lot.

3.4 SITE PANEL

Supply and installation by the holder of the Structural Work of a regulatory site sign in accordance with the signage charter of the Owner, nailed to vertical and braced posts, comprising, among other things:

- The name, nature and general characteristics of the operation and its logo
- The name and address of the Employer and its logo
- The number and date of obtaining the building permit
- Possibly the nature of the funding
- The name and address of the Project Manager (s) and his / her logo
- The names and addresses of other technicians, as well as their logos, such as:
 - o BET o Control office o OPC o SSI coordinator o etc ...

- The names and addresses of all the companies called upon to intervene on the site.

Before installation, this panel must be submitted for the approval of the Client and Project Manager.

The panel will be firmly anchored and stuck (in soil of all kinds) and equipped with bracing. When the panel is removed, the holes will be carefully filled with materials of the same nature as the floor.

The service also includes the display of the PC, regular maintenance of the panels (cleaning) as well as the periodic verification of the anchors.

Dimensions: According to the owner's charter.

3.5 CONSTRUCTION FENCES

Installation by the holder of this lot, of a construction fence (including signage according to the Client), compliant, in solid and rigid cladding-type panels of minimum height 2.20 ml, including vehicle doors and pedestrian access gates to the site (lockable) and installed throughout the duration of the site.

Regulatory signs will be installed on the door (construction site prohibited to the public, wearing a helmet compulsory, etc.).

All travel that may be necessary during the duration of the work, at the request of the Project manager. (Plan to relocate the living area in the offer)

If necessary, the fence feet will be sealed with a concrete pad.

This service includes regular maintenance and reclamation at the end of the construction site and land reclamation.

Location: Site installation area, and work areas.

3.6 ELECTRICAL SUPPLY OF THE WORKSITE

The company holding this lot will carry out the necessary formalities with the local concessionaire for the installation of a site supply.

This service includes:

- The installation of a main site cabinet,
- The possible supply of lifting equipment and the concrete plant,
- Electrical connection to the site office, sanitary facilities, refectory and changing rooms,
- Exterior site lighting (worksite blocking area, traffic areas, road and pedestrian, parking areas, storage area, and ...),
- The site's electrical power supply by carefully distributed distribution cabinet (s) will be charge of the Electricity package,
- Interior lighting of the site if necessary,
- Installation of a general meter,
- Installation of a specific life base meter.

This service also includes verification of the installation by an approved body and regular verification and maintenance by authorized Company personnel.

3.7 SITE WATER SUPPLY

The company holding this lot will carry out the necessary formalities with the local concessionaire for the installation of a site water supply.

This service includes:

- The water connection to the toilets and the dining hall.
- The site water supply.
- The water supply to the washing area.

This service includes regular inspection and maintenance.

3.8 CONNECTION TO EU EV NETWORKS

The company holding this lot will carry out the necessary formalities with the local concessionaire for the establishment of this connection.

This service includes:

- The EU - EV connection to the sanitary facilities and the dining hall,
- Connection to the washing area,

This service includes regular inspection and maintenance.

The service will also include the installation of a pit in the event of an EV network not available.

3.9 PLATFORM - WORKSITE TRACKS

Location: Entire site installation area

The company holding this lot will have to create a platform in shale or other materials compatible with the use allowing the establishment of:

- All site facilities (bungalows),
- Prefabrication and storage areas,
- Parking and delivery areas,
- Special installations such as concrete batching plant, cranes....
- From the site waste storage and sorting area,
- ...

This platform will be maintained throughout the life of the site and should generally allow a clean site.

The service includes, at the end of the work, the removal of these materials and the re-installation of the trimming ground as it was received at the start of the work.

The company will have to clean the roads throughout the duration of the work, including public roads. This service will include the intervention of sweepers whenever necessary. The company will also provide an automatic cleaning system for the wheels of all trucks leaving the site.

3.10 PROVISIONAL CONSTRUCTION BUILDINGS

The company holding this lot will have to set up temporary site buildings sized for the duration of the site.

The temporary buildings in the site's living area are:

- The site office,
- The refectories,
- The sanitary changing rooms,

All these premises must be equipped in accordance with their uses, provided with lighting and electrical installation, and be heated.

They have useful signage, locks, etc.

The entire service includes, under the pro rata agreement, their cleaning, maintenance and useful consumables.

In addition to the general conditions above, the site office must meet the following conditions:

- A room spacious enough to hold a meeting with all the speakers
- A lockable cupboard.
- Be well closed
- Provided with a simple and sufficient office installation (tables, chairs) and telephone up to completion of the site.
- The Company will carry out on its behalf the necessary formalities with the services of the operator telephone chosen by the Contractor for the installation of a "Site" line and broadband internet access.
- Have a display panel with instructions in the event of an accident.
- Have a display panel with daily staffing tables.
- Be equipped with helmets and boots useful to visitors
- Means of warning
- Pharmacy
- Fire extinguishers,
- Installation of a general meter,
- Installation of a specific life base meter,

This room must always be accessible (for using the telephone in an emergency).

This room must be equipped according to the regulations.

This room must not be used by workers as a cloakroom or deposit.

Sanitary facilities - Changing rooms - Refectory:

- Site sanitary installation, comprising, water point (s), WC, shower (s), the number of which will be sufficient with regard to the regulations according to the workforce on site, and equipped according to the regulations.

Maintenance of the installations to be planned.

Weekly cleaning of the entire life base of the site, cleaning of the reception of the work.

Provision of ordinary waste dumpsters for household refuse.

3.11 EDGE PROTECTION

The company holding this lot must protect the surroundings effectively and by all means having received the prior approval of the Project Manager.

This subsection concerns, among others:

- Protection of electric poles, cable lines, etc ...

- Protection of telephone poles, lines, cables, etc.
- Protection of existing fences of all kinds (masonry, wire mesh, etc.).
- Protection of trees, shrubs, various vegetation, etc.
- Soil protection of all kinds.
- And in general, protection of elements of all kinds, the list not being exhaustive.

3.12 PRORATA ACCOUNT

According to CCTC.

3.13 CONSTRUCTION SITE

After the execution of the works, the present company must complete the folding of the site installations and the complete cleaning of the ground, before the execution of the works of green spaces. Folding up at the end of the site is the responsibility of the company.

The withdrawal includes the removal and evacuation of all installations, as well as the rehabilitation of the land.

Note

The retrenchment of the site includes in particular the rehabilitation and repair of existing sidewalks and roads.

4. DESCRIPTION OF THE WORKS

Since the company has an obligation of result, it will eventually have to complete the following descriptions, after having carried out an on-site visit, and taken all the information concerning the buildings.

4.1 LAYOUT AND STITCHING

The structural contractor must ensure the establishment, by an expert surveyor, of fixed planimetry and leveling marks attached to the NGB levels and their maintenance in good condition for the duration of the work.

From these invariable benchmarks, the contractor will ensure the establishment of constructions by means of chairs, masonry stakes, bollards, established outside the right of way of the constructions.

