

City of Willits

Public Works Quality Assurance Program



March 2010

City of Willits

Public Works Quality Assurance Program (QAP)

I. PURPOSE

This Quality Assurance Program (QAP) is a sampling and testing program that will provide assurance that the materials and workmanship incorporated into the City's street and highway construction projects are in conformance with the contract specifications. This program should be updated on an as needed basis, at least every five years. The main elements of the QAP are procedures for:

- Acceptance Testing (AT)
- Independent Assurance Sampling and Testing (IAST)
- Testing of Manufactured Materials

II. APPLICABILITY

This QAP applies to Federal Funded local agency projects off the National Highway System (NHS).

II.1 On-NHS system projects are governed by Caltrans' FHWA-approved QAP, found in Section 16.14 of the Local Assistance Procedures Manual, Chapter 16 - Administer Construction Contracts, Section 14 - Quality Assurance Program ("LAPM-16.14").

II.2 Off-NHS system, federally-funded projects are governed by the procedures in the City of Willits, Special Provisions of the Project Specifications. Its use is mandatory for Federal-aid projects and is recommended for other City street and projects. This local QAP is based upon the requirements for local QAP's contained in the LAPM Section 16.14. Federally-funded projects that mix on-and-off-NHS sites should utilize the Caltrans QAP.

III. APPROVAL

This local QAP has been approved by the City of Willits City Engineer, who is a registered Civil Engineer. It shall be kept on file and available for Caltrans review.

IV. TESTING REQUIRED

This local QAP describes procedures for three types of required testing, described as follows:

IV.1 Acceptance Testing (AT): Procedures for regular testing of materials entering a construction project to verify that of the materials, or products, comply with contract specifications or standards.

IV.2 Independent Assurance Sampling and Testing (IAST): Procedures to verify that AT is being performed correctly by qualified testers and laboratories by:

- a. Verifying that equipment used for acceptance testing is properly calibrated and in good working condition.
- b. Witnessing sampling and testing by the Acceptance Tester.
- c. Splitting material samples and comparing the test results between the Acceptance Tester and Independent Assurance Sampler and Tester.

IV.3 Testing of Manufactured Materials: Procedures for inspecting, accepting and testing of manufactured and prefabricated materials either by source inspection, job site inspection, or certificate of compliance.

V. GENERAL PROCEDURES AND REQUIREMENTS

Conduct of the sampling and testing shall follow these general procedures:

V.1 **Construction Documents.** Because the City does not provide its own testing and inspection of materials, provision of such services must be arranged prior to the Notice to Proceed for a project and addressed appropriately in the construction documents.

V.2 **Sampling and Testing Options.** The City may select from the following sources to perform sampling and testing:

- Another agency's laboratory
- Private consultant laboratory

Non-Caltrans laboratories shall have a QAP that meets LAPM 16.14 requirements.

V.3 **Engineering Charge.** The City of Willits will contract with an independent certified, Materials Testing 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 a minimum of three (3) years 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.

For off-NHS projects, certification of personnel for AT and IAST shall be Caltrans (MR-0111 or MR-0100), NICET, or similar certificate acceptable to the City Engineer. Engineer shall have the authority to specify which methods are to be used on each independent occasion. Certificates for personnel on a project shall be retained in the private consultant's and/or laboratory's files and presented to the City upon demand by the Resident Engineer (RE) or City Engineer.

Sampling and testing by an uncertified person is acceptable only in extreme, unforeseen emergencies, upon assurance by the RE that the uncertified person is competent to perform the work.

V.4. **Laboratory Equipment Calibration.** The materials laboratory used shall document its calibration of its equipment in accordance with LAPM-16.14 and nationally recognized calibration standards. The laboratory is responsible for performing the calibrations and providing such records to the City upon demand by the RE or City Engineer.

Calibration of laboratory equipment and field test equipment (e.g., sand cones, scales, moisture test, slump cones, air meters) shall occur prior to use on a construction project and on regular, appropriate intervals, not exceeding one year.

V.5 **Cost Recovery.** Materials testing and sampling costs are eligible to be charged to the construction-engineering phase of the project.

V.6 **Compliance.** Failure to comply with the local agency QAP may result in loss of

Federal funds.

V.7 **Records.** City's QAP and consultant's QAP material records of samples and tests, material releases, and certificates of compliance for a project shall be incorporated into the RE's project file. For Federally funded projects, records shall be retained for a period of three years.

V.8 **Project Certification.** Upon project completion, the RE shall complete and sign a "Materials Certificate" (Caltrans LAPM Exhibit 17-G). The Certificate shall be submitted to the Caltrans Local Assistance Engineer (for Federally funded projects) and retained in the project construction files. All non-conforming materials must be explained and justified on the Certificate.

VI. ACCEPTANCE SAMPLING AND TESTING (AT)

VI.1 **Definition.** Acceptance Testing ("AT") is defined as regular testing of materials entering a construction project to verify compliance with contract specifications or standards.

VI.2 **Timing.** Sampling should begin as soon as materials are placed on a project. Testing should be performed promptly to enable data evaluation and necessary measures to be taken by the RE and contractor.

VI.3 **Test Methods.** Both California and Americana Society of Testing and Materials (ASTM) test methods are acceptable.

VI.4 **Frequency.** Sampling and testing shall occur in accordance with Caltrans "Frequency Tables" (LAPM Exhibit 16-R), except as modified in writing and as approved by the City Engineer for a specific project. These tables are shown in Attachment #1. The tables are intended as a guide; the actual quality of materials tested may justify decreasing or increasing the frequency of subsequent similar samples and tests.

VI.5 **Tests to be Performed.** The tests to be performed shall be in accordance with Caltrans' "Frequency Tables" (Attachment #1), and the Caltrans Standard Specifications as modified by the project Special Provisions, except as modified in writing and as approved by the City Engineer.

As a guideline, the following tests comprise a minimum scope of commonly used materials:

- Aggregate Base - Sieve Analysis, Sand Equivalent, and R-value for each new source.
- Aggregate Subbase - Sieve Analysis, Sand equivalent, and R-Value.
- Asphalt Concrete - Sieve Analysis for aggregate sampled at the plant. Asphalt content, Maximum Density, and In-Place Density for AC sampled at the site. (A Certificate of Compliance may be accepted for Liquid Asphalt.)
- Soil - Maximum Density, In-Place Density (relative Compaction) at the site.
- Concrete - Sieve Analysis for aggregate sampled at the plant. (A Certificate of Compliance may be accepted for aggregate Cleanliness, aggregate Sand Equivalent Admixtures, and Portland Cement concrete.) Compressive Strength (Cylinders).

VI.6 Test Result Reporting Guidelines. Results should be submitted to the City Inspector within 3 working days of sampling, or as dictated by the construction schedule. Results may be expedited by using fax, telephone, or e-mail.

VI.7 Summary Logs. "Material Testing Summary Logs" shall be maintained by the City Inspector for each material requiring multiple sampling and testing. Log data shall include, for example, station location, test sample depth, approximate quantity of sample materials, test result, and tester.

VI.8 Minor Quantities. Relatively minor quantities of materials from a known, reliable source may be accepted without testing if:

- a. The City Inspector performs visual examination of materials, or
- b. The manufacturer or supplier certifies that the material furnished complies with specification requirements.

Such records of acceptance shall be placed in the City Inspector's project files with related inspection notes.

Examples of maximum "minor quantities" include (from LAPM-16.14):

- Aggregates used for other than Portland Cement concrete: 100 tons per day or 500 tons per project.
- Bituminous mixtures: 50 tons per day or 500 tons per project.
- Bituminous material: 100 gallons per project.
- Paint: 20 gallons per project.

VI.9 Re-testing. Failing test results require re-testing to isolate the failed area. The Log Summary shall cross-reference the retest to the initial failed test.

VII. INDEPENDENT ASSURANCE PROGRAM (IAP): The Independent Assurance Program is only necessary when non-Caltrans test methods applied and/or when a non-Caltrans certified laboratory is utilized.

