


QC Procedures and Forms

	<h1 style="text-align: center;">QC743 Control of Materials</h1>	
Document Owner: Todd Steagall	Revision – 0	Effective Date: 1/17/22
Approved By: Todd Steagall	Revision Date:	Review By:10/15/25
Approved By: Billy Hardwick	Release Date: 1/17/22	Page 1 of 3

1) Purpose:

This procedure establishes the methods and responsibilities for Quality Control (QC) for the control of materials to be incorporated into the Work.

2) Scope:

This procedure applies to the inspection and testing of all purchased permanent materials, purchased equipment, and purchased services by AUJV or its subcontractors. These inspections or tests may be on site or offsite and may be performed by the QCM or QC personnel.

3) Definitions:


See Construction Quality Management Plan Section 3.0.

4) Responsibilities:

- a) AUJV will inspect, accept, and document (in writing) materials delivered to the job site and indicate the location and method of handling and storage for each material.
- b) Quality Control Manager (QCM) or QC Inspector
 - i) Will inspect materials delivered on-site.
 - ii) Verify and document Buy America compliance.
 - iii) Maintain a Materials Certification Log (QC743-1) tracking quantities and material acceptance criteria for all materials requiring a manufacturer certification or SCDOT Qualified Products Approval.
- c) QC Representatives (AUJV Personnel)
 - i) Store and handle materials to prevent damage, contamination, deterioration, or loss.
 - ii) Transport materials in a manner to prevent damage, loss, or segregation after loading and measuring.
 - iii) Store materials so that they may be easily inspected and retested.

5) Process Description


- a) The AUJV Segment Engineer, or designee, will maintain documentation for all materials to be purchased for incorporation into the Work. The documentation will include the quality and technical requirements of the Released for Construction Documents and the required documentation attesting to the conformance of the materials to the requirements. The documentation will also include manufacturer's test results or Certificates of Compliance that must accompany or be part of material certification. Manufacturer's Certifications and Mill Test Reports will be reviewed for all steel products to verify source of origin and compliance with Buy America (23 CFR 635.410).

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- b) Material identified as non- compliant with Buy America will be removed or addressed for acceptance and approval by SCDOT’s Office of Materials and Research. A log of materials received will be maintained to include and track Buy America compliance.

- c) Material Submittals – Source Evaluation, Selection and Quality
 - i) Only products provided by vendors pre-approved by SCDOT (listed on the SCDOT Qualified Products List) or approved through Procedure QC754 Construction Submittals will be accepted.
 - ii) Materials provided from off-site sources will be evaluated against the project requirements and submitted for use in accordance with QC754.
 - iii) Materials such as stone, gravel, sand or other materials found in construction excavations within the Site may be used if the material meets the requirements of the Contract Documents, the Governmental approvals and applicable Law.

- d) Receiving Inspection
 - i) All manufactured items will be given a unique identification during the manufacturing process. AUJV will track the items from manufacture → delivery → installation using these identifiers. QC personnel will monitor and document these items being used to ensure they are correct and being installed in accordance with plans and specifications.
 - (1) Reinforcing steel and MSE wall panels will be delivered to the appropriate staging area for assembly and installation. QC staff will verify the shipment is appropriate for the item being constructed.
 - (2) Upon delivery the material will be checked for material description, quantity, and unit of measure. AUJV will verify a Certificate of Compliance or other documents confirming the material meets the requirements of the Released for Construction Documents and accompanies the shipment or has been submitted for project wide coverage. A receipt inspection will be conducted and will include a visual examination of quantity, packaging and handling, coatings or protective finishes, and general dimensional inspection.
 - (3) The QCM, or QC Inspector, will inspect, accept/reject, and document in writing deliveries of permanent manufactured materials. The materials will be inspected for compliance and damage. The material certification(s) will be checked for Buy America compliance.
 - (4) All materials being manufactured offsite will be delivered with manufactured certifications, approval stamps or tags on shipments. QC personnel will inspect all precast items and verify approval stamps upon arrival. QC will also verify all other material certifications meet the project requirements and are logged into the Material Certification log for verification by QA and OVF as needed.
 - (5) QC staff will ensure that accessibility is granted to IQF, OVF, and IA staff for any sampling, testing and inspection necessary.

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e) Storage of Materials


- i) QC Representatives (AUJV personnel) shall store and handle materials to prevent damage, contamination, deterioration, or loss; transport in a manner to prevent damage, loss or segregation after loading and measuring, maintain positive drainage of stockpiles; and store materials so that they may be easily inspected and retested.
 - (1) AUJV and QCM shall also coordinate with suppliers, IQF and OVF representatives to ensure that there is adequate quantity of materials for IQF and OVF sampling/testing in addition to the Work.
- ii) Only materials that the IQF or SCDOT have pre-approved or inspected, tested, and accepted will be incorporated into the Work.
- iii) All documentation will be maintained in the Project Quality Records File. These files will be submitted to SCDOT weekly.

6) Quality Forms/Records:

Form/Record Number	Description	Storage Location
Form QC743-1	Materials Certification Log	BOX

7) Revision History:

Revision	Originator	Revision Date	DCR Number	Description of Change
0	Todd Steagall			Original issue.

	<h2 style="margin: 0;">QC751 QC Daily Work Report</h2>	
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1) Purpose:

This procedure establishes the methods and responsibilities for completion and review of Quality Control (QC) Daily Work Report(s).

2) Scope:

This procedure shall apply to QC Daily Work Report(s) completed for inspections of construction activities under the supervision of the Quality Control Manager.

3) Definitions:

See Construction Quality Management Plan Section 3.0.

4) Responsibilities


- a) Quality Control Representative (QC Inspector/AUJV personnel)
 - i) Complete QC Inspections for the Work performed under their supervision.
 - ii) Document inspections in Form QC751-1 QC Daily Work Report.
 - iii) Provide completed form to QCM daily, or at the frequency approved by the QCM.

- b) Quality Control Manager (QCM) or designee
 - i) Assigns QC inspection duties based on contractor activities and following sampling and testing frequencies outlined in Supplement I.
 - ii) Assist QC Representatives in the preparation of their QC Daily Reports.
 - iii) Review and accept QC Daily Reports.

