

PART 1 – GENERAL REQUIREMENTS

1. GENERAL

1.1 Reference to other Chapters

Throughout the Specifications and Bills of Quantities, references are occasionally made to other sections. All such references are intended solely for the convenience of those using the documents, and the absence of a reference in no manner excludes the application of every other section in the Specifications which may, in the opinion of the Engineer, have any bearing upon the point in question, the intention being that the Contract Documents shall be read and applied as a whole.

1.2 General Scope of works

The Contractor shall furnish, except as otherwise expressly provided in the Contract, all materials, equipment and labour to complete the work in accordance with the terms of this Contract, Conditions of Contract, Technical Specifications, Bill of Quantities and drawings.

Without in any way limiting the scope of the foregoing, the work shall include all necessary clearing and grubbing; excavation; backfilling; ditching; sheeting; shoring, bracing and supporting; preparing and maintaining access roads; surveying and field investigations; supplying, transporting and installing necessary material and equipment; testing and supplying and placing all construction materials necessary to up-grade and/or restore monument and its area including all associated works as specified herein and as indicated on the Contract Drawings [if any] within the terms of this Contract.

The Contractor shall also furnish all equipment, tools, labour and materials to support, protect, and maintain all existing features and structures. He shall also repair all damage to such utilities, features and structures as may be caused by his operations under this Contract. During the works removal and disposal of all excess materials, and on the completion of construction the Contractor shall leave the entire work in a clean and orderly condition to the satisfaction of the Engineer.

1.3 Project Locations and brief scope of works

- The road that will go through improvement is located in the UN Buffer Zone in Lefka/Lefke-Apliki/Aplic.
- The road footprint includes 7.0 meters for the road pavement and 2.0 meters for road shoulders on both sides (up to 1.0 m on each side). Ditches will be constructed where required on both sides of the road for rain water conveyance.
- Typical cross-section of the road will include: 30 cm of sub-base, 20 cm of base (plant mix material), 7 cm of binder course and 5 cm of wearing course.
- Box culverts will be constructed at locations indicated in order to facilitate flow of water in the low areas and valleys.
- Road signs and road markings will be placed for traffic management and safety.
- Guard rails shall be installed.
- Pipes will be placed at intervals along the road for future use of utilities.

2 CONTRACTOR TO INVESTIGATE

No plea for ignorance of conditions that exist or that may thereafter exist or of conditions or difficulties that may be encountered in the execution of the work under this Contract as a result of non-cognizance of local conditions, laws and regulations and/or failure to make the necessary examinations and investigations shall be accepted as an excuse for any failure or omission on the part of the Contractor to fulfil his contractual obligations and in every detail all the requirements of the said Contract Documents, or shall be accepted as a basis for any claims whatsoever or for extension of time.

The Contractor shall examine the Tender Documents and make personal examination of the site in order to acquaint himself with the conditions under which he shall be obliged to work and with the nature and the requirements of the work to be performed prior to submission of Tender.

The Contractor shall also make all the investigations necessary to thoroughly inform him regarding all facilities for access to the site, characteristics of the site, and he may require for his construction operations. The conditions affecting the supply of labour, water, electricity for temporary lighting and power as well as any local regulations and restrictions and generally any matters which may affect his tender as no claim on the ground of lack of knowledge in any respect will be entertained.

3. SITE CONDITIONS – GENERAL COORDINATION

3.1 General

The Employer does not guarantee the correctness of the designations of any materials described in this Clause and elsewhere nor any interpretations, deductions or conclusions relative to site conditions.

3.2 Climate

Cyprus has a typical Mediterranean climate with a marked seasonal variation characterized by wet winters and very low rainfall during the summer months of June to September. January and February tend to be the coldest month; the hottest months are July and August which display average daily temperature values above the thirties.

3.3 Protection and diversion of existing services

The Contractor shall be responsible for notifying the service authorities and the Engineer of his intention to expose the services and where so required by the service authority shall not commence operations until the service authority is represented on Site.

The Contractor shall excavate, protect until backfill and backfill in a manner so as not to damage the services. As soon as a service is encountered in the excavation whether previously located or discovered during the course of excavation for the Permanent Works the Contractor shall forthwith call the attention of the Engineer and the appropriate service authority thereto. The Contractor shall be responsible for maintaining all such services including natural and artificial watercourses encountered by him in the construction of the Works and shall make good any damage caused directly or indirectly by his activities.

3.4 Protection of antiquities and fossils

As soon as antiquities or fossils are encountered during the course of any excavation, the Contractor shall forthwith call the attention of the Engineer and the appropriate authority thereto.

