# SDSTA DIVISION 01 SPECIFICATION

Ross Headframe Trolley Beam Strengthening Project

# TABLE OF CONTENTS

## Section 01 11 00 Summary of Work

1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

1.1.1 Project Description

The work includes additional structural steel and welding improvements on three existing trolley beams and incidental related work.

1.1.2 Location

The work is located at the Sanford Underground Research Facility, approximately as indicated – **all work is in the Ross Headframe**.

1.2 EXISTING WORK

Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the **Project Manager – Todd Hubbard**. At the completion of operations, existing work must be in a condition equal to or better than that which existed before new work started.

**--- End of Section ---**

# Section 01 30 00 Administrative Requirements

## 1 GENERAL

### 1.1 PROGRESS AND COMPLETION PICTURES

Photographically document site conditions prior to start of construction operations. Provide monthly digital photographs showing the sequence and progress of work to clearly capture the work performed during that period, in particular areas that will be covered as part of the scope of work. Submit photographs with the monthly invoice. Photographs provided are for unrestricted use by the SDSTA.

### 1.2 SUPERVISION

#### 1.2.1 MINIMUM REQUIREMENTS

Have at least one qualified superintendent, or competent alternate, capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of contract work.

#### 1.2.2 SUPERINTENDENT QUALIFICATIONS

The project superintendent must have a minimum of 10 years experience in construction with at least 2 of those years as a superintendent on projects similar in size and complexity. The individual must have experience in the areas of hazard identification and safety compliance. The individual must be capable of interpreting a critical path schedule and construction drawings. The qualification requirements for the alternate superintendent are the same as for the project superintendent. The Contracting Officer may request proof of the superintendent's qualifications at any point in the project if the performance of the superintendent is in question.

For routine projects where the superintendent is permitted to also serve as the Quality Control (QC) Manager as established in Section QUALITY CONTROL, the superintendent must have qualifications in accordance with that section.

##### 1.2.2.1 Duties

The project superintendent is primarily responsible for managing and coordinating day-to-day production and schedule adherence on the project. The superintendent is required to attend weekly progress meetings, and quality control meetings if applicable. The superintendent or qualified alternate must be on-site at all times during the performance of this contract until the work is completed and accepted.

#### 1.2.3 NON-COMPLIANCE ACTIONS

The project superintendent is subject to removal by the Contracting Officer for non-compliance with requirements specified in the contract and for failure to manage the project to ensure timely completion. Furthermore, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders is acceptable as the subject of claim for extension of time for excess costs or damages by the Contractor.

### 1.3 PRECONSTRUCTION

After award of the contract but prior to commencement of any work at the site, the Contractor must meet with the Project Manager to discuss and develop a mutual understanding relative to the administration of the quality control, safety program, preparation of the schedule of prices, shop drawings, and other submittals, scheduling programming, and prosecution of the work. Major subcontractors who will engage in the work must also attend.

**--- End of Section ---**

## Section 01 32 00 Construction Progress Schedules

1 GENERAL

1.1 SUBMITTALS

Construction Schedule

1.2 ACCEPTANCE

Prior to the start of work, prepare and submit to the Project Manager for acceptance a construction schedule in the form of calendar basis, 3 week look ahead.

The acceptance of a Baseline Construction Schedule is a condition precedent to:

- The Contractor starting work on the demolition or construction stage(s) of the contract.
- Processing Contractor's invoice(s) for construction activities.
- Review of any schedule updates.

Submittal of the Baseline Schedule, and subsequent schedule updates, is understood to be the Contractor's certification that the submitted schedule meets all of the requirements of the contract documents, represents the Contractor's plan on how the work will be accomplished, and accurately reflects the work that has been accomplished and how it was sequenced.

1.3 SCHEDULE FORMAT

1.3.1 Schedule Submittals and Procedures

Submit calendar schedule and updates in an electronic format that is acceptable to the Project Manager.

