*ADD THE FOLLOWING SECTION:*

SECTION 112 – CONTRACTOR QUALITY CONTROL ADMINISTRATION

112.01 GENERAL

* 1. The administration of the Contractor Quality Control (CQC) shall comply with the minimum requirements as established in this section. This section includes descriptions of all the Control Measures that are applicable to the QC documentation process. A written program does not have to be submitted if the Contractor performs the administration in accordance with this and other referenced sections. The only submittal required is the personnel qualifications as listed in Section 113 “Contractor Quality Control Organization and Qualification of Laboratories and Technicians”. All documents that are required through the course of the work shall be submitted to the Engineer.

112.02 ADMINISTRATIVE OUTLINE

* 1. The Contractor shall incorporate the following outline for Quality Control administration.

112.03 ORGANIZATIONAL PROCESSES

* 1. The Contractor shall develop his minimum organizational structure, lines of communication, and reporting functions based on the minimum position descriptions as indicated in Subsection 113.02. “Organization.” The organizational structure is based on the partnering approach for conflict resolution; therefore, Quality Control issues shall be addressed at the lowest level possible.
	2. The descriptions of the positions are generalizations of requirements. Additional requirements for a given individual may be further defined in other Special Provisions to the Contract.
	3. The description sheets will suffice for an organization structure.

112.04 GENERAL DOCUMENTATION PROCESS

* 1. The Contractor is responsible for the execution and maintenance of the project file system, which shall be maintained in a location approved by the Engineer.
	2. The Contractor has the responsibility for documenting the construction process. All documentation and records generated at the field level shall be provided through the RPC or the designee. Prior to transmitting to the Engineer, the RPC shall review the following for contract compliance:
		1. Records generated by the Contractor laboratory or an outside laboratory
		2. Records generated by the QCC.
		3. Records generated by Material Sources
	3. **MAINTENANCE**
		1. The maintenance of the documentation shall comply with the following:
			1. Be legible, identifiable, and retrievable.
			2. Protected in a manner to prevent damage, deterioration, or loss.
			3. Readily available for review within 4 hours.
			4. Retain documents until transmitted to the Engineer at substantial completion.
			5. Also, submit on a monthly basis, all records and laboratory and field tests data to the Engineer either in a paper document or PDF files.
	4. **PROJECT FILING SYSTEM**
		1. The RPC or designee shall identify, with approval of the Engineer, the central location for filing and storage of all project documentation locations throughout the duration of the project.
		2. The project file system shall include, where appropriate, the following:
			1. Notification, Activity Cards with test results and QC reports attached, and Log
			2. Pre-activity meeting agenda/minutes.
			3. Deficiency Reports and Log.
			4. Sample Reports and Log.
			5. Certifications and Materials Tracking Log.
			6. Submittals and Log.
			7. Hotmix Log.
			8. Concrete Log.
			9. Audits.
			10. QC Summaries.
			11. QC Final Summary.
	5. **SUBMITTAL**
		1. Submittal tracking shall be performed by the RPC or designee. Submittals that are specification substitutions shall be so identified with written justification.
		2. Copies of submittals shall be filed in the RPC office throughout the review process.
		3. Copies of approved submittals shall reside in the project file.
		4. A person qualified to review the material being submitted shall review and approve the QC Submittal content and verify against specifications. Personnel qualifications are to be submitted for approval by the Engineer.
		5. Logging and Submission Process – The RPC or designee shall take the following steps:
			1. Generate a Submittal Cover Sheet.
			2. Log the submittal into the submittal log.
			3. Review the submittal for compliance with the Contract Documents.
				1. If the submittal is not in compliance with the Contract Documents, return to submitting representative for correction.
			4. Initial the log for review and transmit the submittal to the Engineer for approval.
		6. Reviewing Returned Submittals - The RPC or designee shall take the following steps:
			1. Log the submittal as returned.
			2. Determine the status of the submittal:
				1. “No exceptions taken”:

Forward copy to the RPC for distribution.

Forward a copy to the Submitting Representative, if other than the RPC.