- c) Quality Control Manager (QCM)
 - i) Review weekly summary of the QC Daily Work Reports and upload into BOX.

5) Process Description:

- a) The QC Representative (QC Inspector/AUJV personnel) shall perform inspections of construction activities under their supervision. The QC Representative shall document inspections on Form QC751-1 QC Daily Work Report completing the following information.
 - i) **ACTIVITY:** Describe the activity inspected. (e.g., Concrete, Earthwork, Forming, Traffic Control Plan (TCP), Erosion Control, Trench Protection, Stockpiling, etc.)
 - ii) **DATE:** Indicate the date of the inspection.
 - iii) **INSPECTION:** Check the appropriate box for the inspection/surveillance performed.
 - iv) **STATION:** Indicate the applicable station locations pertinent to the inspection/surveillance performed.
 - v) **SEGMENT:** Insert the appropriate Segment designation.
 - vi) **OTHER LOCATION:** Complete as appropriate (e.g., bridge number, etc.)

		<h2>QC751 QC Daily Work Report</h2>	
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- vii) TYPE OF INSPECTION: Check the appropriate box (Daily, Summary, QC Control report) and provide additional location information, as necessary, to locate the Work inspected.
 - viii) ITEM OF WORK/CONTRACTOR: Indicate the work process and/or contractor identification.
 - ix) QC INSPECTION PERFORMED: Indicate the inspections and tests performed.
 - x) COMPLIES WITH PLANS and SPECS: Indicate whether the Work complies with the plans. If the Work is unsatisfactory, state what action was taken.
 - xi) QC Representative: Print, Sign, and Date.
- b) Each week the QCM summarizes the QC Daily Reports and addresses any compliance or other issues identified and submits to SCDOT.

6) Quality Forms/Records

Form/Record Number	Description	Storage Location
Form QC751-1	QC Daily Work Report	Box

7) Revision History

Revision	Originator	Revision Date	DCR Number	Description of Change
0	Todd Steagall			Original issue.

QC Daily Work Report


FORM QC751-1

Date

Page

1

Project: Carolina Crosroads Phase 1		Weather: _____							
Client: Archer / United JV		High: _____							
File Number 20-61.QC		Low: _____							
Location: _____									
CONTRACTOR		SUPER.	SKILLED	INTER.	UNSKILLED				
1									
2									
3									
4									
5									
TOTALS		0	0	0	0				
Work Done By Contractor				ROAD	STA. TO STA.				
QC Tests and Inspections Performed									
FACTORS IMPEDING THE PROGRESS OF WORK:				Contractors Equipment					
				Contractor #	1	2	3	4	5
				Pick Up Truck					
				Traffic Control Trailer					
				Dump Truck					
				18 Wheel Dump Trailer					
				Loader					
				Crane					
				Bull Dozer					
				Paver					
DEFICIENCIES NOTED AND ACTION TAKEN:				Excavator					
				Rubber Tire Roller					
				Vibratory roller					
				Water Truck					
				Skid Steer					
COMMENTS				Motorgrader					
				Messsage Boards					
				Tractor Broom					
				Flatbed					
				VAC Truck					
Inspector: _____				Hours Worked: _____					

	<h1>QC752 Pre-Construction and Pre-Activity Meetings</h1>	
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1) Purpose:

This procedure establishes the methods and responsibilities for Pre-Construction and Pre-Activity Coordination Meetings for Feature(s) or items of Work. Note: This includes meetings with a selected vendor/supplier prior to execution of Work.

2) Scope:

This procedure shall apply to the Pre-Construction and Pre-Activity Meetings. Pre-Construction Meetings will be held prior to the start of any major Feature of Work in order to assure that the schedule, processes, materials, and work plans are adequate to accomplish the task at hand. A Pre-Activity Meeting will be held prior to starting a component of the major work item to ensure that quality, technical, safety and environmental features are discussed and understood by all parties. Note: Subsequent Pre-Activity Meetings will be held as needed (e.g., significant lapses of time, changes in construction procedures, crew changes, or a significant design change to the Feature of Work).

3) Definitions:


See Construction Quality Management Plan Section 3.0.

4) Responsibilities:

- a) AUJV Construction Supervisor
 - i) Request Meeting to be scheduled.
- b) Quality Control Manager (QCM):
 - i) Schedule the Meeting and invite attendees.
 - ii) Chair Meeting
- c) Supervisor of the feature of Work, QCM, Safety/HSE, Independent Quality Manager (IQM), or designee, Traffic Control Supervisor and Erosion Control Coordinator, or designee, applicable subs/suppliers. OVF, SCDOT and FHWA will be invited as applicable.
 - i) Attend and participate in the Meeting

5) Process Description:

- a) Scheduling the Meeting
 - i) The Construction Supervisor shall contact the QCM and request scheduling of a Preconstruction Meeting for each new major Feature of Work or component of a major feature. (Ex: beginning foundation on new bridge, bridge deck, MSE walls, Interstate paving, etc.) Preactivity Meetings will be held for minor items, when the process on a major item changes, crew changes, etc.
 - ii) The QCM, or designee, shall schedule the meeting and email invitations to attendees.

	QC752 Pre-Construction and Pre-Activity Meetings		
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b) Conducting the Meeting

- i) The QCM, or designee, shall chair the meeting and discuss and/or review the requirements for the following items including identification of applicable communications with other representative(s), third party inspection or Regulatory personnel using QC752-1.
 - (1) Safety requirements and precautions to be observed.
 - (2) Approvals of shop drawings, catalog cuts, etc. (Submittals)
 - (3) Approval of inspection and test reports on material and equipment.
 - (4) Availability of materials and equipment required
 - (5) Completion of previous operations or preliminary work.
 - (6) Any preparatory steps dependent on the given feature of work to be started.
 - (7) Review of the contract drawings and specifications for this feature of work.
 - (8) Review of quality standards, Hold Points and QA inspections guides.
 - (9) QC and QA Testing requirements of the work.
 - (10)Planned utility outages.
 - (11)Provisions for instruction of the workers regarding the quality and technical requirements of the Feature of Work.
 - (12)Traffic control
 - (13)Environmental concerns
 - (14)Public notification.

c) Record Meeting

- i) The QCM, or designee, shall prepare meeting minutes, attach a sign-in list of attendees at the meeting and provide to the IQF and OVF for their records.