VII.1 Definition. The purpose of these procedures is to verify that Acceptance Testing is being performed correctly and reliably, and to ensure that equipment is properly calibrated.

VIII. VII.2 Applicability. IAST procedures are only necessary when non-Caltrans test methods used and/or when a non-Caltrans certified laboratory is utilized. In the event that this condition is not met, IAST procedures as described in LAPM - 16.14 will apply. The City will contract with a separate laboratory to perform IAST as needed. The City will verify that the contracted laboratory possesses its own QAP, which includes IAST procedures for "testing its own testers." IAST procedures are optional, and may be required at the discretion of the City Engineer for non-Federally funded projects.

VII.3 IAST Testers. Laboratory personnel or consultant testers shall have its own industry-standard QAP and employ personnel who are certified in all required testing procedures, by recognized materials testing organizations as approved by the City Engineer.

VII.4 Frequency of IAST. The IAST frequency shall be as specified in the consultant laboratory's QAP for each project where IAST is required.

IAP shall be performed on every type of materials test required for the project. Proficiency tests shall be performed on Sieve Analysis, Sand Equivalent, and Cleanness Value tests. All other types of IAP shall be witness tests.

Poor correlation between acceptance tester's results and other test results may indicate probable deficiencies with the acceptance sampling and testing procedures. In cases of unresolved discrepancies, a complete review of AT shall be performed by IAP personnel, or an independent materials laboratory chosen by the Agency. IAP samples and tests are not to be used for determining compliance with contract requirements. Compliance with contract requirements is determined only by AT.

IX. TESTING OF MANUFACTURED AND ASSEMBLED MATERIALS

VIII.1 Definition. This procedure provides methods for inspecting, accepting, and testing materials that are manufactured or prefabricated off the project site.

VIII.2 Certificate of Compliance. The City may accept manufactured products, materials, or assemblies if accompanied by a Certificate of Compliance, provided they do not involve structural integrity or public safety. Such Certificate shall be signed by the manufacturer and shall state that materials and workmanship conform to the specific project specifications.

VIII.3 Source Inspection. As an alternative to a Certificate of Compliance, the City or its consultant may request Caltrans to do a Source Inspection in accordance with LAPM-16.14 procedures, see Attachment#2 (Exhibit 16-V of the LAPM). A list of materials that can be typically accepted on the basis of certificates of compliance during construction is found in Attachment #3 (Appendix F of the QAP Manual). All certificates of compliance shall conform to the requirements of the contract specifications, for examples see Attachment #4 (Appendix J of the QAP Manual).

VIII.4 Applicable Materials. Contract documents shall specify which materials require a Certificate of Compliance (or optional Source Inspection). Typical materials are listed in LAPM Exhibit 16-T.

VIII.5 Responsibility. The City Inspector shall ensure that Certificates are furnished with material deliveries and are kept in the City Inspector's project file.

VIII.6 Documentation. The certified material's lot number and project number shall be identified on the certificate and on lot tags or stenciled on the material. In addition, this data shall be referenced on the inspector's daily logs and laboratory reports.

VIII.7 Re-testing. Certified materials may be sampled and tested again on the job site, and rejected for cause whether in place or not.

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 sampling.
- 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.

PROJECT CERTIFICATION

Upon completion of a Federal-aid project, a “Materials Certificate” shall be completed by the Resident Engineer. The Agency shall include a “Materials Certificate” in the Report of Expenditures submitted to the Caltrans District Director, Attention: District Local Assistance Engineer. A copy of the “Materials Certificate” 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 “Materials Certification”, including changes by virtue of contract change orders. See Attachment # 5 for an example (Appendix K of the QAP Manual).

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 shall be organized as described in Section 16.8 “Project Files” of the Local Assistance Procedures Manual.
- 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 “Log Summary,” as shown in Attachment #6 (Appendix H of the QAP Manual), 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.

CALTRANS FORMS

The following list of forms from the LAPM would be needed for testing during construction:

- Exhibit 16-D Certificate of Proficiency (completed by testing firm and copy sent to Resident Engineer)
- Exhibit 16-E Independent Sampling and Testing (completed by testing firm and copy sent to Resident Engineer)
- Exhibit 16-F Report of Witness Test (completed by testing firm and copy sent to Resident Engineer)
- Exhibit 16-G Corroboration Report (completed by testing firm and copy sent to Resident Engineer)
- Exhibit 16-H Independent Assurance Sampling and Testing Log Summary (completed by Resident Engineer)
- Exhibit 16-I Notice of Materials to be Used (completed by testing firm and copy sent to Resident Engineer)
- Exhibit 16-K Report of Inspection of Material (completed by Resident Engineer)
- Exhibit 17-G Materials Certificate (completed by Resident Engineer)

APPROVED BY: Thomas M Mannatt R.C.E. 31931
 (Signature) (CE# and Expiration Date) EXP 12/31/10

NAME: Thomas M Mannatt DATE: 7/19/2010

TITLE: City Engineer City of Willits / Mendocino
 (City/ County of (name))

Attachments:

1. Size, Frequency and Location of Sampling and Testing Tables
2. Sample Cover Memo – Source Inspection Request
3. Construction Materials Accepted by a Certificate of Compliance
4. Example of a Vendor’s Certificate of Compliance
5. Examples of Materials Certificates/Exceptions
6. Example of a Log Summary Sheet
7. Caltrans Forms

ATTACHMENT #1
SIZE, FREQUENCY AND LOCATION OF SAMPLING

SIZE, FREQUENCY AND LOCATION OF SAMPLING AND TESTING TABLES
PORTLAND CEMENT CONCRETE (6) - PAVEMENT

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS		REMARKS					
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING						
AGGREGATE	COARSE AGGREGATE	LA Rattler (500 Rev.) 6	See Note (3)	See Note (2)	1 for every 500 cu. yds. 1 per day min. See Notes (1)(7). If production is less than 300 cu. yds, 1 per accumulative 300 cu. yds.	One of the following locations listed in order of preference: a. Belt from weigh hopper to central or transit mixer. b. Belt which feeds batch plant bins immediately preceding the weigh hopper. c. Discharge gate of weigh hopper. A single sample 400+ lbs. into loader or dump truck; split to test portion required for grading analysis. d. Discharge gates of bins feeding the weigh hopper at batch plant	Recommend 1 acceptance test per day if 3 consecutive tests over 80					
		Cleanness value						211 227				
	FINE AGGREGATE	Colometric Test	213	See Note (3)	See Note (2)	Only if initial test shows critical or contamination is suspected	The location and method of sampling are to be determined and agreed upon by the engineer and the contractor. Once selected, the location and method of sampling are not to be changed during the life of a project, or so long as there is no change in plant's configuration or operation.	Recommend 1 acceptance Test per day if 3 consecutive tests over 80				
		Mortar Strength	515									
		Sand Equivalent	217									
		Durability	229									
	COARSE & FINE AGGREGATE	Specific gravity & absorption	206 & 207	See Note (3)	See Note (2)	When aggregate changed. See Note 7	Same as Fine Aggregate (above)					
		Soundness	214									
		Sieve Analysis	202									
		Freeze-Thaw	528									
Moisture		223 & / or 226										
CEMENT	Compliance w/Std. Specs. & Special Provisions	8 lb.	None with Certificate of Compliance (See REMARKS.)	At point of use (See REMARKS)KS)	1 for every 500 cu. yds. 1 per min. See Notes (1)(7). If production is less than 300 cu. yds, 1 per accumulative 300 cu. yd.	Weigh hopper or in the feed line immediately in advance of the hopper	If no Certificate of Compliance, sample at least 14 days prior to use for previously tested brands, 35 days for untested brands.					
								Clean 1/2 gallon plastic jug with lined sealed lid	At point of use (See REMARKS)KS)	As required for acceptance (See REMARKS)	At point of use	City water supplies for domestic use usually need not be tested unless suspected of high chloride or sulfate content. On-the-job wells are to be tested.
WATER	Compliance with Sec. 90 of Std. Specs. & Special Provisions	405	Clean 1/2 gallon plastic jug with lined sealed lid	At point of use (See REMARKS)KS)	As required for acceptance (See REMARKS)	At point of use	City water supplies for domestic use usually need not be tested unless suspected of high chloride or sulfate content. On-the-job wells are to be tested.					

