SAN JOAQUIN COUNTY
DEPARTMENT OF PUBLIC WORKS

QUALITY CONTROL/ASSURANCE PROGRAM FOR NON-NATIONAL HIGHWAY SYSTEM CONSTRUCTION PROJECTS

This manual provides frequency of acceptance testing and outlines the acceptance- testing program for materials used in Federal-aid projects off the State Highway System.

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08/31/2023
DATE

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Exp. September 30, 2025

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SAN JOAQUIN COUNTY
Greatness grows here.

QUALITY CONTROL/ASSURANCE PROGRAM FOR NON-NATIONAL HIGHWAY SYSTEM CONSTRUCTION PROJECTS

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*Note: Check Caltrans website https://dot.ca.gov/programs/engineering-services/california-test-methods for updates.

SAN JOAQUIN COUNTY

A. APPLICABILTITY

For projects on the State Highway System (SHS), the local agency must adopt the Caltrans QAP detailed in the following manuals and guides:

- Caltrans Construction Manual
- Construction Manual Supplement for Local Agency Resident Engineers (REs)
- Local Assistance Structure Representative Guidelines
- Independent Assurance Manual

In addition, the current Caltrans Standard Specifications (CTSS) and Plans must be part of the Plans, Specifications and Estimate (PS&E). Test methods used must be as specified in the CTSS and special provisions.

This QAP applies to Federal-Aid projects off the SHS. Tests methods used may be either CTM, ASTM, AASHTO, or other nationally recognized test methods, but must be specified in the contract documents.

QUALITY CONTROL/QUALITY ASSURANCE PROGRAM
FOR NON-NATIONAL HIGHWAY SYSTEM CONSTRUCTION PROJECTS

B, QUALITY CONTROL

San Joaquin County is committed to obtaining a high-quality product meeting all the requirements of contract specifications. Resources will be utilized from the public and private sector to meet this goal.

PREBID ACTIVITIES

The Senior Civil Engineer, or a designated representative shall review all projects for constructability prior to project advertisement. During project advertisement, the Senior Civil Engineer or a designated representative will be the sole source of fielding questions related to the construction project. Once a project has been advertised, the Public Works Service Center Clerk may respond to requests for bid proposal documents, provide the plan holders list, and engineers estimate cost range.

PRECONSTRUCTION ACTIVITES

The Resident Engineer shall be responsible for the following:

- Reviewing projects for potential construction problems with an emphasis on utility clearance, drainage, traffic circulation, and property frontage and access issues. If problems are identified, proposed solutions are to be presented to the Design Engineer for discussion and resolution of possible problems.

- Coordinating testing activities with the contracted testing firm, which includes ordering testing, provide a copy of the testing requirements and project specifications.

- Coordinating required staking and assuring that the Survey Crew, or contracted surveying firm, has the required information, which includes the Plans, cross sections, benchmark data, and grade sheets.

- Scheduling and chairing a preconstruction meeting utilizing San Joaquin County's Preconstruction Checklist (Exhibit A). Project requirements to be addressed at this meeting shall include prevailing wage rates, training, testing, and any special problems identified during the preconstruction review.

C, QUALITY ASSURANCE PROGRAM (QAP)

The purpose of this program is to provide assurance that the materials incorporated into the construction projects are in conformance with the contract specifications. This program should be updated every five years or more frequent if there are changes of the testing frequencies or to the tests themselves. To accomplish this purpose, the following terms and definitions will be used:

DEFINITION OF TERMS

- Acceptance Testing (AT) - Sampling and testing, or inspection, to determine the degree of compliance with contract requirements.

- Independent Assurance (IA) Program (IA) - Verification that the material incorporated into the project is being performed correctly by qualified testers and laboratories.

- Quality Assurance Program (QAP) – A sampling and testing program that will provide assurance that the materials and workmanship incorporated into the construction project are in conformance with the contract specifications. The main elements of a QAP are the AT, and IAP.

- Source Inspection – AT of manufactured and prefabricated materials at locations other than the job site, generally at the manufactured location.

MATERIALS LABORATORY

San Joaquin County will use a private consultant materials laboratory to perform AT on Federal-aid and other designated projects. The materials laboratory shall be under the responsible management of a California registered Engineer with experience in sampling, inspection and testing of construction materials. The Engineer shall certify the results of all tests performed by laboratory personnel under the Engineer's supervision. The materials laboratory shall contain certified test equipment capable of performing the tests conforming to the provisions of this QAP.

The materials laboratory used shall provide documentation that the laboratory complies with the following procedures:

1. Correlation Testing Program – The materials laboratory shall be a participant in one or more of the following testing programs:

   a. AASHTO Materials Reference Laboratory (AMRL)
   b. Cement and Concrete Reference Laboratory (CCRL)
   c. Caltrans' Reference Samples Program (RSP)

2. Certification of Personnel- The materials laboratory shall employ personnel who are certified by one or more of the following:

   a. Caltrans District Materials Engineer
   b. Nationally recognized non-Caltrans organizations such as the American Concrete Institute, Asphalt, National Institute of Certification of Engineering Technologies, etc.
   c. Other recognized organizations approved by the State of California and/or Recognized by local governments or private associations.