6) Quality Forms/Records:

Form/Record Number	Description	Storage Location
QC752-1	Preconstruction and Preactivity Meeting	Box

7) Revision History:

Revision	Originator	Revision Date	DCR Number	Description of Change
0	Todd Steagall			Original issue.

QC752-1 Pre-Construction/Pre-Activity Meeting


Project Office Address: 1021 Briargate Circle, Columbia, SC

Project Office Phone #: TBD

Date:

Carolina Crossroads Phase 1

1. Introductions
 - AUJV
 - QC
 - IQF
 - OVF
 - SCDOT
 - FHWA
2. Operation Overview
 - **Safety**
 - Location of work
 - Description of work
 - Equipment
 - General Sequence of Construction
 - *Q&A for Operations Scope*
3. Timeline Overview
 - Timeline
 - *Q&A for Timeline*
4. Inspection
 - QC Inspection
 - QA Inspection
 - Hold Points
 - Environmental Compliance
5. Utilities
 - Utility items
 - *Q&A for Utilities*
6. Traffic Control
 - Traffic Control
 - Traffic Control
 - *Q&A for Traffic Control*
7. Operations Review & Action Items

	<h1 style="text-align: center;">QC753 Quality Control Inspection Planning</h1>		
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1. Purpose and Scope

Quality Control (QC) Inspection Planning is designed to ensure that the construction activities performed by AUJV receive proper QC oversight, inspection, and documentation to remain in compliance with the Carolina Crossroads Quality Assurance Program (QAP) and approved Construction Quality Management Plan (CQMP).

2. Roles and Responsibilities

Quality Control is a duty and responsibility of every member of the AUJV Team including construction field staff, project management, and QC inspectors. The Quality Control Manager (QCM) will be responsible for ensuring that all members of the QC team are informed of their responsibility for each task being performed and that the proper inspection and testing occurs.

3. Process Description


- a). QCM identifies construction activity requiring QC inspection (activity, location, item, etc.)
- b). Assign responsible party for QC inspection duties (QC inspector/AUJV personnel)
- c). Identify sampling, testing, and documentation requirements, See Supplement I
- d). Identify Hold Point requirements listed in Supplement D of CQMP
- e). Identify required SCDOT inspector certifications for activity per CQMP Figure 5.3.1 (d)
- f). Discuss QC inspection plans during Preconstruction and Preactivity Meetings

4. Quality Forms/Records:

Form/Record Number	Description	Storage Location

5. Revision History:

Revision	Originator	Revision Date	DCR Number	Description of Change
0	Todd Steagall			Original issue.

	<h1>QC754 Construction Materials Submittals</h1>	
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1) Purpose:

This procedure establishes the methods and responsibilities for submitting, reviewing and approval of Construction Material Submittals by AUJV, subcontractors, and/or vendors.

2) Scope:

This procedure shall apply to construction materials purchased for incorporation into the Work and processes/procedures required.

3) Definitions:


See Construction Quality Management Plan Section 3.0.

4) Responsibilities:

- a) Material Purchasers (includes AUJV, its vendors, and subcontractors)
 - i) Assure the materials purchased for incorporation into the Work meet the requirements of the Released for Construction Documents or SCDOT Qualified Products List.
 - ii) Provide applicable material certifications, test reports, Materials Safety Data Sheets (MSDS), bill of lading, certificates of compliance, cut sheets, sketches, and/or details depicting the quality or technical attributes of the purchased items, and completed Form QC754-1 Submittal Cover Sheet with Construction Submittals to the AUJV Segment Engineer.
 - iii) Prepare submittals for all Material Certifications for approval.
- b) Quality Control Manager (QCM), or designee
 - i) Review Construction Material Submittals for completeness and accuracy.
 - ii) Submit packages to IQM for approval or rejection.
 - iii) Assure that submittals are provided and accepted prior to incorporating material and/or equipment in the Work.
 - iv) Provide a copy of the Construction Material Submittals package to IQF, OVF and SCDOT upon approval.
 - v) Maintain records of Construction Material Submittals with QC Document Control Manager

5) Process Description:

- a) Assembly and review of Submittal Package.
 - i) Material Purchasers (AUJV) shall provide applicable material certifications, test reports, Materials Safety Data Sheets (MSDS), bill of lading, certificates of compliance, cut sheets, sketches, and/or details depicting the quality or technical attributes of the purchased items with material submittals to the AUJV Segment Engineer.
 - ii) Technical service providers for various element of work shall prepare submittals as required by the Contract.

	<h2 style="text-align: center;">QC754 Construction Materials Submittals</h2>		
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- iii) AUJV Segment Engineer shall submit package to AUJV Document Control Manager for review and submittal to QCM.
- iv) The QCM, or designee, shall review all submittals for completeness, accuracy, and compliance with the Released for Construction Documents and Construction Requirements.
 - (1) If the materials are from a SCDOT-approved manufacturer or producer, ensure they are on the SCDOT Qualified Product List (QPL).
 - (2) If the materials are not on the QPL, QCM will submit a request for approval to SCDOT Office of Materials and Research (OMR) for approval. If approved by OMR, the material may be incorporated in the project.
 - (3) If necessary, QCM will submit the material package to the EOR/Design Manager for review and approval prior to submitting to OMR/IQM for acceptance.
 - (4) If the materials are not on the QPL and are not approved by OMR, reject the material, and inform the Materials Purchaser or technical service provider.

b) Approval of Submittals

- i) The QCM, or designee, shall provide a copy of the approved submittal package to the IQM, OVF and SCDOT upon approval.

c) Record Maintenance of the Construction Submittal, Review and Approval

- i) The QC Document Control manager shall maintain records of material submittals in accordance with Section 6 below.

6) Quality Forms/Records:

Form/Record Number	Description	Storage Location
Form QC754-1	Submittal Cover Sheet	Box

7) Revision History:

Revision	Originator	Revision Date	DCR Number	Description of Change
0	Todd Steagall			Original issue.