The errors of coasts and altitudes which could reveal the implantation will be immediately indicated to the Project manager to make the necessary changes for the smooth running of the site. The contractor must liaise with the various administrations as well as the bodies responsible for VRD to check that the alignments, connection dimensions of the VRDs, tracks, sewers, various fluids, are compatible with the installations he carries out.

An implementation report must be drawn up at its expense by the company of this lot.

This document will define in particular:

- The basic axes and alignments,
- The ribs at ground floor level,
- The level coasts of the road and the surroundings of the building.

It will be sent to the Project Manager who will verify the consistency of his project and will then be sent to the Client.

In addition, after completion of the foundations, the company will commission a surveyor to carry out a survey of its works in relation to the property lines.

4.2 EARTHWORKS

4.2.1 General

The preparation of the land is carried out by the earthmoving company of the VRD lot

The platform is delivered at the level defined by the altimetry of the architect's plans.

The following earthworks are implicitly included in the offer:

The Contractor must report to the Project Manager any pipes and networks of any kind encountered during earthworks. A contradictory statement will be established and the pipes in service diverted at the expense and by the holder of this lot.

Having taken cognizance of the terrain through the geotechnical study and the report on soil pollution, the Contractor will present to the Project Manager the best suited solution for earthworks as well as the arrangements to be made during and after earthworks. Particular attention is paid during exhaustion or drawdown to avoid the entrainment of fines and any settling of existing ones.

The Contractor must take all measures to prevent the erosion of the embankments by runoff water and the degradation of the embankments that risk causing damage (protection by polyane, creation of gutters, slopes, sumps, etc.). It must ensure the stability of the existing embankments.

In the vicinity of buildings or streets, the Contractor must take all precautions to prevent any movement and avoid any accident for people walking through the excavations. In particular, it must support all or part of an existing construction which is not of a character of normal strength. The method of support and shielding provided by the Contractor depends on the nature of the land, the environment and the depth of the excavation. The displacement or withdrawal of props or armor can only be done after ensuring that the safety conditions are respected.

In the case of local purges causing accidental excess depth, the necessary backfilling will be carried out with a 0 / 31.5 compacted feeder.

After completion of the underground works, the voids left between the basement walls and the general excavation must be backfilled up to the level of the exterior platforms; before backfilling, these voids must be purged of all rubble and foreign bodies.

The backfill must be made of quality filler material, placed in successive layers of 30 cm and compacted, to obtain 95% of the modified proctor. The backfill can only be put in place if the basement walls are stable and after agreement from the Client.

Finally, the price of earthworks must include:

- Special works: realization of benches, excavations in armored trenches, frontal attacks, shielding, support by spurs or struts, etc.,
- The exhaustion of infiltration or runoff rainwater by any temporary works sanitation such as drains, channels, collection or absorbent sump, pumping, etc.,
- Construction and maintenance of access ramps to the earthworks site,
- The protection of the surroundings and accesses, in particular during earthworks,
- The tolerances on the platform dimensions will be + or - 3 cm in all areas.
- Taking into account the proximity of the existing bastion (cross foundations, enhancement on the park, etc ...)

4.2.2 Water drainage during the construction phase

While the work is being carried out, the contractor will be responsible for lowering the water table (regardless of their origin: groundwater, rainwater, etc.), and their evacuation outside the site, this service being considered as part of its offer.

In the event of the presence of water, any excavation execution constraints (shielding, etc.) that may prove necessary will be the responsibility of the successful tenderer of this lot and will be deemed to form an integral part of his tender.

The contractor will be responsible for the techniques he has implemented and will be held solely responsible in the event of failure.

4.2.3 Excavations in holes, ditches and trenches

Excavations in holes, channels and trenches carried out mechanically, adjustment of the seabed manually, including all loading, transport and evacuation of this land deemed unsuitable for public landfill with all the costs thus generated and any subjection to avoid the collapse of the walls.

The works include the demolition and evacuation of all existing buried structures that must be removed (masonry, concrete blocks, manholes, networks, etc.), the volume of which the company may or may not have been able to assess by all means of investigation. (additional surveys, cadastral research, etc.).

Location: According to the foundation structure plan:

- Massive pile head
- Longrines
- Networks under paving
- Earth belt
- Elevator pits
- Peripheral drains and its manholes
- AEP tanks
- .../...

This list is not exhaustive

4.2.4 Provisional platform

Lot VRD

4.2.5 Embankments

The contractor will have to make all the backfill and land movements essential to the complete and perfect completion of the work of this lot.

The backfill will be made using excess excavation if it is of sufficient quality or incompressible filler materials, classes C1 to C2.

These backfills will be implemented in successive layers 15 to 20 cm thick, including all subjection to tamping, watering and careful compaction, to refusal. The backfill materials will be free of all organic or plant detritus, rubble that may affect the stability of buried and surface structures.

Location: backfilling of excavations around foundation structures and other buried structures

4.2.6 Land evacuation

Surplus land resulting from earthworks or excavations, and not used for backfill, as well as demolition products of any kind whatsoever, will be evacuated to public landfills, including transport and landfill rights.

The trucks or mechanical devices carrying out these removals must not cause damage to foundations or various masonry structures.

4.2.7 Land storage for possible reuse as backfill

The company will take care of the storage of the land: in the event that the storage cannot be done in the right-of-way of the site, the company will be responsible for all constraints resulting from this fact. No supplement will be granted for transport and handling of land.

4.2.8 Drain

Creation of a drainage network on the outskirts of buildings in accordance with the DTU with, in particular, fluted sock drains of diameter adapted to the flow of water to be evacuated and manholes every 30 m, and at each change of direction, including connection to the looks of the VRD lot.

Location: outskirts of buildings.

4.2.9 Earth belt

The present company will include in its offer the installation at the bottom of the excavation of a copper conductor supplied by the electrician and intended to ensure the earthing of the installations. This earth conductor will be welded by the electrician to the expectations that the holder of this lot must set up to the right of each pile on the pile.

All precautions will be taken so that the earth conductors cannot be damaged during the construction of the building. The implementation of a surge protection system (surge arrester) is due to the Electricity package.

Location: Building excavation background (according to the electrician's execution plan).

4.3 FOUNDATION WORKS

The company will include in its estimate a G4 mission to be carried out by the BET of soils having carried out the G2 mission.

4.3.1 Large concrete

Concrete chippings dosed at 250 kg of CPJ poured in full excavation under the foundation footings in order to achieve the same base between the different footing heights

Location: Under all foundation footings

4.3.2 Clean concrete

Realization of concrete chippings dosed at 250 kg / m³, poured in full excavation on 5 to 10 cm thick under all the concrete structures in contact with the ground as soon as the excavations begin so that precipitation water does not reduce the bearing characteristics of the soil

Location: Under sills, footings, elevator pits, etc.

4.3.3 Strip and insulated footings

Realization of reinforced concrete footings C30 / 37 minimum. Steel reinforcement H.A Fe 500 according to calculation of the BET of the company of this batch, cast in full excavation or formwork as necessary.

Dimensions and position according to studies to be submitted for the approval of the technical controller.

Location: All buildings, variable dimensions according to soil ratio.