3.5 Special Conditions and Hazards

The Contractor shall observe the following conditions when drawing up his proposal for traffic access to the Sites and Working Sites and such proposals shall be submitted to the Engineer for his approval before implementation.

3.6 Traffic Arrangements

The Contractor shall seek information on and comply with all requirements and recommendations of the police regarding traffic safety measures. The Contractor shall arrange alternative temporary access with the owners and occupiers of properties and shall submit details of such agreed temporary access arrangements where necessary.

3.7 Disposal of surplus excavated materials

Surplus excavated material and debris arising from the Works shall be dumped on agreed disposal sites at the expenses of the Contractor. The Contractor shall indemnify the Employer against any claims arising from unauthorized disposal of such materials.

3.8 Water Control

Without prejudice to other stipulations in the Contract, all constraints related to the presence of or risks caused by water, all additional work which may prove necessary on this account, all damage caused by water, all pumping in all structures not mentioned in the Contract which the Contractor may find he has to build for water control purposes shall be at the expense of the Contractor.

Without prejudice or other stipulations in the Contract, the Contractor shall be responsible for all damage caused to the foundations of the structure or any part of the Works and occasioned by floods, surface water or runoff, or by failure of any part of the diversion or protection works carried out by the Contractor. Any repairs that are necessary will be carried out at his own expense.

Before any works are begun, the Contractor shall submit to the Engineer's approval the methods and arrangements he proposes to apply in order to protect the Works, unless these are imposed by the design incorporated in the Contract. Such Engineer's approval shall not relieve the Contractor of his obligations and responsibilities under this Section.

4. REGULATIONS

The Contractor shall comply with all provisions of the rules, regulations and orders of local authorities, utilities and the Employer applicable to the work under the Contract. The Contractor shall co-operate with the relevant entities in promptly furnishing any information that may be required by such entities. It shall be the obligation of the Contractor to keep himself informed of these rules, regulations, and orders and the Contractor shall make the requirements of this article a part of any sub- contract he may enter into. The Contractor is to allow in his prices for complying with local regulations with regard to access to and from the site.

5. STANDARDS, CODES AND ABBREVIATIONS

General Standard specifications and codes of the following listed authorities wherever cited herein are referred to by use of the abbreviations shown below. All materials and workmanship shall comply with requirements of applicable codes.

The following abbreviations are used in these Specifications:

E.N	European Standards
CYS	Cyprus Standards
B.S.	British Standards
T.S.	Turkish Standards
D.I.N	German Standards [Deutsches Institute fur Normung]
A.A.S.H.T.O	American Association of State Highway and Transportation Officials
A.C.I	American Concrete Institute
A.N.S.I	American National Standard Institute
A.S.T.M.	American Society for Testing of Materials
I.S.O	International Standard Organization

Where reference is made to a Specification by one of the above mentioned or other Association, it is understood that the latest revision thereof shall apply. In case of conflict, this Specification shall take precedence over the above noted specifications.

6. DRAWINGS AND SPECIFICATIONS

The works are to be built of the materials and to the sizes, dimensions and grades as called for in the Specifications and Contract Drawings and such other Drawings as may be added from time to time by the Engineer during the progress of the work. The only drawings referred to in these Specifications are the drawings provided by the Employer to the Contractor.

Additional working drawings showing details in accordance with which the work is to be constructed will be furnished from time to time by the Contractor and shall then become a part thereof after approval of the Engineer. The Contractor shall be governed by figured dimensions, as given on the Drawings. Where required dimensions are not shown in figures, the Contractor shall obtain such portion of the work to which they refer.

7. SUBMISSION OF WORKING DRAWINGS, "AS BUILT" DRAWINGS BY CONTRACTOR

7.1 WORKING DRAWINGS

For the portions of the work done under this Contract, where detail drawings are to be supplied by the Contractor, Two (2) copies of same plus as many copies as the Contractor may require for his own use with Specifications shall be submitted to the Engineer for review. All drawings shall be in the English language, and all dimensions shall be in Metric system. Symbols shall be in accordance with approved Standards. All drawings submitted for approval shall conform to ISO paper sizes and recommended to be traced on A1 (840 mm x 594 mm) and/or A3 (297 mm x 420 mm) size paper. Title block and numbering shall be approved by the Engineer.

7.2 Additional Drawings

In addition the Contractor shall prepare and deliver to the Engineer prior to construction for information the drawings for:

- performance of the Works as necessary for showing the construction methods,
- detailed drawings of concrete reinforcement and calculation works, as well as bar bending schedules,
- detailed drawings necessary for the performance of each part of the Works in accordance with the Contract.

The Contractor shall be responsible for the behaviour of the permanent works during the various phases of construction. He shall provide all equipment and accessories and all working arrangements necessary to limit stresses on the Works, so that stability of the structures is not threatened and so that stresses and deformation remain within acceptable limits.

