



CTA-S

Rules and Regulations for Contractors on the CTA-S Site during the Site Access Road Construction

CTA-SPE-SEI-303000-0002_1a

Released
31.05.2021

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Revision History

Version	Date	Affected Sections	Reason/Initiation/Remark
1.0	-	All	First release

Authors

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1 Related Documents

1.1 Applicable Documents

The following documents contain additional information. The latest issue of the document is valid.

Ref.Doc	Document Title
AD01	Codigo de Trabajo, Rev Mayo 2021
AD02	
AD03	
AD04	

1.2 Reference Documents

The following documents contain additional information. The latest issue of the document is valid.

Ref.Doc	Document Title
RD01	Ley N 16,744, Establece normas sobre accidentes del trabajo y enfermedades profesionales
RD02	Ley N 20,001, Regula el máximo de carga humana
RD03	Ley N 20,123, Regula trabajo en régimen de sub contratación, el funcionamiento de las empresas de servicios transitorios y el contrato de trabajo de servicios transitorios
RD04	DS N 40, Aprueba reglamento sobre prevención de riesgos laborales
RD05	DS N 54, Aprueba reglamento para la constitución y funcionamiento de los comités paritarios de higiene y seguridad
RD06	DS N 594, Aprueba reglamento sobre condiciones sanitarias y ambientales

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2 Introduction

2.1 Scope

This document describes and defines Rules and Regulations applicable to any Contractor executing Construction and Construction Management Services for the CTA South Site Access Road Construction, It is, thereby, an integral part of the contract between ESO, commercially representing CTAO, and its Contractors.

The goal of this document is to minimize obstructions and hindrances of operations of the different firms involved in executing work at the CTA premises, to protect the property and ESO/CTAO personnel, its contractors and any contracted third parties and to assure compliance with the applicable Chilean national laws and ESO/CTAO regulations.

The Contractor is responsible for compliance and follow-up of all aspects addressed and is obliged to inform and direct his subcontractors, suppliers, consultants and other contracting third parties accordingly.

This document shall be read, interpreted and implemented in conjunction with the Statement of Work.

2.2 Glossary, Definitions and Conventions

CTA	CTA is the Cherenkov Telescope Array
CTAO	The Cherenkov Telescope Array Observatory, the legal entity building the observatory with its project office with headquarters in Bologna, Italy and two sites in La Palma, Canary Island, Spain and at the Paranal Observatory, Antofagasta, Chile
CTA-S	The Array of the CTAO, which is located in the Southern hemisphere in Chile at the Paranal observatory
Contract	The specific contract or purchase order for the Supplies and/or Work and any annex and amendment thereto and/or applicable document thereof.
Contractor	The contracting company, its lower-tier subcontractors, its consultants, suppliers, service providers and all other contracting parties as well as all persons directly or indirectly employed by any of the above entities.
CTA Site Manager	The CTA representative having the authority and responsibility to coordinate CTA work on Site.
CTA Site Safety Officer/Engineer	The CTA representative having the authority and responsibility to coordinate all safety aspects on behalf of CTA related to the work on Site. In particular, the Site Safety Officers/Engineers " are entitled to put a stop to any work, which they deem dangerous for life and limb ".

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Contractor Site Manager	The Contractor representative having the authority and responsibility to coordinate the Contractor work on Site.
Contractor Site Safety Officer/Engineer	The Contractor representative, having the authority and responsibility to coordinate all safety aspects on behalf of the Contractor related to the work on Site.
Site (or CTA-S Construction Site)	<p>The terms "CTA-S Construction Site" or simply "Site" shall mean the area owned by or in concession to CTA including:</p> <ul style="list-style-type: none"> • Exclusively the area assigned to CTA for the construction, installation and operation of the CTA-S array and its infrastructure (Refer to Figure 1 for the actual location of the areas listed above) <p>Within the context of this document, the Site <u>does not</u> include:</p> <ul style="list-style-type: none"> • the premises owned by ESO at Cerro Paranal including the area of the Very Large Telescope (VLT) at approximately 2.500 meters above sea level. • any other area of the ESO land of the Paranal observatory, the ELT construction site or its access road.
Work Area	<p>The term "Work Area" shall mean the area(s) within the Site in which the Contractor performs his Works subject to the terms of his Contract. This comprises:</p> <ul style="list-style-type: none"> • when applicable, the area assigned by ESO/CTAO to the Contractor for his accommodation and temporary installations including access and exit road(s) to reach these areas; • the actual area(s) where the Contractor has to perform his Work in accordance with the terms of the Contract including access and exit roads to reach these areas; • when applicable, the area(s), in which the Contractor, subject to explicit authorization by ESO/CTAO in each case under the terms of the Contract, may be required to deposit excess excavation material including access and exit road(s) to this (those) area(s).
Work	The work that the Contractor is requested to perform on-Site according to the applicable Contract, Statement of Work and other contractual documents.