4.3.4 Erasers

Realization of a reinforced concrete slab dosed at 350Kg / m³ minimum. H.A Fe 500 steel reinforcement, The raft will be placed on a sand bed and pulled with a vibrating rule by strip.

Thickness according to studies.

Location: following plans

4.4 INFRASTRUCTURE WORKS

4.4.1 Basins

Construction of reinforced concrete basins C30 / 37 minimum. Steel reinforcement H.A Fe 500 according to calculation of the BET of the company of this lot, formwork type 5.

Including :

- Earthworks and purging of areas of poor consistency
- Realization of the general platform
- 5cm sand bed
- Creation of reinforced concrete slabs C30 / 37 minimum. HA Fe 500 steel reinforcement according to BET in very damaging cracking.
- C30 / 37 reinforced concrete surveys minimum. HA Fe 500 steel reinforcement according to BET very damaging.
- Treatment of singular points (re-concreting, gutters, etc.)
- Water repellent plaster type waterproofing
- Channels and siphon
- Plumbing technical rooms

Calculation rules: BAEL and DTU 14.1

The service will include all the reservations necessary for the technical lots for the passage of fluids.

Before installing waterproofing, the contractor must ensure that the substrate is compatible (no cracks, grooves or gussets in the salient angles, etc.).

4.4.2 Longrines

Construction of reinforced concrete beams C30 / 37 minimum. Steel reinforcement H.A Fe 500 according to BET of the company for this lot, type 3 formwork for the non-visible parts and type 4 for the visible areas.

Section and position according to studies. The outriggers will be cast on a clean concrete 5cm thick, with an overhang of 5cm on either side of the vertical faces.

Location: dimensions and section according to plans

4.4.3 Elevator pits

Realization in reinforced concrete C30 / 37 minimum scrapped with HA Fe 500 steels according to the calculation of the BET of the company of this batch,

Including :

- The clean concrete layer
- The low slab of the pit which will rest on the foundations
- The sails of the pit
- The implementation of a thick plaster type SIKA coating, to be carried out over the entire surface of pit and over the entire surface of the walls.
- The protective slab on the casing and the concrete drop guard

Given the risk of ground flooding, the holder of this lot will provide for the implementation of membrane-type waterproofing (technical sheet to be submitted for approval by the technical inspector) on the exterior walls of the elevator pits and lifting buried loads so as to ensure the perfect watertightness of the pits.

Location: Elevator pits according to plans.

4.4.4 Low load-bearing slab

The low basement floor will consist of a spanned slab of minimum thickness of 20 cm in reinforced concrete ($f_{c28} = 30$ Mpa) resting on a network of stringers.

Formwork type 2, top facing D4

Reinforcement, according to calculations, in TS and HA Fe 500 steel, class A steels.

Following a geotechnical study, the construction works for the low slab complex include:

- A sub-layer of healthy and inert material, of at least 5 cm, also acting as a draining layer,
- A polyethylene film 150 microns thick, laid in overlaps of 30 cm, under the entire slab surface. The film will be folded laterally on the periphery of the lost formwork (see below),
- Construction of the slab in two-slope for water drainage.

The execution implicitly includes all constraints for hoppers, passage of technical ducts, EP outlets, etc. including filling the hoppers, after installation by the other trades of their pipes and networks. The Structural Work must allow the installation by the other trades of all the incorporated elements necessary for their work.

Type A finish for offices suitable for receiving finishes (see architect's package)

Location: according to plans

4.4.5 EP recovery tarpaulins

Realization, in accordance with the dimensions indicated on the plans, of rainwater storage tanks with a capacity of 20m³ minimum for office buildings in reinforced concrete, (f_{c28} = 30 MPa minimum), poured in place and supported by foundations. Formwork type 4. Reinforcement, according to calculations, in TS and HA Fe 500 steel.

The service will include all the reservations necessary for the technical lots for the passage of fluids.

The tanks will be fitted with airtight inspection hatches for upkeep and maintenance

Including :

- Earthworks and purging of areas of poor consistency
- Realization of the general platform
- 5cm sand bed
- Creation of reinforced concrete slabs C30 / 37 minimum. HA Fe 500 steel reinforcement according to of the BET of the company of this lot in very damaging cracking.
- C30 / 37 reinforced concrete surveys minimum. HA Fe 500 steel reinforcement according to the company of this lot in very damaging cracking.
- Treatment of singular points (re-concreting, gutters, etc.)
- Resin-type waterproofing
- Channels and siphon

Location: Offices and restaurant: under the plumbing room -

4.4.6 Drinking water supply tank

Realization, in accordance with the dimensions indicated on the plans, of drinking water storage tanks with a minimum capacity of 350m³ (maximum height 5m) in reinforced concrete, (f_{c28} = 30 MPa minimum), poured on site and supported by foundations. Type 4 formwork. Reinforcement, according to calculations, in TS and 500.

The drinking water tank will also receive a food-grade paint or a food-proof, SIKA-type or equivalent treatment (product sheet to be submitted for approval to the MOE and the technical inspector).

The service will include all the reservations necessary for the technical lots for the passage of fluids.

The tanks will be fitted with airtight inspection hatches for upkeep and maintenance

Including :

- Earthworks and purging of areas of poor consistency
- Realization of the general platform
- 5cm sand bed
- Creation of reinforced concrete slabs C30 / 37 minimum. HA Fe 500 steel reinforcement according to BET in very damaging cracking.
- C30 / 37 reinforced concrete surveys minimum. HA Fe 500 steel reinforcement according to BET very damaging.
- Treatment of singular points (re-concreting, gutters, etc.)
- Resin-type interior waterproofing
- External waterproofing of PVC membrane type
- Channels and siphon

Location: Less than 5m from the AEP room, directly above the technical room

4.4.7 Fire station water supply covers

Realization, in accordance with the dimensions indicated on the plans, of water storage tanks with a minimum capacity of 250m³ (maximum height 5m), (f_{c28} = 30 MPa minimum), cast in place and supported by foundations. Formwork type 4. Reinforcement, according to calculations, in TS and HA Fe 500 steel.

The service will include all the reservations necessary for the technical lots for the passage of fluids.

The tanks will be fitted with airtight inspection hatches for upkeep and maintenance

Including :

- Earthworks and purging of areas of poor consistency

- Realization of the general platform
- 5cm sand bed
- Creation of reinforced concrete slabs C30 / 37 minimum. HA Fe 500 steel reinforcement according to BET in very damaging cracking.
- C30 / 37 reinforced concrete surveys minimum. HA Fe 500 steel reinforcement according to BET very damaging.
- Treatment of singular points (re-concreting, gutters, etc.)
- Resin-type waterproofing
- Channels and siphon

Location: Less than 5m from the fire room, directly above the technical room

4.5 NETWORKS UNDER SLABS

Fluid batches

4.6 SUPERSTRUCTURE

4.6.1 Vertical structures

4.6.1.1 Columns

Realization of reinforced concrete columns of square section with a characteristic resistance of 30 Mpa minimum and 40 Mpa minimum on the ground floor, including formwork and reinforcements.

Type 4 formwork with chamfer. Neat C finish for all posts.

