

- 1- It must be observed to supply all materials required for isolating paints in such a manner that their specifications will be corresponding to the Egyptian Standard Specifications.
- 2- Rates of isolating paints with all their kinds include all equipment, materials, and workmanship required for them whether brush, gun or roll and the like.
- 3- Surfaces that shall be painted must be cleaned of dusts, fat materials and other impurities.
- 4- The first coat will be painted in the longitudinal direction and the other coat in the horizontal direction.
- 5- All isolating paints will be measured geometrically.

20- Marble Works:

- 1- Cementing will be made by cement and sand mortar at a rate of 350 (Three Hundred and Fifty) kg cement to one cubic meter clean sand.
- 2- Marble imported from Carara is of the best qualities, and of the required kind and thickness. It will be solid and free from defects, veins, cracks and scratches. It will be of a homogenous color, and the sample will be approved before supply.

21- Works of Concrete Pipes:

- 1- The concrete pipes used will be complete with joints. It will be perfectly made, free from cracks and gaps, with smooth surface from inside, and corresponding to the specifications. This is with respect to the materials entering in its manufacturing, as well as for pressures lying on them and borne and for reinforcement steel inside them.
- 2- The pipes shall be of a diameter less than 40 cm of plain concrete, compressed according to the industry principles.
- 3- Pipes with a diameter of 40 cm and more of reinforced concrete.
- 4- It shall not be allowed to use concrete pipes less than 20 cm.
- 5- Caulking thoroughly must be done on joints welding for pipes with cement and sand mortar at a rate of 700 Kg cement for one cubic meter sand, according the industry principles and at a state which prevent water leakage from the joints.
- 6- In case of connecting concrete pipes with other iron pipes, this will be done through a joint of reinforced concrete with a thickness not less than 25 cm and a width not less than 50 cm, and to place an isolating layer 1.5 mm thick to be approved by the NSDO.
- 7- Rate is given by linear meter and it includes and is charged with supply, transport, installation, excavation, water draining works, and the whole equipment, machines and manpower required to finish the work perfectly.
- 8- A certificate must be provided from the factory indicative of the quality of these pipes and testing their safety.

22- Kilometer Signs Works:

N.B. Stipulation of this item shall coincide with drawings.

- 1- It is necessary to have the approval of the Department on the quality of these kilometer signs before being supplied by the Contractor.

- 2- The Contractor is bound to exclude any signs having splits, breaks or cracks.
- 3- The signs must be of the red Abbasa stones, and writing the numbers indicative of the kilometer numbering on them from both sides shall be by engraving and painting with oil paints two coats.
- 4- These signs must be placed in the outer limits of the embankments, and according to instructions, and after fixing locations by measuring by the Contractor and at his own cost and under the supervision of the Department.
- 5- Kilometer signs rates shall include all earthworks, of excavation, back filling, pattering, leveling, compaction and spray with water. Also, they include pouring a base of ordinary concrete composed of 0.8 M3 gravel to 0.4 M3 sand, and adding to them 250 (Two Hundred and Fifty) kilograms ordinary Portland cement with dimensions not less than 0.80 x 0.80 x 0.4 meter to each sign according to the drawings. The rate will be given by number including everything.

23- Fortification Works for Embankments to Establish Sub Base Course :

- 1- This layer will be made of laterite soil, or of graded crushed stone. It shall be mixed with the required binding materials in such a manner that these materials after mixing them thoroughly and spreading them on the road or embankment or berm, and which was previously prepared and the required water was added to it, compressed and plowed in order to become a compacted tenacious body.
- 2- The operation of spreading and leveling must be carried out by compacting these materials with the full width by using rubber rollers. Then, an iron masher will finally mash it. The layer sides must be mashed first, and then to be directed gradually toward the axis till the completion of compaction for the sector. If it is impossible to use mashers, for example, when the area is near walls or structures, other manual instruments can be used to reach the maximum possible density.
- 3- The Contractor shall verify – under the supervision of the Department – of the correctness of density results in the layer after the completion of mashing, by carrying out standard compaction tests will be included in work rates, and nothing of them will be paid to the Contractor. If it is found out that they are less 95% of the density (Revised Proctor), the Contractor is bound to re-compact till reaching the required density.
- 4- Care should be observed during spreading and mixing the materials of sub base course so that this process will not affect the upper layer of embankments or berms.
- 5- Continual maintenance of this layer - whether by spraying or by using mashing equipment and leveling which must continue till final handing over of the work will be included in work rates, and nothing of it will be paid to the Contractor.
- 6- The NSDO has the right to entrust the Contractor to carry out all or some of these tests by the number, which it determines and regards as sufficient for perfect work control. They are: Sieve analysis – Revised Proctor Experiment – Test of defining dry density of the layer after compaction on nature – specific weight, and percentage of absorption – Granular Gradation experiment for what passes through sieve No. 200 – any other additional tests that are required for work.

