

	<b>EMBASSY OF THE UNITED STATES</b> Bogota, Colombia.  NARCOTICS AFFAIR SECTION – N.A.S.-	<b>PROJECT:</b> Soil Studies.  <b>LOCATION:</b> Colombian National Police bases at Tumaco, Nariño	<b>Number of Pages:</b> <b>6</b>
			<b>Request No.</b>
			<b>Date :</b> Oct 2012

**GENERAL TERMS OF REFERENCE**

*A Spanish translation will be supplied as a matter of courtesy. If any difference is found between the Spanish version and the English version, the English version will prevail.*

The proposal should include calculations, tests, supervision, labor, transport, and accommodation, food (only when applied) management, unforeseen and utility, VAT and other inherent to the proponent. The contractor shall include in its proposal a description of the work to run and the options raised (only if applicable), catalogs or testing materials and any other information presented in the following paragraphs.

**Intellectual Property and reserve levels and designs**

In accordance with the rules on intellectual property and copyright, is understandable that the drawings, calculations and designs performed by the contractor belong to the Government of the United States of America, and only charged by this work order. The Embassy may use them at its discretion, partially or totally for future projects, without requiring approval by the designer or constructor.

The contractor shall be required as well to take all necessary measures to maintain the reserve and confidentiality of the information, documents and other matters relating to the work, and may not make reproductions of this information or use partially or totally without the authorization of the Embassy. Any breach to this obligation shall be considered by the Contracting as a serious breach to its obligations, which may lead to the termination of the contract, without prejudice to the other legal actions to be taken against him, including those intended to compensate the harm that might cause this act.

**Execution time and site and weather conditions**

The bidder shall specify the amount of time, in calendar days required to fulfill the purpose of the bid, taking into account between others: the embassy requirements, the activities to be perform prior to starting on site (designs revisions, personnel access permission to site –average five (5) days-, the Project execution time, the site location, weather, time of year and the time it takes to get licenses if applicable.

NAS would take an average of seven (7) working days for revision of each submittal of design, calculations, and samples to be installed. That timing plus the contractor corrections if needed to resubmit should be taken into account in the execution time. Contractor needs to submit for approval the submittals with enough anticipation of the events avoiding delays due to this cause, if delays occur this would be in the fault of the contractor.

The Embassy will consider the contractor’s additional time (no additional costs) to deliver the work in the event of extreme weather conditions or acts of public enemy that can be proved. To submit this additional time for approval it needs to be in writing in the established periods and with the required documentation submitting it as separate information from the weekly reports.

Acts of Public Enemy: In the case of public enemy information needs to be submitted in the next five (5) calendar days of the event including supports from the Base commander or personnel in charge

Weather: In the case of extreme weather changes information should be submitted as son as possible and always before the “Substantial Completion” the IDEAM charts and studies and the analysis charts performed to show that these days are out of the monthly standard of rain or intensity base on the last five (5) years. The information needs to be gathers form the IDEAM’s nearest weather station to the project site. In the case there is no IDEAM station near the site, the contractor needs to gather information from two or three towns from the area and take an average.

Final report shall be submitted in two exact copies and shall include:

- Description work executed, location etc
- Drawings in 0.25m x 0.50 m size paper
- Soil studies, summary information, description of the work performed and documentation supporting it.
- Pictures of the activities carried out and in each picture a brief description.
- CD or DVD that includes all delivered documentation, drawings and final report, calculations etc
- Contractor clearance certificate in the NAS format and signed by the legal representative indicating that all payments to suppliers, employees and subcontractors has been done.
- Base Clearance certificate signed by the Commander of the base or the assigned person, certifying that the work is completed, that all elements borrowed by the base has been delivered, that the base cafeteria has all payments certificates.
- Payment of invoice indicating the number of the order and discriminated against VAT.
- Closing documentation to process payment signed by the legal representative work receipt

### **Safety, social security and occupational health**

Is responsibility and obligation of the contractor to ensure that all his staff comply with the actual legal provisions given by the Labor Ministry for safety and occupational health for different activities to be develop that may affect his staff on site and that can affect directly or indirectly to the general.