After Final Filing, no additional action shall be required.

* + - * 1. “With Corrections Noted”:

Verify that the corrections are clear.

Forward copy to the RPC.

Forward a copy to the Submitting Representative, if other than the RPC.

After Final Filing, no additional action shall be required.

* + - * 1. “Amend and Resubmit”:

Return the Submittal to the individual who generated the Submittal initially.

These Submittals shall require “Revision” and shall be resubmitted using the same initial log ID number. The Revision number shall progress sequentially for each additional “Resubmit.”

Note that a Revision is pending on the Submittal Log.

* + - * 1. “Rejected”:

Return the Submittal to the Submitting Representative, and inform them that a New Submittal is required.

These Submittals shall be given a new log ID number and treated as a new submittal.

File a copy of the Submittal regardless of Status in the Submittal File.

* 1. **DEFICIENCY TRACKING AND RESOLUTION**
		1. This subsection shall define the procedures required to accurately identify, track, and resolve project deficiencies:
			1. Deficient Work - Deficient work is defined as work that is not in accordance with Contract Documents. An item of work may remain a Deficiency (and not be escalated to Non-Compliance) provided it can be readily corrected "in the field" by the project level personnel. For example, field soils density test below specification requirements.
			2. Non-Conforming Work (non-compliance) - Non-compliant work is defined as work that has a Deficiency which cannot be readily corrected "in the field," and/or shall require that a decision be made by personnel with an "authority" level higher than that which is available daily on the project site. For example, concrete compressive strengths being below specification, or Field soils density test being below specification and no longer accessible.
			3. Informational Tests - In order to control failing Quality Control inspections by the Engineer and/or testing, the Contractor may perform "informational testing." The Contractor shall explain how informational testing shall be utilized prior to requesting any acceptance inspection and/or testing from Engineer. Informational testing may be performed by the Contractor to determine the amount of effort necessary to provide work that complies with the contract documents. However, the informational testing that is performed shall be in addition to the minimum testing required by the Contract Documents. Passing informational test(s) which represent the work being performed may be submitted as part of the minimum testing required by the Contract Documents and approved Quality Control Program, only if the Engineer was given proper advance notification of the testing. Informational testing not counting toward the minimum testing required by the Contract Documents is not required to be submitted to the Engineer as part of the Quality Control documentation but shall be made available for review at the Engineer's request.
			4. Tracking Responsibility - The RPC shall review all Activity Cards daily for New and Resolved Deficiencies. Resolutions shall be approved by the Engineer:
				1. When New Deficiencies are found that were resolved on the same day, do not log them on the Deficiency Log. (No further action shall be required for these items.)
				2. When New Deficiencies are found that are not Resolved on the same day, log them on the Deficiency Log including the following information:

Sequential Deficiency Log ID Number

Reference QC Activity Card Number

Date of Deficiency

Material ID Number

Written description of the deficiency

QC Initials

* + - * 1. When Resolutions are found on the Activity Card, log them on the Deficiency Log including the following information:

Reference Activity Card Number on which the Resolution occurred.

Date of Correction

Written Description of the remitted action per conflict resolution chart

QC Initials

* + - * 1. The personnel responsible for identifying deficiencies at the project level may be any one of the following, but not limited to QA Representatives, QCC, Technician(s), RPC, and Foreman.
				2. Documentation and logging of deficiencies shall be provided by the RPC or designee.
				3. The RPC or designee is responsible for transferring deficiencies from the log to the applicable Activity cards.
				4. The RPC is responsible for tracking deficiencies.
				5. The RPC is responsible for deficiency resolution documentation. Following the resolution, the corrective action and resolution shall be documented on the deficiency log and the deficiency noted as corrected.
			1. Deficiency Reporting - The Contractor shall as a minimum take the following actions to report Deficiencies:
				1. Weekly Review.
				2. Before the Weekly Progress Meeting, review the Deficiency Tracking Log for outstanding Deficiencies.
				3. Generate a summary of outstanding deficiencies including status of each.
				4. Deliver the Summary at the Weekly Progress Meeting.
			2. Deficiency Resolution - This program does not allow a resolution to be initiated by the Engineer. The Engineer will review resolutions initiated by the Contractor and where engineering properties or design are involved, the Contractor shall have the resolution reviewed by a Nevada Professional Engineer at the Contractor’s expense. The Engineer has the right to not approve the resolution and/or propose a documented resolution after review of the Contractor’s proposal.