1.4 CONTRACT MODIFICATION

Submit a schedule analysis with each cost and time proposal for a proposed change. The analysis must illustrate the influence of each change or delay on the Contract Completion Date or milestones. No time extensions will be granted nor delay damages paid unless a delay occurs which consumes all available project float and extends the Projected Finish beyond the Contract Completion Date. Identify types of delays as follows:

- Excusable Delay: Force-Majeure (e.g. unusual weather) - Contractor may receive time extension, but time will not be compensable.
- Inexcusable Delay: Contractor Responsibility - Contractor will not receive time extension.
- Compensable Delay: SDSTA Responsibility - Contractor may receive compensable time extension.

If a combination of any of the delay types outlined above occurs, it is considered a Concurrent Delay, which will require an analysis of the facts to determine compensability and entitlement to any time extension under the applicable contract clauses.

**--- End of Section ---**

# Section 01 33 00 Submittal Procedures

1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal Descriptions (SD)

Submittal requirements in addition to those noted below may be specified in the technical specification sections and drawings.

Preconstruction Submittals

Submittals required prior to start of construction:

- List of Proposed Subcontractors
- Construction Schedule
- Health and Safety Plan
- Quality Control (QC) Plan

Certificates

Statements created using the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system, or material attesting that the product, system, or material meets specification requirements. Statements must be dated after award of project contract and clearly name the project.

1.2 VARIATIONS

Variations from contract requirements require both A/E and SDSTA approval and will be considered where advantageous to SDSTA.

1.2.1 Considering Variations

Discussion with Project Manager and A/E (if applicable) prior to submission will help ensure functional and quality requirements are met and minimize rejections and re-submittals.

Specifically point out variations from contract requirements in transmittal letters. Failure to point out deviations may result in the rejection and removal of such work at no additional cost to the SDSTA.

1.2.2 Proposing Variations

When proposing variation, deliver a written request to the Project Manager, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to SDSTA. If lower cost is a benefit, also include an estimate of the cost savings. In addition to the documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

1.2.3 Warranting that Variations are Compatible

When delivering a variation for approval, Contractor, including its Designer(s) of Record (if applicable), warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.2.4 Review Schedule Extension

In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the A/E and SDSTA of submittals with variations.

## 1.3 SCHEDULING

Schedule and submit interrelated submittals concurrently, such as component items forming a system. Include certifications to be submitted with the pertinent drawings at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

- Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential resubmittal of requirements.
- Resubmit register and annotate monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.
- Carefully control procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved Submittal Register.

### 1.3.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

- Submittals marked "accepted" authorize the Contractor to proceed with the work covered.
- Submittals marked "accepted as noted" or "accepted as noted, resubmittal not required," authorize the Contractor to proceed with the work covered, provided Contractor takes no exception to the corrections.
- Submittals marked “revise and resubmit," indicate noncompliance with the contract requirements or design concept, or that submittal is incomplete. Resubmit with appropriate changes. No work shall proceed for this item until resubmittal is approved.
- Submittals marked "not reviewed" will indicate that the submittal has been previously reviewed and accepted, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it has not been reviewed. Resubmit submittals that have been returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

## 1.4 REJECTED SUBMITTALS

If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, notice must be given to the Contracting Officer. Contractor is responsible for the dimensions and design of connection details and construction of work. Failure to point out deviations may result in the SDSTA requiring rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and submission of the submittals in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

## 1.5 ACCEPTED SUBMITTALS

The acceptance of submittals is not to be construed as a complete check and indicates only that acceptance will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under Section QUALITY CONTROL FOR CONSTRUCTION requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work.

After submittals have been accepted, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

**--- End of Section ---**

## Section 01 35 23 Safety and Environmental Requirements

1 GENERAL

1.1 CONTRACTOR'S RESPONSIBILITY FOR PROJECT SAFETY AND ENVIRONMENTAL PROTECTION

1.1.1 The Contractor recognizes the importance of performing the work in a safe and responsible manner to prevent damage, injury, or loss to individuals, the environment, and the work itself, including materials and equipment incorporated into the work or stored on-site or off-site. Contractor assumes responsibility for implementing and monitoring all Environment, Safety and Health (ESH) precautions and programs related to the performance of the work.