2.3 Definition of Terms and Abbreviations

Term/Abbreviation	Definition
AD	Applicable Document
BAC	Blood Alcohol Content

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ESO	European Organization for Astronomical Research in the Southern Hemisphere
HR	Human Resources
RD	Reference Document
RUT	Rol Único Tributario (the Chilean taxation and national identification number)

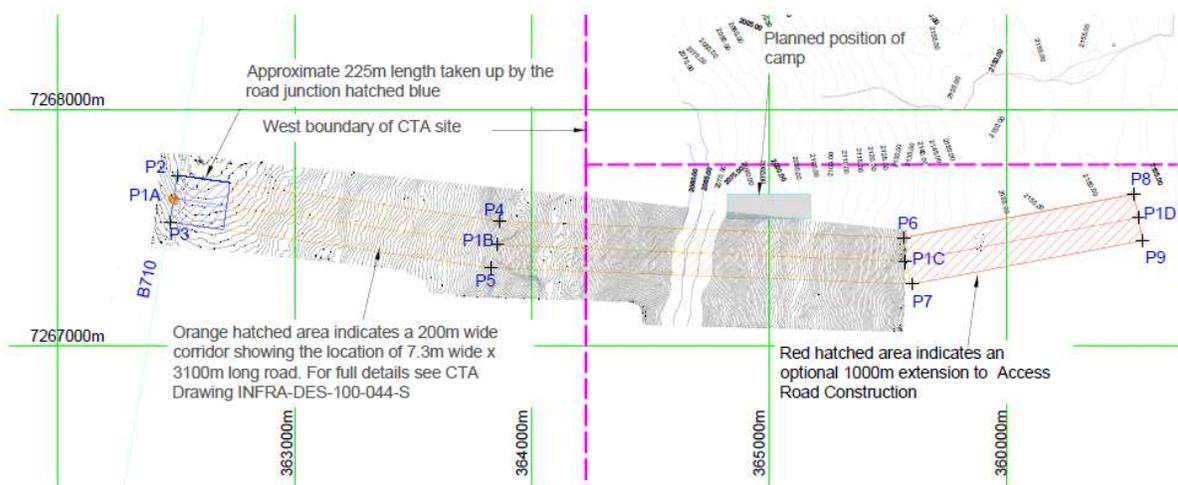
3 Site and Site Limits

The site for the construction of the CTA-S Site Access road is defined by the corridor in Figure 1 including the area of the base camp, or in case that CTAO will agree to a different routing proposed by the contractor during the design phase, by the necessary work area for the construction of said access road.

In addition the areas of the borrow pit(s) and dump areas, which are located outside the regular road construction area, shall be considered as site, and all regulations as set forth in this document also apply.

The contractor shall limit his activities to the assigned areas. Occupation of other areas require the authorization of CTAO.

Figure 1: Construction Area





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Rules and Regulations for Contractors on the CTA-S
Site
Site and Site Limits

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Point	East m	North m
P1A	362489	7267623
P1B	363853	7267428
P1C	365573	7267358
P1D	366556	7267543
P2	362503	7267722
P3	362473	7267524
P4	363862	7267528
P5	363828	7267331
P6	365566	7267458
P7	365604	7267262
P8	366537	7267641
P9	366574	7267445

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4 General Provisions

4.1 Effect and Duration

The Rules and Regulations are applicable to all Contractors performing Work on the Site. They apply from the date of signature of the Contract until the Contractor has left the Site, after completion of the Work and after final acceptance of the Contractor's Work, whichever is the latter.

They also apply to all work-related visits to the Site before, during or after the execution of the Contract.

4.2 Interpretation

Clarifications concerning the interpretation of the present Rules and Regulations, if required, shall be asked in writing to ESO/CTAO and confirmed by ESO/CTAO to the Contractor in writing.

4.3 Amendments

ESO/CTAO may amend the present Rules and Regulations from time to time and/or if deemed necessary for the proper execution of the Work on-site.

Such amendment will be subject to the Change Request procedure defined in the applicable Contract.

5 Administrative Organisation and Personnel Issues

5.1 Contractor's On-Site Representative(s)

In addition to what may be specified in the Contract, the Contractor shall inform CTA in writing of the name of his On-Site Representative(s) at least one month prior to the start of the Work. ESO/CTAO may reduce the amount of notice time if the Work requires so.