7.3 Submission and approval

The Contractor shall submit in one hard copy and one electronic copy to the Engineer, for review, information or approval, all brochures, designs and drawings which has to be prepared by the Contractor (except for "As-Built"). The Engineer will analyze all such designs and drawings, will appraise them as to whether they are reasonable and consistent with the Construction Drawings, will approve if requested and will order changes when deemed necessary.

Within seven (7) days after submission of the drawings, the Engineer will advise the Contractor of his conclusions regarding the drawings.

The Contractor shall bring to the attention of the Engineer any variation to the Contract in the document submitted for approval. Review of the Contractor's drawings by the Engineer shall not relieve the Contractor of the responsibility for the correctness thereof, nor from the results arising from any error or omission of details of design. Review of Drawings and Specification shall, in every case, be subject to final approval of the equipment and materials after they have been put in commission, all guarantees have been fulfilled and the general operation of the equipment and materials has been found satisfactory to the Engineer.

7.4 AS BUILT DRAWINGS

After the work has been completed, the Contractor shall furnish to the Engineer 2 copies of drawings (hard copies) and CD-ROM prepared from conditions as surveyed during construction, showing the Works as constructed together with all other information that may either be required or be useful for the operation and maintenance of the Works in the future, such as alignment, depth and levels of utilities, dimensions and location of structures, size of pipelines and services encountered during excavation.

The "As-Built" Drawings shall be submitted for review and approval by the Engineer. The cost of preparing the As-Built Drawings as required under this subsection shall be deemed to be included by the Contractor in his unit rates for the various items in the Bill of Quantities and shall not be paid for separately.

8. CONSTRUCTION SAFETY

The contractor is obliged to carry out the works in accordance with the relevant and applicable laws and regulations pertaining to health & safety in the construction sector. The Health & Safety officer of the contractor shall be responsible to implement construction safety.

9. PROJECT SIGNBOARD AND PLAQUE

The Contractor shall manufacture one sign/notice board and erect these where directed by the Engineer within the working limits. The sign/notice board shall be 1.20 x 1.50 m. The sign/notice board shall have the indication as instructed by the Engineer. The Contractor shall erect the sign/notice board on suitable supports in positions within the site as directed by the Engineer. The sign/notice board shall be left in position and maintained during the works and the Defects Liability Period.

10. TEMPORARY FACILITIES

Starting from the site possession date, the Contractor shall have to bear the cost of management of all temporary facilities and/or works.

10.1 CONTRACTOR TEMPORARY FACILITIES

The Contractor shall provide and maintain on the site an office and adequate number of facilities for resting and sanitary purposes of his personnel of the Contract working on or associated with this project.

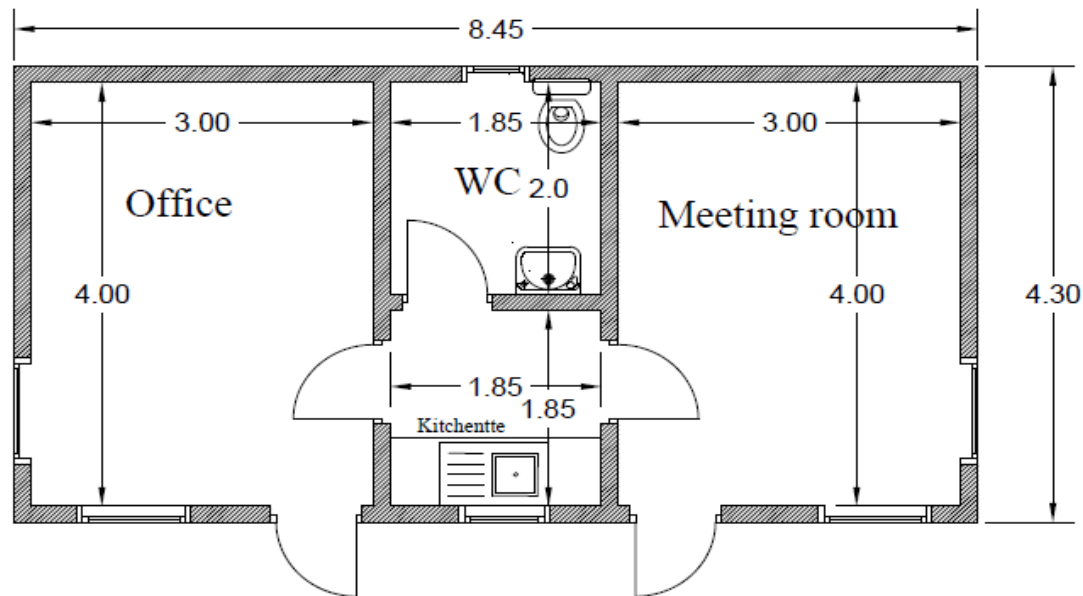
Temporary facilities must be kept clean and free from nuisance so as not to become a danger to the adjoining properties or to form grounds for complaints from property owners adjacent to the site. The Contractor shall provide proper and adequate lavatory accommodation for the workmen, satisfactory to the Engineer.