3. Laboratory and Testing Equipment – The materials laboratory shall only use laboratory and testing equipment that is in good working order. All such equipment shall be calibrated at least once each year. All testing equipment must be calibrated by impartial means using devices of accuracy traceable to the National Institute of Standards and Technology. A decal shall be firmly affixed to each piece of equipment showing the date of the last calibration. All testing equipment calibration decals shall be checked as part of the IAP.

MATERIALS ACCEPTANCE PROGRAM

Materials acceptance program is used to determine the quality and acceptability of materials and workmanship incorporated into the project. The program must address soils and aggregates, and manufactured and fabricated materials.

ACCEPTANCE OF UNPROCESSED AND PROCESSED SOILS AND AGGREGATES

The acceptance of processed and unprocessed soils and aggregates includes verification sampling, testing, and inspection. Examples of unprocessed materials include sand, rip rap, subgrade, and embankment and backfill materials. Examples of processed materials include aggregates, bases, PCC and HMA. The contract and the QAP combine to ensure the quality of the soils and aggregates entering the project.

Generally, the contract will specify what criteria the material must meet, and what test method will be used to determine if the material met or failed the criteria; the QAP will specify the minimum number of samples to be taken and tests to be performed to ensure the material has met the criteria, and where the material will be sampled. Sometimes, the contract documents will specify the frequency and location of the sampling and testing, overriding the QAP.

RESPONSIBILITIES OF THE RESIDENT ENGINEER (RE)

It is important that the RE read each contract and not assume a new contract has the same specifications as the last contract. The RE must ensure the correct criteria is used to determine if the material passed or failed. The passing criteria is found in the contract specifications, but in some cases, the specifications allow the contractor to submit mix designs which establish the criteria.

For example, the contractor is allowed to submit gradation target values (TV) for HMA mix designs and chose X factors for concrete mix designs. Be sure mix designs are approved prior to work and that the lab and inspectors have been provided a copy of the approved mix design.

The RE must ensure the correct test method is used as specified in the contract. Verification and quality control testing must be performed in accordance with a recognized testing standard. While California Test Methods, the American Society for Testing and Materials (ASTM), and the American Association of State Highway and Transportation Officials (AASHTO) test methods are all acceptable test methods on local agency projects, the test method to be used must be specified in the contract documents at bid time. The RE or lab cannot change the test method during the project without first writing a CO and providing justification. The RE must ensure the correct version of the test method is used. When the specifications reference a test method by number, it indicates the test in effect on the date of the Notice to Bidders. This means the test methods for each project are fixed and are not necessarily the latest revisions.

The California Test Methods are published on the Internet at:
http://www.dot.ca.gov/hq/esc/ctms/index.html

ASTM Test Methods are available at the following Internet address:
http://www.astm.org

AASHTO Test Methods are available at the following Internet address:
http://www.transportation.org

The RE must ensure that field personnel who perform tests for compliance with the specifications are certified to conduct the test method indicated by the contract. This is discussed further under Independent Assurance Program.

TESTING AND SAMPLING FREQUENCY TABLES

The RE must also ensure the minimum number of samples are taken and tests are performed as required by the adopted QAP's Testing and Sampling Frequency Table. Often a QAP will call for taking more samples than are used to perform tests. This is beneficial in the case of failing results. The RE can then go back and test additional samples to determine the exact limits of the failing material.

TEST DATA AND SUMMARY LOGS

The RE must obtain test data and results from the lab in a timely manner and keep records of all samples and tests in the project files. The RE must keep a test results summary log for each test method performed more than once. Use **Exhibit 16-Z2: Acceptance Testing Results Summary Log or a similar form.** On larger projects, it may be necessary to keep multiple logs for the same test method, broken out by salient features such as compaction tests performed on the roadway structural section on one log, and those performed on structural backfill on a separate log.

The use of a summary log facilitates the review of material sampling and testing by Caltrans and FHWA reviewing personnel, and assists the RE in tracking the frequency of testing.

FAILING TEST

Whenever failing tests occur, sufficient additional acceptance tests must be taken to isolate the affected work. Documentation of the results of such additional tests must be included in the records, including a description of the corrective measures taken. Corrective action or retesting of failing tests must be noted in the remarks column of the test summary log. Documentation of the reason that materials represented by failing tests were incorporated into the project must be in the project files.

MIX DESIGN APPROVAL AND CHECKING

Mix designs must be submitted by the Contractor and include the name of the material plant, the product name, a mix design ID number, and item of work in which it is to be used. The RE must review and approve the mix design in writing. A copy of the approved mix design must be placed in the files. Field inspectors must verify that the mix delivered to the job site matches the approved mix design. The inspector must place a check mark adjacent to the mix ID shown on the weigh tag and initial the tag. Tags are to be collected at the point of delivery to the jobsite.