7- The rate includes and is charged with removal of dissolved materials and those in disagreement with the specifications, extraction of materials of stone quarries, transport and stowing, as well as all works of workmanship, such as spreading materials, supply and adding water, and works of mixing, leveling, mashing, and continual maintenance works, providing machines, equipment and manpower, and all what is required for finishing work perfectly.

8- The materials supplied for establishing the base course must be of the big stone of the natural gravel, or crushed, or crushed stones and fine binding materials required to fill the gaps, and which in total form a graded mixture complying with the following specifications:

a) Thick Materials:

- 1- They consist of the retained materials on sieve No. 10 of strong solid stone, whether they were rigid or stony, or from furnace slag.
- 2- Loss percentage in Los Angeles instrument shall not be more than 50% according the standard test.
- 3- Percentage of materials liable to fragmentation in water of the retained thick and thin materials on sieve No. 4 must not be more than 5% of its weight.
- 4- On flooding a sample of the layer in maximum dry density according to the amended sand, it ought to be free of distention by the presence of discs over them which balances the paving weight which comes over the layer for standard testing.
- 5- Percentage of absorption by water after 24 hours shall not be more than 10% of the thick materials. Experiment will be made for testing the suitability of materials to resist dissolution in sulphate sodium or magnesium solution after 5 successive rounds, and the loss must not be less than 15%.
- 6- California bearing percentage to a dipped sample must not be less than 50%.

b) Thin materials:

- 1- They shall be of natural sand and the outcome of breakage of crushers of thin materials from sieve No. 200 (0.075 mm).
- 2- The part passing through sieve No. 200 (0.075 mm) must not be more that one third of the part passing through sieve No. 40 (0.425 mm).
- 3- Plasticity of the part passing from sieve No. 40.
Liquidity limit Maximum 30%
Plasticity limit Maximum 8%
Longitudinal Shrinkage not more than 7%
- a- All materials must be free from organic materials, balls, and muddy accumulations.
- b- Compaction, mashing and pressing the base course must be carried out by iron mashers weighing 10 tons with triple wheels, in such a manner that it gives a density of 95% of the laboratory density.
- c- A complete group of equipment must be designated, and to continue water spray works and mashing with the addition of any new quantities the gravely soil corresponding to the specifications for base course in the falling down areas if it is necessary, and not to leave it without maintenance.

Gradation Averages for Materials
Extracted from Stone Quarries or After Mixing

Spacing or Number of Sieve	Percentage		
	Maximum Volume 2	Maximum Volume – 1	Maximum Volume 1
2 Inches	100	100	100
1.5 Inches	70 – 100	100	100
1 Inch	55 – 85	70 – 100	100
¾ Inch	50 – 80	60 – 90	70 – 100
3/8 Inch	40 – 70	40 – 75	50 – 80
Number 4	30 – 60	30 – 60	35 – 65
Number 10	20 – 50	20 – 50	25 – 50
Number 40	10 – 30	10 – 30	05 – 35
Number 200	5 – 15	5 – 15	5 – 15

Soil Replacement Works

- 1- Replacement layer must be of gravel and sand or sand only. The gravel must be graded, homogenous and free from impurities, soils, organic materials, shells, tenacious masses; also, the used sand must be natural siliceous formation, clean and free from organic materials and tenacious masses.
- 2- The item rates are include the Contractor carrying out at his own cost test boring in the appurtenant structure site through a consultant office and under the supervision of the NSDO. Reports and Calculations shall be submitted purporting the necessity of making replacement layer, its thickness and its method of execution. These reports and calculations will be submitted to the NSDO for revision and approval.
- 3- The rate includes and is charged with all what is required of excavation and back filling works, water draining, construction, maintenance and removal of barriers, bracing and wooden forms, and all what is required for finishing the work and reaching the designed levels and dimensions. Cubic meter will give the rate.
- 4- The item rates are charged with compaction of replacement layer to reach the maximum possible density by using all required and suitable equipment, and all types of hand rammers, provided that compaction tests prescribed in the Standards Specifications for Roads and Bridges shall be carried out whenever the Contractor is requested to do so, in approved laboratories at his own cost, to make sure of the compliance of compaction works for each replacement layer with the specifications. The Contractor has no right to object whatever the costs reached.

The Standard Specifications and Standard Tests of the Roads and Bridges – print of the year 1990 are the basic reference to the method of taking samples and carrying out tests, and the results that ought to be obtained.

- 5- The Contractor account shall be settled geometrically on the basis of the cubes he placed as replacement soil with the thickness mentioned in the drawings or specifications, or what the NSDO shall approve.

Road Works

First: Specifications of Constructing the Base Course

From graded natural gravelly materials or the outcome of crushing.

- 1- Thickness of layer after compaction must not be more than fifteen (15 cm).