Further, the Contractor shall furnish and maintain all apparatus and equipment, such as ladders, scaffolds, ramps, runways, temporary stairs, derricks, hoists, elevators, chutes, etc., as required for the proper execution and progress of the work. Such facilities shall be strong and substantial and safe for the purpose for which they are to be used, shall meet all applicable requirements of governing authorities and the Engineer.

When temporary building facilities are no longer needed in construction they shall be promptly dismantled, unless otherwise specified or directed, and removed from the site.

10.2 Engineer Site/Field office (Lot B only)

The engineer's office shall be a prefabricated, modular and a portable one that can be manufactured elsewhere and installed on the site.



The office should be connected to water, sewage and electricity.

Internet connectivity and telephony are to be provided either with a land line or with at least 3-G GSM connection. 1 GSM telephone with dual sim-card - basic features and 1 GSM sim-card for the telephone (closed to international calls).

The office will be equipped with a hot water heater of 5lt capacity and 2 units air-conditioning of 18000BTU each. Furnishing will compose of 1 meeting table of 2.4mx1.2m with 8 chairs, an office desk, an office chair and two chairs. A board of 2x1 is to be installed in the meeting room wall.

A laptop computer with the following technical properties;

- PROCESSOR: Dual-core x86 CPU 2.4 GHZ or Faster, with AMD-V or Intel VT-X virtualization technology
- RAM: 4GB - INTERNAL STORAGE; 500GB - GRAPHIC CARD; Discrete 128Mb RAM; DISPLAY; 12" -15" with at least 1280x800resolution
- REMOVABLE MEDIA- DVD-RW Drive; LAN & WIRELESS Enabled
- Windows 7 Enterprise edition 32bit
- Symantec Endpoint Protection 2013
- Microsoft Office 2010

One combined printer/copier/scanner.

One water dispenser and its 19lt water bottle, one kettle for heating water.

Sufficient supplies of cups & glasses, coffee, tea, sugar etc.

Necessary stationery materials, such as papers, pencils, ink and rubbers, etc.

Measuring devices of various types and kinds.

Safety equipment such as hardhats (10no), shoes (10 pairs) and vests (15 no) shall be provided by the Contractor.

The Contractor shall be responsible for erecting, furnishing, making all utility connections and disconnections, winter heating, summer cooling, lighting, wall mounted socket outlets, maintaining and completely servicing the field office. Maintenance and upkeep of the office includes cleaning, repairs, consumables, toiletries and electricity & phone usage will be included.

After one month of the substantial completion being issued, the contractor will remove all from the site.

Payments will be made prorated at each payment certificate.

11. TEMPORARY WATER, POWER AND LIGHT

The Contractor shall provide all temporary water, power and light service required for his work. The Contractor shall make all necessary applications, obtain required permits and pay all fees and charges for such service and its use.

The Contractor shall furnish all wiring, lamps, switches, fuses, receptacles, etc., as may be required for his work. Temporary power and light circuits shall be thoroughly insulated and waterproof. The temporary power and light system shall be subject to the inspection and approval of the electricity authority. The Contractor shall provide sufficient lighting to ensure that, at all times safe working conditions are provided for all personnel on the work sites and security of the works area and public safety measures are adequate and effective.

All moving plant used during night operations shall be equipped with sufficient lights and reflectors and fluorescent markings to ensure safe working conditions. The submission to or approval by the Engineer of the Contractor's proposals for lighting shall not relieve the Contractor of any of his liabilities or obligations under the Contract.

12. HEALTH & SAFETY

The Contractor shall prepare a HS Plan prepared by the designated licensed HS officer and elaborate on the health safety risk matrix submitted at the bidding stage. The HS Officer shall supervise all aspects of health & safety on site and shall report monthly on any activity pertaining to health & safety.

Report should be written in good English and should be proof-read before submission.

The HS Officer shall sign the report. Printed and digital formats must be submitted. Upon approval of the report relevant payment shall be made.

13. ENVIRONMENTAL MANAGEMENT PLAN

The Contractor shall prepare an Environmental Management Plan (EMP) prepared by the designated Environmental Engineer and elaborate on the plan submitted at the bidding stage.