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

AD MIXTURES	Air Entraining Agent	Air entraining properties, chloride identification	ASTM C 260	1-quart can or plastic bottle of liquid, 2 lbs. of powder	Samples must reach testing lab at least 1 week prior to use.	As required for information	Sample must reach testing lab at least 1 week prior to use	
	Water Reducers Set Retarders	Claimed properties, chloride identification	ASTM C 494	1-quart can of liquid, 2 lbs. of powder	Samples must reach Testing lab at least 1 week prior to use. Untested brands require 5 weeks prior to use.	As new supplies arrive on the job or each time brand is changed.	Samples must reach testing lab at least 1 week prior to use. Untested brands require 5 weeks prior to use.	
CONCRETE	Yield		518	See test method See Note (8)		One for each 4 hours production	At point it is deposited on the grade	If yield test used for payment, 1 per each 1,500 cu. yds.; min. of 2 per mix design per job.
	Ball Penetration		533			When test specimen is fabricated & when consistency or uniformity is questionable. Min. 2 per day	At point concrete is deposited in the work and from different portions of the batch to check uniformity.	
	Modules of rupture		523	1 set of 3 beams 6" x 6" x 34" each	See California Test 539	One set for each 4,000 cubic yards	See California Test 539	Recommend min. 2 sets per shift. Normally, from each set, break 1 beam at 7 days, 1 beam at 10 days, and 3rd beam as required 50% decrease after 10 sets.
	Air Content		504	Approx. 1/2 cubic foot		As required for information; min. once every 4 hours. Each time 518 is performed.	At point deposited on the grade.	Where specified for freeze thaw resistance, acceptance testing shall not be less than once every hour.
	Coarse agg. per cu. ft. of concrete		529			As required to assure uniformity of concrete. See Std. Specs., Section 90	1st and last 4th of batch	
	Dimensions					As required for information. See Std. Specs. Section 40		
PIGMENTED CURING COMPOUND	Compliance (See Std. Specs. & Special Prov.)			1 Quart (Can)		As new shipments arrive on job or each time brand is changed	From spray nozzle or feed line at point of field application.	

- Note:
- (1) Not required if P.C. from same source is being used on other work and test is being made there. No need to duplicate the test just for the sake of record. The actual test results may be used anywhere they are applicable.
 - (2) From material site or stockpile; 60 days prior to use.
 - (3) 150# of 2 1/2" x 1 1/2" - 100# of 1 1/2" x 3/4" - 75# of 3/4" x No. 4-75# of pea gravel -50# of sand. This material for test numbers 202, 206, 207, 211, 213, 214, 217, 227, 229 and 515.
 - (4) See California Test No. 528 or contact the Division of New Technology, Materials and Research.
 - (5) Contact District Materials Engineer for special sampling procedures at least 120 calendar days before intended use.
 - (6) For lightweight concrete, see Standard Specifications and Special Provisions.
 - (7) When prior test results are acceptable and material appears to be of uniform composition, a max. of 2 tests per day will satisfy acceptance test requirements for this material. Adjustments to testing frequencies shall be documented in the project files.
 - (8) No deductions for cement content will be made based on the results of California test 518.

PORTLAND CEMENT CONCRETE (6) - BRIDGES & MAJOR STRUCTURES (R.C.B., P.C.C. Arch Culverts, Retaining Walls)

				POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	REMARKS	
AGGREGATE	COARSE AGGREGATE	LA Rattler (500 Rev.) Cleanness Value	211 227	See Note (3)	See Note (2)	1 for every 500 cu. yds. 1 per day min. See Notes (1)(7). If production is less than 300 cu. yds, 1 per accumulative 300 cu. yds.	One of the following locations listed in order of preference: a. Belt from weigh hopper to central or transit mixer. b. Belt which feeds batch plant bins immediately preceding the weigh hopper. c. Discharge gate of weigh hopper. A single sample 400+ lbs. into loader or dump truck; split to test portion required for grading analysis. d. Discharge gates of bins feeding the weigh hopper at batch plant	Recommend 1 acceptance test per day if 3 consecutive tests over 80
	FINE AGGREGATE	Colometric test Mortar Strength Sand Equivalent Durability	213 515 217 229	See Note (3)	See Note (2)	Only if initial test shows critical or contamination is suspected 1 for every 500 cu. yds. See Notes (1) (7). If production is less than 300 cu. yds., 1 per accumulative 300 cu. yds.	The location and method of sampling are to be determined and agreed upon by the engineer and the contractor. Once selected, the location and method of sampling are not to be changed during the life of a project, or so long as there is no change in plant's configuration or operation.	Recommend 1 acceptance test per day if 3 consecutive tests over 80
	COARSE & FINE AGGREGATE	Specific gravity & absorption Soundness Sieve Analysis Freeze-Thaw Moisture	206 & 207 214 202 528 223 &/ or 226	See Note (3)	See Note (2)	When aggregate changed. See Note (7) 1 for every 500 cu. yds. 1 per day min. See Notes (1)(7). If production less than 300 cu. yds, 1 per accumulative 300 cu. yd. 1 for every 500 cu. yds. 1 per day min. See Notes (1)(7). If production less than 300 cu. yds, 1 per accumulative 300 cu. yd.	As per potential source list Same Fine Aggregate (above) Same Fine Aggregate (above)	Sample must be in an airtight container
CEMENT	Compliance w/Std. Specs. & Special Provisions		8 lb.	None with Certificate of Compliance (See REMARKS.)	1 for every 500 cu. yds. 1 per min. See Notes (1)(7). If production is less than 300 cu. yds, 1 per accumulative 300 cu. yd.	Weigh hopper or in the feed line immediately in advance of the hopper	If no Certificate of Compliance, sample at least 14 days prior to use for previously tested brands, 35 days for untested brands.	
WATER	Compliance with Sec. 90 of Std. Specs. & Special Provisions	405	1/2 gallon plastic jug with lined sealed lid	At point of use (See REMARKS.)	As required for acceptance (See REMARKS)	At point of use	City water supplies for domestic use need not be tested unless suspected of high chloride or sulfate content. On-the-job wells are to be tested.	

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

AD MIXTURES	Air Entraining Agent	Air entraining properties, chloride identification	ASTM C 260	1-quart can or plastic bottle of liquid, 2 lbs. of powder	Samples must reach testing lab at least 1 wk prior to use.	As required for information	Sample must reach testing lab at least 1 week prior to use	Check with DNTM&R for brands which may be used prior to sampling and testing when properly certified
	Water Reducers Set Retarder	Claimed properties, chloride identification	ASTM C 494	1-quart can of liquid, 2 lbs. of powder	Samples must reach testing lab at least 1 wk prior to use. Untested brands require 5 wks prior to use.	As new supplies arrive on the job or each time brand is changed.	Samples must reach testing lab at least 1 week prior to use. Untested brands require 5 weeks prior to use.	
CONCRETE	Yield		518	Approx. 1 cu. ft. See Note (8)	See California Test 539	As necessary to assure accuracy of mix design; min. 2 per each mix design	At point it is deposited in the work	
	Ball Penetration		533			When test specimen is fabricated & when consistency or uniformity is questionable. Min. 2 per day	At point concrete is deposited in the work and from different portion of the batch to check uniformity	
	Compressive Strength		539 & 540	1 set of 2-6" x 12" cylinders for each test age		1 set for approx. every 300 cu. yds. concrete or as required for acceptance. Min. 1 set per job & class of concrete for each days production.	At point deposited in the work	For trial batches, see Std. Specs. or job Special Provisions and Section 8-03 of this manual.
	Air Content		504			A Min. once every 4 hours of production and when test specimens are fabricated	At point deposited on the grade.	Where air is specified for freeze-thaw resistance, a min. of 1 per each 30 cu. yds.
	Coarse agg. per cu. ft. of concrete		529			As required to assure uniformity of concrete. See Std. Specs., Section 90	1st and last 4th of batch	
	Dimensions					As required for information. See Std. Specs. Sec. 40		
PRESTRESSED TENDON GROUT	Efflux time		541	1-6" x 12" cylinder mold can	From batch immediately after mixing for prequalification; thereafter from outlet end of tendon &/or storage tank.	At the start of each day's work and thereafter 1 test per each 5% of ducts		Repeat acceptance tests whenever source of material is changed
PIGMENTED CURING COMPOUND	Compliance (See Std. Specs. & Special Prov.)			1 Quart (Can)		Periodically to ensure compliance	From storage drums	For chlorinated rubber base type, sample and test if not previously inspected at the source.