Quality Control Construction Material Submittal

Submittal Date: _____

Submittal Name: _____

Item Location/Use: _____

Sub-location: _____

To be used in: _____

Submittal Identifier: _____

Document Category: _____
(Material Certifications, etc.)

Document Type: _____

SCDOT QPL: _____
(QPL Number)

Attachment Description: _____

Remarks: _____


Approvals:

AUJV: _____

Quality Control Manager: _____

Idependent Quality Firm: _____

Owner Verification Firm: _____

	<h1 style="text-align: center;">QC756 Hold Point Inspections</h1>	
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1) Purpose and Scope:

This procedure is to describe the responsibilities and process to administer and document established Hold Points (HP) as part of the CQMP process.

2) Reference Documents:

- a) QAP for Carolina Crossroads Phase 1 project.

3) Definitions:


See Construction Quality Management Plan Section 3.0.

4) Responsibilities:

- a) The coordination of all HP inspections with IQF, OVF and SCDOT is the responsibility of the QCM or designee
 - i) The QCM or designee is responsible to establish a complete list of HPs that will be submitted to IQF, OVF and SCDOT for approval
 - ii) The QCM or designee is responsible for making sure that all HPs are recognized in the field, and that IQF, OVF and SCDOT are promptly notified 24 hours in advance of a planned HP
 - iii) IQF (and OVF in some instances) is responsible to sign off on each HP. See Supplement D of CQMP for those minimum HPs that will require IQF and OVF approval.
 - iv) A member of the QC staff attends HP inspections.

5) Procedure:

- a) During work activity when a HP is identified and ready for inspection, the QCM or designee shall notify IQF, OVF and SCDOT by email notification at least twenty-four (24) hours in advance for their participation in the inspections, and examinations of specific work operations or tests, before proceeding to the next phase of construction. If after proper notification to IQF, OVF and SCDOT, the decision is made to delay the next phase of work, the QCM or designee shall notify their IQF, OVF and SCDOT counterparts. If requirements of the HP are not met, no further work will take place until the work conforms to contract requirements and an additional HP is documented.
- b) QCM or designee shall review the NCR and DN logs prior to HP assignment and are to be checked prior to the HP inspection for the item of work subject to the upcoming HP inspection. The purpose of this is to confirm that there are no outstanding NCRs or DNs. The HP will not be released until any outstanding DNs or NCRs are resolved. Any modification or conditions on a HP are to be signed off by OVF or SCDOT.
- c) Once the HP Inspection is conducted and receives an agreement by the IQF (and OVF if applicable), IQM will complete Form QA756-1 for the project records.

		<h2>QC756 Hold Point Inspections</h2>	
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d) With approval from all parties, DN's that are open at the time of the HP inspection will be converted to NCR's if they are not resolved at the HP and work progresses. DN's and NCR's will be recorded on Form QA756-1.

e) QCM will attached the HP Checklist to the Daily Work Report for that item. HP Inspections will be included in the weekly summary submitted to SCDOT.

f) Additional HPs may be identified by IQF, OVF, SCDOT or AUJV at any time throughout the project. The revised HP List will be approved by IQF, OVF and SCDOT prior to revising the CQMP to include the revised HP List.

6) Quality Forms/Records:

Form/Record Number	Description	Storage Location

7) Revision History

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

Quality Control Hold Point Checklist

Hold Point Date: _____

Hold Point ID: _____

Hold Point Item: _____

Location: _____

Sub-location: _____

Description: _____

Remarks: _____

Related RFIs/NCRs _____

RFIs/NCRs Cleared Yes _____ No _____


Hold Point Clearance: YES _____ NO _____

QC Signature: _____

IQF Signature: _____

OVF Signature: _____

SCDOT Signature: _____

	QC759 Control of Equipment for Quality Testing	
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1) Purpose:

This procedure establishes the methods and responsibilities for maintaining, controlling, calibrating, verifying, and adjusting tools, gauges, instruments, and other measuring and testing devices (equipment) used in activities affecting quality of Quality Control (QC) inspection and testing.

2) Scope:

This procedure shall apply to QC calibration of tools, gauges, instruments, and devices for the Carolina Crossroads Phase 1 Project.

3) Definitions:

See Construction Quality Management Plan Section 3.0.

4) Responsibilities:

a) Materials Manager (MM)

- i) Establish a schedule for maintenance, calibration/verification, and adjustment of equipment. Calibration intervals shall be based upon manufacturer recommendations or as indicated by industry standards.
- ii) Oversee implementation of established schedule.
- iii) Maintain records of equipment maintenance, calibration, verification, adjustment, and NIST traceability.
- iv) Check delivered equipment for calibration records and obtain calibration records from suppliers when not included with delivery.
- v) Identify new equipment with a unique equipment number.
- vi) Supervise verification of calibration, or calibration activities in accordance with the established schedule.
- vii) Document results of calibration, or verification on calibration record, provide record to QCM.
- viii) Apply calibration sticker to calibrated/verified equipment.
- ix) Verify calibration status of equipment prior to use.
- x) Remove from service any equipment that has exceeded its calibration interval or is apparently damaged.


b) Technician

- i) Perform equipment calibration under the direction and supervision of the MM or designee.