The Environmental Engineer shall supervise all aspects of the EMP and shall report monthly on any activity pertaining to the EMP. Report should be written in good English and should be proof-read before submission. The Environmental Engineer shall sign the report. Printed and digital formats must be submitted. Upon approval of the report relevant payment shall be made.

14. MONTHLY PROGRESS REPORT

The Contractor shall prepare a progress report every month. The report should show all the activities carried out with sketches, drawings, pictures, etc. Before and after photo documentation must be followed.

Report should be written in good English and should be proof-read before submission. The Project Engineer shall sign the report.

Printed and digital formats must be submitted. Upon approval of the report the IPC shall be processed by the Engineer.

15. CONSTRUCTION SCHEDULE

This construction schedule shall show clearly how the works shall be organized by section and the corresponding proposed progress on the main items, structures and sub-trades of the Contract. The Work program shall indicate the area of work, the plot number, the number of construction crews, plant and equipment to be employed, etc. The Engineer may require the Contractor to revise his proposed schedule at any time, as provided for in the General Conditions. The Contractor is advised that he shall not be permitted to work haphazardly throughout the whole area of the Contract but shall be required to complete several items of one section insofar as possible, before permitting that working crew to start working in another work of the next section.

16. WORK TO CONFORM

All work shall conform during its progress and on its completion, truly to the lines, levels and grades shown on the Drawings and shall be built in a thoroughly substantial and workmanlike manner, in accordance with the Drawings and Specifications subject to such modifications and additions as may be deemed necessary by the Engineer during its execution and in no case shall any work in excess of the requirements of the Drawings and Specifications be paid for unless ordered in writing by the Engineer.

17. LAYOUT OF WORK AND SURVEY

17.1 Reference points, lines and levels

The Contractor shall carry out surface surveys and shall establish marks on the surface and he will establish Bench Marks at appropriate locations on the site of the works. The Engineer shall check these surveys and marks. The Contractor shall be responsible for transferring the lines and levels from these points to all points of construction. The Contractor must set the line, levels and grade by means of surveyor's instruments or other approved means. Any work done without accurate line or levels having been established or without the supervision of an Inspector may not be estimated, measured or paid for and, if found to be inaccurate shall be corrected or removed and replaced at the Contractor's cost and expense.

17.2 Record of the Site Conditions before Construction

The Contractor shall perform topographical survey of the site within 28 days after the Commencement Date, prior to his first entry thereon, and record with details the existing layout, levels, site conditions. The survey shall include the condition of existing services and facilities, walls and circulations area, and also shall include photographs where appropriate and spot levels as necessary and written descriptions of the site conditions. The survey will be approved by the Engineer.

17.3 Elevations

The setting out by the Contractor shall include, but shall not be limited to, the preparation of topographical maps including coordinates system and/or axis, the installation of centre line stakes, grade and offset stakes, sight rails and batter boards. The Contractor shall be responsible for the true and proper setting out of the works and for the correctness of the position, levels, dimensions and alignment of all parts of the

works and for the provision of all necessary instruments and labour in connection therewith. The checking of the setting out of any lines or levels by the Engineer shall not in any way release the Contractor from his responsibility for the correctness therefore. The Contractor shall carefully protect and preserve all Bench Marks, stakes and other items used in setting out the works.

18. PROTECTION & REPAIR OF PROPERTY, STRUCTURES & UTILITIES

No responsibility shall be assumed by the Employer for the correctness or completeness of the Drawings with respect to existing utilities, pipes, catch basins, chambers or other objects either under-ground or on the surface and should plots of such be found incorrect or incomplete the Contractor shall have no claim on that account.

The Contractor shall, at his own cost and expense, and in a manner approved by the Engineer sustain in their places and protect from injury any conduits, cables, pipes, roadways, buildings and all other structures or property in the vicinity of his work, whether above ground or underground, or which appear within the excavations.

He shall, at all times, have sufficient quantities of timber and plank, chains, etc. on the site, and shall use the same as required for sheathing or sheet piling and bracing the sides, roofs and ends for excavations, and for sustaining or supporting any and all structures that are endangered.

When the construction is adjacent to or on residential property the excavation, disposal of the material, and backfill operations shall be performed in such a manner as to restore the properties to their original conditions as nearly as practicable as determined by the Engineer.

Any stones, trees, brush or other deleterious matter left by construction operations shall be removed by the Contractor by hauling to approve disposal areas or by means acceptable to the Engineer before final replacement of the soil. The Contractor shall carry on his operations in such sequence and in such manner as to minimize disturbance to the public and to interfere as little as possible with the operations of property users.