112.05 CONFLICT RESOLUTION PROCESS

* 1. Conflict resolution shall be accomplished in a partnering method in that there shall be levels of authority, time frames of resolution, and a correspondence between the Contractor and QA employees as outlined in the chart below. Every effort shall be made to resolve conflicts at the lowest possible level.
	2. The example chart depicts the resolution process for “deficient and non-compliant work”:

|  |  |  |
| --- | --- | --- |
| **CONTRACTOR NAME** |  | **Contracting Agency Construction Management** |
| Organization Chart Position 1Contractor Principal Representative |  | 96 hours |  | City Engineer and/orConstruction Manager |
|  |  |
|  |  |  |  |  |
| Organization Chart Position 3Responsible Person-in-charge |  | 48 hours |  | Construction Manager and/or Construction Management Coordinator |
|  |  |
|  |  |  |  |  |
| Organization Chart Position 4Quality Control Coordinator |  | 24 hours |  | Construction Project Representative |
|  |  |

* 1. The above chart is used as a process to follow whenever there is disagreement between Contractor Quality Control and Engineer Quality Assurance test results. Third party testing may be proposed under the following conditions:
		1. The third party shall be a separate independent laboratory, meeting the minimum qualifications set forth for laboratories on the project and not performing any additional work for the Engineer, Contractor, Subcontractors, and/or Suppliers on or for the project.
		2. The third party shall be agreed to by both the Contractor and the Engineer.
		3. Costs for the third party testing shall be as follows:
			1. Initial test for the disputed work shall be paid for by the Contractor.
			2. For each instance of conflict if the third party’s test results reflect Engineer results, Contractor shall pay for any additional testing performed by the third party after the initial test.
			3. For each instance of conflict if the third party’s test results reflect the Contractor results, the Engineer shall pay for any additional testing performed by the third party after the initial test.

112.06 CERTIFICATION AND MATERIAL DELIVERY AND TRACKING PROCEDURE

* 1. Logs shall be established for the purpose of tracking materials that are delivered to or generated from the project. The logs shall be executed and maintained by the RPC or designee and shall remain in the project file system at all times when not in use. The accompanying certifications shall be filed and numbered relative to the log.
	2. The RPC or designee shall be responsible for generating and completing delivery-tracking documentation. There may be instances where activity foremen shall complete the log.
	3. The documentation of the lot, or other identifiable information, relative to the item and the date of installation documented by the RPC or designee shall serve as evidence of the location of the delivered material upon incorporation into the project. For non-authorized sources, the required tests per lot shall be attached to the certificate. The RPC shall:
		1. Complete the Materials Delivery documentation.
		2. Track materials until incorporation into the work.
		3. Ensure that all materials are noted on the Materials Tracking Log.
		4. Resolve certification problems.
	4. When a certification is not presented with the delivery, the RPC shall obtain the document prior to material installation.
	5. The logs shall be executed and maintained in the project file system at all times when not in use.
	6. The sample log ID number shall be the Contract project sequential number, not an independent numbering system supplied by the laboratory. A separate column may be added for a cross-reference if a laboratory number is needed.