ACCEPTANCE OF MINOR QUANTITIES OF MATERIALS WITHOUT TESTING

Relatively minor quantities of construction materials may be accepted without testing provided the following 3 conditions are met:

1. Visual examination of the material is performed.
2. The manufacturer or supplier has recently furnished similar materials found to be satisfactory using normal sampling and testing requirements.
3. The manufacturer (or supplier in the case of HMA or concrete) provides certification that the material furnished complies with the contract specifications.

INDEPENDENT ASSURANCE (IA) PROGRAM

The IA program consists of activities that are unbiased and are an independent evaluation of all the sampling and testing procedures used in the acceptance program. The requirements are defined in Title 23, Code of Federal Regulations, Chapter 1, Part 637 (23 CFR 637).

Per this CFR, IA program consists of two parts:

- Testing equipment be evaluated by using calibration checks and proficiency samples
- Testing personnel be evaluated by observation and proficiency samples

During project construction, the RE must verify that the IA program is being executed by performing the following tasks:

- Obtaining Certifications of all Sampling and Testing Personnel
- Obtaining Qualifications of all laboratories
- Verifying equipment is calibrated

All samplers and testers, including project, laboratory and consultant personnel, must possess a current certificate of proficiency for the tests performed. A copy of the certificate must be in the project files.

IA sampling and testing is not to be used for determining quality and acceptability of material incorporated into the job. Such tests are used only for the purpose of determining the reliability of testing personnel.

CERTIFICATION OF SAMPLING AND TESTING PERSONNEL

All samplers and testers, including project, laboratory and consultant personnel, must possess a current certificate of proficiency for the tests performed. A copy of the certificate must be in the project files. It is important that samplers as well as testers are certified to ensure the integrity of the sample and that the sample was taken at the right time, from the right location, using the correct method, and is properly labeled.

The Joint Training and Certification Program (JTCP) was established by Caltrans, local agencies, and industry to make the certification process more efficient and to obtain consistent, reliable quality testing. The JTCP offers training and certification in hot mix asphalt, soils and aggregates, and Portland cement concrete.

For CTMs not covered by the JTCP, Caltrans will still provide certification. When test methods used are not covered by the JTCP or Caltrans, certifications must be obtained from other acceptable organizations such as ACI.

QUALIFICATION OF LABORATORY

All laboratories providing testing services for projects located in California must:

- Possess a current certificate of qualification.
- Be under the responsible engineering management of a California registered Professional Engineer with experience in inspection and testing of construction materials. The Engineer shall certify the results of all tests performed by laboratory personnel under his or her supervision.
- Maintain their laboratory testing equipment in accordance with recognized national calibration standards.
- Participate in one or all of the following:
  a) The AASHTO Materials Reference Laboratory (AMRL)
  b) The Cement and Concrete Reference Laboratory (CCRL) inspection programs
  c) The Caltrans Reference Sample Program

These proficiency sample testing programs conform to the FHWA requirement that each State Transportation Agency must participate in an approved laboratory inspection and comparative sample testing program.

All laboratories which use Caltrans' test methods must participate in the Caltrans Reference Sample Program. Upon request, if CTMs are being used, Caltrans Materials Engineers will qualify local agency's (or consultant's) laboratories. Caltrans IA staff will issue Form TL-0113, Caltrans Accredited Laboratory Inspection Report, valid for one year. Those laboratories which do not use Caltrans' test methods must participate in the AMRL and CCRL programs to fulfill proficiency sample testing program requirements.

EQUIPMENT CALIBRATION GENERAL

The local agency laboratory shall calibrate field construction laboratory equipment and portable field test equipment (sand cones, scales, moisture test equipment, slump cones, air meters, etc.) prior to use on construction projects, and re-calibrate as frequently as required. The maximum interval between calibrations is one year. The local agency is responsible for calibration of laboratory testing equipment used for testing on local agency projects, whether or not the equipment is owned by the local agency, a consultant contractor, or sub-contractor. Consultant laboratory-supplied equipment shall be calibrated by the consultant or local agency. Calibration of test equipment must conform to Section 8-03, Field Tests of the Caltrans Construction Manual. Two sections in the QAP manual describe the procedures that the IA personnel are to use when calibrating materials testing equipment. Upon proper calibration, a decal shall be firmly affixed to each piece of calibrated equipment. Decal type and required information are specified on page 63 of Appendix B of the Quality Assurance Program Manual. A manufacturer's or service contractor's decal is acceptable as long as the above-required information is readily available. Should such decal become unreadable or lost, then the equipme is to be re-calibrated as soon as possible. Where such equipment either requires repair or cannot be repaired, a timely repair or replacement shall be secured.