19. WORK PROTECTION

It shall be a requirement of this Contract that the Contractor erect adequate fencing/protection around all worksite to protect the public when the Contractor's forces are on the site and are actively engaged in constructing the works. The Contractor shall clean and keep clean the streets, the work and public property occupied by him from waste materials or refuse resulting from his operations. Trucks hauling excavated materials, cement, sand, stone or other loose materials from or to the site shall be tight so that no spillage will occur on adjacent streets.

The Contractor will remove from the site of the works any machine or tool unsuitable for the works specified, or of insufficient efficiency and will replace them by approved equipment without being entitled to any extra payment for transport, loss of working hours, or any other damage or loss caused by replacing the equipment.

20. PROTECTION, REPAIR AND MAINTENANCE OF CONSTRUCTION

All newly constructed work shall be carefully protected from injury in any way. No wheeling or walking or placing of heavy loads on it shall be allowed and any portion injured shall be reconstructed by the Contractor at his own expense. During the restoration process all structures shall be protected in a manner approved by the Engineer. Should any of the floors or other parts of the structures become heave, cracked or otherwise damaged all such damaged portions of the work shall be completely repaired and made good by the Contractor at his own expense and to the satisfaction of the Engineer. If in the final inspection of the work, any defects, faults or omissions are found, the Contractor shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labour required. Further, the Contractor shall be fully responsible for satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the guarantee period described in the General Conditions of this Contract.

21. SAFETY MEASURES

21.1 GENERAL

The Contractor shall prepare a Health and Safety Plan as required by the relevant regulations on health and safety. The Contractor shall be responsible for the safety of all workmen and other persons entering the Works and shall, at his own expense (where not otherwise stated) and to the approval of the Engineer, take all measures necessary to ensure their safety.

Provision of proper safety and emergency regulation includes fire, gas (if any) and electric shock prevention, stretchers and first aid boxes, together with rescue facilities generally, for each place of working.

- Safe shoring of all excavations
- Provision of efficient safety helmets for all personnel including the Employer and the Engineer and each of their staff and any authorized visitors to the site
- Provision and maintenance of suitable lighting to provide adequate illumination of the Works with appropriate spares and standby equipment

Notices written in suitable languages to be erected at points likely to be used by the public and warning the public of the existence of the Works. These notices shall be in addition to any statutory requirements demanded of the Contractor.

The Contractor shall ensure that all his employees are fully conversant with the regulations, emergency and rescue procedures, etc., and the Contractor shall enforce the rule that any employee committing a serious breach of such regulations shall be instantly dismissed and shall not be re-employed. Personal protective equipment shall be available and used by operatives when appropriate, including: safety helmet, eye protection, ear protection, hand protection, foot protection.

21.2 First Aid

The Contractor shall provide and maintain on the work a completely equipped first-aid kit, as required by Health & Safety requirements, in a clean orderly condition, which shall be readily accessible at all times to all his employees and the Engineer & his staff. The Contractor shall designate certain employees who

are properly trained to be in charge of first aid. At least one such employee shall be available to render first-aid at all times that work is being carried on.

A telephone call list for summoning aid, such as doctors, ambulances, pull motor and rescue squads from outside sources shall be posted. The Contractor shall provide a stretcher and shall ensure that it is readily available at the site of the work. In locations of rural settings and far from any town and especially in the hot period (May – October) vials of serum against snake bite must be provided and maintained accordingly.

21.3 Transportation of materials and equipment

The Contractor shall take all reasonable precautions to ensure that public streets and thoroughfares used by him either for the Works or for the transport of plant, labour and materials are not made dirty and in the event of their becoming thus dirtied in the opinion of the Engineer the Contractor shall take all necessary and immediate steps to clean them. Each individual site must be kept clean during the work and must be thoroughly cleaned upon completion.

21.4 Sanitary requirements - Sanitation

The Contractor shall maintain the Site in a hygienic condition and shall comply with the requirements of the Engineer. At least all the wastewater produced on the Site, should be reasonably treated. The Contractor shall provide the necessary services to maintain the toilet facilities in a clean, sanitary condition and shall furnish all toilet room supplies required by the employees and the Engineer and his staff.

21.5 Prevention of noise and disturbance

The Contractor shall in general comply with the recommendations of the applicable regulations. The Contractor shall justify the details and arrangements of all plant before installation to ensure that suitable provisions are provided to reduce noise emission in built-up areas.

The Contractor shall take noise intensity readings as required by the Engineer and shall submit the results to the Engineer. The Contractor shall comply with measures required by the Engineer to keep noise and disturbance to the reasonable minimum. The hours of usage of any noisy machinery or plant for the above purpose shall be controlled by the Engineer or by his agent all in conformity with the relevant Statutory Regulations currently in force.