- Note:
- (1) Not required if P.C. from same source is being used on other work and test is being made there. No need to duplicate the test just for the sake of record. The actual test results may be used anywhere they are applicable.
 - (2) From material site or stockpile; 60 days prior to use.
 - (3) 150# of 2 1/2 x 1 1/2"-100# of 1 1/2 x 3/4 - 75# of 3/4" x No. 4-75# of pea gravel -50# of sand. This material for test numbers 202, 206, 207, 211, 213, 214, 217, 227, 229 and 515.
 - (4) See California Test 528 or contact the Division of New Technology, Materials and Research.
 - (5) Contact District Materials Engineer for special sampling procedures at least 120 calendar days before intended use.
 - (6) For lightweight concrete, see Standard Specifications and Special Provisions.
 - (7) When prior test results are acceptable and material appears to be of uniform composition, a max. of 2 tests per day will satisfy acceptance test requirements for this material. Adjustments to testing frequencies shall be documented in the project files.
 - (8) No deductions for cement content will be made based on the results of California Test 518.

PORTLAND CEMENT CONCRETE MISCELLANEOUS CONCRETE
See Notes (6) and (9)

				POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS			
MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	REMARKS	
AGGREGATE	COARSE AGGREGATE	LA Rattler (500 Rev.)	211	See Note (3)	See Note (2)	1 for every 500 cu. yds. 1 per day min. See Notes (1)(7). If production is less than 300 cu. yds, 1 per accumulative 300 cu. yds.	One of the following locations listed in order of preference: a. Belt from weigh hopper to central or transit mixer. b. Belt which feeds batch plant bins immediately preceding the weigh hopper. c. Discharge gate of weigh hopper. A single sample 400+ lbs. into loader or dump truck; split to test portion required for grading analysis. d. Discharge gates of bins feeding the weigh hopper at batch plant	Recommend 1 acceptance test per day if 3 consecutive tests over 80
		Cleanness Value	227					
	FINE AGGREGATE	Colometric Test	213	See Note (3)	See Note (2)	Only if initial test shows critical or contamination is suspected	The location and method of sampling are to be determined and agreed upon by the engineer and the contractor. Once selected, the location and method of sampling are not to be changed during the life of a project, or so long as there is no change in plant's configuration or operation.	Recommend 1 acceptance test per day if 3 consecutive tests over 80
		Mortar Strength	515					
		Sand Equivalent	217					
		Durability	229					
COARSE & FINE AGGREGATE	Specific gravity & absorption	206 & 207	See Note (3)	See Note (2)	When aggregate changed.			
	Soundness	214						
	Sieve Analysis	202			1 for every 500 cu. yds. 1 per day min. See Notes (1)(7). If production less than 300 cu. yds, 1 per accumulative 300 cu. yd.			
	Freeze-Thaw	528	See Note (4)	See Note (5)				
	Moisture	223 & / or 226		None	1 for every 500 cu. yds. 1 per day min. See Notes (1) (7). If production less than 300 cu. yds, 1 per accumulative 300 cu. yd.	Same as Fine Aggregate (above)		
CEMENT (6)	Compliance w/Std. Specs. & Special Provisions		8 lb.	None with Certificate of Compliance (See REMARKS.)	1 for each 500 cu. yds. used. 1 per day min.: 2 per day max. See Note (1). See Section 8-02 of this Construction Manual	From weigh hopper, screw leading to weigh hopper	If no Certificate of Compliance, sample at least 14 days prior to use for previously tested brands, 35 days for untested brands.	
WATER	Compliance with Sec. 90 of Std. Specs. & Special Provisions	405	1/2 gallon plastic jug with lined sealed lid	At point of use (See REMARKS.)	As required for acceptance (See REMARKS.)	At point of use	City water supplies for domestic use usually need not be tested unless suspected of high chloride or sulfate content. On-the-job wells are to be tested.	

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

ADMIXTURES	Air Entraining Agent	Air entraining properties, chloride identification	ASTM C 260	1-quart can or plastic bottle of liquid, 2 lbs. of powder	Samples must reach testing lab at least 1 week prior to use.	As required for information	Samples must reach testing lab at least 1 week prior to use.	Check with DNTM&R for brands which may be used prior to sampling and testing when properly certified.
	Water Reducers Set Retarder	Claimed properties, chloride identification	ASTM C 494	1-quart can of liquid, 2 lbs. of powder	Samples must reach Testing lab at least 1 week prior to use. Untested brands require 5 weeks prior to use.	When new lots are to be used.	Samples must reach testing lab at least 1 week prior to use. Untested brands require 5 weeks prior to use.	
COMBINED MIX (6)	Yield Cement Factor		518	See test method See Note (8)		As necessary to assure accuracy of mix design	At point concrete is deposited in the work from different portions of the batch to check uniformity	If yield test used for payment, 1 per each 1,500 cu. yds.; min. of 2 per mix design per job.
	Ball Penetration		533			When test specimen is fabricated & when consistency or uniformity is questionable. Min. 2 per day		
	Compressive Strength		539 & 540	1 set of 2-6" x 12 cylinders		One set for each day when volume exceeds 25 cu. yd. (1) None if total days run less than 25 cu. yds.	At point deposited in work	
	Entrained Air		504	Approx. 1/2 cubic foot		As required for information	At point concrete is deposited in work	

- Note:
- (1) Not required if P.C. C. from same source is being used on other work and test is being made there. No need to duplicate the test just for the sake of record. The actual test results may be used anywhere they are applicable.
 - (2) From material site or stockpile; 60 days prior to use.
 - (3) 150# of 2 1/2" x 1 1/2" - 100# of 1 1/2 x 3/4 - 75# of 3/4" x No. 4-75# of pea gravel -50# of sand. This material for test numbers 202, 206, 207, 211, 213, 214, 217, 227, 229 and 515.
 - (4) See California Test 528 or contact the Division of New Technology, Materials and Research.
 - (5) Contact District Materials Engineer for special sampling procedures at least 120 calendar days before intended use.
 - (6) For minor concrete, sample and test only at Resident Engineer's discretion.
 - (7) When prior test results are acceptable and material appears to be of uniform composition, a max. of 2 tests per day will satisfy acceptance test requirements for this material. Adjustments to testing frequencies shall be documented in the project files.
 - (8) No deductions for cement content will be made based on the results of California test 518.
 - (9) For lightweight concrete, see Standard Specifications and Special Provisions.