EQUIPMENT CALIBRATION -NUCLEAR GAUGE

All nuclear gauges must be calibrated on National Institute for Standards and Technology (NIST) traceable blocks and have current calibration stickers.

EQUIPMENT CALIBRATION -MATERIALS PLANTS

Plants producing construction materials such as HMA, concrete, cement treated bases, lean concrete bases, etc. must have a current CEM-4204, Material Plant Quality Program (MPQP) Acceptance Sticker or California Test 109, Method for Testing of Material Production Plants approval. This ensures the accuracy and suitability of the scales and meters used to proportion materials, and is important to uniformity and quality of the material. The Material Plant Quality Program can be found at https://dot.ca.gov/programs/construction/material-plant-qualityprogram.

REPORTING ACCEPTANCE TESTING RESULTS

The following are time periods for reporting material test results to the Resident Engineer:

- When the aggregate is sampled at material plants, test results for Sieve Analysis, Sand Equivalent and Cleanness Value should be submitted to the Resident Engineer within 24 hours after sampling.
- When materials are sampled at the job site, test results for compaction and maximum density should be submitted to the Resident Engineer within 24 hours after sample.
- When soils and aggregates are sampled at the job site:
    1) Test results for Sieve Analysis, Sand Equivalent and Cleanness Value should be submitted to the Resident Engineer within 72 hours after sampling.
    2) Test results for "R" Value and asphalt concrete extraction should be submitted to the Resident Engineer within 96 hours after sampling.

When sampling products such as Portland Cement Concrete (PCC), cement-treated base (CTB), hot mix asphalt (HMA), and other such materials; the time of such sampling shall be varied with respect to the time of the day insofar as possible, in order to avoid a predictable sampling routine. The reporting of AT results, if not performed by the Resident Engineer's staff, shall be done on an expedited basis such as by fax or telephone.

ACCEPTANCE OF MANUFACTURED OR FABRICATED MATERIALS

The acceptance of manufactured and fabricated materials is most frequently based on one of the following 4 methods:

SOURCE INSPECTION

Source inspection is the inspection, sampling and testing of manufactured and prefabricated materials at locations other than the job site. It is most commonly performed on materials involving structural integrity or safety to the public, such as precast pre-stressed concrete members, structural steel, and poles for electrical systems. The purpose is to ensure that structural materials comply with contract requirements in regard to raw materials, fabrication processes, personnel certification, and in-process quality control testing.

The local agency determines which materials will be source inspected. For a list of manufactured or prefabricated materials that are commonly source inspected for Caltrans projects, see Table 6-2.1, Inspection of Fabricated and Manufactured Materials of the Caltrans Construction Manual.

Source inspection is performed by the local agency or a qualified consultant. Caltrans no longer provides source inspection services for projects off the SHS. Caltrans may provide source inspection for projects on the SHS if terms are detailed in a cooperative agreement or encroachment permit. For more details on the inspection procedures, refer to Section 6-3, Field Tests, of the Caltrans Construction Manual and the Office of Structural Materials Practices and Procedures (OSMPP) manual.

Due to the costs incurred when traveling to inspect materials sourced far from the job site, Section 6-3.05B, Source Inspection Expense Deductions of the CTSS provides the details for deductions to be taken when applicable.

Verification at the source of fabrication does not guarantee acceptance at the job site. Table 6-2.1 referenced above also includes items that must be checked or rechecked at the job site to ensure that the materials are acceptable. The RE must inspect the material upon arrival to be sure it meets the requirements of the specifications and is undamaged by shipping and handling. The RE must obtain and file the source inspectors report.

MATERIALS ACCEPTED ON THE BASIS OF AUTHORIZED MATERIALS LIST

The CTSS identifies some materials that must be on an authorized materials list. The list is available at https://dot.ca.gov/programs/engineering-services/authorized-materials-lists.

For contracts using the CTSS, the RE must verify the materials furnished are shown on the appropriate authorized materials list before the material is used on the project. Materials shown on the authorized materials list may also require a certificate of compliance or sampling and testing for acceptance.

MATERIALS ACCEPTED BY CERTIFICATE OF COMPLIANCE

The local agency may permit the use of certain manufactured products, materials or assemblies accompanied by a Certificate of Compliance (COC) prior to sampling and testing, provided these products, materials or assemblies do not involve structural integrity or safety to the public. Additionally, these items must have a history of having met specifications based upon previous sampling and testing. The manufacturer of the products, materials or assemblies shall sign the Certificate of Compliance and state that the included materials and workmanship conform in all respects to the project specifications. The contract documents must specify which materials require the Contractor to submit a Certificate of Compliance. The RE is responsible for insuring that a Certificate of Compliance is furnished with each lot of these materials delivered to the work site. Refer to Caltrans Local Assistance Procedure Manual Exhibit 16-T1: Materials Requiring a Certificate of Compliance Per the Caltrans Standards Specifications and Exhibit 16-T2: Materials Requiring a Certificate of Compliance Per the Greenbook for lists of materials for which the contractor must submit a COC per the respective project specifications. The COC must be furnished before the material is incorporated into the work and include:

- Project number
- Certified material lot number matching lot tags affixed or stenciled to the released materials
- Manufacturer's signature
- A statement that the material complies with the specifications of the contract

All materials accepted on the basis of a signed Certificate of Compliance shall be documented in the inspector's daily reports. Inspect the material upon arrival to be sure it meets the requirements of the specifications and is undamaged by shipping and handling before accepting. Manufactured products, materials or assemblies used on the basis of a

Certificate of Compliance may be sampled again at the job site and tested at any time during the life of the contract. Items found not in conformance with contract requirements must be rejected whether in place or not.

A Certificate of Compliance for each item shall be kept in the RE's file.

Materials Requiring a Buy America Certification

Steel and iron products incorporated into the project must comply with Buy America requirements of the CFRs. All steel and iron products must be delivered with a COC stating all manufacturing processes involved in the production of the products occurred within the United States. These processes include:

- Rolling
- Extruding
- Machining
- Bending
- Grinding
- Drilling
- Coating
- Welding
- Smelting

In addition to the COC requirements mentioned earlier in this section, a Buy America COC must also include the mill markings or heat numbers.

The Buy America requirements apply to the entire construction contract if any federal-aid money has been authorized for any phase of the project, not just the construction phase. The local agency cannot circumvent the Buy America requirement by declaring that the material is being paid for with the non-federal portion of the funding.

Buy America does not apply to temporary steel such as that used in falsework, sheet piling or shoring. A minimal use of foreign iron and steel is allowed provided that the total delivered cost to the project site is less than $2,500.00 or 0.1 percent of the contract amount, whichever is greater. Supporting invoices, including the cost of transportation, must be on file in the project records.

PROJECT CERTIFICATION

Upon completion of a Federal-aid project, a “Final Materials Certification” (Exhibit E), shall be completed by the Resident Engineer. The agency shall include a “Final Materials Certification” in the Report of expenditures submitted to the Caltrans District Director, attention: District Local Assistance Engineer.

A copy of the “Final Materials Certification” shall also be included in the Agency’s construction records. The Resident engineer in charge of the construction function for the Agency shall sign the certificate. All materials incorporated into the work which did not conform to specifications must be explained and justified on the “Final Materials Certification” including changes by virtue of contract change orders.

PROJECT RECORDS

All material records of samples and tests, material releases and certificates of compliance for the construction project shall be incorporated into the Resident Engineer’s project file. If a Federal-aid project:

- The files must be complete and well organized and should include, at a minimum, the categories indicated in the Agency-developed filing index (Exhibit F) for projects that are off the state highway system (SHS). The County will utilize CT’s filing system when appropriate and for all local projects on the SHS.
- It is recommended that the complete project file be available at a single location for inspection by Caltrans and Federal Highway administration (FHWA) personnel.
- The project files shall be available for at least three years following the date of final project voucher.
- The use of a “Test Log Summary” (Exhibit G), facilitates reviews of material sampling and testing by Caltrans and FHWA, and assists the Resident Engineer in tracking the frequency of testing.

When two or more projects are being furnished identical materials simultaneously from the same plant, it is not necessary to take separate samples or perform separate tests for each project; however, copies of the test reports are to be provided for each of the projects to complete the records.

EXHIBITS

Department of Public Works
Field Inspection Division

Exhibit A-Preconstruction Conference Check List

- Superintendence
    - Letter authorizing personnel to sign contract document.
      (Must be by person signing bid forms)
    - Authorized representative of the Contractor to be on project **at all times**.
    - Names of three persons to be contacted in case of an emergency.
      (To include address and phone numbers)

- Subcontracting
    - Contractor must file a written statement showing work to subcontract before subcontractor does any work. Copy must be in Resident Engineer's file. Include items or percentage of item to be done by subcontractor.
    - The County does not recognize the subcontractor as to method problems, payment, etc. Must control contractors and all work.

- Source of Materials
    - Resident Engineer is to be notified in sufficient time to test and/or inspect material prior to its use.

- Weight Limitations
    - Penalty for overloads shown on scale sheets.

- Progress Schedule
    - If required, stress early submittal.
    - Re-submittal if the original schedule becomes obsolete.
    - Progress schedule does partially control retention of funds – must be kept current.

- Progress Payments
    - Contractor must make request for payment of materials on hand monthly. Submit early enough for Engineer to check.
    - Request for payment of materials on hand and extra work must be received by the 15th of the month to be put on progress estimate.
    - Indicate payment cut-off date (3rd Monday of the month).
    - Retention as per specifications.