1.1.2 The Contractor and subcontractors shall comply with all legal and SDSTA-specific reporting requirements relating to ESH set forth in the contract documents. The Contractor will verbally notify of any injury, loss, damage, or accident arising from the work to Project Manager and to the SDSTA ESH Safety Representative (ESH Safety Rep), to the extent mandated by legal requirements, to all government or quasi-government authorities having jurisdiction over safety-related matters involving the project or the work. All persons injured while working at SURF will be immediately evaluated, and treated as necessary, by a medical professional before returning to work. Contractor and its subcontractors will immediately report to the Project Manager all spills of a regulated substance of one gallon or greater, and all other significant impacts to the environment (soil, water, air) in performance of the work. Contractor will also immediately notify the Project Manager of any failure to comply with state and federal environmental laws, rules, and regulations.

1.1.3 The Contractor's responsibility for ESH under this specification is not intended in any way to relieve subcontractors and sub-subcontractors of their own contractual and legal obligations and responsibilities.

1.1.4 The Contractor is responsible for screening all subcontractors with respect to safety and to adopt a safety selection process consistent with requirements defined herein. In addition, Contractor is responsible for flowing down all ESH requirements of the Contract to its subcontractors, including monitoring and enforcing compliance.

1.2 ESH REQUIREMENTS AND COORDINATION

1.2.1 Safety and protection of the environment are of the utmost concern on this contract. Safety in this context refers to the health and safety of people and the protection of the environment. Nothing contained herein relieves the Contractor from complying with all applicable standards and regulations found in 29 CFR Part 1926 (OSHA construction standard), 40 CFR (Federal environmental regulations, and Part 74 of the Administrative Rules of South Dakota (State environmental regulations), where applicable. Site specific safety requirements are defined in the SDSTA ESH Manual located at: https://www.sanfordlab.org/esh. Mine Safety and Health Administration (MSHA) compliance may be acceptable, where applicable.

1.2.2 The Contractor will address the safety requirements defined herein and in the SDSTA ESH Manual. Contractor costs associated with the implementation of the requirements will be borne by the Contractor. Safety deficiencies discovered after the award will be remedied at no cost to SDSTA and may at the Contracting Officer's discretion be deducted from the contract amount.

1.2.3 The Contractor shall have a designated Safety Representative (SR), approved by SDSTA, present on the Project at all times when work is physically being performed. The SR may have other

minor duties, but the position's primary role is to oversee safety of the worksite and work being performed by the Contractor, as well as that of its subcontractors. The superintendent or qualified designee may act as the SR. If shift work is utilized, the Contractor must have a SR for each shift. In the case of shift work, the Contractor will designate one SR as the lead for the project. The training requirements for the second SR are the same as the lead and are as follows:

- The SR shall have underground safety experience and training (e.g., MSHA part 48) when applicable.
- The SR shall be certified in CPR, AED, and First Aid.
- The SR is responsible for administering the Contractor's ESH program.
- The SR will escort the ESH Safety Rep on a monthly ESH site visit.
- The SR will provide training to all employees working on their behalf in regard to oil pollution prevention, solid and hazardous waste management, and storm water management, if applicable.
- The Contractor will supply a weekly ESH report to the ESH Safety Rep, detailing any ESH related items.

1.2.4 The Contractor shall have at least one individual certified in CPR, AED, and First Aid onsite at all times.

1.2.5 The Contractor is responsible for identifying the need for Qualified and/or Competent Persons for specific tasks as defined in 29 CFR 1926.