ASPHALT CONCRETE (3)

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS		REMARKS
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	
AGGREGATE PRIOR TO MIXING	LA Rattler (500) Rev.)	211	Type A & B UNPROCESSED 250# PROCESSED 50# of each bin size Open graded 50#	Materials site, stockpile, or plant (7)	As necessary for information and/or acceptance (8)	Plant bin prior to mixing (2) (7)	
	Specific gravity (coarse and fine aggregate)	206 & 208					
	CKE	303					
	Stabilometer	366					
	Swell	305					
	Moist Vapor Susceptibility	307					
	% Crushed Particles	205					
	Sieve Analysis	202					
	Sand Equivalent	217					
	Film Stripping	302					
PAVING ASPHALT LIQUID ASPHALTIC EMULSION	In accordance with applicable Section of Std. Specs		Asphalt 1 quart can	Test only if no Certificate of Compliance. Asphalt line (6)	Once daily (6)	Asphalt line or distributor	
			Emulsion 1/2 gallon plastic jug	Test only if no certification of compliance. Emulsion Storage Tank	Each shipment	Emulsion Storage Tank or Distributor	

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

COMPLETE MIXTURE	Swell	305	DGAC 15# carton		As necessary for information and/or acceptance		When less than a total of 500 tons is to be placed, sample and test only at Resident Engineers discretion. Total sample: DGAC: Four Cartons (about 60#) OGAC: Four 1 Qt. cans (about 14#)
	Moist, vapor susceptibility	307	OGAC 1 qt. can				
	Stabilometer	304					
	Sieve Analysis	202					
	Asphalt Content	310, 362 & 379			1 for each 500 ton; 2 per day minimum		
	Moisture	310 & 370				Completed pavement	
	In-Place Density	375	As specified or lot size		1 sample representing each 4 hours of production	As per California Test 375	
	Maximum Density	375	Two 15# cartons		As per California Test 375		

- Note:
- (1) On smaller projects being supplied from sources currently in use on larger projects, a copy of the acceptance test information on asphalt concrete aggregate is all that is required.
 - (2) For continuous mixing, sample from the combined feed in advance of mixing, for mixing, sample from hot bins.
 - (3) When special provisions state that production shall be "from commercial quality asphalt and aggregate" sample and test only at Resident Engineers discretion.
 - (4) Not required if P.C.C. from same source is being used on other work and test is being made there. No need to duplicate tests; results may be used anywhere they are applicable.
 - (5) When prior test results are acceptable and material appears to be of uniform composition, a max. of 2 tests per day will satisfy acceptance test requirements for this material. Adjustments to testing frequencies shall be documented in the project files.
 - (6) When continuous mixing plants used, sample and test for specific gravity at least monthly.
 - (7) When sampling for AC mix design (California Test 367), aggregate samples must be taken as described in Note 2.
 - (8) Refer to Standard Specifications, 39-3.03 "Proportioning" for frequency of AC mix design (California test 367) sampling.
 - (9) When prior test results are acceptable and material appears to be of uniform composition, a max. of 2 tests per day will satisfy acceptance test requirements for this item. Adjustments to testing frequencies shall be documented in the project files.

LEAN CONCRETE BASE

			POTENTIAL SOURCE TESTS		ACCEPTANCE TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	REMARKS
AGGREGATE	Sand equivalent	217	100 lbs. for aggregate qualification As required for method of test for acceptance tests.	Material site or stockpile	1 sample for each 3,000 tons or 2,000 cu. yds. (1)	One of the following locations listed in order of preference: a. Belt from weigh hopper to central or transit mixer. b. Belt which feeds batch plant bins immediately preceding the weigh hopper. c. Discharge gate of weigh hopper. A single sample 400+ lbs. into loader or dump truck; split to test portion required for grading analysis. d. Discharge gates of bins feeding the weigh hopper at batch plant The location and method of sampling are to be determined and agreed upon by the engineer and the contractor. Once selected, the location and method of sampling are not to be changed during the life of a project, or so long as there is no change in plant's configuration or operation.	
	Sieve analysis	202 & 105					
	Compressive strength of laboratory mixtures	548					
CEMENT	Compliance with Section 90 of Std. Spec.		8 lbs.	None with Certificate of Compliance (see REMARKS)	Each 120 tons of cement, 2 per day max.	Weigh hopper or screw leading to weigh hopper or from distributor if road-mixed.	If no Certificate of Compliance, sample at least 14 days prior to use for previously tested brands; 35 days for untested brands.
WATER	Compliance with Section 90 of Std. Spec.	405	Clean 1/2 gallon plastic jug with lined sealed lid.	At point of use(see REMARKS)		At point of use.	City water supplies for domestic use need not be tested unless suspected chlorine or sulfate content. On-the-job wells are to be tested
ADMIXTURES	Air Entraining Agents						Contact DNTM&R for information
	Retarders	Compliance with specifications	530 or 415	1 quart can or plastic bottle of liquid, 2 lbs. of powder	Each new lot of material brought to the job	Samples must reach testing lab at least 1 week prior to use. Untested brands require 5 weeks prior to use.	Contact DNTM&R for brands which may be used prior to sampling and testing when properly certified

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

COMPLETED MIXTURE	Penetration	533			At least once for every 4 hours of production	At point concrete is deposited in the work	
	Entrained Air	504	Approx. 1/2 cu. ft.	Request laboratory to perform this test during aggregate qualification.	At least once for each day's production		
	Dimensions				As required		
CURING COMPOUND	Compliance with specifications		1 quart can		Each new lot of material brought to the job	From spray nozzle or feed line at point of field application	

NOTE; (1) If material is uniform and well within specification limits, the frequency is decreased to 1 a day unless source is changed. Adjustments to testing frequencies shall be documented in the project files.

CEMENT TREATED BASE ROAD MIX OR PLANT MIX

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS		REMARKS	
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING		
AGGREGATE	R-value (with & without cement)	301	100 lbs. for aggregate qualification	Material site or stockpile	1 sample for each 3,000 tons or 2,000 cu. yds. (1)	As specified.	Class B only	
	Compressive Strength	312	As required for method of test for acceptance tests.				Class A	
	Sieve Analysis	202					Minimum 1 acceptance test per project on smaller projects.	
	Sand Equivalent	217					As specified.	
COMPLETED MIX	Compressive Strength	312	See California Test 312 Part II	See Section 6-27 of this manual.	See California Test 312 Part II	Use minimum of 1 person full time during full-time operation.		
	Cement Titration	338	See California Test 338 Part I				As necessary for acceptance (See REMARKS)	See California Test 338 Part I
	Relative Compaction	312 216 231					1 sample for each 3,000 tons or 2,000 cu. yds. (1).	See California Test 375.
	Dimensions						As necessary for information.	In place after compaction.
CEMENT	Compliance with Section 90 of Std. Spec.		8 lbs.	None with Certificate of Compliance (see REMARKS)	Each 120 tons of cement, 2 per day max.	Weigh hopper or screw leading to weigh hopper or from distributor if road-mixed.	If no Certificate of Compliance, sample at least 14 days prior to use for previously tested brands; 35 days for untested brands.	
WATER	Compliance with Section 90 of Std. Spec.		1/2 gallon plastic jug with lined sealed lid.	At point of use(see REMARKS)	As necessary for acceptance (see REMARKS).	At point of use.	No sample necessary if from obviously suitable source such as municipal water supply. On-the-job wells should be tested.	
Liquid Asphalt	In accordance with Special. Prov. & Std. Specs.		1 quart can	None with Certificate of Compliance. If no Certificate of Compliance, then from storage tank of distributor truck.	Each shipment.	Distributor truck.		

NOTE; (1) If material is uniform and well within specification limits, the frequency is decreased to 1 a day unless source is changed. Adjustments to testing frequencies shall be documented in the project files.

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

ASPHALT TREATED PERMEABLE BASE (ATPB)

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS		REMARKS
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	
AGGREGATE	Grading	202	50#	Materials, site, stockpile or plant bins.	2 times daily	Plant bins prior to mixing. See Note (1).	Recommend 1 acceptance test per day if 3 consecutive tests over 62.
	% crushed particles	205					
	LA Rattler (500 rev.)	211					
	Cleanness Value	227					
	Film Stripping	302					
ASPHALT	In accordance with Std. Specs.		quart can	Test only if no cert. of compliance	One daily.		
COMPLETED MIX	Asphalt content	310 & 362	Two 1-quart cans		1 for every 4 hours of production		

CEMENT TREATED PERMEABLE BASE (CTPB)

AGGREGATE	Grading	202	See note (2)	See note (3)	Once for each 4 hours of production. See note (4).	One of the following locations listed in order of preference: a. Belt from weigh hopper to central or transit mixer. b. Belt which feeds batch plant bins immediately preceding the weigh hopper. c. Discharge gate of weigh hopper. A single sample 400+ lbs. into loader or dump truck; split to test portion required for grading analysis. d. Discharge gates of bins feeding the weigh hopper at batch plant. The location and method of sampling are to be determined and agreed upon by the engineer and the contractor. Once selected, the location and method of sampling are not to be changed during the life of a project, or so long as there is no change in plant's configuration or operation..	Recommend 1 acceptance test per day if 3 consecutive tests over 80
	LA Rattler (500 rev.)	211			One for each 4 hours of production. See Note (4).		
	Cleanness Value	227					
CEMENT	Compliance w/ Std. Specs & Spec. Prov.		8 lbs.	None with Cert. of Compliance	Once for each 120 tons, 2 per day mix.		
WATER	Compliance with/ Sec 90 of Std. Specs and Special Provisions		1/2 gallon plastic jug with lined sealed lid.				City water supplies for domestic use; need not be tested unless suspected chlorine or sulfate content. On-the-job wells are to be tested.