Construction shall be made on two layers according to the required total thickness. It must be of approved stone quarries or from the materials whose properties shall be improved by adding other materials to it. They must contain the required binding materials in such a manner that all these materials after mixing them thoroughly and spreading them on the surface of the sub base course or foundation layer, and adding the required water to them, compacting them while they are homogenous, graded and forming a tenacious body, and corresponding to the inclinations, longitudinal and cross section shown on the drawings.

- 2- The materials constituting it, which are the thick, thin, and binding of siliceous pebbles, or natural stones, or the outcome of crushing, or graded furnace slag, and natural graded sands or mixture of them – shall constitute in its whole a graded mixture corresponding to the Standard Specifications for Roads and Bridges.
- 3- They shall be from approved stone quarries accepted by the NSDO.
- 4- The materials shall be homogenous, clean and free from impurities or alien materials, while taking into account not to lose any of its components during transport operation.
- 5- All materials shall be free from organic materials, balls, or muddy accumulations.
- 6- The layer density must not be less than 95% of the laboratory density resulting from the revised compaction.
- 7- Before carrying out works of supplying this layer, the Contractor is bound to make an accurate leveling on the sub base course surface, or foundation layer, and prepare the surface of this layer by leveling, mashing, and compacting it at the levels by distention, and the determined inclinations in both longitudinal and traversal directions.
- 8- It shall be supplied on the road surface in the form of stows with uniform sections which facilitate measuring them.
- 9- Mixing, Stirring and thoroughly spread by motor grader. Water shall be added to the mixture by means of tanks with sufficient and suitable quantities to reach the maximum density after crushing. Spreading shall be carried out in such a manner that the thickness shall not be more than 15 cm after crushing, and shall not be made on two layers.
- 10- Humidity percentage must be verified before carrying out crushing operation. If water percentage is little, it can be increased, and if it was large it can be aerated.
- 11- The crushing operation shall be carried out by means of using the suitable type of mashers that are appropriate for the kinds of used materials.
- 12- Surface uniformity and levels must be verified. The Contractor should fully maintain cleanliness of the base course from dust and mud. He must remove them and make sure of the thickness after removal and to handing over.
- 13- The Contractor must take into account that each damage or harm occurs to base course layer, he will be alone responsible to repair it with full care and on his own cost. In case of making the initial prime coat, this will be after the elapse of a period of not less than two weeks on the base

course layer. The Contractor must assign a complete group of equipment for this purpose, while continuing the operation of spraying with water, leveling and crushing, and adding new quantities in the falling distances in such a manner that the surface is always in the required straightness degree, and to be compacted and tenacious continuously. It will not be left without maintenance for any period that leads to looseness of its surface. In case the Contractor neglects all that or some of it, all procedures required for this maintenance shall be carried out, and to be deducted from the Contractor account.

14-Payment shall be made per square meter including supplying, works of workmanship, leveling base course layer, stowing, spreading and mixing materials, and adding water to them, as well as re-mixing, leveling, and spreading, continual maintenance till initial handing over or till the prime coat operation. The rate also includes manpower, and required equipment, and operating them, and all what is required to complete the work according to the specifications, drawings and instructions.

Second: Specifications of Establishing and Executing Initial Prime Coat (M.C.O.)

- 1- Preparation of the base surface is included in the rates of this work.
- 2- The liquid asphalt must be of the medium volatile kind (M.C.O) corresponding to the Standard Specifications for Roads and Bridges.
- 3- The Contractor must provide the equipment for preparing the road surface and spraying the asphalt. They are motor grader – water tanks – rubber mashers – mechanical brushes – instruments for heating the asphalt and asphalt distributors.
- 4- The Contractor performance of leveling the surface of the base course with its full width by the suitable motor, and in case of necessity slight plowing for the surface of this layer and asphalt distributors are included in the rate of the item.
- 5- Before spreading surface painting, it must be thoroughly cleaned from dissolved materials and dusts by using mechanical and hand brushes.
- 6- After the completion of the road surface preparation, asphalt will be sprayed after heating it to the temperature degree indicated in the Standard specifications for Roads and Bridges Department. The surface must be dry to the degree which allows for the leakage of the asphalt in the surface. This will be done by using mechanical asphalt sprayers at a rate of 1.5 (One and Half) kg per square meter on one time or two times in such a manner that the road surface is thoroughly saturated by asphalt. Hand sprayers may also be used for the surfaces where mechanical spraying is impossible and pursuant to the approval of the NSDO.
- 7- Asphalt layer shall be left without passing over it for a period not less than 24 hours. After this period there must be a continuous maintenance for this layer by water for a period of at least two days till placing the surface asphalt layer on it, together with treating asphalt leakage process by sand.
- 8- Payment shall be made per square meter for the surface to be sprayed with asphalt. The rate includes and is charged with supplying the required asphalt, as well as all works of workmanship including leveling of base course, the whole layer, and spraying asphalt after heating it to the determined width and with the appropriate average. The rate also includes and is charged with cleaning the base surface.