1.2.6 The Contractor must have a documented Site-Specific Environment, Safety and Health Program/Plan in place and accepted by SDSTA before work will be authorized to start. This program must be consistent with the requirements in the SDSTA ESH Manual. The program will be based on the hazards inherent to the Means and Methods adopted by the Contractor and its associated work environment. The scope of work will dictate the required program elements for this contract. Program elements may include those listed on the ESH Manual of the SURF website at https://www.sanfordlab.org/esh.

- If the Contractor chooses to adopt one or more specific elements of the SDSTA ESH program, it must adopt that element in its entirety.

1.2.7 The Contractor is expected to follow a work planning and controls process that is aligned with the SDSTA. (See SURF website ESH Manual at https://www.sanfordlab.org/esh.) The work planning and controls process must be conducted and documented prior to the start of work in the form of a Job Hazards Analysis (JHA). A JHA, developed by the SR, approved by the Project Manager and ESH Safety Rep. The JHA will be reviewed with the individual(s) expected to perform the work prior to work starting on a specified task. The SR is expected to review all JHAs. Copies of JHA(s) must be present at the location where work is being performed and accessible to the individuals performing the work and to SDSTA representatives.

1.2.8 The Contractor will conduct a daily crew work planning meeting (tailgate/toolbox talk), including, when necessary, subcontractor employees, prior to the beginning of each shift. This talk will include the plan of work for the day, a review of hazards and potential regulatory issues, inspection/removal of loose puncture hazards as part of a general daily cleanup requirement of the work area, and the review of applicable JHAs. These documented talks will be submitted to the Project Manager or uploaded to a designated electronic database at the end of each day, or by the end of the work week.

1.2.9 The Contractor is responsible for assuring that all Contractor employee safety training is completed in compliance with SDSTA guidelines, standards, and associated regulations. The following training is required for all Contractor personnel before they start work:

- Sanford Underground Research Facility (SURF) Surface and/or Underground Orientation Training, if onsite for less than 40 hours in a 12-month period
- Cultural Awareness video
- Any specific equipment training (e.g.: crane operator)
- Site specific training for environmental compliance (e.g.: spill prevention, Hazmat, storm water, etc.)

For contractor personnel working on-site more than 40 hours in a 12-month period, the following training is required:

- General Safety Basic Training (Surface and/or Underground)

1.2.10 The Contractor shall provide all common Personal Protective Equipment (PPE) required for the work (hard hats, safety toe boots, safety glasses with side shields, hi-visibility clothing and required fall protection equipment including suspension trauma straps, and full body harness (ANSI A10.14 approved). All contractor personnel shall follow the ESH-(7000-S)-71493 PPE Standard and supporting documents.

- Unique PPE required for aerial lift equipment:
  - Anyone working from an aerial lift must wear a personal fall restraint system or SRL following manufacturer's recommendations.
  - Fall protection must be attached to the manufacturer's designated anchor point.

1.2.11 Smoking, use of tobacco products, including vapor, alcohol, controlled substances, or weapons are not allowed within the boundaries of SURF. All property owned and operated by the SDSTA is designated as tobacco and vapor-free. This applies to all areas of the surface and the underground. The Contractor shall manage and maintain a drug and alcohol policy that aligns with that of SDSTA written policy and procedures. The ESH department review of this document may be required.

1.2.12 If SDSTA perceives the Contractor has created or is exposed to an imminent danger, unacceptable risk, or a non-compliance situation, SDSTA will stop work until safe conditions are re-established. Such work stoppages will be at the expense of the Contractor and will not add time to the completion date of the contract. All personnel have the right and responsibility to authorize a stop work onsite whenever encountering an unsafe condition or act. Refer to the ESH-(2000-S)-202124 Stop Work Standard.