Reinforcement, according to calculations, in HA Fe 500 steel. Class A steels.

The posts will be made with great care for all noble premises.

Location: according to plans

4.6.1.2 Concrete Corbel

Realization of Corbel in reinforced concrete ($f_{c28} = 30$ Mpa minimum) of sections defined on the plans, including formwork and reinforcement

Type 4 formwork.

Reinforcement, according to calculations, in HA Fe 500 steel.

Fire resistance obtained without installing insulation.

Location: according to plans, to the right of the JD, as necessary

4.6.1.3 Reinforced concrete walls

Realization of walls in reinforced concrete ($f_{c28} = 25$ Mpa minimum), thickness according to plans, including formwork, reinforcements, and necessary incorporated frames.

Type 4 formwork for all visible wall surfaces; provide for reworking of the bead, pickings and edges to allow the completion of the finishes without specific preparation. The concrete will be vibrated with a pneumatic needle; the nature of the concrete and its implementation will allow a perfect finish.

Reinforcement according to calculations and, at least, in accordance with DTU n ° 23.1.

Including :

- Incorporation of door frames
- The realization of the lintels and chains

- Reservations for technical packages.

In order to obtain the finish required in general, the form spacers will be carefully plugged and all the shims will be removed.

In order to limit sound transmissions, the electrical boxes in the slits will never be placed opposite each other.

Location: according to plans

4.6.1.4 Stairs _____

Construction of reinforced concrete stairs, prefabricated including:

Steps with fruit and risers on a continuous monobloc bench,
Solid slab bearings with smooth underside,
Rounded stair nosing with non-slip.

Type 4 formwork for visible facings

Reinforcement, according to calculations, in TS and HA Fe 500 steel.

The prefabricated stairs will comply with the prescriptions of D.T.U. 21.3.

The static and handling reinforcements of the prefabricated elements are included in these works.

The stairs will be finished according to the coating batch and the table of finishes by using a prefabricated concrete slab according to the architect's detail book.

The stairs will be completely separated from the rest of the structure in order to limit impact noise.

The stairs on the outside will be watertight in the mass and must allow the implementation of a waterproofing.

Location: according to plans, interior and exterior stairs

4.6.1.5 Masonry - Concrete block partitions _____

At the locations defined on the plans in the file, execution of masonry in hollow agglomerates 15 and 20cm thick, made with cement mortar, including all constraints for lintels, rabbets, reservations and stiffeners according to DTU 20.1.

For load-bearing walls, the agglomerates must be of class B 60, at least. Class to be defined by the technical execution study. Thicknesses: depending on the slenderness of the walls, loads and acoustic requirements.

All necessary stiffeners and chaining, other than columns, beams, concrete lintels, will be incorporated into the walls. Including all the special elements for the realization of the horizontal and vertical chains.

The vertical links of the masonry will be provided by harpages.

The rebates for joinery and the vertical reservations for the passage of pipes will be made under the same conditions as the horizontal reservations.

All the rebates will be filled before the passage of the plasterwork, as well as all the filling of the pipe passages. The infill should be 5mm back from the bare masonry.

The mortar used for all masonry will be dosed at 150Kg of hydraulic lime and 200 to 250 Kg / m³ of cement.

For uncoated concrete block masonry, intended to be painted, the faces of the walls will be perfectly groomed and jointed, with vertical and horizontal joints completely filled, and, made after assembly and ironed.

Location: Interior partitions, according to plans

4.6.1.6 Reinforced concrete solar shading

Realization of solar shading in reinforced concrete of rectangular section of 14x40 having a characteristic resistance of 30Mpa minimum, including formwork and reinforcements.

Type C formwork without chamfer. Neat C finish.

Reinforcement, according to calculations, in HA Fe 500 steel. Class A steels. 5cm cover

The sun breezes will be made with great care.

Location: according to plans

4.6.1.7 Metal Posts

Supply and installation of metal posts of the hollow tube type, will be plumb using metal fittings and wedges of the appropriate dimensions.

The space below the plate will not be greater than 25 mm unless approved by the Project Manager

Including :

- Bolted or welded joints
- Base plate and column head
- Protection anti-corrosion
- Finishes

Location: Covered passage

4.6.2 Horizontal structures

4.6.2.1 Beams

Construction of beams, prefabricated or not, in reinforced concrete ($f_{c28} = 30$ Mpa minimum) of sections defined on the plans, including formwork and reinforcement. Reservations diameter 100 will be provided every meter.

Type 4 formwork.

Reinforcement, according to calculations, in HA Fe 500 steel.

Fire resistance obtained without installing insulation.

In the event that reservations are requested in the beams, the contractor will ensure that they are compatible with the work.

Location: according to plans

4.6.2.2 Concrete lintels

Concrete lintels, prefabricated or not, of a width adapted to the thickness of the wall concerned, including all formwork, reinforcement and careful implementation constraints.

Location: according to plans

4.6.2.3 Reinforced concrete floor

Realization of solid slab type floors poured in place in reinforced concrete ($f_{c28} = 30$ MPa minimum), including formwork and reinforcements.

Formwork type 4. Facing type D4

Reinforcement, according to calculations, in TS and HA Fe 500 steel. 5cm cover

Fire stability obtained without installing insulation.

Minimum thickness 20cm according to calculations and plans.

Including :

- Offsets on the underside,
- Reservations and hoppers necessary for all trades,
- All incorporation of electric cables, pipes and miscellaneous,
- Recapping of the hoppers, after installation by the other trades, of their pipes and their networks,
- Shapes of terraced slopes as indicated on the architect's plans
- The disbursements to insert the resilient and acoustic screeds (0.5cm + 5cm) to the right of the finishes of floor listed in the acoustic instructions (floor painting, tiling, waxed concrete)
- All constraints for an execution in the rules of art.

The floor will be perfectly dressed to the rule with a finish conforming to that which will be requested by the holders of flexible and hard flooring work and waterproofing work.

Location: On the outer periphery of office buildings, generally in line with sun breezes, car parks and annex buildings, according to plans

4.6.2.4 Precast reinforced concrete floor

Construction of prefabricated pre-slab type floors + compression slab cast in place in reinforced concrete ($f_{c28} = 25$ MPa minimum), including formwork and reinforcements.

Formwork type 4. Facing type D4

Reinforcement, according to calculations, in TS and HA Fe 500 steel.

Fire stability obtained without installing insulation.

Minimum thickness 5 + 15cm according to calculations and plans.

Layout according to architect plans.

Including :

- Offsets on the underside,
- Reservations and hoppers necessary for all trades,
- All incorporation of electric cables, pipes and miscellaneous,
- Recapping of the hoppers, after installation by the other trades, of their pipes and their networks,
- Shapes of terraced slopes as indicated on the architect's plans
- The disbursements to insert the resilient and acoustic screeds (0.5cm + 5cm) to the right of the finishes of floor listed in the acoustic instructions (floor painting, tiling, waxed concrete)
- All constraints for an execution in the rules of art.

The floor will be perfectly dressed to the rule with a finish conforming to that which will be requested by the holders of flexible and hard flooring work and waterproofing work.