With respect to the used sand, it shall be either natural or the outcome of crushing in the stone quarries, free from organic, muddy, align, and harmful materials. After grading it and mixing it with the stone and powder it must fulfill the general grading stated in the Standard Specifications of The Roads and Bridges Department.

As for the powder the outcome of crushing lime stones or any other solid stones, it must be free from the muddy materials.

With respect to the solid asphalt, it must be with a degree of insertion 60/70, and its specifications agree with the Standard Specifications of the Roads and Bridges Department.

The rate includes and is charged with supplying of materials, machines and instruments required for mixing, spreading, leveling, compacting, preparing materials, mixing, transporting, spreading and crushing them, and finishing the surface.

The rate also includes crushing cross and longitudinal joints and edges, making joints, and testing straightness of the layer surface, its density which should not be less than 95% of the laboratory density. It shall not be allowed to pass over the paved layer before the decrease of layer temperature to weather temperature, and this must be for a period not less than at least 8 hours. The rate is given per square meter including everything, as well as operating all machines, equipment, boilers, distributors, and all what is required to complete the work according to the specifications, drawings and instructions.

Third: Specifications of Surface Course of Asphalt

- 1- The used materials must be clean, strong and tight, and do not dissolve in water. They should not contain flat or rectangular gravel and free from surface dust and undesired materials.
- 2- The missing in Los Angeles instrument according to the standard tests should not be more than 40%.
- 3- Gradation of pre-mixed materials shall be according to the Standard Specifications of the Road and Bridges Department.
- 4- The materials shall be either stone resulting from crushing process or natural materials with sharp angles and thoroughly sticking to asphalt.
- 5- Using solid asphalt (60/70) shall be either from the production Suez Company or Alexandria Petroleum Company. It should be corresponding to the Standard Specifications of the Roads and Bridges Department.
- 6- Mixing shall be done by the mechanical mixers for stones with asphalt in the appropriate temperature degree, together with the availability of homogeneity, and guaranteeing easy transport, spreading, and compaction without splitting up of the asphalt cover from gravel surface.
- 7- Paving surface shall be thoroughly cleaned before spreading the pre-mixed layer.
- 8- In case the mixture being spread is exposed to the act of rains it must be excluded and replaced by another one.
- 9- Mashers from 8 – 12 tons will be used. Crushing must be done at the rate of spreading. The crushing process shall be carried out till reaching the maximum density exactly. This will be evidenced by the non appearance of the marks of the masher wheels, together with the necessity of protecting the edges during compaction operation.
- 10- The rate will be given by one square meter.

Fourth: Rapid Volatile Liquid Asphalt (R.C.)

The used asphalt must be homogenous free from water, and corresponding the Standard Specifications of the Roads and Bridges Department. It will be sprayed immediately before the process of spreading the asphalt mixture, after cleaning the base course surface from dusts, loose and align materials and the like by using mechanical or manual brushes, or mechanical blowing machines.

Fifth: Hot Surface Asphalt Concrete

It is a hot mixture of stones or natural or crushed gravel, or natural stones, sand, powder and solid asphalt. It will be spread and crushed to the determined thickness over the road surface prepared with the binding asphalt layer.

All used stones must be clean with acceptable homogeneity. The missing rate shall not be more than 40% in Los Angeles Test.

Technical Specifications for Tree Planting (Windbreak)
(BQ Pay Item Nos. 37, 38, 39, 40 and 41)

First: Tree Planting Plan

- 1- Both sides of the canal (right and left) will be tree planted with two rows of Casuarina and Acacia alternately in the right side and left side of the water course at a distance of one meter between the trees, and according to the instructions.
- 2- Distance between trees in the one row is 1.00 meter.
- 3- Distance between each row and the other is 0.5 (One Half) meter.
- 4- The inner row shall be planted at a distance of 0.5 meter of the end of embankment.
- 5- Planting shall be in two rows alternately (Crow foot).

Second: Technical Specifications for Casuarina Transplants

- 1- The age of transplant shall not be less than one year and not more than one and half years.
- 2- The transplant shall have a sound end but, not branched, with a height not less than 70 (Seventy) cm from ground surface, and not more than 90 (Ninety) cm.
- 3- The transplant shall have a suitable firmness (muddy soil) inside clayey flowerpots No. 8 or No. 10, or in Polyethylene bags, sound and free from weeds and in particular the long age (grass – esparto).
- 4- Required hardening process shall be made to the transplants from the breeding house to propagator for a sufficient period in order to have stiff transplant stem that can bear weather conditions. Also, the transplant would have been weaned in the propagator within an appropriate time before its being conveyed to the permanent ground.
- 5- Transplants must be of the quick growing kinds, and which are defined in sandy grounds of the upright branching kinds and not of lying down or hanging loosely kinds.