The Contractor's On-Site Representative(s) shall include the following functions¹:

¹ if, according to Chilean national legislation, the number of Contractor's staff performing Work on Site so justifies, these two functions may be combined in one person.

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- 1) Site Manager
- 2) Site Safety Officer/Engineer

The Contractor shall demonstrate that for the execution of the Contract his On-Site Representative(s) has (have):

- 1) the necessary authorities delegated by the Contractor to perform his/their tasks;
- 2) adequate and practical on-site experience;
- 3) the capability to operate a work site located in a remote area of Chile;

In addition, for the Site Manager:

- 4) strong organisational skills and an ability to multi-task and prioritize work schedules;
- 5) strong communications skills and ability to work in a team to achieve organisational goals;

In addition, for the Site Safety Officer/Engineer:

- 6) the authority to put a stop to any activity that he deems dangerous for life and limb, property or the environment;
- 7) the appropriate knowledge and qualification related to Chilean construction site safety legislation including the knowledge of RD1 and associated decrees and the possession of a recognized technician or engineer degree in risk prevention.

In particular, the Contractor shall confirm, in writing, whether his Site Manager is authorized to:

- a. sign documents and correspondence, elaborate and submit quotations, estimates and measurement of quantities binding to the Contractor on the Contractor's name and behalf;
- b. accept work orders, execute orders and instructions given by ESO/CTAO or its authorised representative(s) concerning the execution of the Work, discuss Work status reports, occupational safety, health and security.

The Contractor's On-Site Representative(s) shall be approved by ESO/CTAO. This approval can be withdrawn by ESO/CTAO at any time and, having received written notice of that, the Contractor shall withdraw his On-Site Representative(s) immediately and appoint new On-Site Representative(s) equally subject to ESO/CTAO's approval.

The Contractor's On-Site Representative(s) shall be present at all time on the Work Area during the whole execution of the Contract. In order to meet this requirement, the Contractor may nominate deputy(ies) who shall be subject to the same requirements as defined above and shall also be approved by ESO/CTAO. The Contractor shall inform ESO/CTAO when the deputy is in charge.

5.2 Contractor's Staff at the Site

The Contractor shall be responsible for all his staff including the staff of his subcontractors, suppliers, consultants and other contracted third parties during their whole presence on-Site on-duty and off-duty (if lodging on-site) and for their appropriate supervision.

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The Contractor shall instruct all people directly or indirectly associated or involved in the Work on all relevant requirements and information that may be applicable to their obligations and responsibilities under the terms of the Contract and of the present document.

The Contractor shall be responsible for removing from the Site any person under his responsibility who demonstrates or has demonstrated unsatisfactory behavior, incompetence or negligence in the fulfilment of his/her functions, does or did not follow safety rules, or if his/her presence, for any other reason, is deemed to be undesirable. ESO/CTAO reserves the unrestricted right to request immediate withdrawal of any such person from the Work Area or the Site. The Contractor shall replace the person(s) removed with personnel of equal qualification and experience without delay.

Under no circumstances shall the Contract or the Works performed by Contractor's staff under the Contract create or be deemed to create any employment relationship between Contractor's staff and ESO/CTAO.

5.3 Compliance with Laws and other Regulations

The Contractor shall fully comply with all the relevant labour laws, notably Chilean, applicable to the Contractor's staff, including employment, social, fiscal, health, safety, welfare, immigration and emigration laws or any other applicable regulations, in particular but not limited to AD01 and shall allow his staff all their legal rights.

The Contractor shall require all Contractor's staff to obey all applicable laws, notably those concerning health and safety at work.

According to the applicable Chilean labour legislation, the Contractor shall deliver to ESO/CTAO on a periodic basis (at least every month) for himself and all of his subcontractors certificates of compliance of labour obligations from the Chilean Labour Authority concerning all staff working on the Site.

In the event that the Contractor fails to provide the corresponding certificates issued by the Chilean Labour Authority, and these certificates fail to fully certify the prompt and due compliance with the Contractor's labour obligations, ESO/CTAO shall be entitled to withhold payment of any amount due to the Contractor and shall be authorised to pay the employee directly and/or make payments to the relevant social security institutions as applicable.

5.4 Working Hours

The Contractor, prior to the start of the Work, shall provide information and request ESO/CTAO approval on:

- a) the planned daily working hours;
- b) the planned general work routine and shifts system; and
- c) the number of shifts foreseen for the execution of the Work.

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The Contractor is entirely responsible for the observance and application of the relevant local Chilean labour legislation concerning working hours and shift systems on the Site.