21.6 Fire prevention

The Contractor shall make arrangements and provide sufficient number of fire-fighting equipment to the satisfaction of the Engineer for the protection of the Works and any Temporary Works and any adjacent property from fire and shall give the Fire Authority all facilities periodically to inspect the fire prevention arrangements. The Contractor shall remove all rubbish and surplus material of a flammable nature and take such other steps as the Engineer may require but this shall not relieve the Contractor of any of his obligations under the Contract.

22. RECORD OF CONDITIONS BEFORE DEMOLITION AND/OR CONSTRUCTION

22.1 SURVEY – MONITORING EXISTING CONDITIONS

The Contractor shall perform survey of the site prior to start of any works. The Contractor shall agree the surface topography and ground conditions of the site and the immediate surrounding areas to the extent considered necessary for the works. The Contractor shall survey the existing conditions of roads and facades and keep the corresponding records.

The records shall include the condition of existing services and facilities, location of columns, roads, walkways, walls, roof, doors, windows, shutters, ornamental and/or decorative elements, etc.... The records shall include photographs and spot levels, coordinates/location as necessary and written descriptions of the site conditions. All buildings and structures situated adjacent to the site or close enough to the works which the Engineer considers could be affected by the construction of the works are to be structurally surveyed both internally and externally and agreed with the Engineer prior to construction work commencing. The survey is to include photographs where appropriate. The survey and the monitoring records on one soft and one hard copy shall be submitted for approval to the Engineer.

22.2 DISASSEMBLY - MARKING

All parts or units disassembled, shall be marked, or tagged with piece marks. Marks shall be in accordance with approved demolition and/or erection drawings, clearly legible and so placed as to be readily visible when the part is being removed and/or erected in the field. The location of the match marks shall be clearly indicated on erection drawings. All parts or assembly of parts shall also be so marked as to identify them with this Contract. Photograph and documentation of all details of facades, architectural/historical elements should be done before, during and after the dismantling as instructed by the Engineer. If this task is not performed appropriately, the Engineer may delegate these duties to an external party, and then deduct the costs from amounts payable to the Contractor

22.3 PIECE OF ART

After recording and marking any valuable piece of art materials, after removal the corresponding material shall be kept at a secure place, on the condition and location to be agreed with the Engineer and the Employer. The materials shall be delivered to the Employer in exchange for an official receipt document. The Contractor will be responsible from the loss of any piece of art from the Site.

22.4 Special repairs works

In special case, the Engineer may request the Contractor to execute moulds and/or "copying works" at required locations related ornamental stones or wooden prior to the renewal of the element. The special corresponding arrangement shall be discussed and agreed between the parties prior to the execution of this works.

23. ELEMENTS FOR RE-USE

The dismantling and/or removal of the existing construction and/or structures elements shall be done with extreme care to avoid destruction/damage and in order to appreciate its exact condition. Existing element such as wood, timber, iron, I-beam, stone, adobe, tiles, marble and/or similar building element can be proposed for re-use if in good condition. If it is established by the Contractor and approved by the Engineer that the element has lost its technical, structural and load-bearing characteristics it shall be removed from the site and shall not be proposed re-use for any rehabilitation works. Any element acceptable for re-use proposed and/or recommended by the Contractor and/or Engineer, shall be recorded, measured and

properly stored in accordance with its nature and corresponding storage requirement. All elements for re-use shall be reconditioned, cleaned, protected, and painted as per specifications before installation. The works for checking, investigating, and storing buildings elements for re-use are included in the present scope of works. The Contractor will be responsible for damages that may occur to any existing building element during dismantling and/or removal; any damages to building elements will be repaired and/or the element replaced at the Contractor's expenses.

24. RESPONSIBILITY FOR MATERIAL

The contractor has to present the list of materials, which will be used during the construction, while submitting a proposal. All information; test result, documents, etc... related to materials will be submitted with the proposal. The Contractor shall be responsible for all material furnished by him and shall replace at his own expense all such material found defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required for the replacement of installed material discovered defective prior to the end of the guarantee period. If not otherwise specified in the drawings or in the Bill of Quantities, all materials supplied shall comply with approved EN and EU Standards, such as the CE. The Contractor shall be responsible for the safe loading and unloading of all materials furnished by the Employer or the Contractor and/or delivered to the site by him, under the Contract. The Contractor shall be responsible for the safe storage of materials or equipment furnished by him and intended for the work until it has been incorporated in the completed project. The execution of special paint will be done by the Contractor following the instructions of the manufacturers.

25. MATERIALS AND WORKMANSHIP

All materials furnished under this Contract shall be new, of best quality, first-class in every respect and purchased from a known and approved manufacturer/supplier. The material shall be installed, constructed and finished in a workmanlike manner. Materials shall be suitable for the service intended and selected and fabricated in accordance with the best Engineering practice. Unless otherwise specified herein, all materials shall conform to the appropriate standard specification requirements.