112.07 ACTIVITY CARDS AND CONTROL MEASURES

* 1. The RPC shall ensure that the QC activity cards are in conformance with the procedures in Section 114, “Contractor Quality Control Procedures,” and shall establish the guidelines and processes utilized with respect to Notification and QC Activity Cards. The RPC is responsible for verifying all documentation on the QC Activity and notification cards is in compliance with this program before being presented to the QA Representatives for “sign-off” and closeout of the activity.
	2. Tracking Responsibility
		1. The RPC shall be responsible for logging and tracking deficiencies on the QC Activity Card. Constant comparison against the deficiency log shall ensure no deficiency is left unresolved.
		2. The RPC shall document deficiencies that are new or have been cleared for each item relative to each activity. Every effort shall be made to resolve deficiencies as soon as possible. No work shall proceed that will negatively affect the resolution.
		3. Section 2 of the QC Activity Card is used for documenting existing deficiencies associated with the activity listed in section 1 of the QC Activity card. If no deficiencies exist or occur for the activity, the RPC shall check-off and initial this section. If deficiencies do exist, the lower area of this section shall be completed. Each material number shall be verified against outstanding deficiencies.
	3. Testing Identification Responsibility
		1. The RPC utilizing the QC testing frequencies as specified in Table I, Appendix X shall verify the test methods, frequency of the tests, and the planned number of tests to be taken for each material used in the respective activity as designated by the author of the Activity Card.
		2. The tests are subject to a testing turn-a-round time as designated in Table B, Appendix X. Check the box on the table for which tests are performed either in-house or contracted. This form is to be submitted at the beginning of the project. A deduction will be made to the contract and monthly work completion estimate of $100 per day demerit per test method when they are submitted after the durations shown in Table B.
		3. The QCC, in the appropriate space provided on the QC Activity Card, shall document the actual number of tests taken on each material. The activity card must indicate the actual quantity of tests and the testing frequency.
		4. The Quantity of Material to be tested is the numerical amount of material actually available or “ready” for testing shown in units defined in Table I relative to the frequency of the material and based on the stationing information documented on the card. For example, the testable quantity of Type II grade for compaction from station 0+00 to station 10+00, given a width of 30 feet, would be 30,000 square feet (SF). Given this example and using Table I, the minimum number of tests required for this item would be 6 total tests based on the required frequency of 1 test per 5,000 SF.
		5. The RPC or designee shall verify all necessary calculations to ensure the number of tests performed meet the required number. All minimum test numbers calculated shall be rounded up.
		6. In the event that multiple lifts of material are represented or given that the testable quantity shown on the QC Activity Card is not readily identifiable with documented stations and dimensions, appropriate documentation and/or calculations shall be provided on the QC Activity Card to facilitate easy verification of the testable quantity. This process allows the technician to show documentation for the entire amount of material represented without documenting repetitive entries.
		7. The RPC shall generally arrive at total quantities for each activity by documenting pertinent information such as stations, widths, and other miscellaneous dimensions at the beginning of the activity and comparing them against dimensions at the end of the activity. If situations arise where RPC or QCC cannot be present during all operations and would not be able to derive total quantities, the QCC shall retrieve the information from the activity Foreman and forward it to the RPC. The Materials Tracking Logs shall also be utilized in this respect.
		8. The QC Activity Cards shall reflect certain bid item payment quantities. However, the contractor shall not use them for compilation of the monthly pay estimate or for bid item payment tracking. This is due to the difference between the pay item unit of measurement and the testable quantity unit of measurement shown in the QC table(s), and also given that payable activities may take place without the presence of a QC Activity Card. (No testing or inspection)
		9. The test numbering shall be sequential for the entire project. If a test number is missing, it needs to be accounted for by the RPC or the testing consultant.

112.08 DAILY REPORTING

* 1. The Quality Control Activity cards with the inspection forms and daily reports attached plus any field tests shall be used to satisfy the requirements of this subsection. The Quality Control Activity card, completed and signed off, shall serve as the daily summary of activities on the project for the relative item(s). This shall include the transfer of any deficiency items to the tracking log.