Third: Execution Works On Site

- 1- Trees shall be prepared by excavating with a ditcher to a suitable depth. The distance between diameter of the trees shall be (1.00) meter. Irrigation test shall be made to make sure of its being easy. A-----shall be made between each 7 – 10 trees according to ground surface straightness for the accuracy of irrigating the groups.
- 2- The pits shall be excavated with a diameter of 50 cm, and a depth of 50 cm, and irrigation will be made at the same day of planting, together with serving it by adding clay at a rate suitable for growing not less than two baskets for the pit.
- 3- It should be taken into account that the distances between trees in the row shall be (one) meter, and between one row and the other (one half) meter. It shall be planted in the shape of crow foot.
- 4- Fertilizing by chemical fertilizers shall be after the elapse of the first six months after planting.

Fourth: Executive Steps

- 1- Irrigation will be made by means of movable units in the first years of the trees age.
- 2- The required transplants shall be supplied to the site, to which a rate of patching transplants is added (10%).
- 3- The ground shall be prepared and leveled.
- 4- The ground shall be lined, and pits places will be defined.
- 5- Excavation of tree lines will be made by ditcher in case of need.
- 6- Irrigation before planting to make sure of irrigation accuracy.
- 7- Excavation of planting ditches will be with a diameter of 50 cm and a depth of 50 cm.
- 8- Manure must be added with the supplied clayey soil, according to the standard and suitable rates in each ditch.
- 9- After that, transplants will be planted.
- 10- Irrigation will be carried out after planting.
- 11- The Contractor is responsible for the works of guarding the transplants, and the works of care and maintenance required to them for a period of one year of handing over.

Fifth: Plantation

The transplants shall be implanted at any time of the year with the exception of strong hot months (June, July and August), together with giving care and attention to irrigation. Planting will be made by placing the transplant vertically and straight at the middle of the ditch. It shall be with a depth of 50 cm than the previous position in the supporting place.

The outcome of soil excavation will be mixed with the silt and manure mixture at a rate of one quarter basket per ditch. It will be pressed round the transplant. Irrigation will be carried out directly, while taking into account the uniformity of planting lines in a longitudinal line. All this will be done under the supervision of the NSDO and according to the instructions.

Sixth: Care After Plantation

These works are confined by the regularity of irrigation works on close periods in the first stages of plantation, and the continual cleaning of irrigation channel, plantation ditches, and non-trimming of trees during the first year, together with maintaining the growing buds of the trees. In case of their being lost or broken or dried the trees shall be replaced, those trees which loses its buds shall be replaced without claiming a return for that.

Seventh: Patching

This can be done during the first year, after making sure of the success of transplants by the appearance of new grows on the transplants during the maintenance and care period, together with the exclusion of the extremely hot months (June, July and August).

Eighth: Guarding in Seasons of Activity

The Contractor is responsible for all what is necessary for guarding the trees and in particular during care period.

"GENERAL CONDITIONS"

- 1- The Contractor will investigate by himself about the nature of land * the subject of this Contract, by making the required tests and the complete study. This will be through inspecting the site to be acquainted with soil properties in the different necessary levels; also, to be fully aware of the precautions that should be taken to construct a sound work.

2- Quantities

Before starting of supply or execution, the Contractor must be sure of the correctness of the quantities estimated in the Bill of Quantities and the required Specifications, and that the materials rejected or ordered to be excluded no price shall be paid for them, while observing that the quantities mentioned in the main bill of rates are approximate. What is important are the final quantities.

3- Rejection and Removal of Works not Complying with Specifications

All works that are carried out and the NSDO found out that they are not in conformity with the technical specifications, whether this was a result of bad workmanship, or using low quality materials, or damages occurred in the work due to the Contractor negligence, they shall be repaired by a method to be approved by the NSDO.

In case of delay incurred by the Contractor to do that, the NSDO shall after advising him of that remove them and deduct the cost from his account without the Contractor having the right of objection with respect to the costs.

4- Control of Materials

The NSDO must approve the sources that will supply the materials entering in the works. This is before start of supply. The approval will be granted after making tests on the taken samples to determine the extent of its conformity with the specifications. Taking into account that the conformity of results of tests on these samples shall not relieve the Contractor responsibility of the materials supplied on site, and from which samples will be taken at any time before and during operation. If it is evident that the sources of materials previously approved had become not conforming to the specifications, he must provide fit materials from other approved sources. It will not be allowed to use materials which are not corresponding to specifications. All used materials are subject to inspection and tests at any time.

5 - Rates

Rates shall be according to those stated in the Bills of Quantities including the rates for supply, distribution, stowing, measuring, workmanship, and maintenance works throughout the operation period. These rates also include all what is required for work of supply of materials and requirements whether what is mentioned in the special conditions for the operation or what is required for work and not mentioned in these conditions.