ESO/CTAO reserves the right to request the adjustment of the Contractor's working hours, in case disturbances resulting from the Contractor's work may perturb the Paranal astronomical observations (see also section 5.11). In such case, the impact on the Contractor's work and schedule shall be assessed, reviewed and mutually agreed in writing beforehand.

5.5 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of wages, and observe conditions of labour, which are not lower than those established in Chile for the trade or industry in which the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.

The Contractor shall inform the Contractor's staff about their liability to pay personal income taxes in the relevant countries and shall perform his duties in regard to deductions thereof as may be imposed on him by such Laws.

5.6 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly (amongst others by the meaning of the present text) conduct by or amongst the Contractor's staff, and to preserve peace and protection of persons and property on and near the Site.

5.7 Employment Records of Workers

The Contractor shall keep complete and accurate records of the employment of Contractor's staff at the Site. The records shall include the names, ages, genders, RUT (if applicable), function, details of employer, type of shifts, hours worked and wages paid. These records shall be summarized on a monthly basis and shall be available for inspection by ESO/CTAO during working hours.

6 Instructions Concerning Operations on the Site

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6.1 Agreement between the Contractor and other Parties

In the general interest of having smooth operations, ESO/CTAO will insist on the achievement of optimal coordination between various contractors engaged on the Site. ESO/CTAO will endeavour to ensure that such coordination is maintained.

ESO/CTAO will call coordination meetings should the need arise. The minutes of these meetings will be prepared by the ESO/CTAO Site Manager and distributed to each participant. The statements reported in the minutes of the meetings shall bind all participants to their respect, follow-up and implementation.

The status of the safety on Site shall be a topic of discussion during every meeting.

When a joint solution to the disputes should not be achievable, the ESO/CTAO Site Manager will take the appropriate and final decision.

6.2 Site Log Book

The Contractor shall keep, on-Site, a daily site logbook with numbered pages. The Contractor shall enter therein:

- 1) important events, visits, etc.
- 2) the number of persons employed on the Site
- 3) presence on the Work Area of Contractor's sub-contractor(s), consultants, suppliers, service providers and other contracted third parties
- 4) description of the execution of the Work
- 5) accounts relative to the progress of the Work
- 6) occurrence of accidents and near-miss-incidents
- 7) occurrence of security incidents
- 8) equipment on the Work Area
- 9) occurrence of property damage
- 10) hazardous materials being used and/or stored on the Work Area (type, amount)
- 11) hazardous water disposal activities
- 12) weather

The Contractor shall submit the site logbook daily to CTAO Site Manager. The site logbook shall be kept in the Spanish language unless otherwise agreed.

6.3 Traffic

The Contractor shall require ESO/CTAO's authorisation, for all motorized and non-motorized vehicles, to enter into and circulate on the Site. All vehicles shall be in good and safe operational conditions, (e.g. mechanically, tire wear, etc.) and shall comply with all Chilean National technical inspection and circulation requirements.

The Contractor shall take the necessary steps to avoid traffic jams or disruptions on the public roads leading to the Paranal Observatory, and on the roads within the Site. The Contractor

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shall immediately clean such roads in case they have been littered and/or soiled by Contractor's Work traffic.

The Contractor shall rigorously observe and enforce towards his staff and his subcontractors, suppliers, consultants and other contracted third parties all instructions given by CTA, particularly concerning road signs and speed limits. Moreover the Contractor shall observe the laws and rules governing traffic and road safety in force in Chile.

Unless otherwise indicated on Site, the following specific traffic rules shall apply on the Site:

- Alcohol while driving shall not be tolerated (0,00% BAC!)

Parking of heavy equipment and vehicles shall be coordinated with ESO/CTAO and ESO/CTAO's instructions, given to this end, shall be followed by the Contractor.

The Contractor shall not park heavy equipment outside the confines of roadways or in areas not previously authorized by ESO/CTAO.

The Contractor shall assure that drivers operating vehicles at the Site shall be in possession of a driver's license valid in Chile and for the type of vehicle they operate. ESO/CTAO will monitor and randomly check the fulfilment of this requisition.

The use of vehicles outside the existing roads and outside the designated working areas is strictly forbidden.

Material, equipment and persons shall only be transported with appropriate vehicles complying with applicable Chilean laws. These vehicles shall be equipped with adequate seats (including seat belts) for each passenger. Drivers of vehicles used for personnel transport shall be previously authorized to drive by the Contractor.

Transport of personnel on open loading platforms of trucks and pick-ups is strictly forbidden. It is the Contractor's responsibility to strictly enforce these rules.

The CTAO Site Safety Officer/Engineer has the authority to remove, from the Site, all vehicles that are not complying with this chapter.