- NOTE:
- (1) For continuous mixing plants, sample from combined feed in advance of mixing.
 - (2) 75 # of 1' x No. 3/4" x No. 4. This material for test numbers 202, 211, and 227.
 - (3) From material site or stockpile; 60 days prior to use.
 - (4) Not required if P. C. C. from same source is being used on other work and test is being made there. No need to duplicate the test just for the sake of record. The actual test results may be used anywhere they are applicable.

MISCELLANEOUS MATERIALS

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS	REMARKS	
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING		LOCATION OR TIME OF SAMPLING
AGGREGATE BASE	% crushed Particles	205	100 # for initial samples. 50 # for control samples.	Materials site or stockpile.	As necessary for acceptance.	As specified	Minimum 1 acceptance test per project.
	Sieve Analysis	202			Every 3,000 tons or 2,000 cu. yds. (1).		Minimum 1 acceptance test per project on smaller projects.
	Durability Index	229			If initial source changes or new source developed.		
	R-Value	301			Every 3,000 tones of 2,000 cu. yds. (1)(2).		
	Sand Equivalent	217	Every 3,000 tones of 2,000 cu. yds. (1)		Minimum 1 acceptance test per project on smaller projects.		
	Moisture	226	2 times daily if paid for by weight.		At time of weighing.		
	Relative Compaction	216 or 231	As necessary for acceptance.		In place after compaction.		
	Dimensions		As necessary for information		Upon completion of layer.		
AGGREGATE SUBBASE	Sieve analysis	202	50 #	Material site or stockpile.	1 for every 3,000 tons or 2,000 cu. yds. (1).	As specified.	Minimum 1 acceptance test per project on smaller project. None if less than 300 tons.
	R-value	301			1 for every 3,000 tons or 2,000 cu. yds. (1) (2).		
	Sand equivalent	217	1 for every 3,000 tons or 2,000 cu. yds. (1).				
	Relative compaction	216 or 231	As necessary for acceptance.		In place after compaction.		
	Dimensions		As necessary for information.		Upon completion of layer.		

- NOTE:
- (1) If material is uniform and well within specification limits, the frequency may be decreased to one a day unless source is changed. Adjustments to testing frequencies shall be documented in the project files.
 - (2) R-value testing may be waived when test records demonstrate that material from the same source, and having comparable grading and sand equivalent values, meets the minimum R-value requirements.

MISCELLANEOUS MATERIALS

				POTENTIAL SOURCE TESTS	ACCEPTANCE	TESTS		
MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	REMARKS	
IMPORTED BORROW	Relative Compaction	216 or 231			As required for acceptance.	Immediately after material is placed and compacted		
BASEMENT SOIL	R-Value	301	50 #	Test material below grading plane, both in cut and in fill.	As necessary for acceptance.	Prior to placement of cover material.		
	Relative Compaction	216 or 231	30 #			Immediately prior to placement of cover material.		
	Grade Tolerance					Grading plane.		
EMBANKMENT	Relative compaction	216 or 231	30 #			In place after compaction.		
LIME TREATMENT (1)	Soil or Aggregate to be Treated	Unconfined compressive strength	301	100 #	Native soils. Test each type of material to be treated.	If initial source changes.	Prior to beginning of lime treatment.	To determine appropriate lime content.
	COMPLETED MIX	Lime Content	338	20 #		As necessary for acceptance.	See California Test 338, Part I	
		Relative Compaction	216 & 231				In place after compaction.	
		Dimensions					In place after compaction.	
LIME	Compliance with Special Provisions		1/2 gallon can with friction lid	None with Certificate of Compliance.	Each load delivered.	From distributor.		
EMULSION (CURING SEAL)	In accordance with Special Provisions and Standard Specifications		1/2 gallon plastic jug.	None with Certificate of Compliance. If no Certificate of Compliance, then from storage tank or distributor truck.	Each shipment.	Distributor truck.		

NOTE: (1) Not to be used for the lime treatment of AC aggregates.

				MISCELLANEOUS MATERIALS					
MATERIAL OR PRODUCT		TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS LOCATION OR TIME OF SAMPLING	ACCEPTANCE TESTS FREQUENCY OF SAMPLING	TESTS LOCATION OR TIME OF SAMPLING	REMARKS	
PENETRATION TREATMENT	LIQUID ASPHALT	In accordance with applicable section of Std. Specs.		1 quart can	None with Certificate of Compliance.	Each shipment.	Plant storage tank or distributor.		
	SAND	Sieve Analysis	202			As necessary for acceptance.	As delivered to project.		
BITUMINOUS SEALS	PAVING ASPHALT	In accordance with applicable section of Std. Specs		Asphalts 1 quart can , Emulsion 1/2 gallon plastic jug	None with Certificate of Compliance.	Each shipment.	Storage tank or distributor		
	LIQUID ASPHALT	Binder distribution	339						
	ASPHALTIC EMULSION	LA Rattler	211		Stockpile	As necessary for acceptance..	As delivered to spread, equipment.		
	SCREENINGS	% crushed particles	205	50 #			Twice daily.		
		Sieve Analysis	202				As necessary for acceptance.		
	SLURRY SEAL AGGREGATE	Film Stripping	302				Once daily		
		Cleanness Value	227						
		Sand Equivalent	217		Stockpile		As necessary for acceptance	Prior to mixing	
		Sieve Analysis	202	25#					
		Film Stripping	302						
SOLID OR SEMI-SOLID AIR REFINED ASPHALT	In accordance with Std. Specs		3 #	Barrels or sacks.	Each 29 barrels or sacks.	Barrels or sacks.			

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

MISCELLANEOUS MATERIALS

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS	REMARKS	
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING		LOCATION OR TIME OF SAMPLING
PERMEABLE MATERIAL	Sieve Analysis	202	150 #	Stockpile	1 daily, or as required for acceptance.	In place, at time of placing.	Minimum 1 acceptance test per project.
	Durability Index	229			If initial source changes or new source developed.	Material site or stockpile	
	Sand Equivalent	217			1 daily, or as required for acceptance.	In place, at time of placing.	
STRUCTURE BACKFILL	Sieve Analysis	202	50 #	Materials site.	As required for acceptance.	At time of use	
	Sand Equivalent	217					
	Relative Compaction	216 & 231				In place after compaction.	
SLOPE PROTECTION	Size		75 #	Quarry	As required for acceptance (See REMARKS)	Upon delivery to job site or at time of placing.	Adequate size of slope protection documented by measuring or weighing the material.
	Apparent Specific Gravity	206					
	Absorption	206					
	Durability Index	229					
ASBESTOS SHEET PACKING			12" X 12"		1 each lot.	At delivery	Sample and test if not previously inspected at the source.
ASPHALT PLANK			Contact DNTM&R for instructions.	Contact DNTM&R for instructions.			
BARBED WIRE			3' length		Each 50 rolls or fraction	At time of use.	Sample and test if not previously inspected at the source. If less than 500 LF. of fence, see Note (1).
BOLTS AND HARDWARE			2 samples each diameters		Each lot.		Sample and test if not previously inspected at the source.