1.2.13 In the event of an incident, Contractor will notify the Project Manager and/or ESH Safety Rep immediately and never later than the end of shift on the day of incident. Contractor shall complete the ESH-(3000-F)-173324 First Report form and submit to the Project Manager or ESH Safety Rep. Contractor shall conduct an incident investigation in accordance with the SDSTA Standard. The investigation will include preparing a written report summarizing the results of the investigation, corrective actions taken to prevent a reoccurrence, and any lessons learned. SDSTA may at its discretion participate in and facilitate the incident investigation. Time and expense incurred by Contractor performing an incident investigation will be at the Contractor's expense.

1.2.14 The Contractor may, with SDSTA written permission, operate SURF-owned equipment. The Incidental Operator must first meet SDSTA requirements for the operation of said equipment. The Contractor shall regularly inspect, test, and calibrate as necessary all equipment, machinery,

tools, or other items furnished by SDSTA that are employed in Contractor's work. Contractor shall take reasonable precautions to avoid damage to facility structures and utilities. If apparent defects are found in SDSTA-provided materials or equipment, defective equipment shall be taken out of service and Contractor shall promptly notify the Project Manager of such defect(s) in writing. Contractor provided equipment shall be inspected and maintained prior to arriving on-site and before each use. Failure of Contractor-provided equipment shall not be entitled to any compensation for downtime or delays or schedule extensions.

1.2.15 When working in the headframes, the Contractor will maintain six-foot distance away from an open shaft hole when the cage gate is open or have 100% tied-off (Fall Arrest) protection.

1.2.16 The Contractor acknowledges that periodic evacuation drills and exercises are required by SDSTA to validate the adequacy and effectiveness of the ESH-(6000-S)-185207 Emergency Management Standard. Contractor also recognizes that such drills and exercises enhance its employees' understanding of Emergency Management Standard. Contractor agrees to participate in quarterly evacuation drills, which may or may not be scheduled in advance, during the term of this contract. It is understood that Contractor will not be entitled to any additional compensation for participating in these evacuation drills or exercises.

1.2.17 The Contractor agrees to assess whether Contractor's employees have the physical, mental, and emotional capacity to perform assigned tasks competently and in a manner that does not unreasonably threaten safety, health, or property, including participation in emergency procedures applicable to Contractor's work location. The ESH-(2000-S)-15209 Fatigue Management Standard regulates the impacts of fatigue for safety, health, and productivity onsite. Refer to the SURF website ESH Manual at https://www.sanfordlab.org/esh for further information.

1.2.18 The Contractor shall follow use of ladders and shall meet the requirements of OSHA 1926.1053 (Subpart X) and OSHA 1910.23 (Subpart D). Prior to using a ladder, the following shall be considered:

- Alternative methods, such as platform/podium ladder, scaffolding, scissor lift, or aerial lift.
- Fall protection is required when working from a standard ladder at a height greater than four feet.
- Fall protection is required when working from the platform of a three-sided podium ladder at a height greater than six feet.
- Additional fall protection is not required when working from a four-sided podium ladder.

For further information on the ESH-(7000-S)-73415 Fall Protection and Prevention Standard, refer to the SURF website ESH Manual at https://www.sanfordlab.org/esh.

1.2.19 The Contractor shall manage all waste, both solid and hazardous, as well as all obsolete, expired, or unused materials procured by the Contractor, including the cost of disposal. The Contractor shall manage and dispose of all wastes generated in compliance with all applicable state and federal laws and regulations. The Contractor shall minimize, to the extent practical, the generation and accumulation of waste during the lifespan of the project. Waste shall not be allowed to accumulate to the point of becoming a threat to the environment (air, land, water) and must not be stored on the ground for longer than a single work shift. Where large amounts of waste are anticipated, a roll off bin should be used. When a roll off bin is not used, wastes must be removed from the work site on a regular basis.

All clean-up and disposal costs associated with Contractor spills or equipment leaks of environmentally regulated substances in the performance of their work are the responsibility of the Contractor. Spills and leaks must be cleaned up immediately, and leaks must be repaired to prevent further environmental contamination.