6.4 Cleanliness of the Work Area and Environmental Protection

The Contractor is fully responsible for the continuous and final cleaning of the work area and for the removal of waste and spills from the Site resulting from his work.

Waste collection and disposal shall proceed according to the conditions and the instructions given by ESO/CTAO. In any case, the final disposition of any waste shall be made in authorized dump places located outside the Site. ESO/CTAO may request proof of such disposition at authorized dumps and the contractor shall provide a certificate of the dump place operator.

Should the Contractor neglect these duties for any reason, ESO/CTAO shall carry them out and charge the Contractor with all the costs incurred.

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The Contractor shall observe the Chilean standards for waste handling and protection of the environment, in particular regarding avoidance and clean up of any contamination.

If several Contractors operate simultaneously on the Site, ESO/CTAO shall, in case of doubt, designate each Contractor's share for the cleanliness of the Site.

6.5 Hygiene

The Contractor shall be fully responsible for the hygiene on the work area and shall provide relevant facilities in sufficient number.

6.6 First Aid Facilities

The Contractor shall be fully responsible to make sure that First Aid Services can be provided to his staff in accordance with applicable laws, notably Chilean.

These facilities shall also be made available for up to 10 person working on site for ESO/CTAO or ESO/CTAO's nominated contractors.

In addition, ESO is maintaining, at the Paranal Observatory, during planned regular work shifts fully operational First Aid Facilities including Ambulance services. These facilities are operated by qualified personnel. First aid equipment, authorized medicines and medical supplies are available, too. The First Aid Facilities are supervised and monitored in accordance with the instructions and guidelines of the appropriate Chilean Worker's Compensation Organization (Mutual). In emergency cases, the First Aid Facilities at the Paranal Observatory may be called in support, which will be provided on a best effort basis.

Although ESO/CTAO will employ its best efforts to provide these ESO First Aid services, ESO/CTAO do not guarantee the availability of these services nor their adequacy to treat specific conditions.

All cost for services rendered to the Contractor by the ESO First Aid Facility shall be borne by the Contractor.

6.7 Accident

In the event of any accident or incident, a full incident or accident report shall be provided by the Contractor to the CTAO Site Safety Officer/Engineer within 24 hours.

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6.8 Alcoholic Beverages, Drugs and Prohibited Items

All alcoholic beverages, illegal drugs, weapons and ammunition of all kind are strictly forbidden on the Site.

The possession, distribution and consumption of alcoholic beverages and drugs other than individual prescription drugs and drugs expended in the First Aid Facility at the Site shall be strictly forbidden.

Prescription drugs may be used only if they do not cause side effects that may affect the person's or other persons' safety.

Medical clearance for drugs shall be granted by a physician.

The Contractor shall remove Contractor's staff from the Site when found under the influence of alcohol and/or illegal drugs.

6.9 Smoking

The Site is a non-smoking environment. Smoking shall not be allowed at any areas inside CTAO facilities, the Contractor's camp and inside permanent facilities. Smoking shall only be allowed at designated outdoor areas agreed by ESO/CTAO.

6.10 Access to Contractor's Facilities and Inspections

The Contractor shall provide ESO/CTAO with a full, unrestricted access to his facilities, such as work area, workshops, buildings, storage areas, etc.

ESO/CTAO reserves the right to perform inspections of the Contractor's facilities at regular intervals or when deemed necessary.

ESO/CTAO furthermore retains the right to intervene in the event of circumstances encountered during the inspections, deemed prejudicial to the safety, environment, cleanliness or hygiene on the Site and the quality and/or the materials used in the installations.

ESO/CTAO instructions resulting from the inspections and/or interventions shall be executed by the Contractor as soon as possible.

6.11 Mitigation of Disturbances to Paranal Observatory

Due to the relative proximity (9 km approx. line distance) of the continuously operating Paranal astronomical observatory, the Contractor shall take appropriate measures to mitigate the possible disturbance to the astronomical observation, and more generally the operation of the

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Paranal Observatory. Such disturbances include, but are not limited to, light pollution, seismic disturbance due to the use of explosives, dust, and traffic.

As a general rule, the following disturbance mitigation measures shall be taken into account in the planning of the Contractor's Work and shall be applied during Work execution:

- Night² work is only permitted in very exceptional cases of operational emergencies with prior authorization by ESO/CTAO
- Limit external lighting to the areas strictly necessary (for Work execution and safety) and never orient strong lights in the direction of Cerro Paranal
- Do not execute explosive works at night.
- Avoid traffic jams or disruptions on the public roads leading to the Paranal Observatory

Contractor mitigation actions will be reviewed regularly by CTA.

7 Temporary Facilities

7.1 General Requirements

As a general rule, the Contractor shall be fully responsible to provide all temporary facilities needed for his staff and for his Work in accordance with applicable laws, notably Chilean.