NOTE: (1) Resident Engineer may accept on the basis of visual examination provided the source has recently furnished similar material found to be satisfactory under the normal sampling and testing procedures of the Department. Place Resident Engineer's written approval in the project file.

MISCELLANEOUS MATERIALS

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE TESTS	REMARKS
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	
BRICK	Compliance with Specifications		10 full size		Contact DNTM&R for instructions.	At time of use
CHAIN LINK FENCING			24" width		Each 50 rolls or fraction.	Sample and test if not previously inspected at the source. If less than 500 LF of fence, see note (1).
CONCRETE AND CLAY PIPE			Contact DNTM&R for instructions.		Contact DNTM&R for instructions.	Sample and test if not previously inspected at the source. If less than 100 LF. of fence, see Note (1).
JOINT FILLER EXPANSION			6" long full width of sheet		Each 1,000 sq. ft. not less than 2 per shipment.	Sample and test if not previously inspected at the source. If less than 100 sq. ft. see Note (1).
ELECTRICAL CONDUCTOR	Compliance with Specifications		2 each 3" long, include markings		Each type each lot.	Sample and test if not previously inspected at the source. Certificate of Compliance required for 5,000 volt cable.
GALVANIZED PIPE			1' length from each end of length tested of each size		Each 500 lengths or fraction	Sample and test if not previously inspected at the source.
GEO-SYNTHETICS Filler, Reinf. & Paving Fabric S/R Fence, Etc.			1 piece, 3' x full width of roll		Each lot.	Distribution Warehouse. Certificate of Compliance required for each lot. Unroll at least 1 circumference before sampling.
JOINT SEAL, Type B			Contact DNTM&R			At time of use. Sample and test if not previously inspected at the source.
JOINT SEALING COMPOUND 2-COMPONENT POLYSULFIDE POLYMER TYPE	Specification requirements		1 gallon of each component		1 sample from each component of each batch	From cans at job site.
MOPPING ASPHALT	Compliance with Specification		1 quart		Each lot.	At time of use. Sample and test if not previously inspected at the source.
PAINT	Compliance with Specification		For Br. or major Str. send an unopened 5 Gal. can. For misc. painting, 1 qt. (See Sec. 8-02)		Each batch	Unused portion of 5 gallon sample will be returned to job. See Section 8-02. If less than 20 gallons, see note (1).
PAVEMENT MARKERS	Compliance with Specification		20 Markers		1 Sample (20 markers) from each lot of 10,000	Sample and test if not previously inspected at the source
PLASTIC CONDUIT	Compliance with Specification		2" long from center of length		2 samples each size	Sample and test if not previously inspected at the source
RAISED BARS (PRECAST)	Compliance with Specification		1 unit or full size bar		Each lot	Sample and test if not previously inspected at the source
REINFORCING STEEL	Compliance with Specification		2 samples 30" except 36" for #14 & #18		As necessary for acceptance	Before use Sample and test at job site

NOTE: (1) Resident Engineer may accept on the basis of visual examination provided the source has recently furnished similar material found to be satisfactory under the normal sampling and testing procedures of the Department. Place Resident Engineer's written approval in the project file.

EXHIBIT 16-R
Size Frequency and Location of Sampling and Testing Tables

MISCELLANEOUS MATERIALS

MATERIAL OR PRODUCT	TEST FOR	TEST NO.	SAMPLE SIZE & CONTAINER TYPE	POTENTIAL SOURCE TESTS	ACCEPTANCE	TESTS	REMARKS
				LOCATION OR TIME OF SAMPLING	FREQUENCY OF SAMPLING	LOCATION OR TIME OF SAMPLING	
STEEL PRODUCTS			Contact DNTM&R for instructions.		Contact DNTM&R for instructions.	At time of use	Sample and test if not previously inspected at the source.
STRUCTURAL STEEL & MISC. IRON & STEEL			2 samples, 2" x 30" cut parallel to direction of rolling		Each heat or melt or 10 tons or fraction.		Sample and test if not previously inspected at the source
WATER-PROOFING MATERIALS		ASTM D173	1 sq. yd. of asphalt saturated cotton fabric		1 sample from each lot.	Manufacturer's stock or contractor yard.	Meshes of fabric shall be substantially open
		ASTM D449	5 pounds of asphalt				Contractor's stock must be kept covered.
		ASTM D41	1 quart of asphalt primer.				
WIRE MESH REINFORCING			3' x 3'		Each 10 tons or fraction.	At time of use.	Sample and test at if not previously inspected at the source. If less than 2 rolls, see note (1).
WIRE ROPE OR CABLE			Per Special Provisions or as instructed.		Per Special Provisions or as instructed. At time of use.		Sample and test if not previously inspected at the source.

NOTE: (1) Resident Engineer may accept on the basis of visual examination provided the source has recently furnished similar material found to be satisfactory under the normal sampling and testing procedures of the Department. Place Resident Engineer's written approval in the project file.

ATTACHMENT #2
SAMPLE COVER MEMO – SOURCE INPSECTION REQUEST

**SAMPLE COVER MEMO
SOURCE INSPECTION REQUEST
FROM LOCAL AGENCY to
CALTRANS' DISTRICT LOCAL ASSISTANCE ENGINEER
(Prepared By Applicant On Applicant Letterhead)**

To: (name)
Caltrans' District Local Assistance Engineer
Caltrans' Local Assistance Office
(district office address)

Date: _____

Federal-aid Project Number: (if one has been assigned) _____

Project Description: _____

Project Location: _____

Subject: (*Source Inspection for Project Name, County*)

We are requesting that Caltrans provide Source Inspection (reimbursed) services for the above mentioned project. We understand we are responsible for paying for this service provided for by the State. Listed below are the materials for which we are requesting Caltrans' Source Inspection (reimbursed) services.

Materials that will require source inspection:

Justification for request: (Based on the requirements in Section 16.14 under "Source Inspection") _____

Any question you might have about the above materials should be directed to: _____, at _____ (phone #) _____.

Approved:

(Applicant Representative Name)

District Local Assistance Engineer

(Title)

(Date)

(Local agency, name & address)

ATTACHMENT #3
CONSTRUCTION MATERIALS ACCEPTED BY A
CERTIFICATE OF COMPLIANCE



Appendix F - Construction Materials Accepted by a Certificate of Compliance *

Soil Amendment
Fiber
Mulch
Stabilizing Emulsion
Plastic Pipe
Lime
Reinforcing Steel
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
Structural Metal Plate Pipe Arches and Pipe Arches
Perforated Steel Pipe
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
Minor Concrete
Waterstop

* If Caltrans Standard Specifications May 2006 is part of contract specifications.

Note: Usually these items are inspected at the site of manufacture or fabrication and reinspected after delivery to the job site.

ATTACHMENT #4
EXAMPLE OF A VENDOR'S CERTIFICATE OF COMPLIANCE



Appendix J.1 - Example of a Vendor's Certificate of Compliance

No. 583408

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
VENDOR'S CERTIFICATE OF COMPLIANCE
 MR-0543 (REV. 5/93) #CT-7541-6020-2

PRECAST CONCRETE PRODUCTS OR SOUNDWALL

TO: BILL SYNDER

STATE HIGHWAY ENGINEER
RESIDENT ENGINEER - CITY OF FLATLAND

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

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

CHECK BOX IF A CHEMICAL ADMIXTURE WAS NOT USED

MINERAL ADMIXTURE	
MANUFACTURER	CLASS
POZZ. INC.	F

CHECK BOX IF A MINERAL ADMIXTURE WAS NOT USED

DELIVERY DATE (Ready-Mix)	DATES OF FABRICATION (Precast)
7/7/07	

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

*Portland Cement
 Flyash
 Water Reducer*

MANUFACTURER OF CONCRETE PRODUCTS
A. & B. READY MIX

By: AUTHORIZED REPRESENTATIVE SIGNATURE
Joe Anderson

FM 93 1839

Original to Res. Engr. Retain Duplicate.