5) Process Description:

a) Maintenance and Calibration Schedule

- i) The MM shall establish a schedule for maintenance, calibration, verification, and adjustment of equipment according to recommendations from the manufacturer or, where not

	QC759 Control of Equipment for Quality Testing	
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applicable, industry standards and/or requirements of AASHTO. The schedule shall also identify the method by which the calibration shall be completed. All equipment subject to calibration/verification shall be incorporated into the schedule, identified by a unique identifier.

b) New Equipment Receipt

- i) The MM shall check equipment delivery records for calibration records and maintain them in accordance with Section 6.0.
 - (1) If calibration records are not received, contact the supplier of the equipment to obtain calibration records.
 - (2) For equipment calibrated in house, assign qualified QC personnel to perform calibration/verification in accordance with this procedure.

c) Calibration/Verification of Equipment

- i) The MM shall arrange for the calibration/verification of equipment in accordance with the established schedule.
- ii) The MM shall supervise calibration or verification of equipment in accordance with the appropriate calibration method, in accordance with the schedule.
 - (1) Calibration/Verification shall be performed with a NIST traceable standard.
 - (2) A calibration record shall be generated including, at a minimum, the following information.
 - (a) Equipment ID.
 - (b) Calibration /Verification Method.
 - (c) NIST Standards used and their calibration due dates.
 - (d) Calibration /Verification Date.
 - (e) Technician performing the calibration.
 - (f) As found condition, and a statement as to whether the equipment was found in or out of tolerance.
 - (g) As left condition.
 - (h) Next Calibration/Verification Due Date.
- iii) The MM shall apply a sticker or other marking to the equipment indicating the calibration date and next due date.
- iv) If the equipment is damaged or unable to be adjusted within tolerance, the equipment shall remove the equipment from service and contact the MM.
- v) Upon discovery of an Out of Tolerance condition, the MM shall:
 - (1) Investigate potential questionable test results using the out-of-tolerance equipment.
 - (2) Examine results further if any test results are confirmed as questionable.

	QC759 Control of Equipment for Quality Testing		
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- (3) In the case of repetitive Out of Tolerance conditions, the MM shall increase the frequency of calibration/verification intervals.
- d) Prior to the performance of inspection or testing using calibrated equipment, QC Representatives shall verify calibration status of the equipment and shall not use any equipment that is outside its calibration interval.

6) Quality Forms/Records:

Form/Record Number	Description	Storage Location
N/A	Calibration Records	Equipment calibration file

7) Revision History:

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

	QC760 QA Notification of Inspection and Testing	
Document Owner: Todd Steagall	Revision – 0	Effective Date: 1/17/22
Approved By: Todd Steagall	Revision Date:	Review By: 10/15/25
Approved By: Billy Hardwick	Release Date: 1/17/22	Page 1 of 2

1) Purpose:

This procedure provides methods and responsibilities for providing notification to the IQF for inspection, sampling or testing by Quality Acceptance (QA), OVF and SCDOT.

2) Scope:

The procedure has been developed to assure that timely notification is provided to the IQF, OVF and SCDOT or Utility Owner for the performance of required inspections, sampling and/or testing for all Features of Work and prior to start of the next operation that may cover or conceal the feature (such as reinforcement and embedded items prior to concrete placement; succeeding lifts of embankment, base, pavement, asphaltic concrete; etc.). These notifications shall include both verbal and written documentation to the IQF, OVF and SCDOT.

3) Definitions:


See Construction Quality Management Plan Section 3.0.

4) Responsibilities:

- a) AUJV Construction Manager or designee
 - i) Provide, update, and present the 3-week look-ahead schedules at regularly scheduled meetings involving SCDOT, OVF, AUJV, IQF, and QC personnel.
 - ii) Provide sufficient daily notice to the IQF, OVF and SCDOT of pending points at which QA Hold Point inspections or sampling and testing will be necessary.
 - iii) Ensure that work does not extend beyond the Hold Point inspection unless a passing result is achieved.
 - iv) Provide sufficient notice to IQF, SCDOT, OVF for required inspections and/or tests.
 - v) Ensure passing test results are achieved prior to work proceeding.

5) Process Description:

- a) AUJV will conduct weekly meetings presenting, to the IQF, OVF and SCDOT, the 3 week look-ahead schedule.
- b) AUJV will notify IQF, OVF, or SCDOT of the scheduled activities requiring their inspection or testing far enough in advance to attain completion of the applicable Work within the schedule.
- c) Each day, AUJV Field personnel will coordinate construction activities with the QCM to facilitate QC inspection and testing activities. This information will serve as the basis for daily notification of work activities.
- d) QCM will notify IQF, OVF and SCDOT of daily activities to ensure that Proper QA inspection and testing can take place.
- e) AUJV Construction Superintendents and Segment Engineers are empowered with the authority to make schedule changes that may be needed to accommodate the daily

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construction activities. When this occurs, the AUJV Construction Superintendents and Segment Engineers shall notify the IQF, QCM, OVF, SCDOT, or Utility Owner of these changes either verbally, by phone or through email, in sufficient time to facilitate required inspection, sampling or testing.

- f) AUJV Segment Engineers will provide notification of anticipated quantities of materials to be delivered, the timeframes for deliveries, and the location of delivery on a daily basis for the work to be performed during the next day's work activities to the IQF Inspectors. AUJV Segment Engineers will provide notifications to the QCM. QCM will notify IQF, OVF and SCDOT either verbally, by phone or through email, in sufficient time to facilitate required QC, QA and OV inspection, sampling or testing

6) Quality Forms/Records: N/A

7) Revision History:

Revision	Originator	Revision Date	DCR Number	Description of Change
0	Todd Steagall			Original issue.

	<h1>QC762 SCDOT HMA Sampling and Testing</h1>	
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1) Purpose:

This procedure establishes the methods and responsibilities for inspection and testing of asphalt mixtures used on the Carolina Crossroads Phase 1 Project.

2) Scope:

This procedure shall apply to all asphalt mixtures used on the Carolina Crossroads Phase 1 project.