No facilities will be made available for use by ESO/CTAO or ESO/CTAO's nominated contractors.

In cases where the Contractor provides his own temporary facilities, the following general requirements apply:

- 1 Temporary buildings and structures erected by the Contractor shall not present safety or environmental hazards. These structures shall also comply with all applicable standards with respect to their structural soundness and compliance with local Chilean codes and regulations. They shall be approved by ESO/CTAO prior to the start of their installation.
- 2 The Contractor shall confine areas he will use as storage, machinery deposit, temporary buildings, structures and the associated activities only to the limits of the area(s) allotted to him. The contractor is fully responsible for the site security and possible consequences from thefts.
- 3 When applicable, the area required by the Contractor will be handed over by ESO/CTAO unimproved.
- 4 Transports to and from and within the Contractor's facilities shall be scheduled such that safety hazards, environmental hazards and interference with the work of others or CTA operations are avoided.
- 5 The Contractor shall be fully responsible to remove all his temporary installations after contract completion and to restore the original environment conditions (or equivalent, approved by CTA).

² defined as the period between Sunset and Sunrise

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7.2 Board and Lodging

It is at the contractor's discretion to decide on the concept of board and lodging in accordance with the work planning. The contractor may provide board and lodging for his staff on site, In such case the contractor is obliged to install all necessary and according to norms and legally required facilities for this purpose, in particular those which are necessary to maintain the hygiene on site. It is also the contractor's responsibility to obtain all permits for the operation of such facilities and organize the required inspections. All administrative processes, in particular with the Seremi de Salud are the sole responsibility of the contractor.

Before the start of installation of such facilities ESO/CTAO shall approve the design and engineering of those.

After the completion of the site work all the installations for this purpose shall be removed, and the area shall be restored to its original conditions.

7.3 Offices

The contractor shall in a previously assigned area install his site offices according to the need of the construction process, with the associated infrastructure for the operation. The installation and outfitting shall comply with all applicable notably Chilean standards.

In addition the contractor shall provide offices for ESO/CTAO staff as specified in the Statement of Work for the applicable contract.

Before the start of installation of the offices ESO/CTAO shall approve the layout of those.

After the completion of the site work all the installations for this purpose shall be removed, and the area shall be restored to its original conditions.

7.4 Workshops and Warehouses

No workshop nor warehouse services will be provided by ESO/CTAO. The contractor shall erect and operate workshops and warehouses as required by the workflow on site. All applicable safety and environmental regulations shall strictly be followed. No soil contamination is permitted and in case such happened accidentally, they have to be restored by the contractor at his own expenses.

7.5 Storage Areas

At the Site a storage area will be available within the area assigned to the contractor for his temporary facilities.

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Any Contractor planning to make use of this area shall obtain beforehand a written agreement from ESO/CTAO.

The storage area will have the following characteristics:

- Outdoor
- No Levelling or compaction of the ground will be provided and the contractor shall be responsible for the preparation of such area
- Foundations: no foundation for container storage is foreseen

The Contractor shall take the necessary measures to protect and preserve the materials and devices stored and keep the area(s) allotted to him orderly, free of debris, in safe and hygienic conditions. The Contractor shall remove all contaminated soil or other material resulting from the operation of workshops and gas station.

The storage of explosives or hazardous material is subject to prior written agreement by CTA on the exact place, manner and the appropriate preventive measures in terms of safety, security (notably access) and environmental protection.

7.6 Temporary Sanitary Facilities

The Contractor shall be fully responsible to ensure that the amount and location of sanitary facilities accessible to his staff is in accordance with applicable laws, notably Chilean.

Whenever necessary, the Contractor shall provide, relocate, maintain and remove an adequate number of temporary toilets during his Work. Temporary toilets shall be located at the Contractor's Work Area as per the minimum amount and at the maximum distances from the work fronts mandated by RD6. Toilets shall be of the portable self-contained type, well maintained and screened from view. An adequate supply of tissue paper shall be maintained at all times.

Temporary sanitary facilities shall be regularly serviced and maintained in a clean state.

8 Supplies and Waste

8.1 Fuels (Diesel Fuel and Gasoline)

The Contractor shall be responsible to provide his own fuel supply and storage, of whatever kind required. These storage facilities shall comply with all relevant Chilean national laws, standards and regulations.

Special care shall be put in making the fuel storage and distribution facilities compliant with the requirements dictated by the Superintendencia de Electricidad y Combustibles (SEC).