- Project Stakeout – County Survey Crew

    - Discuss staking request form to be submitted by Contractor and the normal lead time of 48 hours is required.
    - Stress reasonable requests – County has limited forces.
    - Stress saving stakes, notification for relocation of important stakes and charging Contractor for resetting stakes destroyed through negligence.
    - Discuss staking methods – to include location and method of marking stakes.
    - Stress staking is not used to eliminate plans.

- Contract Change Order

    - All EWO's (Engineer Work Orders) to be under direct control of County personnel as to labor, equipment, materials, and/or methods used.
    - No extra work to be started until the Resident Engineer has given notice to contractor that proper approvals have been obtained by County.
    - Agreement between foreman and County Inspector at the end of each day as to labor and equipment hours used on force account work for that day.
    - Hourly pay for personnel based on most current agreement.
    - Equipment rental rate in effect when work is performed will be paid.

- Working Day Statement

    - Contractor is to challenge within 15 days.
    - Request for time extension to be submitted when work is in progress.

- Handling of Public Traffic

    - No road closures allowed unless specified in contract.
    - All detours and interruptions of public traffic must have Resident Engineer approval.
    - All directional and warning signposts and frames must be kept in good repair during life of contract.
    - Safety is to be stressed, involving traveling public, Contractor and County personnel.

- Unusual Special Provision Requirements

    - Order of work, if specified, should be thoroughly discussed as to reasons for and restriction of operations.
    - Material site location, mandatory, optional or necessary testing for new sites.
    - Environmental impact statement delay.
    - False work plans are required for bridges – submit plans a minimum of two weeks prior to bridge construction (lateral forces to be considered).
    - Excavation safety – plan prior to work (Section 7-1.02K(6)(b)) of the Standard Specifications.
    - Other special features as per job demand.

- Storm water pollution prevention plan – job site activities must not start until a water pollution control plan or storm water pollution prevention plan is authorized (Section 13-1.01) of the project specifications.
- Testing requirement – who will do testing

- Beginning of Work

  - Approximate schedule of Contractor's operations for staking purposes – County Survey Crew
  - Possible start before approval of contract. (Must comply with all submittals prior to work).
  - Contractor's mailing address, phone, etc.

- Questions or Subject from Contractor

- Protests – Section 5-1.43, “Potential Claims and Dispute Resolution” of the project specifications.

- Forms to be provided to the Contractor

  - Notice of materials to be used (Exhibit 16-I).
  - Progress schedule.
  - Progress payment calendar (new Contractor).
  - Staking request – County Survey Crew

EXHIBIT B - ACCEPTANCE SAMPLING AND TESTING FREQUENCIES

HOT MIX ASPHALT (HMA) / ASPHALT CONCRETE (AC)

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Aggregate Gradation (Sieve Analysis)	CT 202	1 Per 3,000 Tons or Part Thereof; Minimum: 1 per day during production/ placement of at least 500 Tons. Sampling/Testing for Driveways & Pavement Repairs are not required.	At Plant per CT 125 (a)
Asphalt Binder Content	CT 382 (By Ignition Method)		Loose mix behind paver or windrow per CT 125
Percent Compaction by Maximum Theoretical Density (Rice)	Nuclear Gage(b) CT 375 or ASTM D2950 (c)	1 Set Per 1,000 Tons or Part Thereof; Minimum: 1 per day during production/placement of at least 500 Tons. Sampling/Testing for Driveways & Pavement Repairs are not required.	Random locations per CT 375
Maximum Theoretical Density (Rice)	CT 309	As necessary to provide data for compaction testing	Loose mix behind paver or windrow per CT 125
Asphalt Binder	----------	Verified by Certificate of Compliance	----------
Smoothness	12-foot Straightedge per Standard Sepcifications	----------	----------

(a) Exact tonnage of sample location to be determined by random sampling plans

(b) Compaction determined by Nuclear Density Device. Core testing per CT 308 required if compaction fails the nuclear test

(c) Correlation between core densities and nuclear device required only if compaction fails the nuclear test

SCREENINGS (BITUMINOUS SEALS)

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Screenings Gradation	CT 202	1 test (minimum) per material source	Sample from truck or plant prior to placement
Cleanness Value	CT 227	1 test (minimum) per material source	Sample from truck or plant prior to placement
Durability Index	CT 229	1 test (minimum) per material source	Sample from truck or plant prior to placement

SUBGRADE (DISTURBED BASEMENT SOIL) OR EMBANKMENT

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Maximum Density	CT 216	If needed to provide data for compaction testing	Random locations as determined by the Engineer, in-place after compaction.
Relative Compaction	CT 231	1 test (minimum) per 12,000 sqft under vehicle traveled way and 1,000 linear feet under sidewalks	

EXHIBIT B - ACCEPTANCE SAMPLING AND TESTING FREQUENCIES

AGGREGATE BASES AND SUBBASES, IMPORTED BORROW

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Sieve Analysis	CT 202	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement
Sand Equivalent	CT 217	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement.
Maximum Density	CT 216	If needed to provide data for compaction testing	Random locations as determined by the Engineer, in-place after compaction.
Relative Compaction	CT 231	1 test (minimum) per 250 Tons placed	
R-Value	CT 301	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement
Durability	CT 229	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement

STRUCTURE BACKFILL, SELECT BACKFILL

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Sieve Analysis	CT 202	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement.
Sand Equivalent	CT 217	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement.
Maximum Density	CT 216	If needed to provide data for compaction testing	Random locations as determined by the Engineer, in-place after compaction.
Relative Compaction	CT 231	1 test (minimum) per 1,000 SF of area or 1,000 LF of trench	
R-Value	CT 301	1 test (minimum) per material source	Sample from site stockpile/plant prior to placement

PORTLAND CEMENT CONCRETE (PCC) - STRUCTURAL AND SIGNAL/LIGHTING FOUNDATIONS

WET MIX

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Slump/Penetration	CT 533	1 minimum per day for structural concrete	Sample from truck/work site
Cylinders	CT 539/540	1 set (minimum) of 4 per day for structural concrete	

Exhibit C- Construction Materials Accepted by a Certificate of Compliance

- Liquid Asphalts and Emulsions
- Geosynthetics
- Soil Amendment
- Sod
- Imported bio-filtration soil
- Straw
- Fiber
- Tackifier
- Mulch
- Stabilizing Emulsion
- Rolled erosion control product
- Plastic Pipe
- Lime
- Structural Steel/Metal, including but not limited to:
  - Cast-in-steel-shell piles/casings
  - Steel piles
  - Steel girders/beams
  - Steel trusses
  - Steel decking
  - Structural Metal Plate Pipe Arches and Pipe Arches
- Protective Coatings
- Bearings
- Reinforcing Steel
- Welded Reinforcement Hoops
- Railings (e.g., metal beam guardrails, posts, etc.)
- Lighting Standards (e.g., poles, mast arms, pedestal materials, etc.)
- Joint Seals
- Precast Concrete Members
- Attenuators
- Concrete Pavement Repairs: Filler materials and bonding agents (for contracts less than 60 original working days).
- Polytetrafluoroethylene (PTFE) fabrics
- Structural Timber and Lumber
- Treated Timber and Lumber
- Timber and Lumber
- Culvert and Drainage Pipe Joints
- Reinforced Concrete Pipe
- Corrugated Steel Pipe and Corrugated Steel Pipe Arches
- Perforated Steel Pipe

Exhibit C- Construction Materials Accepted by a Certificate of Compliance

(Continued)

- Polyvinyl Chloride Pipe and Polyethylene Tubing
- Steel Entrance Tapers, Pipe Down drains, Reducers, Coupling Bands and Slip Joints
- Aluminum Pipe (Entrance Tapers, Arches, Pipe Down drains, Reducers, Coupling Bands and Slip Joints) Metal
- Target Plates
- Electrical Conductors
- Portland Cement
- Concrete Admixtures
- Minor Concrete
- Waterstop
- Striping and Signage Materials
- Crack Sealant
- Crumb Rubber Modifier

Exhibit D - Example of a Vendor's certificate of Compliance

No. 583408

STATE OF CAUfORNIA· OEPARTl.ENT OF TRANSPORTATION
VENDOR'S CERTIFICATE OF COMPLIANCE
MR·OSC3 (REV. SIII3) IICT ·7641-6020-2

PRECAST CONCRETE PRODUCTS *OR* *SOUNDWALL* BILL SYNDER

~~STATE HIGHWAY ENGINEER~~
RESIDENT ENGINEER – CITY OF FLATLAND

We certify that the prtland cement, chemical and mineral admixtures contained in the material described below are brands stated and comply with specifications for:

CONTRACT NUMBER:

CEMENT BRAND	MILL LOCATION
XYZ CEMENT CO.	MIDLAND,
TYPE II MODIFIED	CALIFORNIA
CHEMICAL ADMIXTURE	
1. BRAND ABC. ADMIXTURE	MANUFACTURER XYZ SUPPLIER
TYPE WATER REDUCER	
2. BRAND	MANUFACTURER
TYPE	

OCIECItBOltIFA_~WASNOTU5EO

MANUFACTURE CLASS
POZZ. INC. F

■ *check box if a chemical admixture was not use*

DELIVERY DATE (Ready-Mix)	DATES OF FABRICATION (Precast)
7/7/01	

LIST PRODUCTS TO WHICH CERTIFICATE APPLIES. (Show size and lin. ft. of pipe, etc., delivery slip numbers for ready-mix.)

Portland Cement
Flyash
Water Reducer 08P 0155624

MANUFACTURER OF CONCRETE PRODUCTS
A.&B. READY MIX

By: AUTHORIZED REPRESENTATIVE SIGNATURE
Joe Anderson

FM 80 1639

Rev. 6/1/18

Exhibit D - Example of a Certificate of Compliance for Portland Cement (continued)

This is to certify that the

Portland Cement

Supplied by LBC Cement Company complies with all requirements for Type II Portland Cement when tested in accordance with ASTM C - 494.