3) Responsibilities:

a) Quality Control

i) AUJV QC Personnel (Field Operation):

- (1) Verify proper mix being used
- (2) Verify HMA placement rate
- (3) Verify mix temperature at placement
- (4) Record results on Form 400.04 and on DWR

ii) Hot Mix Asphalt Supplier (Plant Operations):

- (1) Coordinate paving operation with SCDOT District Asphalt Manager in accordance with established protocols in SC-M-400
- (2) Verify proper mix being used
- (3) Perform QC sampling and testing of mix during production to ensure compliance with SCDOT approved mix design. Make adjustment to plant operations as necessary based on QC test results.


b) Quality Acceptance

i) Hot Mix Asphalt Supplier (Plant Operation):

- (1) Coordinate paving operation with SCDOT District Asphalt Manager in accordance with established protocols in SC-M-400
- (2) Perform QA sampling and testing per SC-M-400
- (3) Submit HMA samples to OMR for testing per SC-M-400
- (4) Establish and maintain QA workbook

ii) Hot Mix Asphalt Supplier (Roadway Operation):

- (1) Determine roller pattern
- (2) Perform compaction testing/cores in presence of IQF ART inspector
- (3) Bag and tag. Submit duplicate tag to IQF ART
- (4) Deliver cores to plant for SCDOT testing

	QC762 SCDOT HMA Sampling and Testing		
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4) Process Description:


The AUJV and asphalt supplier testing personnel will perform all testing at the asphalt plant and in the field in accordance with SC-M-400 and SCDOT Standard Specifications for Highway Construction. QC and asphalt supplier testing personnel will perform this role in accordance with SC-M-400 using personnel certified by SCDOT in HMA Level 1 (Quality Control Technician), HMA Level 2 (Job Mix Technician), HMA Level 3 (Quality Control Manager), and Asphalt Roadway Technician. Certification level will depend on role being performed.

5) Quality Forms/Records:

Form/Record Number	Description	Storage Location
SCDOT 400.04	Daily Report of Asphalt Road Inspection	Box

6) Revision History:

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

	<h1 style="text-align: center;">QC768 Maintenance of Traffic</h1>	
Document Owner: Todd Steagall	Revision – 0	Effective Date: 1/17/22
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1) Purpose:

This procedure establishes the methods and responsibilities for development, installation and inspection of traffic control setups used on the Carolina Crossroads Phase 1 Project.

2) Scope:


This procedure shall apply to all traffic control setups used on the Carolina Crossroads Phase 1 project.

3) Responsibilities:

- a) AUJV Traffic Control Supervisor (TCS)
 - i) Utilize SCDOT standard drawings in the implementation of Traffic Control Plans submitted for approval
 - ii) Monitor traffic control devices, lane closures, shoulder closures and traffic shifts daily to monitor compliance with the Standard Drawings or approved revisions using SCDOT Form 600.02 (Workzone Traffic Control Review).
 - iii) Assign AUJV certified TC personnel to fix any deficiencies reported in the traffic control setup
 - iv) Ensure all deficiencies are corrected in a timely manner
 - v) Maintain required Work Zone Traffic Control Certifications
- b) AUJV Certified Traffic Control Personnel
 - i) Under the supervision of the TCS, responsible for the installation and maintenance of all traffic control devices, lane closures, shoulder closures and traffic shifts
 - ii) Maintain required Work Zone Traffic Control Certifications
- c) QC Inspectors
 - i) Monitor TC installations for compliance with TCP and Standard Drawings
 - ii) Notify TCS of deficiencies immediately
 - iii) Record TC operations on DWR

4) Process Description:

- a) The AUJV Traffic Control Supervisor will submit the proposed Traffic Control Plan to IQF at least two weeks prior to implementation date.
- b) Depending on the complexity of the Traffic Control setup, a Pre-Activity Meeting will also be scheduled with IQF, SCDOT and OV to discuss the set up.
 - i) All logistics, emergency contacts, issues and concerns will be discussed in the Pre-Activity Meeting
- c) QC Inspectors will inspect and monitor traffic control installations to ensure compliance with the approved TCP


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5) Quality Forms/Records:

Form/Record Number	Description	Storage Location
SCDOT Form 600.02	Work Zone Traffic Control Review	Box

6) Revision History:

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

	QC769 Environmental Compliance		
Document Owner: Todd Steagall	Revision – 0	Effective Date: 1/17/22	
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1) Purpose:

This procedure establishes the methods of the implementation of environmental management and compliance with project environmental permits on the Carolina Crossroads Phase 1 Project.

2) Scope:

This procedure shall apply to all Work that is associated with the environmental permits and regulations commitments on the Carolina Crossroads Phase 1 project.

3) Responsibilities and Process Description:

a) All AUJV and QC personnel

Environmental compliance is a top priority for AUJV. AUJV will ensure that all work performed is in compliance with the approved Environmental Compliance Plan and that all commitments contained in the Environmental Compliance Plan and permits are performed accordingly. Successful environmental compliance will require a joint effort from both Contractor, QC and QA personnel.

b) AUJV and QC dedicated environmental compliance personnel


- i) Must be CEPSCI certified
- ii) Will review pertinent environmental commitments and concerns at the Preconstruction and Preactivity meetings
- iii) Will perform Erosion Control Inspections on SCDOT Construction Form 800.02 (Weekly Sediment and Erosion Control Site Inspection Report)
 - (1) At time of installation
 - (2) Monitor as work progresses
 - (3) Participate in the project's weekly erosion control inspections with IQF (and OVF staff as needed)
- iv) Will ensure timely correction of environmental and EC deficiencies

4) Quality Forms/Records:

Form/Record Number	Description	Storage Location
SCDOT Form 800.02	Sediment and Erosion Control Site Inspection Report	Box

5) Revision History:

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

	QC850 QC Survey Verification		
Document Owner: Todd Steagall	Revision – 0	Effective Date: 1/17/22	
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1) Purpose:

This procedure establishes the process for ensuring the construction alignment and profile/grades of the Work are set and verified in accordance with the Contract, RFC plans and specifications on the Carolina Crossroads Phase 1 Project.

2) Scope:

This procedure shall apply to all survey Work that is associated with the Carolina Crossroads Phase 1 project.

3) Responsibilities and Process Description:

- a) AUJV Surveying Group
 - i) Provide all layout, machine control, survey documentation and field work verification.
 - ii) Verification surveys will be performed periodically throughout the life of the project at a sufficient frequency to ensure compliance with the plans and specifications.
 - iii) Final surveys will be performed in accordance with contract specifications to verify RFC plan compliance and to be included in the as-built plans
- b) AUJV Survey Manager
 - Coordinate with design engineers, IQF and OVF as needed to assure data meets construction survey needs.