If the Contractor will be disturbing one or more acres, it is the responsibility of the Contractor to obtain a South Dakota Stormwater Construction Permit and to comply with that permit, including the installation and maintenance of stormwater pollution controls. Stormwater flowing off the work site must be clean, with no visible sheen or solids. Any existing stormwater pollution controls that are altered during Contractor activities must be returned to full operating condition as soon as possible.

Work that results in the storage of petroleum products (55 gallons or greater in a single container) or the installation of oil-filled operational equipment with a volume of 55 gallons or greater must be reported to the Environmental Department, and secondary containment must be installed.

Visible air emissions occurring from roads, stockpiles, conveyors, etc. used during Contractor work must be controlled by the Contractor.

1.2.20 All chemicals to be used at SURF must be pre-approved by SDSTA and Safety Data Sheets (SDS) must be maintained by the Contractor and be readily available to workers on site.

1.2.21 Flammables (defined in 30 CFR Part §57.4460 Storage of flammable liquids underground) are not allowed underground. Flammables used on the surface are to be stored in engineered flammable cabinets or in containers with a minimum one-hour fire resistance.

1.2.22 SDSTA reserves the right to restrict or deny access of any Contractor employee to the work location.

1.2.23 The Contractor shall report the hours worked on site by Contractor's employees on a monthly basis to the Project Manager named in the contract. Hours shall be emailed to the Project Manager no later than the 3rd day of the month for hours worked the previous month.

**--- End of Section ---**

## Section 01 45 00 Quality Control for Construction

1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

- Preconstruction Submittals
- QC Plan;

Submit a QC plan within 15 calendar days of Contract award.

1.2 INFORMATION REQUIREMENTS

Prior to commencing work on construction, the Contractor can obtain a single copy set of the current report forms from the Project Manager. The report forms will consist of the Contractor Daily Report, Rework Items List, and Testing Plan and Log.

Deliver the following to the Project Manager and the designated SDSTA QA Rep:

- DAILY Report: By 10:00am the next working day after each day that work is performed, or by the time determined and accepted by the team;
- Field Test Reports: One copy, within one week after the test is performed;
- QC Certifications: As required by the paragraph entitled "QC Certifications."

1.3 QC PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Manager, a QC plan, a Project Preconstruction Conference, Weekly Status Meeting, submittal review, testing, and QC certifications and documentation necessary to provide materials, equipment, workmanship, fabrication, construction, and operations that comply with the requirements of this contract. The QC program shall cover on-site and off-site work and shall be keyed to the work sequence. No work or testing may be performed unless the QC Manager is on the work site.

1.3.1 Preliminary Work Authorized Prior to Acceptance

The only work that is authorized to proceed prior to the acceptance of the QC plan is the mobilization of storage and office trailers, the installation of temporary utilities, and surveying.

1.3.2 Acceptance

Acceptance of the QC plan is required prior to the start of construction. SDSTA reserves the right to require changes in the QC plan and operations as necessary, including removal of personnel, to ensure the specified quality of work.

1.3.3 Notification of Changes

Notify the Contracting Officer, in writing, of any proposed change, including changes in the QC organization personnel, a minimum of seven calendar days prior to a proposed change. Proposed changes shall be subject to the acceptance by the Contracting Officer.

1.4 QC ORGANIZATION

1.4.1 QC Manager

1.4.1.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. In addition to implementing and managing the QC program, the QC Manager may perform the duties of project

superintendent. The QC Manager is required to attend the Preconstruction Conference, conduct the QC meetings (If separate from the Weekly Status meeting), perform submittal review, ensure testing is performed, and provide QC certifications and documentation required in this contract. The QC Manager is responsible for managing and coordinating documentation performed by others.

1.4.1.2 Qualifications

An individual with a minimum of 5 years combined experience as a superintendent, inspector, QC manager, project manager, or construction manager on similar size and type construction contracts which included the major trades that are part of this contract. The individual must be familiar with and have experience in the areas of hazard identification and safety compliance.