Location: Inside Building.

4.6.3 Miscellaneous structures in superstructure

4.6.3.1 Drillings, reservations, plugs, caulking

The contractor of this lot owes all the reservations requested by the secondary trades, namely plumber, electrician, carpenter, etc.

The contractor will also have to all the plugs, packings and jams whatever the importance to ensure the tightness, the firebreaks of the elements considered and the junction of all the works of the finishing work.

4.6.3.2 Sheaths

The company will have to supply and install all the penetration and evacuation ducts necessary for the realization of the various connections. Before performing this service, it is responsible for contacting all the concessionary services itself, so as not to omit sleeves.

In the event of failure on his part, all inherent costs will be borne by him. The sleeves will go, in particular from the facades to the technical rooms.

Location: according to plans of the different technical bodies

4.6.3.3 Technical bases

In the form of reinforced concrete plinths cast in smooth formwork, fine floated top, incorporation or sealing of materials provided by the technical lots. These bases will be implemented on a layer of anti-vibration insulation adapted to the vibratory characteristics of the device that will be installed on it.

Dimensions according to the plans of the various technical bodies. The beds will be placed on anti-vibration cork.

Location: according to the needs of the technical bodies, especially on the technical terraces

4.6.3.4 Thresholds

The contractor must produce the thresholds in finished concrete, allowing the installation of the joinery thresholds including the way of rejingots, slope and possible drip edges and any appropriate constraints.

The threshold nose will not exceed 2 cm in height for reasons of disabled accessibility.

Service also including the supply and installation of blue stone thresholds for busy entrances to shops and main office entrances

Location: All exterior access and according to plans.

4.6.3.5 Elevator hooks

Supply and implementation of elevator hooks stamped with characteristics in accordance with the elevator operator's requests.

Location: According to technical plans

4.6.3.6 Expansion joints

Expansion joints will be provided in the shell of the building as indicated on the plans.

All vertical and horizontal expansion joints will comply with the requirements relating to the fire resistance of the structure.

The watertightness can be reinforced by the supply and implementation during the casting of rubber or plastic seals. The final closure of the joints will be achieved by a flexible silicone or polyurethane type gasket Illmod series from Ets ISOVER or equivalent product.

4.6.3.7 Studs

Supply and installation of CRET type studs or equivalent to the right of the expansion joints in order to ensure the sliding of the slab or beam on the support.

Location: according to plans, as required

4.6.3.8 Fire seals

All expansion-contraction joints, vertical and horizontal, must be fitted with fire-stop joints to ensure the continuity of the fire-stop.

In elevated sails and floors, an open joint is provided but with perfectly straight sharp edges.

This seal is closed by a flexible material materializing the seal and which must not be susceptible to slow combustion or hydrophilic.

Gas tightness is ensured by a mastic, the whole being protected by a metal element. Expansion joint caulking test reports must be provided.

4.6.3.9 Add-on expansion joint cover for aluminum floors

Works including in particular:

- Installation of a polyurethane foam joint backing
- Tightening the seal with the 1st category sealant pump
- Supply and installation of a flat aluminum expansion joint cover, fixing clips, including all cuts and fittings, all details and all execution constraints

Location: Project expansion joints in the floor painting areas, according to plans

4.6.3.10 Wall mounted aluminum expansion joint cover

Works including in particular:

- Installation of a polyurethane foam joint backing
 - Tightening the seal with the 1st category sealant pump
 - Supply and installation of a flat aluminum expansion joint cover with flexible elastomer tape, fixing clips, including all cuts and fittings, all details and all execution constraints.
- Type and color according to the architect's request

Location: Project wall expansion joints in areas with floor paint, according to plans

4.6.3.11 Miscellaneous works

The following works are due by the shell:

- holes, hoppers, seals,
- reservations of all kinds and in particular those of technical packages,
- horizontal and vertical rebates,
- caulking around the frames,
- installation of sleeves of all types and sections,
- passage of natural and mechanical ventilation,
- concrete filling of the reservations in the walls and floors after passing the various bodywork (continuity of fire-rated quality, sound insulation and surface finish will be ensured),

Provide for all installation constraints to avoid cracking, especially between materials of different natures.

Location: Entire project

4.7 TERRACE WORKS

4.7.1 Acroterions

Acroterions in reinforced concrete including subsection, cladding, height according to plan. These structures will include the gaskets necessary for good performance as well as spoilers, slope systems and reservations necessary for the proper execution of the waterproofing work.

Fractionation joints of the high parapets must be provided in order to comply with the provisions of the NF P 10-202-2 (DTU 20.1) which limits the length between expansion joints, for these protruding elements, to 6m in humid regions, all specifying the density of reinforcement to be implemented

These will be self stable and will not be braced.

Formwork type 4. Reinforcement according to calculation and DTU 20.1

Location: on the outskirts of building terraces

4.7.2 Edicules

Realization of elevator kiosks (if not included in the sails station), all ventilation kiosks necessary for technical lots, in particular DF and AF (including concrete slab covers chimney). The realization of this service can be offered in masonry.

The contractor will have to incorporate the grids provided by the Metallery lot.

The support must be able to receive a coated-type finish: sanded concrete or coated masonry.

4.7.3 Bases - Channels - Various solid masses

The contractor must carry out all civil engineering works relating to the equipment of technical rooms, in particular the machinery for elevators, hoists, etc.

He also owes the bases and concrete blocks of reinforced gravel under technical equipment including all subjugations of neat formwork, placed on resilient anti-vibration mattress for VMC and at the request of technical lots.

The beds must be placed on anti-vibration cork.