The contractor to whom the project is awarded shall ensure that all the employees and subcontractors working in the project are registered and payments up to date in a social security system that includes E.P.S. (entity) (Healthcare institution) and A.R.P. (risk professional administrator). At the same time the contractor shall be responsible for any damage or harm arising of such activity. The contractor shall deliver in the first 7 days of the month copies of the payments done to those entities to the NAS Project Engineer.

The contractor shall consider the following minimum standards:

- a) **List of Personnel:** Before beginning works and in order to approve access to the workplace the contractor shall deliver a detail list of his staff with full names, ID numbers, place and date of birth, address, and in some cases legal past certificate. The Embassy and the police base reserves the right of admission or rejection of the contractor's staff for reasons of security and/or quality of work
- b) **Endowment:** All the working staff on site shall be dress accordantly, shall have a uniform of the same design and color, boots, hard hats, gloves, and special items in each activity requires as masks, earplugs, special protection belts, etc. which shall be mandatory within the work. They shall also carry a company badge with names, ID number, position, subcontractor, and recent photo. If the contractor does not comply with these requirements, this shall result in the temporary suspension of the work until the contractor meet with the specified standards.
- c) **Vehicles and machinery:** All vehicles and equipment to access the base facilities shall be written down in a list in advance to be verified and in order to give them the access permission. This listing shall include type of vehicle, license plate and the name, ID number and phone number of the driver. The contractor shall take into account how much time does the vehicle and the personnel take to enter and leave the base facilities. The safety of the vehicles and the machinery shall be the responsibility of the contractor.
- d) **Security delimitation:** The work area shall be demarcated with two rows of yellow plastic safety tape 8 cm. width attached to wood post completely stable. Also the project areas where the surveys shall be carried out or that are considered accidents risk areas shall be demarcated with fences or preventive signals, as well as signaling that indicates the use of protective elements.
- e) **Cleaning and debris removal:** The contractor shall keep clean all the work sites by avoiding the accumulation of refuse wastes which will be transferred to approved sites or garbage areas outside the base facilities. Burning waste materials on site shall not be allowed. Cleaning will take place at the end of each day and the value of shall be included in each activity.
- f) **Work hours:** Work hours at most Bases are Monday thru Saturday from 7 a.m. to 4 p.m. However before quoting a price and initiating the project, the contractor shall verify the work hours with the base authorities. Likewise, should additional time be required during the course of the work, permission to this effect shall be

requested in advance for approved to the base authorities. No work shall be permitted during night hours unless approved in advance by the base authorities.

- g) **Food, transportation and lodging:** The contractor is responsible for food and accommodation of his staff outside the base premises. The contractor is also responsible for the necessary transportation of his staff.
- h) **Security measures:** The contractor shall adopt all the security measures for the control of those factors that may affect the health and well-being of the community.
- i) **Industrial safety personnel:** The contractor shall have one person specialized in safety that shall supervise all of the staff in the work area to ensure that safety measures are constantly being followed by the staff as well as for the scaffolding safety standards, equipment and electrical installations.

#### **Technical Parameters:**

- a.) **Nearby zones:** Leave areas as they were. All the perforations, probes, etc. shall be properly closed either with the same material from the excavation or with new material (earth, selected filling material, asphalt, concrete, etc.) and the areas shall be left as they were before the works started or shall be improved.
- b.) **Protection of elements in the work area:** Areas, equipment and elements at the work site or in areas nearby must be protected from damage or deterioration. The contractor shall assume the cost of any repair or replacement required because of improper use or carelessness on his part or on the part of his workers. All the perforations, probes, etc. should be properly closed either with the same material product of the excavation or with new material (land) (material classified fill, asphalt, concrete) and the areas should be left as they were before the works started or improved.
- c.) **Weekly Reports:** The contractor shall submit a weekly progress report with photos to the COR, , in a NAS format, indicating whether or not the work is going according to the proposed schedule, the number of people that worked daily, the activities performed during each day, and the problems encountered.

#### **Quality of the work**

The contractor shall be responsible for the good quality the works executed by him, their workers or subcontractors and therefore for any damage, defect, repair or works poorly executed, or poorly completed, shall be fixed and assumed by the contractor without any additional cost to the Embassy.