6 - Program of Works Execution:

Immediately upon concluding the contract with the Contractor, he must submit to the NSDO within fifteen days a detailed program for works execution, in which times and periods of executing each part will be indicated. The NSDO shall have the right to amend this program according to what it regards appropriate to carry out the required works.

After the approval of this program by the NSDO, it shall be considered as one of the Contract Conditions. The Contractor must abide by it with full accuracy. If the Contractor neglected to start carrying out the work defined in the Program, or if he failed or neglected to comply with carrying out the NSDO instructions regarding this Contract or to take into consideration the Contract conditions by the method which satisfy the NSDO, it shall have the right to request from the Contractor through a registered letter with acknowledgment or receipt to carry out his obligations according to the Contract conditions. In case the Contractor failed after that to carry out his obligations with full accuracy whether this was in repairing a previous default or a default following the notification, the NSDO shall have the absolute freedom to use all rights entitled to it pursuant to the Contract conditions. In case the Contractor violates the conditions of this Contract or neglects in executing one of them the NSDO shall have the right to suspend executing any new works in the part or parts which are affected by this negligence or default or till he repairs its effect. The Contractor shall have no right to claim in this case for any indemnity or extension to the time fixed for completing and handing over the required work.

7 - Organization of Traffic Movement During Work Progress

The Contractor is bound to erect barriers and signs indicative of closing the road with respect to traffic. He must put sufficient number of red lights at night, as well as guides, instructors and guards day and night by him and at his own cost. The Contractor will be responsible for what may happen due to shortage of these precautions according to the instructions of the Roads and Bridges NSDO.

8 - Equipment:

All machines and instruments which shall be brought by the Contractor to use them in the execution of works * the subject matter of this Contract * must be in good state approved and accepted by the NSDO before starting execution. The Contractor must maintain its state throughout the execution period; also he must bring the sufficient number of them to the work site to guarantee quick execution according the approved time schedule.

Furthermore, the Contractor must appoint the sufficient number of workers and technicians trained to operate this equipment with high efficiency.

9 - Optional Items:

In the cases where there are optional items the NSDO shall have the right to entrust the Contractor whether to carry out all or part of the work shown in these items or not, without the Contractor having the right to object or claim with indemnity due to that.

10 - Amendment of Works:

The NSDO shall have the right at any time either before or after starting work to make amendment in works by increase or decrease or deleting certain items stated in the bill of quantities and rates in such a manner that the value of amendment will not exceed one quarter of the total Contract whole value. The Contractor must abide by and carry out these amendments immediately upon notifying him by means of a registered letter with acknowledgment of receipt from the NSDO. These amendments shall be considered as if they are stated in the original contract, and at the same rates the same period specified therein. In case the value of amendments exceeded 25 % of the total Contract value whether by increase or decrease, the Contractor shall have the right to object against that, and to reach an agreement with the NSDO concerning the prices and execution period.

If the works required to be executed have no prices in the Contract or in the annex of bill of

rates, a suitable price for them will be agreed upon with the Contractor before the start of work execution, provided that work execution shall not be delayed because of any disagreement or dispute that may arise regarding this agreement.

The amendments and additional works shall not result in any delay in carrying out the operation within the fixed time, and the Contractor shall be responsible for the delay that occurs if he was not able to hand over the whole works in the fixed time.

11 - Regulations and Laws

The Contractor must abide by the laws and general regulations currently in force. He must obligate his agents and workers to abide by them. The Contractor shall bear alone all fees, and insurance due on him in application of the provisions of the law. The Contractor shall also bear tax stamp of the Engineering and Applied Professions Association, and he alone shall be responsible for that.

12 - Lining and Levels

The Contractor must make the required lining for each part of the work by his engineer and the presence of the NSDO Engineer. The Contractor is alone responsible for carrying out the works required for lining with full accuracy, for its correctness, checking the dimensions shown on the drawings, and the correct recording of all information on them to the real nature. The approval of the NSDO Engineer or his participation in execution and making the lining will not relieve the Contractor from the absolute responsibility for the correctness of this lining. The NSDO will specify a constant level (Roper) for executing the required works.

The Contractor must carry out all these works according to the levels shown on the drawings, or requested from him. He must verify the correctness of heights from the fixed level by making fixed marks, and recording these fixed marks for their revision and approval by the NSDO. All costs required for executing this work are charged on the Contract rates and nothing for them shall be paid to the Contractor.

13 - Maintaining the Existing Structures

The Contractor must maintain the existing structures located in the work area and adjacent to the structures required to be made. Any damage or harm occurs to these structures by reason of the work must be repaired by the Contractor and at his own cost, without the need to take any other measures. The Contractor shall have no right to object or discuss what is determined by the NSDO with respect to costs spent by it on repairs and rebuilding what was damaged to its original state.