Location: According to plans of technical lots

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT N ° 2 - LARGE WORKS

OFFICE BUILDING

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation of services related to overheads as defined below. This list is not exhaustive. In addition, the contractor must take cognizance of the premises and follow the site installation plan.				
	General costs				
	These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.			
	_ Tests (Soil, concrete specimen tests, Head load tests Ens.				
	_ Assurance TRC	To us.			
	Prorata account	To us			
	The contractor for this lot must take into account the pro rata accounts for: payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	Studies				
	The calculations and execution plans for concrete to be established, for the entire Ens. (Technical studies)				
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				
	TOTAL GENERALITES				
4	<u>WORKS DESCRIPTIONS</u>				
4.1	<u>Layout and staking</u>	To us.			
	TOTAL 4.1				
4.2	<u>Earthworks</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS				
	YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase	To us.			
	Excavations in holes, ditches and trenches	m3			
	Provisional platform (vrd lot)	m2			
	Embankments	m3			
	Land evacuation	m3			
	Land storage	m3			
	Drain	ml			
	Earth belt	ml			
	TOTAL 4.2				
4.3	Foundation works				
4.3.1	Large concrete	m3			
4.3.2	Clean concrete	m3			
4.3.3	Insulated soles				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 1	m ²			
	_ HA steel	kg			
4.3.4	Raft				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 1	m ²			
	_ HA steel	kg			
	TOTAL 4.3				
4.4	Structures				
4.4.2	Longrines				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.4.3	Elevator pits				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	_ Waterproof	m ²			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.4.4	Low load-bearing slab				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.4.5	EP collection sheet				
	Earthworks	m3			
	General platform	m ²			
	Sand bed	m ²			
	Raft:				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	BA sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	Waterproofing water repellent coating	m ²			
	TOTAL 4.4				
	Networks under slabs	To us.			
	TOTAL 4.5				
	TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE				
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.4	Stairs				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.1.6	BA solar shading				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	_ HA steel	kg			
4.6.2.2	Lintels				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.4	Prefabricated BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 Ground floor				
4,6	<u>Superstructure R+1</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.4	Stairs				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.1.6	BA solar shading				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m3			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.4	Prefabricated BA floor				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 R+1				
4.6	<u>Superstructure R+2</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.4	Stairs				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.1.6	BA solar shading				
	_ Concrete C40 / 50	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.4	Prefabricated BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 R+2				
4,6	<u>Superstructure R+3</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.4	Stairs				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.1.6	BA solar shading				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.6.2.4	Prefabricated BA floor				
	_Concrete C30 / 37	m3			
	_Formwork Type 4	m²			
	_HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 R+3				
4.7	Terraced structures				
4.7.1	Acroterions				
	_Concrete C30 / 37	m3			
	_Formwork Type 4	m²			
	_HA steel	kg			
4.7.2	Edicules				
	_Concrete C30 / 37	m3			
	_Formwork Type 4	m²			
	_HA steel	kg			
4.7.3	Bases - gutters - miscellaneous	To us.			
	TOTAL 4.8 Terraced structures				
	TOTAL SUPERSTRUCTURE				
	TOTAL 1 OFFICE BUILDING				

**CITE ADMINISTRATIVE -
- COTONOU -**

QUANTITATIVE

LOT n ° 2 - LARGE WORKS

CONFERENCE CENTER BUILDING

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation of related services overheads as defined below. This list is not exhaustive.				
	In addition, the contractor must take cognizance of the premises and refer to the site installation plan				
	<u>General costs</u>				
	These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.	1,00		
	_ Tests (Soil, concrete specimen tests, Tê load tests Ens.		1,00		
	_ Assurance TRC	To us.	1,00		
	<u>Prorata account</u>	To us	1,00		
	The contractor for this lot must take into account the pro rata accounts for:				
	payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	<u>Studies</u>				
	Calculations and execution plans for concrete to be established, for the entire project	To us.	1,00		
	(Technical studies)				
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.	1,00		
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				
	TOTAL GENERALITES				CFA
4	<u>WORKS DESCRIPTIONS</u>				
4.1	<u>Layout and staking</u>	To us.	1,00		

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
TOTAL 4.1					
4.2	<u>Earthworks</u>				
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase	To us.	1,00		
	Excavations in holes, ditches and trenches	m3	817,20		
	Provisional platform (vrd lot)	m2	0,00		
	Embankments	m3	163,44		
	Land evacuation	m3	653,76		
	Land storage	m3	163,44		
	Drain	ml	160,00		
	Earth belt	ml	160,00		
TOTAL 4.2					
4.3	<u>Foundation works</u>				
4.3.1	Large concrete	m3	500,00		
4.3.2	Clean concrete	m3	31,00		
4.3.3	Insulated soles				
	_ Concrete C30 / 37	m3	150,00		
	_ Formwork Type 1	m ²	250,00		
	_ HA steel	kg	7 200,00		
4.3.4	Raft				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 1	m ²			
	_ HA steel	kg			
TOTAL 4.3					
4.4	<u>Structures</u>				
4.4.1	Basins	Included in the site works			
	Earthworks	m3			
	General platform	m ²			
	Sand bed	m ²			
	Raft:				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	BA statements				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	Waterproofing water repellent coating	m ²			
4.4.2	Longrines				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.4.3	Elevator pits				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	_ Waterproof	m ²			
4.4.4	Low load-bearing slab				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	TOTAL 4.4				- CFA
	<u>Networks under slabs</u>	To us.			
	TOTAL 4.5				- CFA
	TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE				- CFA
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.1.6	BA solar shading				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m3			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.2	Lintels				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.4	Prefabricated BA floor				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 Ground floor				- CFA
4.7	<u>Terraced structures</u>				
4.7.1	Acroterions				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.7.2	Edicules				
	_ Concrete C30 / 37	m ³			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.7.3	Bases - gutters - miscellaneous	To us.			
	TOTAL 4.8 Terraced structures				- CFA
	TOTAL SUPERSTRUCTURE				- CFA
	TOTAL CONFERENCE				- CFA

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT n° 2 - LARGE WORKS

MEDICAL CENTER BUILDING

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation of related services				
	overheads as defined below. This list is not exhaustive.				
	In addition, the contractor must take cognizance of the premises and refer				
	to the site installation plan				
	<u>General costs</u>				
	These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.			
	_ Tests (Soil tests, concrete specimen tests, load tests in pile head ...)	To us.			
	_ Assurance TRC	To us.			
	<u>Prorata account</u>	To us			
	The contractor for this lot must take into account the pro rata accounts for:				
	payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	<u>Studies</u>				
	Calculations and execution plans for concrete to be established, for the entire project	To us.			
	(Technical studies)				
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				
	TOTAL GENERALITES				CFA
4	<u>WORKS DESCRIPTIONS</u>				
4.1	<u>Layout and staking</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
TOTAL 4.1					
4.2	<u>Earthworks</u>				
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase				
	Excavations in holes, ditches and trenches				
	Provisional platform (vrd lot)				
	Embankments				
	Land evacuation				
	Land storage				
	Drain				
	Earth belt				
TOTAL 4.2					
4.3	<u>Foundation works</u>				
4.3.1	Large concrete				
4.3.2	Clean concrete				
4.3.3	Insulated soles				
	- Concrete C30 / 37				
	- Formwork Type 1				
	- HA steel				
TOTAL 4.3					
4.4	<u>Structures</u>				
4.4.2	Longrines				
	- Concrete C30 / 37				
	- Formwork Type 4				
	- HA steel				
4.4.4	Low load-bearing slab				
	- Concrete C30 / 37				
	- Formwork Type 4				
	- HA steel				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
TOTAL 4.4					
<u>Networks under slabs</u>					
TOTAL 4.5					
TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE					CFA
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	Concrete C40 / 50	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.1.3	Sails				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.2.2	Lintels				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.2.3	BA floor				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
TOTAL 4.6 Ground floor					
4.7	<u>Terraced structures</u>				
4.7.1	Acroterions				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.7.2	Edicules				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.7.3	Bases - gutters - miscellaneous	To us.			
	TOTAL 4.8 Terraced structures				
	TOTAL SUPERSTRUCTURE				- CFA
	TOTAL CENTRE MEDICAL				- CFA