The quality shall be based on the technical specifications of the project and to those belonging to the corresponding Colombian standards for each of activity. It shall be clear that in the case of absence of the Colombian standards for a specific case, the corresponding codes of the United States shall govern for the specific activity.

The acceptance of designs, drawings, calculations and/or works from the Embassy does not relieve the contractor from complying with the codes and rules for both design and construction.

If there are jobs that are poorly executed by imputed causes of the contractor and you need to do a review or redo the work as a whole, the staff of the contractor shall go back to the workplace, and the costs of transportation, accommodation, food, working hours and other expenditure involved shall be assumed by the contractor and shall be implemented as soon as possible.

### **PROJECT OVERVIEW** **TECHNICAL SPECIFICATIONS**

The following are the main characteristics of the work to perform at the Colombian National Police bases in Tumco, Nariño:

#### **Work General Objectives:**

Perform studies, calculations and field survey for the purpose of identifying the terrain conditions and prior recommendations for the construction of three 24 man bunker lodging facilities (lodging for 72 men) in mini-bastion system, an observation multi-story tower (9 m high) with two-three man bunker in mini-bastion system and two-three man bunker with a 2.40 m. high tower in mini-bastion system.

The work shall be executed and designed according to the Colombian code of buildings seismic resistance standard NSR-10 or existing.

Works to be performed on the Colombian National Police Bases are described as follow:

- Soil study of the selected sites for the Colombian National Police Bases at Tumaco.

This information shall be compiled into a final report that contains the information of the project sites, in an organize manner. The detail of the number of copies and the information required for the final report shall be describes later on this text.

The areas subject to the mentioned soil study shall be located at:

Along the area near the Tumaco airport (Florida airport) where the Colombian National Police operates, in which the soil study shall be performed as indicated by the competent authorities from the bases.

## **2. SOIL STUDIES:**

Experience: The personnel that execute the work shall have minimum 2 years of experience and geotechnical engineer in charge certified as professional in this field shall have minimum 5 years of experience. The experience shall cover several fields for the recommendations and for the foundations design for any type of structure to build such as footings, pilots, caissons, floating slab, roads, bridges, towers, retaining walls, airfields, roads etc. And also drainage structures and groundwater and surface water management that may affect the construction.

The Geotechnical study shall include the investigation of the subsoil, the analysis and Engineering recommendations needed for the design and construction of the works in contact with the ground, as to ensure an appropriate behavior of building and that the existing roads are protected, as well as the existing utilities, the land and the neighboring constructions. It shall include all the field tests required to quantify the mechanic and hydraulic characteristics of the subsoil.

This study shall be done based on the project to build performing probes, perforations, etc. in the amount and in the necessary depth with the most convenient method to determine the depth and extent of the different types of soils, profiles and location of phreatic level and the consequences it might have on the project.

The analysis and recommendations shall include the technical interpretation leading to the characterization of the subsoil and the assessment of the possible test mechanisms to provide the parameters and recommendations necessary for the design and construction of foundations and works related to the subsoil.

As minimum, the contractor shall conduct and geotechnical survey of each area to be constructed and its surroundings. This research shall take place, running 9 perforations (3 at each site) at a depth of at least 6 meters and/or additional perforation and at the depth recommended by the professional in charge of the study considers necessary (without any additional cost). These perforations and testing's should be made with the most convenient method to understand and analyze the conditions and/or predominant characteristics of the soil at each base. The perforations shall be carried out throughout the area indicated and shall be spread so it covers the whole area subject to the study, in order to determine the amount and extent of the different types of soils, the way in which these are arranged in layers and the location of the phreatic level. In each executed drilling representative samples shall be taken of the different layers of soil found. Additionally the contractor shall verify the support capacity of the existing soil (CBR) at different depths.

The Geotechnical study shall include at least the following aspects required by the NSR-10 (Sub-chapter H.2.2.):

- a) Project: name, location drawing, objective of the study, general description of the project, structural system and loads.