4) Process Description:

AUJV Survey Group

- a) Before any layout and/or verification is completed in the field, the assigned survey crew will setup off a min of 2 Primary and/or Secondary Survey Control that has been established, as well as checking into a separate 3rd point to confirm the Equipment setup. If the assigned survey crew chooses to setup using a Survey Resection, then the crew will use a min of 3 Primary and/or Secondary Survey Control and will check into a separate 4th point to confirm the Equipment setup. All results will be documented and recorded in the Field Book assigned to that Scope of Work and shared with the project team.
- b) After the initial layout is completed and before any critical work is completed, i.e. Concrete Pours, the assigned survey crew will verify the field items to confirm that Horizontal and Vertical accuracies meet the project tolerances for the scope of work. All results will be documented and recorded in a Field Book assigned to the Scope of Work and shared with the project team.

5)Revision History:

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

	<h1 style="text-align: center;">QC860 Corrective Action Report</h1>	
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1) Purpose:

This procedure establishes the responsibilities and process for the issuance, determination of root cause, action plan sufficient to prevent recurrence, and tracking of Corrective Action Report (CAR) within the Construction Quality Management Plan in order to achieve continual improvement.

2) Scope:

This procedure shall apply to all CARs identified on the Carolina Crossroads Phase 1 Project. It is applicable to requests/requirements for corrective or preventive actions resulting from: Management Review, Internal or External Audits, recurring or chronic service, product or process Nonconformance, and supplier process nonconformances.

3) Responsibilities:

a) Originator


- i) Document CARs on Form QC860-1 and submit to the Quality Control Manager as indicated in this Procedure.
- ii) The Originator may be a part of AUJV, QC, IQF, OVF or SCDOT.

b) Document Control Manager

- i) Completion of various portions of Form QA860-1 Corrective Action Report (CAR) with the information required in Appendix F of Project's QAP (found in Supplement A of the CQMP), maintenance of Form QA860-2 CAR Tracking Log, and distribution of Form QA860-1 as indicated in this procedure.
- ii) Manage the CAR Tracking Log and alert the Responsible Manager (Manager of the Operation that the CAR is required) of upcoming due dates for response and implementation.
- iii) Notify the IQM, QCM, and AUJV Project Manager of initiation of CARs and outstanding responses or actions not completed by the due dates.
- iv) Submit CARs to SCDOT via email to ProjectWise Deliverables Management for their review and approval prior to the CAR being implemented.
- v) Furnish a copy of closed CARs indicating verification and closure to SCDOT, IQF and OVF for Record purposes.

c) Responsible Manager

- i) Respond to a CAR within the Due Date.
- ii) Investigate and determine root cause(s) of the problem, or potential problem, and identify an CAR plan sufficient to prevent recurrence.
- iii) Implement approved CAR plans by approved implementation date.
- iv) Once implemented, verify CAR plan to determine effectiveness.

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d) Quality Control Manager (QCM):

- i) Serve as the Originator of a process nonconformance, or a potential for nonconformance, stemming from external audits.
- ii) Escalate and report on CARs at Weekly Management Review.
- iii) Notify IQF, OVF and SCDOT when CAR Plans have been fully implemented and closed.

e) Construction Manager

- i) Review and approve CAR responses in terms of root cause, CAR plan to prevent recurrence and implementation dates.
- ii) Verify implementation and effectiveness of CAR plans.

f) IQF Auditor

- i) Review, approve, verify and close CAR responses in terms of root cause, CAR plan to prevent recurrence and implementation dates stemming from audits performed internally on the CQMP.

g) AUJV Project Manager

- i) Take action with Responsible Managers to expedite response, implementation, verification and closure of CARs.


h) QC Document Control Manager

- i) Maintain log of CARs in Box


4) Process Description:

a) CAR Origination

- i) Potential CARs may be identified by any of the following sources:
 - (1) Any AUJV staff member, QC, IQF, OVF, SCDOT or FHWA who, through the conduct of their normal activities, notices a process nonconformance or an opportunity for improvement to the Quality Management System.
 - (2) An internal or external auditor who observes a process nonconformance or a potential for nonconformance.
 - (3) The Responsible Manager reviewing product NCRs and identifies systematic issues.
- ii) In each case, the individual who identifies the CAR shall serve as the Originator as defined in this procedure. External Auditors are an exception; in this case when an external auditor observes a nonconformance or a potential for nonconformance, the QCM shall serve as the Originator.
- iii) Once a potential CAR has been identified, the Originator shall complete the following fields on Form QC860-1:

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- (1) Originator: Your name
 - (2) Department: Your Department/Company/Work Group
 - (3) CAR # - Sequential and unique identification (assigned by DCM)
 - (4) Date – Date evaluation initiated for recurring non-conformance
 - (5) Location of Non-Conformance – i.e. member, Unit ID, Station/Offset, etc.
 - (6) Description of Non-Conformance– i.e., Test results, specification and deviation/non-conformance, etc.
 - (7) Once received, the DCM shall review the potential CAR to assure it is an appropriate use of the CAR system. If not, the DCM will inform the Originator and end the process. The DCM may consult with the IQM, OVPE or SCDOT to make this determination.
- iv) CAR Approval
- (1) Immediate action taken – i.e., halt production, re-train staff, change supplier, etc.
 - (2) Responsible Person Comments and Recommendation / Signature – Responsible Manager
 - (3) OVPE Comments and Recommendation / Signature - OVPE Review
 - (4) SCDOT CMMP Comments and Approval / Signature – CMMP Review
- v) Once completed, the QCM shall submit Form QC860-1 to the Document Control Manager.
- b) CAR Log-In and Distribution
- i) The Document Control Manager shall record the CAR in the CAR Tracking Log, Form QC860-2.
 - ii) Once completed, the DCM shall distribute the Form QC860-1, to the Responsible Manager and notify the QCM of the initiation.
- c) CAR Response
- i) Once received, the Responsible Manager shall perform root cause analysis and identify a CAR action plan that is sufficient to prevent recurrence of the problem. This may be done with a team at the Responsible Manager’s discretion, but the Responsible Manager maintains the responsibility for response and implementation of the CAR plan.
 - ii) The Responsible Manager shall fill out the following fields of Form QC860-1 and return to the DCM by the Response Due Date (10 days after CAR was created):
 - (1) Date of Response
 - (2) Evaluation and Root Cause Analysis – i.e. Description of evaluation, analysis, additional testing, etc.
 - (3) Proposed Corrective Action – i.e., corrective action performed, improvement plan, etc.
 - (4) Monitoring Plan, - i.e., method, frequency, testing, etc. to ensure effectiveness of corrective action, etc.