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT n° 2 - LARGE WORKS

GUERITE BUILDING

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation related services				
	overheads as defined below. This list is not exhaustive.				
	In addition, the contractor must take note of the premises refer				
	to the site installation plan				
	<u>General costs</u>				
	These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.			
	_ Tests (Soil tests, concrete specimen tests, load tests at the head of piles ...)	To us.			
	_ Assurance TRC	To us.			
	<u>Prorata account</u>	To us			
	The contractor for this lot must take into account the pro rata accounts for:				
	payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	<u>Studies</u>				
	Calculations and execution plans for concrete to be established, for the entire project (Technical studies)	To us.			
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				- CFA
	TOTAL GENERALITES				- CFA
4	<u>WORKS DESCRIPTIONS</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.1	<u>Layout and staking</u>	To us.			
	TOTAL 4.1				
4.2	<u>Earthworks</u>				
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase	To us.			
	Excavations in holes, ditches and trenches	m3			
	Provisional platform (vrd lot)	m2			
	Embankments	m3			
	Land evacuation	m3			
	Land storage	m3			
	Drain	ml			
	Earth belt	ml			
	TOTAL 4.2				- CFA
4.3	<u>Foundation works</u>				
4.3.1	Large concrete	m3			
4.3.2	Clean concrete	m3			
4.3.3	Insulated soles				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 1	m ²			
	_ HA steel	kg			
	TOTAL 4.3				
4.4	<u>Structures</u>				
4.4.2	Longrines				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.4.4	Low load-bearing slab				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	TOTAL 4.4				
	<u>Networks under slabs</u>	To us.			
	TOTAL 4.5				- CFA
TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE					- CFA
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.2	Lintels				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 Ground floor				- CFA
4.7	<u>Terraced structures</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.7.1	Acroterions				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.7.2	Edicules				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.7.3	Bases - gutters - miscellaneous	To us.			
	TOTAL 4.8 Terraced structures				- CFA
	TOTAL SUPERSTRUCTURE				- CFA
	TOTAL GUERITE				- CFA

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT n° 2 - LARGE WORKS

LOCAL TECHNICAL BUILDING

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation of services related to overheads as defined below. This list is not exhaustive. In addition, the contractor must take cognizance of the premises and follow the site installation plan.				
	<u>General costs</u>				
	These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.			
	_ Tests (Soil tests, concrete specimen tests, Head load tests Ens.				
	_ Assurance TRC	To us.			
	<u>Prorata account</u>	To us			
	The contractor for this lot must take into account the pro rata accounts for: payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	<u>Studies</u>				
	The calculations and execution plans for concrete to be established, for the entire		Ens. (Technical studies)		
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				- CFA
	TOTAL GENERALITES				- CFA
4	<u>WORKS DESCRIPTIONS</u>				
4.1	<u>Layout and staking</u>	To us.	1,00		
	TOTAL 4.1				- CFA
4.2	<u>Earthworks</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T.(H.T)
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase	To us.			
	Excavations in holes, ditches and trenches	m3			
	Provisional platform (vrd lot)	m2			
	Embankments	m3			
	Land evacuation	m3			
	Land storage	m3			
	Drain	ml			
	Earth belt	ml			
	TOTAL 4.2				- CFA
4.3	Foundation works				
4.3.1	Large concrete	m3			
4.3.2	Clean concrete	m3			
4.3.3	Insulated soles				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 1	m ²			
	_ HA steel	kg			
	TOTAL 4.3				- CFA
4.4	Structures				
4.4.2	Longrines				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.4.4	Low load-bearing slab				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
	TOTAL 4.4				- CFA
	Networks under slabs	To us.			
	TOTAL 4.5				- CFA

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE					
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	_ Concrete C40 / 50	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.3	Sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.2	Lintels				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
TOTAL 4.6 Ground floor					- CFA
4.7	<u>Terraced structures</u>				
4.7.1	Acroterions				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
TOTAL 4.8 Terraced structures					- CFA

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T.(H.T)
	TOTAL SUPERSTRUCTURE				
	TOTAL LOCAL TECHNIQUE				CFA

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT n ° 2 - LARGE WORKS

MAQUIS

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u> The company of this Lot will be responsible for the implementation of related services overheads as defined below. This list is not exhaustive. In addition, the contractor must be aware of the location and refer to the site installation plan				
	General costs These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.			
	_ Tests (Soil tests, concrete specimen tests, Head load tests piles ...)	To us.			
	_ Assurance TRC	To us.			
	Prorata account	To us			
	The contractor for this lot must take into account the pro rata accounts for: payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	Studies The calculations and execution plans for concrete to be established, for the entire pro		Ens. (Technical studies)		
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				
	TOTAL GENERALITES				CFA
4	<u>WORKS DESCRIPTIONS</u>				
4.1	<u>Layout and staking</u>	To us.			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
TOTAL 4.1					
4.2	<u>Earthworks</u>				
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase	To us.			
	Excavations in holes, ditches and trenches	m3			
	Provisional platform (vrd lot)	m2			
	Embankments	m3			
	Land evacuation	m3			
	Land storage	m3			
	Drain	ml			
	Earth belt	ml			
TOTAL 4.2					
4.3	<u>Foundation works</u>				
4.3.1	Large concrete	m3			
4.3.2	Clean concrete	m3			
4.3.3	Insulated soles				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 1	m ²			
	_ HA steel	kg			
TOTAL 4.3					
4.4	<u>Structures</u>				
4.4.2	Longrines				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			
4.4.4	Low load-bearing slab				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m ²			
	_ HA steel	kg			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
TOTAL 4.4					
	<u>Networks under slabs</u>	To us.			
TOTAL 4.5					
- CFA					
TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE					
- CFA					
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	Concrete C40 / 50	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.1.3	Sails				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.2.2	Lintels				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.2.3	BA floor				
	Concrete C30 / 37	m3			
	Formwork Type 4	m ²			
	HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
TOTAL 4.6 Ground floor					
4.7	<u>Terraced structures</u>				
4.7.1	Acroterions				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	. Concrete C30 / 37	m3			
	. Formwork Type 4	m²			
	. HA steel	kg			
4.7.2	Edicules				
	. Concrete C30 / 37	m3			
	. Formwork Type 4	m²			
	. HA steel	kg			
4.7.3	Bases - gutters - miscellaneous	To us.			
	TOTAL 4.8 Terraced structures				
	TOTAL SUPERSTRUCTURE				- CFA
	TOTAL MAQUIS				- CFA