- b) Subsurface: Summary of the survey performed in the specific work site, morphology, geological origin, visual description, its physic-mechanicals characteristics well supported and description of groundwater levels with a description of its relevance to the project behavior.
- c) Geotechnical analysis: summary of the analysis and justification of the adopted geotechnical criteria that includes the aspects referred to in the NSR-10, Chapter H.4.
- d) Design recommendations: geotechnical parameters for the structural design of the project as Foundation type, support depth, acceptable pressure, calculated settlements, soil profile for the earthquake-resistant design and analysis parameters for the interaction of soil- structure, together with an assessment of the deposit behavior subjected to seismic loads, etc.
- e) Construction recommendations: construction procedures, tolerances of Foundation elements, instrumentation, monitoring and control. The recommendations for the ground appropriateness should be included, construction phases of the Foundation, criteria for the protection of drains and pipes and construction procedures to guarantee the stability of the project and the neighboring areas.
- f) Annex: in the soils report a regional and local location of the project shall be included, as well as a location of the field work, drilling records and result of field and laboratory tests and calculation reports. In addition drawings, layouts, graphics, photographs and every aspect required to illustrate and justify properly the study and its recommendations.

The final report shall contain at least:

- General description of the work and procedures
- Drawing with the location of the perforations along the project area
- Description of the soils stratigraphy found
- Stratigraphic Profile ( perfil estratigrafico)
- Results of basic field tests (cohesive and not cohesive soils)
- Perforations Record
- Phreatic level Measurement
- Laboratory test results: unit weight, natural moisture, CBR, limits, size analysis, etc.
- Summary indicating which the average type of soil is found at the Base, in order to have it as a guide for future projects in the area.
- Conclusions and recommendations for the foundations of structure projected (lodging and surveillance towers in mini-bastion system)

#### GENERAL INFORMATION:

The work shall be executed in a way such as that it interfere as little as possible with the operations and movement of the area. This activity shall be coordinated with the Base Commander or the person he shall assign.

The contractor who the contract is awarded to shall contact NAS construction section prior to getting to the site and when he arrives to the site for any clarification needed in order to perform the work as planned. The numbers to contact in Bogota are: 2752286 or 36 and mobile phones 313 2451552. The list of personnel that shall go to the site shall be needed to be submitted with various days in anticipation in order to send it to the Base and inform the Base Commander of your arrival.

#### **Attached are the following drawings or photos:**

1. Bidding Chart
2. Scope of work in Spanish

**BIDING CHART**  
**LOCATIONS: TUMACO, NARINO**

Item	Description	Unit	Quantity	Cost per area	Cost per field
<b><u>SOIL STUDIES</u></b>					\$
<b>1</b>	<b>SITE WORK</b>				
1.1	Implementation of minimum 24 m linear perforations through the drilling of 4 perforations 6 m depth each	Unit	1.00		
1.2	Sample of subsurface CBR	Unit	1.00		
<b>2</b>	<b>LABORATORY TEST</b>				
2.1	Limits de Atterberg	Unit	2.00		
2.2	Sizing	Unit	2.00		
2.3	Unconfined Pressure	Unit	2.00		
2.4	Unit weight	Unit	2.00		
2.5	Humidity	Unit	2.00		
2.6	Subsoil CBR	Unit	2.00		
<b>3</b>	<b>RECOMMENDATIONS</b>				
3.1	Characteristics of soils and recommendations for foundations of towers and others	GL	1.00		
<b>4</b>	<b>TRANSPORTATION, PERDIEMS, HOTELS, LOCAL LABOR AND UNFORSEEN</b>				
4.1	Expenses associated with Tumaco	Gl	1.00		
<b>ADDITIONAL COSTS</b>					
<b>DIRECT COST</b>		%			
	<b>Administrative and unforeseen costs</b> (if applicable). Maybe it does not apply as it could be already included in each item above	%			
	<b>Profit</b> Maybe it does not apply as it could be already included in each item above	%			
<b>SUBTOTAL</b>					
	<b>IVA</b> ( taxes and indicate how is calculated)				
<b>TOTAL</b>					
<b>TOTAL TIME TO PERFORM THE WORK ( in calendar days)</b>					
	Time to perform the work on site and transportation				
	Time at laboratory and offices for the reports and drawings				