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8.2 Electric Power

Wherever the contractor will require electrical power for the purpose of his site operations, he shall install the necessary temporary systems of generation and distribution. All electrical installations shall comply with all applicable standards and legal regulations for such purpose. This shall also include the necessary grounding system.

No power supply will be provided by ESO/CTAO.

8.3 Water and Sewage

The Contractor is solely responsible for his own water supply and storage. This applies to drinking, potable, sanitary and industrial water supplies.

In case the Contractor needs to install temporary water tanks for his Work, their location shall be agreed with CTA.

The Contractor shall also be responsible to properly handle the wastewater that results from his Works in accordance with Chilean environmental and other applicable regulations .

8.4 Removal of Waste, Garbage and Debris

Waste, spills, debris and garbage, generated by the Contractor shall be removed by the Contractor at Contractor's responsibility and expense. This includes any waste generated by ESO/CTAO in connection with the Works of the Contractor, e.g. during supervisions, inspections or testing. The Contractor shall remove waste, debris and garbage from the Site and dispose them in a legal manner complying with all applicable local regulations and rules (Servicio Nacional de Salud).

The Contractor is not allowed to dump these substances in an uncontrolled manner, including outside the Site.

Contractor's waste, garbage and debris removal shall be continuous in order to maintain a hygienic ambience to protect the environment and avoid accidents.

The accumulation of Contractors' waste, garbage and debris will not be tolerated and, in persisting cases, CTA will remove Contractor's accumulated waste garbage and debris charging him for the corresponding costs.

Hazardous waste (i.e. used oils, solvents, leftover paints, acids, chlorine containing liquids, fuels etc.) may not be poured into toilet bowls, wash basins and/or any drain leading into the sewage system in order to protect the biological sewage treatment plant. Hazardous waste shall be removed from the Site and disposed of in a legal manner in compliance with local Chilean laws. A certificate of disposal shall be provided to CTA on request.

All deposit locations and manners of disposal of hazardous and non-hazardous waste, debris and/or garbage shall be always subject to prior approval by CTA Safety Officer/Engineer.

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9 Communications

The Contractor shall be responsible to provide his own communications and adequate internet access.

ESO/CTAO will not provide radio communication systems to the Contractors. The use of any radio communication systems shall be approved by ESO/CTAO in advance. Work channels, safety channels and frequency settings shall be agreed with CTAO safety responsible. ESO/CTAO will provide in due time the frequencies to the Paranal safety channel for the contractor to program his own devices with this channel to be able to call Paranal in case of emergency. The radio coverage cannot be guaranteed for the full area of the construction, and this emergency communication might fail in part of the area.

The Contractor shall pay all costs related to their communication facilities.

10 Safety

10.1 General

The Contractor shall comply with all health or safety requirements, laws, ordinances, rules, regulations,

- which ESO/CTAO has defined as specific requirements in its safety policies and manuals
- which apply with respect to the Contractor executing the contract in Chile
- which apply with respect to the national incorporation (company registration) of the Contractor

10.2 Safety Plan

The Contractor shall provide his own health and safety plan. The Contractor shall consider that the behaviour and consciousness of individuals may change due to the lack of oxygen at high altitudes, altitude of the work site approximately at 2.100 meters above sea level.

10.3 Safety Data and Documentation

All safety-related data shall be properly documented by the Contractor and ready for inspection at the Work Area. It shall be made available to ESO/CTAO before the start of the Work and at any time thereafter whenever such data is complemented, updated, amended and/or newly produced, in particular before new/additional staff, vehicles and/or equipment are employed on the Site. Additionally, it shall be made available to ESO/CTAO at any time upon request.

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This shall include:

1. reports, statistics and history of occupational accidents and diseases at workplace;
2. register of performed safety training;
3. register of performed safety inspections;
4. certificate of affiliation to the relevant organisms in charge of the Occupational Accident Insurance, according to RD1. This certificate must indicate “to be presented at CTA-S Site Access Road Design and Construction Project”;
5. timetable with the activities or tasks to be performed, indicating the name of the company or companies that will participate in their execution. Additionally, it is necessary to enclose a list with people working in the CTA-S Site Access Road Construction site and the type of shifts for each of them;
6. registry confirming the fulfilment of the obligation to inform employees about occupational risks, according to Art. No. 21 of RD4 (Right to know or “*Derecho a Saber*” DAS, in Spanish);
7. status of vehicles and equipment to be used on site;
8. formation document and registry of monthly meetings for the Health and Safety Committee (if applicable);
9. official authorizations such as certification from the Chilean *Superintendencia de Electricidad y Combustibles (SEC)* for electric technicians, professional license to drive special equipment, sanitary authorization for food handling, special authorization to remove or to eliminate hazardous materials, among others;
10. criminal record certificate of the employees;
11. copy of the Internal Regulations of (Order) Health and Safety. It shall enclose a record that confirms delivery to each employee;
12. employment Contract for all employees;
13. attendance to Site Safety Induction course (if applicable);
14. copy of the following documents from drivers:
 - valid driving license, according to the type of vehicle;
 - updated Curriculum Vitae;
 - psycho Technical evaluation and certificate;
 - certificate of driving course at high altitude;
 - list with all drivers authorized by the company;
15. copy of the following documents for vehicles within the project:

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- vehicle registration document
- vehicle circulation tax
- mandatory insurance

10.4 Safety Signage

The Contractor is responsible to provide appropriate health and/or safety signage, within his sphere of responsibilities and according to the existing risks. Safety signs are required wherever hazards, dangers and risks need to be highlighted and brought to the attention of persons on the Site.

These signs shall be in accordance with applicable safety codes and standards. They shall be in Spanish.

These signs shall be furnished, installed, maintained, moved and removed by the Contractor.

10.5 Electrical Installations

The Contractor shall give particular attention to the safety of temporary electrical installation and shall comply with all applicable electrical safety standards and legislation, in particular the one issued by the Superintendencia de Electricidad y Combustibles (SEC).

10.6 Hazardous material

The Contractor shall strictly follow the instructions of section 7.4 of this document relative to declaration, approval, documentation, labelling, handling, storage, disposal, etc. of hazardous material.

The Contractor shall not use any products containing asbestos, lead, arsenic or formaldehyde and/or their derivatives.

10.7 Fire Protection, Fire Detection and Fire Fighting

The Contractor shall strictly follow all Chilean norms and ESO/CTAO instructions with respect to fire protection measures.

The Contractor Site Safety Officer/Engineer shall carry out and regularly update a Fire Risk Assessment in coordination with the CTAO Site Safety Officer/Engineer.

Fire safety inspections will be carried out regularly by the CTAO Site Safety Officer/Engineer.

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The Contractor shall install and maintain at his Work Area adequate fire alarm, suppression and fire fighting devices in accordance with Chilean codes and standards.

Fire protection measures shall be taken in particular, in case of hot work (open flames, heat sources, welding, cutting and any other work that could provide a potential source of ignition) and manipulation with liquid and gas fuels as well as explosives.

The Contractor shall assure that no accidental release of fire alarm systems shall occur in connection with his Work. Costs resulting from accidental releases of alarm in connection with Contractor's Work shall be borne by the Contractor.

The Contractor shall not start and process any fire i.e. burning wood, tires, cables, garbage, and other products at the Site.

10.8 Blasting Work

All blasting work and/or handling and manipulating of explosives shall be carried out by the Contractor only with qualified manipulators certified by the local Chilean authorities and in strict adherence to the local Chilean safety Codes and Standards including, but not limited to "*Ley 17.798 complementarios*".

All blasting work of the Contractor requires prior notice and authorization from ESO/CTAO on a daily basis.

10.9 Personal Protective Equipment

The entire Work Area, and all other areas on Site as indicated with appropriate signage, are hard hat areas and appropriate safety shoes and safety vests shall be used. Additional Personal Protective Equipment shall be worn or used if so required by the circumstances of the Work, as coordinated with the CTAO Site Safety Officer/Engineer.

All Personal Protective Equipment shall be certified in accordance with applicable standards. Unless otherwise indicated on Site, wearing of the Personal Safety Equipment is not required while at the offices and Board and Lodging Facilities.

The Contractor shall, prior to the purchase of hard hats, coordinate the colors with ESO/CTAO.

11 Security

The Contractor is responsible for the adequate protection of the Work Area, his materials, products, devices, equipment, temporary installations and all aspects of security of his operations on-site.

No site guards and access point control at the Site entrance will be provided. This is fully under the responsibility of the contractor.

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Lost or stolen material, products, equipment systems, installations, damaged tools, or other items belonging to the Contractor shall be replaced or repaired by the Contractor at his own cost.

Damage to, or theft of, property belonging to CTAO or third parties, which is caused and/or can be attributed to the Contractor or to any person employed directly or indirectly by the Contractor, shall be repaired and/or replaced by the Contractor at his own cost.

Any security incident shall be reported to CTAO.

12 Completion of Work

After completion of the Work, the Contractor shall undertake a final inspection of the Work Area in presence of CTAO Site Manager. The Contractor shall restore the proper function of all safety/technical equipment and systems as required. All remaining garbage, waste and trash like scrap materials, screws, nails, cigarette butts, rivets, wood boards, bottles and the like shall be removed from the Work Area and disposed off in a legal manner.

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