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT n ° 2 - LARGE WORKS

OPENING OF THE SITE

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation of related services overheads as defined below. This list is not exhaustive.				
	In addition, the contractor must take cognizance of the premises and refer to the site installation plan				
	<u>General costs</u>				
	These are the costs relating to all of the LARGE WORKS, namely				
	_ Technical control	To us.			
	_ Tests (Soil tests, concrete specimen tests, load tests in pile head ...)	To us.			
	_ Assurance TRC	To us.			
	<u>Prorata account</u>	To us			
	The contractor for this lot must take into account the pro rata accounts for:				
	payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	<u>Studies</u>				
	Calculations and execution plans for concrete to be established, for the entire project (Technical studies)	To us.			
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				_ CFA
	TOTAL GENERALITES				_ CFA
4	<u>WORKS DESCRIPTIONS</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.1	<u>Layout and staking</u>	To us.			
	TOTAL 4.1				- CFA
4.2	<u>Earthworks</u>				
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase	To us.			
	Excavations in holes, ditches and trenches	m3			
	Provisional platform (vrd lot)	m2			
	Embankments	m3			
	Land evacuation	m3			
	Land storage	m3			
	Drain	ml			
	Earth belt	ml			
	TOTAL 4.2				- CFA
4.3	<u>Foundation works</u>				
4.3.1	Large concrete	m3			
4.3.2	Clean concrete	m3			
4.3.3	Insulated soles				
	- Concrete C30 / 37	m3			
	- Formwork Type 1	m ²			
	- HA steel	kg			
	TOTAL 4.3				- CFA
4.4	<u>Structures</u>				
4.4.1	Basins				
	Earthworks	m3			
	General platform	m ²			
	Sand bed	m ²			
	Raft:				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
	BA statements				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			
	Waterproofing water repellent coating	m²			
4.4.6	Drinking water supply tank				
	Earthworks	m3			
	General platform	m²			
	Sand bed	m²			
	Raft:				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			
	BA sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			
	Membrane tightness	m²			
	Resin waterproofing	m²			
4.4.7	Fire station water supply tank				
	Earthworks	m3			
	General platform	m²			
	Sand bed	m²			
	Raft:				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			
	BA sails				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			
	Waterproofing water repellent coating	m²			
	TOTAL 4.4				
	<u>Networks under slabs</u>	To us.			
	TOTAL 4.5				- CFA
	TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE				- CFA
4.6	Ground floor superstructure				
4.6.1	Vertical structures				
	_ HA steel	kg			
4.6.2.4	Metal posts	kg			
4.6.2	Horizontal structures				
4.6.2.3	BA floor				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 Ground floor				
4.7	Terraced structures				
4.7.1	Acroterions				
	_ Concrete C30 / 37	m3			
	_ Formwork Type 4	m²			
	_ HA steel	kg			
	TOTAL 4.8 Terraced structures				
	TOTAL SUPERSTRUCTURE				- CFA
	TOTAL CONFERENCE				- CFA

**CITE ADMINISTRATIVE
- COTONOU -**

QUANTITATIVE

LOT n° 2 - LARGE WORKS

RESTAURANT BUILDING

June 2018

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
1	<u>GENERALITES</u>				
1,1	<u>GENERALITES</u>				
	The company of this Lot will be responsible for the implementation of related services				
	overheads as defined below. This list is not exhaustive.				
	In addition, the contractor must take cognizance of the premises and refer				
	to the site installation plan				
	<u>General costs</u>				
	These are the costs relating to all of the LARGE WORKS, namely:				
	_ Technical control	To us.			
	_ Tests (Soil tests, concrete specimen tests, load tests in pile head ...)	To us.			
	_ Assurance TRC	To us.			
	<u>Prorata account</u>	To us			
	The contractor for this lot must take into account the pro rata accounts for:				
	payment of invoices for the services listed below				
	_ Electric site subscription				
	_ Site water subscription				
	_ Site cleaning and delivery				
	_ The water supply				
	_ The site's electricity supply				
	_ Site supervision				
	_ Maintenance of sanitary facilities and site traffic areas ...				
	_ This list is not exhaustive				
	<u>Studies</u>				
	Calculations and execution plans for concrete to be established, for the entire project	To us.			
	(Technical studies)				
	TOTAL 1.0				
3	<u>SITE INSTALLATION</u>	To us.			
	Site signage				
	Site fence				
	Temporary construction site buildings				
	TOTAL 3.0				
	TOTAL GENERALITES				CFA
4	<u>WORKS DESCRIPTIONS</u>				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.1	<u>Layout and staking</u>				
	TOTAL 4.1				
4.2	<u>Earthworks</u>				
	NOTE: THE CONTRACTOR OF THIS LOT WILL TAKE ALL NECESSARY PROVISIONS FOR PERFORMANCE OF INFRASTRUCTURE WORKS YC BOTTOM LINE AND TUBING SI NECESSARY				
	Water evacuation during the construction phase				
	Excavations in holes, ditches and trenches				
	Provisional platform (vrd lot)				
	Embankments				
	Land evacuation				
	Land storage				
	Drain				
	Earth belt				
	TOTAL 4.2				
4.3	<u>Foundation works</u>				
4.3.1	Large concrete				
4.3.2	Clean concrete				
4.3.3	Insulated soles				
	_ Concrete C30 / 37				
	_ Formwork Type 1				
	_ HA steel				
	TOTAL 4.3				
4.4	<u>Structures</u>				
4.4.2	Longrines				
	_ Concrete C30 / 37				
	_ Formwork Type 4				
	_ HA steel				
4.4.4	Low load-bearing slab				
	_ Concrete C30 / 37				
	_ Formwork Type 4				
	_ HA steel				

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.4.5	EP collection sheet				
	Earthworks				
	General platform				
	Sand bed				
	Raft:				
	- Concrete C30 / 37				
	- Formwork Type 4				
	- HA steel				
	BA sails				
	- Concrete C30 / 37				
	- Formwork Type 4				
	- HA steel				
	Waterproofing water repellent coating				
	TOTAL 4.4				
	<u>Networks under slabs</u>				
	TOTAL 4.5				- CFA
	TOTAL EARTHWORKS - FOUNDATIONS - INFRASTRUCTURE				- CFA
4.6	<u>Ground floor superstructure</u>				
4.6.1	Vertical structures				
4.6.1.1	Columns				
	- Concrete C40 / 50	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.6.1.3	Sails				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.6.1.5	Masonry - partitions				
	Hollow blocks th. = 0.20 m including lintels and stiffeners	m ²			
4.6.1.6	BA solar shading				
	- Concrete C40 / 50	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.6.2	Horizontal structures				
4.6.2.1	Beams				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.6.2.2	Lintels				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.6.2.3	BA floor				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			

N° Art.	DESIGNATION	U.	Qt.	P.U.	P.T(H.T)
4.6.2.4	Prefabricated BA floor				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.6.3	Miscellaneous structures in superstructure				
4.6.3.1	Drillings, reservations, plugging, caulking	To us.			
4.6.3.2	Sheaths	To us.			
4.6.3.3	Bases	To us.			
4.6.3.4	Thresholds	To us.			
4.6.3.5	Elevator hooks	To us.			
4.6.3.6	Expansion joints	ml			
4.6.3.7	Studs	To us.			
4.6.3.8	Fire seals	ml			
4.6.3.9	Floor expansion joint covers	ml			
4.6.3.10	Wall expansion joint covers	ml			
4.6.3.11	Miscellaneous works	To us.			
	TOTAL 4.6 Ground floor				
4.7	<u>Terraced structures</u>				
4.7.1	Acroterions				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.7.2	Edicules				
	- Concrete C30 / 37	m3			
	- Formwork Type 4	m ²			
	- HA steel	kg			
4.7.3	Bases - gutters - miscellaneous	To us.			
	TOTAL 4.8 Terraced structures				CFA
	TOTAL SUPERSTRUCTURE				CFA
	TOTAL RESTAURANT				CFA