1.4.2 Alternate QC Manager Duties and Qualifications

Designate an alternate for the QC Manager to serve in the event of the designated QC Manager's absence. The period of absence may not exceed two weeks at one time, and not more than 30 workdays during a calendar year. The qualification requirements for the Alternate QC Manager shall be the same as for the QC Manager.

1.5 QC PLAN

1.5.1 Requirements

Provide a QC plan that covers both on-site and off-site work and includes the following with a table of contents listing the major sections identified with tabs.

I. QC ORGANIZATION: A chart showing the QC organizational structure and its relationship to the production side of the organization.

II. NAMES AND QUALIFICATIONS: In resume format, for each person in the QC organization.

III. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Of each person in the QC organization.

IV. OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms that will be employed by the Contractor and a description of the services these firms will provide.

V. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing and managing submittals. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval.

VI. TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraphs "Accredited Laboratories" or "Testing Laboratory Requirements", as applicable.

VII. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.

VIII. PROCEDURES TO COMPLETE REWORK ITEMS: Procedures to identify, record, track and complete rework items.

IX. DOCUMENTATION PROCEDURES: Use SDSTA formats or agreed upon formats with SDSTA QA Manager and Contractor.

X. PROCEDURES FOR COMPLETION INSPECTION: See the paragraph entitled "COMPLETION INSPECTIONS".

## 1.6 PROJECT PRECONSTRUCTION CONFERENCE

During the Preconstruction Conference and prior to the start of construction, discuss the QC program required by this contract. The purpose is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, and the coordination of the Contractor's management, production and the QC personnel. At the meeting, the Contractor will be required to explain how quality control will be implemented for key features of work. Contractor's personnel required to attend shall include the QC Manager, Project Manager, and superintendent.

## 1.7 QC CERTIFICATIONS

### 1.7.1 Completion Certification

Upon completion of work under this contract, the QC Manager shall furnish a certificate attesting that "the work has been completed, inspected, tested and is in compliance with the contract."

## 1.8 COMPLETION INSPECTIONS

### 1.8.1 Final Inspection

Near the completion of all work, a Final Inspection is scheduled with the QC Manager and SDSTA project team, including the A/E. During this inspection, the QC Manager develops a punch list of items which do not conform to the approved drawings and specifications. Include in the punch list any remaining items on the "Rework Items List" which were not corrected prior to the Final Inspection. The punch list includes the estimated date by which the deficiencies will be corrected. A copy of the punch list shall be provided to the Project Manager. Any items noted on the punch list shall be corrected in a timely manner and shall be accomplished before the Contract Completion Date. The QC Manager or staff shall make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify SDSTA that the project is ready for the SDSTA Final Acceptance Inspection. A pre-final walkthrough with the PM is recommended to ensure the Contractor is adequately prepared for the Final Inspection.

### 1.8.2 Final Acceptance

When all items on the punch list have been completed, a Final Acceptance inspection is performed. The QC Manager, superintendent or other Contractor management personnel, and SDSTA project team will attend this inspection to verify that the facility is complete and ready to be occupied.

## 1.9 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities. Reports are required for each day work is performed. Account for each calendar day throughout the life of the contract. The superintendent and the QC Manager (if separate) must prepare and sign the Contractor Daily Report. The reporting of work shall be identified by terminology consistent with the construction schedule. In the "remarks" section in this report which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered and a record of visitors to the work site.

### 1.9.1 As-Built Drawings

The QC Manager is required to review the as-built drawings and ensure they are kept current on a regular basis and marked to show deviations, which have been made from the contract drawings. Ensure each deviation has been identified with the appropriate modifying documentation, e.g. modification number, RFI number, etc. The QC Manager shall initial each deviation or revision.

## 1.10 NOTIFICATION ON NON-COMPLIANCE

The Project Manager or QA Rep will notify the Contractor of any detected non-compliance with the foregoing requirements. The Contractor shall take immediate corrective action. If the Contractor fails or refuses to correct the non-compliant work, the Contracting Officer will issue a non-compliance notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall make no part of the time lost due to such stop orders the subject of claim for extension of time, for excess costs, or damages.