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(5) Implementation Date: Provide the date upon which the CAR Plan will be implemented and effective.

(6) Sign and date QC860-1

iii) Responses not received by the Due Date shall be escalated by the QCM to the AUJV Project Manager.

d) CAR Response Review and Approval


- i) Once received from the Responsible Manager, the DCM shall update the CAR Tracking Log and forward Form QC860-1 to the QCM and AUJV Project Manager for review and approval.
- ii) QCM and AUJV Project Engineer or Segment Engineer shall review the CAR response to evaluate the root cause and CAR action plan provided to assure that root cause has been identified and that the CAR action plan proposed will be sufficient to prevent recurrence of the problem.
- iii) Upon concurrence, QCM signs Form QC860-1 and should engage AUJV Management, IQF Management and the OVPE and SCDOT CMMP for concurrence of the proposed corrective action, if they haven't been advised of the proposed corrective action already.
- iv) Upon concurrence, OVPE and CMMP shall sign and date the Form QA860-1 and return it to the DCM. DCM shall update Form QC860-2 and forward approved Form QC860-1 to the Responsible Manager to proceed with implementation.

e) CAR Implementation

- i) The Responsible Manager shall proceed with the implementation of the approved CAR action plan in accordance with the approved implementation date.
- ii) If the Responsible Manager discovers he or she will not be able to accomplish the CAR plan by the approved Implementation Date, he or she may request a reasonable extension from the Supervisor of the Responsible Manager QCM.
- iii) If an extension is granted, the QCM shall notify IQF and SCDOT and alert the DCM to update the Form QC860-2.
- iv) CAR plans not implemented by the approved implementation date, inclusive of any granted extensions, shall be escalated to the AUJV Project Manager.

f) CAR Verification

- i) The IQM and QCM shall review the verification method and results provided by the Responsible Manager including a review of objective evidence to make a determination as to whether or not the CAR plan has been implemented and whether or not the plan has been effective to address root cause and prevent recurrence.

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- (1) If the IQM and QCM determines that the CAR plan has not been implemented as approved, Form QA860-1, shall be returned to the Responsible Manager to address any issues, with notification to the DCM. Return to Step 4.e.
 - (2) If the IQM and QCM determines the CAR plan has been implemented as approved, and has been effective to prevent recurrence, the Supervisor of the Responsible Manager, or QCM, shall close the CAR.
- ii) The QCM shall complete the following fields on Form QC860-1:
- (1) Review and Verification: Enter information related to the review of objective evidence and verification of effectiveness of the CAR plan. Also use this section to document any deficiencies in implementation or effectiveness for return to the Responsible Manager, if not verified.
 - (2) Was CAR Plan deemed effective in reducing or eliminating the root cause? Check Yes or No
 - (3) Closed: Check when CAR has been successfully verified and can be closed
 - (4) Sign and Date
- iii) The QCM shall return the completed form QC860-1 to the DCM who shall update Form QC860-2 and forward to the CMMP and OVPE for their review/comments/signatures.
- iv) The CMMP and OVPE shall return the signed Form QC860-1, to the Document Control Manager to update the CAR Tracking Log and distribute to IQF, OV, SCDOT and FHWA as required.
- g) CAR Status Reporting
- i) The QCM shall report on the status of CARs including outstanding responses and implementations at the Weekly Management Review meetings.
 - ii) The Document Control Manager shall furnish a copy of the closed CARs indicating verification and closure to IQF, OV, SCDOT and FHWA as required.

5) Quality Forms/Records:


Form/Record Number	Description	Storage Location
Form QC860-1	CAR Form	Box
Form QC860-2	CAR Tracking Log	Box

6) Revision History:

Revision	Originator	Revision Date	Description of Change
0	Todd Steagall		Original issue.

	Form QC860-1	
	Corrective Action Report	
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Issue Date:	Response Due Date:	CAR Tracking #
Originator:		Department:
Source <input type="checkbox"/> Audit Finding (AF) <input type="checkbox"/> Recurring or Chronic Work Product NCR (NCR) <input type="checkbox"/> Customer Complaint (CC) <input type="checkbox"/> Employee Suggestion (ES)		<input type="checkbox"/> Audit Observation (AO) <input type="checkbox"/> Process/Service Improvement (PI) <input type="checkbox"/> Other
CAR Classification: <input type="checkbox"/> Corrective Action <input type="checkbox"/> Preventive Action		
Description of Problem or Potential Problem:		
<input type="checkbox"/> Critical: Nonconformance will result in service/process failure or represents unsafe or environmentally hazardous condition.		
Responsible Manager:		Date of Response:
Root Cause: (attach documents if necessary)		
CAR Plan sufficient to prevent recurrence (If Classified as Critical, please also describe containment activities): (attach documents if necessary)		
Implementation Date:		
Concurrence:		
_____ QCM (Print)	_____ Signature	_____ Date
_____ AUJV PM (Print)	_____ Signature	_____ Date
_____ OVPE (Print)	_____ Signature	_____ Date
_____ CMMP (Print)	_____ Signature	_____ Date

	Form QC860-1	
	Corrective Action Report	
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VERIFICATION RESULTS		
<p>To be completed by Responsible Manager Describe Verification Method (attach objective evidence if necessary):</p>		
<p>To be completed by Responsible Manager Describe Results of Implementation of CAR Plan (attach supporting data or information if necessary):</p>		
<p>Review and Verification:</p>		
_____	_____	_____
QCM (Print)	Signature	Date
_____	_____	_____
IQM (Print)	Signature	Date
<p>Was CAR Plan deemed effective in reducing or eliminating the root cause? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>		
<p>If No, provide additional instruction to Responsible Manager:</p>		
<p><input type="checkbox"/> Closed</p>		
_____	_____	_____
OVPE (Print)	Signature	Date
_____	_____	_____
CMMP (Print)	Signature	Date

Form QC860-2 CAR Tracking Log

[illegible]