Local Agency Project
No. HSIPL 5929 (209)

O'Shea Jackson
Quality Assurance Engineer
LBC Cement Company

Date: 05/18/23

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
Working for YOU

Department of Public Works

Fritz Buchman, Director

Alex Chetley, *Deputy Director - Development*
Kristi Rhea, *Deputy Director - Administration*
David Tolliver, *Deputy Director - Operations*
Najee Zarif, *Deputy Director - Engineering*

Exhibit E- Final Materials Certification

Date:
Federal-Aid Project No.: _____-5929 (___)
Job Stamp:

Insert Project Title
(Insert Project limits)
(Insert Contractor Name and Business Address)

Subject: Final Materials Certification

This is to certify that:

The results of the tests on acceptance samples indicate that the materials incorporated in the construction work and the construction operations controlled by sampling and testing conform to the approved plans and specifications.

☑ Exceptions to the plans and specifications are explained on the back of this memorandum (or on attached sheet).

☐ No exceptions to the plans and specifications were found.

Calvin Cordozar
Resident Engineer

Exhibit E (continued)

Attachments: Materials Exceptions (Acceptance Testing)

Type of Test	Description of Work	Total Tests Performed on the Project	Number of Failed Test	Action Taken
Slump Test	Concrete Sidewalk	8	1	When the measured slump exceeded the maximum limit, the entire concrete load was rejected
Sand Equivalent	Aggregate for Structural Concrete	10	1	The tested S.E. was 70 and the contract compliance specification was 71 minimum. However, the concrete 28-day compressive strength was 4800 psi. The concrete was considered adequate and no materials deductions were taken.
Compaction	Sub grade	12	1	One failed test was noted. The failed area was watered and reworked. When this was completed, a retest was performed. The retest was acceptable.
Compaction	Hot Mix Asphalt	12	1	One failed area was noted. It was reworked and retested. The second test met specifications.

Calvin Cordozar	*Calvin Cordozar*	*May 18, 2023*
Resident Engineer (Print Name)	Resident Engineer (Signature)	(Date)

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EXHIBIT G -TESTING LOG SUMMARY

Project Name: County Road Resurfacing

Resident Engineer: Calvin Cordozar

Material: Subgrade Materials

Contractor: LBC Company

TEST NO.	DATE	TYPE OF TEST	LOCATION	TESTER	TESTING CO.	REPORT DATE	TEST SCORE	REQUIRED SCORE	P/F
1	5/15/18	231-Compaction	1+00 (30"L) / 99.00	Jane	Kleintech	5/16/18	93	90+	P
2	5/16/18	231-Compaction	1+50 (20"R) / 100.50	Jane	Kleintech	5/17/18	94	90+	P
3	5/17/18	231-Compaction	2+25 (25"R) / 101.00	Jane	Kleintech	5/18/18	96	90+	P
4	5/18/18	231-Compaction	1+50 (30"L) / 101.50	Jane	Kleintech	5/19/18	95	95+	P
5	5/19/18	231-Compaction	2+50 (20"L) / 102.00	Jane	Kleintech	5/20/18	92*	95+	F
6	5/19/18	231-Compaction	2+50 (20"L) / 102.00	Jane	Kleintech	5/20/18	95	95+	P

* The Contractor used a water tank to dampen the soil surface at the failed subgrade location. Using a sheep's foot compactor, he reworked the subgrade (making at least 10 passes) from Station 2+00 to Station 3+00. After approximately 30 minutes, another compaction test was taken. This time the relative compaction was 95.

Project Name:

Resident Engineer:

Material: Aggregates and Base Materials

Contractor:

TEST NO.	DATE	TYPE OF TEST	LOCATION	TESTER	TESTING CO.	REPORT DATE	TEST SCORE	REQUIED SCORE	P/F
1	6/22/18	217-Sand Equivalent	1+00 (10'R) / 102.50	Jane	Kleintech	6/23/18	75	25+	P
2	6/20/18	217-Sand Equivalent	2+00 (20'R) / 102.50	Jane	Kleintech	6/21/18	83	25+	P
3	6/20/18	227-Cleanness Value	1+00 (20'R) / 102.50	Jane	Kleintech	6/21/18	86	71+	P
4	6/20/18	227-Cleanness Value	1+50 (20'L) / 102.50	Jane	Kleintech	6/21/18	85	71+	P
5	6/24/18	231-Compaction	2+00 (20'R) / 102.50	Jane	Kleintech	6/24/18	98	95+	P
6	6/24/18	231-Compaction	2+50 (20'L) / 102.50	Jane	Kleintech	6/25/18	97	95+	P

P = Pass F = Fail Test Summary