14 - Water

The Contractor must obtain by himself and at his own cost the water required for carrying out the works * the subject matter of this Contract. The water must be pure to the required degree. Water determined by the NSDO as unfit must not be used. In this case, the NSDO resolution is final and binding the Contractor.

15 - Obtaining Construction Materials

The Contractor is solely responsible for procuring the materials required for all constructions

(reinforcement steel * cement * woods .. etc.) by himself. The role of the NSDO is confined to handing letters to facilitate receiving these materials from the concerned bodies without its being liable to the least responsibility. The Contractor must pay all what is requested from him of costs or fees to the competent bodies by himself and on his own account.

- 16 -** The Contractor is solely bound to take all steps required for leveling the existing roads or to make replacement roads or footpaths for entering work site * the subject matter of this Contract, and to convey the required equipment, instruments, raw materials, and machines to all locations of execution, by himself and at his own cost, and without paying anything to him in return of that.
- 17 -** The Contractor is bound to procure all and various equipment, engineering and survey instruments required for the works of lining, executing and measuring in a good state to work site to be used by the supervision staff assigned by the NSDO.
- 18 -** The Contractor must take into account that the work area is located east of Suez Canal in Sinai Peninsula, and which was a stage of numerous military battles, and which usually results in the existence of mines, explosives, dynamites and wars leftovers that are always liable to explosion.

Since all these hazards may exist in this area, the NSDO from its side reached an agreement with the Armed Forces to inspect and clean the area * the subject matter of this Contract, and determined to be reclaimed and planted, and which is shown on the Project maps from all these leftovers. The Armed Forces from its side issues a certificate purporting the completion of cleaning and inspection together with placing the required warning signs to define the limits of these areas.

The Contractor must take all this into his account, and that the performance of the Armed Forces of this matter by instructions from the NSDO will not relieve him from the responsibility of the safety of his workers and equipment. He solely will assume the responsibility, and he must take all measures which he regards as appropriate for the sake of protecting his work and workers without the least responsibility on the NSDO.

- 19 -** The Contractor must also be well aware that the Contract area is a military area, and he must abide by all rules and regulations organizing work in such areas, together with full safeguarding the contact lines for the Armed Forces and Security. Also, he must abide by any military instructions issued before and during work progress. Contract rates include the costs of repairing any military facilities exposed to damage as a result of work and according to the estimations of the Armed Forces.
- 20 -** The Contractor must take all precautions to protect the safety of what may be found of roads, electric and telephone cables, potable water pipelines and the like. He must notify the NSDO whenever these utilities are found to obstruct the required operation in order to enable moving them or operating beside them or avoiding them. This will be done by a written approval. If it will be necessary to remove or amend any of these utilities, the costs involved shall be charged to the NSDO account, and the Contractor shall be responsible for protecting any equipment till handing them to the body owning it, or to the NSDO stores.
- 21 -** The Contractor is bound to hand to the NSDO and the concerned bodies defined by the NSDO all what is found out during work progress of antiquities, coins and the like of the valuable things. He shall take all precautions to guarantee keeping off hazards from them. The Contractor immediately upon finding out any antiquities or statues or tombs or inscriptions, or

remains of ancient buildings or any other ancient monuments shall advise the NSDO. In this case the Contractor shall suspend work within the limits of the place where the discovery is found till he receives instruction from the NSDO in this concern.

- 22 -** The Contractor undertakes * for the sake of realizing the goals of the Contract documents, and without prejudice of the stipulations of Article (27) of the General Contract * to put at the disposal of the staff starting from the date of issuing operation order from the NSDO to the Contractor, and throughout the execution period and till the actual completion of the work (6) six passenger vehicles in a good state and serviceable, and acceptable to the NSDO, and (2) two vehicles equipped with auxiliary gearbox of a type acceptable to the NSDO also. The Contractor shall bear all costs concerning operation and maintenance of these vehicles, fuel and oils, as well as expenses and wages of drivers. In case the Contractor falls behind putting these vehicles at the disposal of the supervisory staff or putting them in a serviceable state, the NSDO shall have the right to hire these vehicles at the Contractor cost.
- 23 -** If during the validity of this Contract decrees were issued from the competent bodies of the State, it is of their nature that they increase or decrease of the prices of supply materials (reinforcement steel and cement) the Contractor shall be compensated for the increase and the decrease shall be deducted from his dues.
- 24 -** Any increase to be deducted from the operation final account will affect the Contractor priority.
- 25 -** The NSDO is not bound to pay anything to the Contractor for the material, equipment, and works rejected by it according to the provisions of this Contract. Also, it will not allow an extension of the period of work execution due to any delay resulting from the rejection of materials, equipment and works by the NSDO.
- 26 -** Without prejudice of the stipulation of Article (21) of the General Contract concerning the Contractor Engineer, the contractor must employ for him during the execution of the Contract, and from the date of issuing operation order to him * two of the engineers graduates of Faculty of Engineering * Civil Division, one of them having experience more than ten years and the other having experience not less than five years, and both having full efficiency. Both of them shall have a general delegation from the Contractor to act on his behalf for receiving and for quick execution of the instructions and orders issued to him from the NSDO, and to perform all work particulars. The Contractor shall submit their names to the NSDO before employment for approval and authorization.
- If the Contractor failed to employ the engineers continuously, or in replacing them during a period of fifteen days from the date of his receiving a written request by that effect, he shall be bound to pay a fine amounting to fifty pounds for each engineer per each day of the days elapsed without employing this engineer or replacing him according to the case. This will be without the need of a warning or taking a certain procedure.
- 27 -** All works will continue to be * to the date of final handing over * under the care of the Contractor and at his responsibility. He must repair all defects that may rise or harms that may result from any reason in general. Supervision of the NSDO on work progress will not prejudice by any way the Contractor responsibility, but the responsibility will remain fully to the Contractor up till the final handing over of the works. The report indicative of that will be written.
- 28 -** The Contractor must complete and carry out all works * the subject matter of the Contract