112.09 MONTHLY REPORTING

* 1. The RPC shall be responsible for coordinating the monthly quality control summaries at the end of each calendar month and submitting to the QA within the time period allowed by agreement between the Engineer and Contractor after each calendar month. This shall include a summary of the quality control performed during the reporting period that includes the frequency of testing for each material type in accordance with table I or other agency tables.
	2. The RPC shall generate a cover letter. The cover letter shall attest that the summary has been reviewed, that any short falls in testing, sampling, or qualities have been identified, quantified, and acknowledged. Deficient items shall be acknowledged and state that resolution actions are contained in the letter and/or being resolved. A material resolution shall be reviewed and stamped by the Nevada P.E. who has responsible charge.
	3. A Nevada Professional Engineer shall certify that all field laboratory testing was performed correctly, and that the corresponding data is accurate as required by NAC 625.612. This certification shall be attached to the monthly submittal. Additional P.E. stamped letters shall accompany the monthly summary to indicate a P.E. level review and acceptance of the information provided by outside laboratories.
	4. The report may be submitted on media as follows:
		1. PDF format.
		2. Spectraqest test report printouts.
		3. Other word processor documents.
		4. Or any combination.
	5. The summary shall be submitted in the following format:
		1. Cover letter generated by RPC and/or QCC.
		2. P.E. stamped cover letter stating review and approval of the test summary.
		3. Field Test Result Summary that shall indicate all field test procedures and results performed during the reporting period. Items and tests shall be summarized by type. The associated daily field reports for inspections and testing shall be attached behind this summary.
		4. Field Density Test Result Summary indicating all pertinent information generated during all field density testing. The associated daily field reports for test results shall be attached behind this summary.
		5. Laboratory Test Result Summary that shall indicate all laboratory test procedures and results performed during the reporting period. Items and tests shall be summarized by type. Individual test results shall be attached behind this summary.
		6. Laboratory Concrete Break Result Summary facilitating brief analysis of critical concrete strength data. Items shall be summarized by cylinder set numbers. Individual Concrete Break Results for each set of samples shall be attached behind this summary.
		7. Laboratory Aggregate and Soils Result Summary indicating all gradation test procedures performed during the reporting period. Individual test results shall be attached behind this summary.
		8. Deficiency log.
		9. Testable Quantity Summary that shall indicate total month and to-date counts of tests performed relative to the testable quantities and to-date testable quantities.
	6. The monthly QC summary report shall attach a copy of the most current AASHTO accreditation status for the laboratories referenced in the report from the AASHTO web site. The report shall also attach a list of the NAQTC certified technicians that were working at the referenced laboratories or in the field for the project during that report period.

112.10 FINAL REPORTING

* 1. A final summary report shall be generated in accordance with Subsection 112.09 and shall not be submitted until such time as all discrepancies and non-conformances have been resolved as well as a compliant close-out audit.

112.11 QC AUDITING PROCEDURES

* 1. For projects that have calendar days to complete greater than 90 days, the RPC is responsible for informal internal audits at a frequency of once per week. The RPC shall perform formal written audits on a monthly basis. QCC shall formally document monthly audits with results given to the Engineer. Formal audits shall be filed and maintained with jobsite files.
	2. Specific items or topics of the program that will be evaluated are:
		1. Advanced Notification Cards Logs - 24-hour notice being given.
		2. Pre-Activity Meetings Logs.
		3. Activity Cards Logs - accurate, correct, and complete on a daily basis.
		4. Materials tracking log.
		5. Sampling and Testing completed with tracking information and results.
		6. As-built’s are being updated monthly.
		7. QC documentation and overall program is being implemented effectively.
		8. Documentation for resolution of Deficiencies/Non-Conformances Logs correct and complete.
	3. Written documentation of the audit shall be a checklist format with space provided for comments.
	4. Items that are found to require corrective measures shall be noted in the remarks section of the audit form. The RPC shall ensure corrective measures are taken and comply with the program. A follow-up audit limited to items that need correcting shall occur within one week.
	5. Failure to submit monthly written documentation will result in the Progress Payment being withheld until this documentation is provided and accepted by the Engineer.

112.12 BLANK

112.13 BLANK

112.14 SAMPLE RETENTION

* 1. All samples are to be retained until the project is complete. The sample size shall be such that the required testing could be performed. The Contractor QCC shall be responsible for ensuring the sample is of the appropriate size and that it is stored properly at a location approved by the Engineer.

END OF SECTION 112