26. INSPECTION & REJECTION OF MATERIALS & EQUIPMENT SUPPLIED BY THE CONTRACTOR

The Contractor shall submit to the Engineer full information as to all materials, equipment and arrangements which the Contractor proposes to furnish or make. Two (2) copies of this information shall be submitted in a form approved by the Engineer and shall be complete to the extent that the Engineer may determine if the proposed materials, equipment and arrangements will meet the Contract requirements. In addition, the materials supplied by the Contractor for the performance of the work will be inspected by the Engineer at the time of delivery to the Contractor, and at such other time before use as the Engineer may elect, and materials rejected after delivery to the Contractor shall be returned to the point of delivery by and at the expense of the Contractor. All work done by the Contractor shall also be subject to the inspection of the Engineer, and defective work repaired or replaced as directed. Facilities for the handling and inspection of materials and work supplied by the Contractor shall, at all times, be furnished by and at the expense of the Contractor, who shall provide suitable and adequate storage room for

materials during the progress of the work and be responsible for any loss of or damage to materials stored therein.

27. SUBMISSION OF SAMPLES AND DATA

In addition to any specific provision in the Contract for the sampling and testing of materials, the Contractor shall submit to the Engineer, as he may require, samples, drawings, catalogues, cuts, diagrams and other descriptive data for all mechanical, electrical, architectural and such other materials and equipment as may be designated by the Engineer and which the Contractor proposed to incorporate in the Works. Such samples, if approved, will be retained by the Engineer.

No materials or goods, of which samples have been submitted, shall be used in the Works, unless and until such samples have been approved in writing by the Engineer. The Engineer may reject any materials and goods which in his opinion, are inferior to the samples thereof previously approved and the Contractor shall promptly remove such materials and goods from the Site, at his own expense.

25 TESTS

25.1 General

The Contractor shall afford the Engineer all facilities, assistance, labour and appliances necessary for the convenient supervision of testing, weighing, or analysis of all materials or goods. The Contractor shall provide and execute the tests of any materials or goods or as the Engineer may require, and shall arrange for tests to be undertaken at an approved independent laboratory/ies. Should the Engineer not inspect any materials or goods at the place of manufacture, the Contractor shall obtain Certificates of Test from the suppliers of such materials and shall submit to the Engineer.

Such certificates shall certify that the materials or goods concerned have been tested in accordance with the requirements of the Contract and shall give the results of all tests carried out. The Contractor shall provide adequate means of identifying the materials and goods delivered to the Site with the corresponding certificates.

25.2 Manufacturer's Certificate Of Compliance – Mill Certificates

In the case of standard labelled stock products of standard manufacture which have a record of satisfactory performance in similar work over a period of not less than 2 years, the Engineer may accept a statement from the Manufacturer attested by a certificate that the product conforms to the applicable Specifications. In the case of materials for which such practice is usual, the Engineer may accept the manufacturer's certified mill and laboratory certificate.

25.3 Cost of Tests

The costs of all tests made by the Contractor and/or at the Engineer's instructions on all materials as requested in the Contract and the cost of tests on finished work as specified in the contract shall be borne by the Contractor.

25.4 Acceptance of Materials

The approval by the Engineer of any material or equipment shall in no way relieve the Contractor of any of his responsibilities for meeting all of the requirements of the Specifications and shall not prevent

subsequent rejection if such material or equipment is later found to be defective or not conforming to the Specifications.

26. "OR EQUAL" CLAUSE

Whenever a material or article required is specified or shown on the drawings by using the name of the propriety product or of a particular manufacturer or vendor, any material or article which will perform adequately the duties imposed by the general design will be considered equal and satisfactory provided the material or article so proposed is of equal substance and function in the Engineer's opinion. It shall not be purchased or installed without his written approval.

27 PROTECTION OF FINISHES

The Contractor shall take every care to prevent damage to the works and shall ensure that adequate protection is given to all works from the activities of following trades and any third party.

Vulnerable parts of the works particularly liable to damage shall be protected as may be reasonably required by the Engineer and shall be deemed to be insured against damage in accordance with the conditions of contract.

28 CLEANING

The debris accumulated on the working platform and on the roofs shall be removed through dustproof canals, which shall be constructed by the Contractor. The rubbles and other debris shall never be thrown down from the roof and from the working platform. The Contractor shall be sensitive on this subject and shall do the clearing frequently. The Contractor, before leaving the site after the completion of the works, shall clear the site. This clearing shall be done before leaving the storage area also.