during a period of thirty months starting from the date of issuing the written order to him, and his receiving the operation site including any increase or amendments issued pursuant to written orders pursuant to the right entitled to the NSDO in accordance with the provisions of this Contract, and till the work becomes serviceable from all aspects for provisional Handing Over.

29 - The Contractor must take into account that all his dues in the operation including the advance payments shall be paid in local currency, and he solely responsible for procuring all his requirements of the foreign currency. The role of the NSDO shall be confined to handing him letters of facilitation to the concerned bodies without the least responsibility on it.

30 - The Contract Rates include and apply to the Contractor carrying out, and at his own cost and throughout the period of operation, procurement, preparation and maintenance of a housing unit to be designated as a rest house for the staff supervising the Contract execution from the Project Executive Agency. Also, to make available, prepare and maintain an office to facilitate the works of this agency, and with them his working staff by acceptable form, and in the location to be approved by the NSDO, and to the extent which guarantees convenience for the supervising staff, and qualifies him for work without any obstacles.

The area of the housing unit designated as a rest house shall not be less than one hundred square meters, and the area of the office not less than forty square meters. They shall be provided with drinking water, electricity and all sanitary sewerage services. It should be taken into consideration that work in the Project is daily and throughout the twenty four hours. The Contractor shall be responsible for all maintenance works, as well as all costs required for work in the office and residence in the rest house. These housing units can be of buildings or pre-cast units which are approved by the NSDO. These units (the office and the residence house) shall be furnished with complete sets of suitable furniture which shall be approved by the NSDO.

31 - The Rest House and Office must be completely separated from the rest houses and offices of the Contractor. The Contractor is bound to prepare a suitable road to them, and to make adjacent to it a suitable place * vehicles parking area. The Contractor must take into account that he is bound throughout the operation period to provide means of complete accommodation for the supervisory staff, and procure the manpower required for the works of service, guarding and maintenance.

32 - The Contractor must take into consideration the necessity of completing, preparation, furnishing and providing both the Rest House and the Office with all their contents during two months from the date of issuing the written order to him to work. All costs of construction, service and maintenance throughout the period of operation are charged on the Contract rates, and nothing for them will be paid to the Contractor. In case the Contractor falls behind or slackens in carrying out all above-mentioned or some of it concerning the Office and the Rest House, the NSDO shall have the absolute right to carry it out and to deduct the value thereof from his account, together with obliging him with all resulting obligations according to the Contract.

33 - The Contract Rates include the Contractor paying the local fees and taxes according to the approved decrees in this concern.

34 - On submitting his Tender, the Contractor must take into account that the Agency will deduct 0.5 % (One Half percent) from the total value of his tender, after awarding. It will be paid through the Agency to the Ministry Training Center in 6 October City with the aim of training the engineers or technicians nominated by the Agency in proportion to the volume and value of the Operation, to develop their human skills and experiences in the field of work. This value

is charged to the Contract rates, and nothing for it shall be paid to the Contractor.

35 - This Tender together with all conditions thereof is governed by the Egyptian Law No. 89 for 1998 (and its Executive Regulations) concerning Bidding.

36 - Advance Payment

The NSDO will consider payment of the Advance Payment when so requested by the Tenderer in his Tender Documents. However, the Tenderer shall take into consideration that the actual payment of the Advance Payment cannot be the prerequisite for the commencement of the construction works. The Contractor shall be bound to start the Contract works within the period specified in the Order of Commencement issued by the NSDO and after the handover of the construction site to the Contractor by NSDO, irrespective of the actual payment of the Advance Payment.

37 - After conclusion of the Contract, it is subject to the revision of the State Council. The two parties agree in advance to execute the resolution of the State Council.

The Employer

The Contractor

(name)
(title)
North Sinai Development Organization

(name)
(title)
(Name of Contractor)