**--- End of Section ---**

## Section 01 50 00 Temporary Construction Facilities and Controls

1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AWS – American Welding Society (Latest Edition)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations (latest edition)

NFPA 70 National Electrical Code (latest edition)

1.2 SUBMITTALS

Submit the following in accordance with Section SUBMITTAL PROCEDURES:

- Construction Site Plan

1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit a site plan showing the locations and dimensions of temporary facilities (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Indicate if the use of a supplemental or other staging area is desired. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

1.1.1 Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic barricades will be required. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.1.2 Fencing

Provide fencing along the construction site at all open excavations and tunnels to control access by unauthorized people.

- The safety fencing must be a high visibility orange colored, high-density polyethylene grid or approved equal, a minimum of 1.2 m (48 inches) high and maximum mesh size of 50 mm (2 inches), supported and tightly secured to steel posts located on maximum 3 m (10 foot) centers, constructed at the approved location. Install fencing to be able to restrain a force of at least 114.00 kg (250 pounds) against it.

3.1 EMPLOYEE PARKING

Contractor employees will park privately owned vehicles in an area designated by the Project Manager. This area will be within reasonable walking distance of the construction site. Contractor employee parking must not interfere with existing and established parking requirements of the SDSTA installation.

3.2 AVAILABILTIY AND USE OF UTILITY SERVICES

#### 3.2.1 Temporary Utilities

Provide temporary utilities required for construction. Materials may be new or used, must be adequate for the required usage, must not create unsafe conditions, and must not violate applicable codes and standards.

#### 3.2.2 Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the Project Manager and periodically empty wastes into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Obtain approval from the system owner prior to discharge into any district or commercial sanitary sewer system. Any penalties and/or fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the Project Manager and follow sanitary district regulations and procedures when discharging into the sanitary sewer system. Maintain these conveniences at all times without nuisance. Include provisions for pest control and elimination of odors. SDSTA toilet facilities will be available to Contractor's personnel.

#### 3.2.3 Fire Protection

Provide temporary fire protection equipment for the protection of personnel and property during construction. Remove debris and flammable materials daily to minimize potential hazards.

### 3.3 CLEANUP

Remove construction debris, waste materials, packaging material and the like from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways must be cleaned away. Store any salvageable materials resulting from demolition activities within the fenced area described above or at the supplemental storage area. Neatly stack stored materials not in trailers, whether new or salvaged.

**--- End of Section ---**

## Section 01 78 00 Closeout Submittals

1 GENERAL

1.1 DEFINITIONS

1.1.1 As-Built Drawings

As-built drawings are developed and maintained by the Contractor and depict actual conditions, including deviations from the contract documents. These deviations and additions may result from coordination required by, but not limited to, contract modifications, official responses to Contractor submitted Requests for Information, direction from the Contracting Officer, designs which are the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

1.1.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.2 SUBMITTALS

Submit the following in accordance with Section SUBMITTAL PROCEDURES:

- As-Built Drawings

2 PRODUCTS

2.1 AS-BUILT DRAWINGS

2.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the as-built drawing. Show what was changed, how it was changed, where item(s) were relocated, and change related details. These working as-built markups must be neat, legible, and accurate.

2.1.2 As-Built Drawings Content

Show the following information on the as-built drawings:

- The location and dimensions of any changes.
- Layout and schematic drawings of electrical circuits and piping.
- Correct grade, elevations, cross section, or alignment of roads, earthwork, structures, or utilities if any changes were made from contract plans.
- Changes in design details or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, etc.
- Unusual or uncharted obstructions that are encountered in the contract work area during construction.

2.2 CLEANUP

Leave premises "broom clean." Remove waste, surplus materials, rubbish, and construction facilities from the site.

**--- End of Section ---**