OSP 01 55624



Appendix J.2 - Example of a Certificate of Compliance for Portland Cement (continued)

This is to certify that the

Portland Cement.

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

Local Agency Project No.

HP21L – 5055 – 111

Albert Howakowa

Quality Assurance Engineer
ABC Cement Company

Date: 07/07/07.

ATTACHMENT #5
EXAMPLES OF MATERIALS CERTIFICATES/EXCEPTIONS



**Appendix K - Examples of Materials Certificates/Exceptions
 (Signed by the Resident Engineer at the Completion
 of the Project)**

Federal-aid Project No.: Project HP21L – 5055 – 111

Subject: 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 were in conformity with the approved plans and specifications.

All materials exceptions to the plans and specifications on this project are noted below.

No exceptions were found to the plans and specifications on this project.

Bill Sanders
 Resident Engineer (Print Name)

Bill Sanders
 Resident Engineer (Signature)

7/7/07
 (Date)

Note: The signed original of this certificate is placed in the Resident Engineer’s project files and one copy is mailed to the DLAE and filed under “Report of Expenditures.”

See the attachment (next page)



Appendix K (continued)

Attachments: Materials Exceptions (Acceptance Testing)

Type of Test	Description of Work	Total Tests Performed On the Project	Number of Failed Tests	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 Material	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.

Bill Sanders
 Resident Engineer (Print Name)

Bill Sanders
 Resident Engineer (Signature)

July 4, 2007
 Date

ATTACHMENT #6
EXAMPLE OF A LOG SUMMARY SHEET



Appendix H - Example of a Log Summary Sheet

Subgrade Materials

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
5/15/07	231	1+ 00 (30' L)	99.00	93	90 or greater	Passed	N/A
5/16/07	231	1+ 50 (20' R)	100.50	94	90 or greater	Passed	N/A
5/17/07	231	2+ 25 (25' R)	101.00	96	90 or greater	Passed	N/A
5/18/07	231	1+ 50 (30' L)	101.50	95	95 or greater	Passed	N/A
5/19/07	231	2+ 50 (20' L)	102.00	92 *	95 or greater	Failed	See Note 1
5/19/07	231	2+ 50 (20' L)	102.00	95	95 or greater	Passed	N/A

CT 231 = Compaction (Nuclear Gage)

* Note 1: 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.

Aggregates and Base Materials

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
6/20/07	202	1+ 00 (10' R)	102.50	See data sheet	See data sheet	Passed	N/A
6/20/07	202	2+ 00 (20' L)	102.50	See data sheet	See data sheet	Passed	N/A
6/22/07	217	1+ 00 (10' R)	102.50	75	25 or greater	Passed	N/A
6/22/07	217	2+ 00 (20' L)	102.50	83	25 or greater	Passed	N/A
6/20/07	227	1+ 00 (20' R)	102.50	86	71 or greater	Passed	N/A
6/20/07	227	1+ 50 (20' L)	102.50	85	71 or greater	Passed	N/A
6/24/07	231	2+ 00 (20' R)	102.50	98	95 or greater	Passed	N/A
6/24/07	231	2+ 50 (20' L)	102.50	97	95 or greater	Passed	N/A

CT 202 = Sieve Analysis, CT 217 = Sand Equivalent, CT 227 = Cleanness Value,
 CT 231 = Compaction (Nuclear Gage)



Appendix H (continued)

Hot Mix Asphalt

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
7/10/07	339	1+ 00 (10' R)	103.00	0.08 gal/ sq yd	0.05 -0.10 gal/sq yd	Passed	N/A
7/10/07	366	2+ 00 (20' L)	103.00	32	>23	Passed	N/A
7/10/07	366	1+ 00 (10' R)	103.00	41	>23	Passed	N/A
7/10/07	375	2+ 00 (20' L)	103.00	94	RC = 93 to 97	Passed	N/A
7/15/07	375	1+ 00 (20' R)	103.00	96	RC = 93 to 97	Passed	N/A
7/15/07	375	1+ 50 (20' L)	103.00	95	RC = 93 to 97	Passed	N/A

CT 339 = Distributor Spread Rate, CT 366 = Stabilometer Value
 CT 375 = In-Place Density & Relative Compaction

Portland Cement Concrete

Date	CT	Station	Elevation	Test Results	Minimum Spec.	Passed or Failed	Action Taken
9/25/07	504	10 + 50 (50' R)	102.50	6.5%	>6.0%	Passed	N/A
9/25/07	533	12 + 50 (50' R)	102.50	1.5"	<2"	Passed	N/A
9/25/07	518	11 + 50 (50' R)	102.50	151 lb/cu ft	> 145 lb/cu ft	Passed	N/A
9/25/07	521	10 + 50 (50' R)	102.50	28 day = 4200 psi	>3800 psi	Passed	N/A
9/28/07	521	11 + 50 (50' R)	102.50	28 day = 4290 psi	>3800 psi	Passed	N/A
9/30/07	521	12 + 50 (50' R)	102.50	28 day = 4160 psi	>3800 psi	Passed	N/A

CT 504 = Air Content, CT 518 = Unit Weight, CT 521 = Compressive Strength,
 CT 533 = Ball Penetration

ATTACHMENT #7
CALTRANS FORMS

CALIFORNIA DEPARTMENT OF TRANSPORTATION

CERTIFICATE OF PROFICIENCY

In the Sampling and Testing of Construction Materials

This certifies that

is qualified to perform the following tests:

CALIFORNIA TEST	DATE CERTIFIED BY	DATE RENEWED BY
202 Sieve Analysis	_____	_____
217 Sand Equivalent	_____	_____
226 Moisture Content	_____	_____
227 Cleanness Value	_____	_____
229 Durability Index	_____	_____
231 Relative Compaction-Nuclear	_____	_____
375 Relative Compaction of AC	_____	_____
379 Asphalt Content-Nuclear	_____	_____
504 Air entertainment in PCC	_____	_____
518 Unit Weight-PCC	_____	_____
523 Flexural Strength of PCC-Beams	_____	_____
533 Kelly Ball penetration-PCC	_____	_____
539 Sampling Fresh Concrete	_____	_____
540 Fabricating PCC Cylinders	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

District Materials Engineer

IAST Certificate #

Certification expires three years from above dates.

Note: This certificate is valid as long as the Acceptance Tester complies with the applicable requirements of the Caltrans *Quality Assurance Program Manual*.

THIS FORM IS TO BE ON FILE AT THE DISTRICT MATERIALS LAB AND CONSTRUCTION OFFICES. A COPY OF THE MASTER LIST SHALL BE KEPT IN THE RESIDENT ENGINEERS PROJECT FILE.

MR - 0111 (1/93) (Old HC-1)

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
INDEPENDENT ASSURANCE SAMPLING AND TESTING**

MR-0102

Date _____ File: Category 39, Independent Assurance Tests

District _____ County _____ Route _____ P.M. _____

Contract No. _____ Federal No. _____

To: RESIDENT ENGINEER

This is to inform you that your contract requires INDEPENDENT ASSURANCE SAMPLING AND TESTING. The primary Independent Assurance Tester assigned to your project is _____ however, other materials personnel may be utilized.

We will sample, test and/or witness material being incorporated into this project as per the *Local Assistance Procedures Manual, Chapter 16, Construction Administration*, for Federal-aid Projects administered by local public agencies.

Personnel performing individual acceptance tests must be certified (Form MR-0111). Upon your request, we will provide certification for those persons.

The following bid items on your contract will require Independent Assurance Sampling and Testing:

We would appreciate your cooperation in contacting the District Materials Laboratory at phone _____, FAX # _____, at least _____ hours prior to any contractor operations requiring Independent Assurance Sampling and Testing.

Signed: _____

District Materials Engineer

Form MR -0102

Distribution: NHS Projects: Prepared by District Materials Engineer and sent to DLAE to forward to local agency Resident Engineer

Non NHS Projects: (Similar form) Prepared by local agency IAST and sent to local agency Resident Engineer

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
REPORT OF WITNESS TESTS**

Form: MR-0103 (New 4/90)

Date _____

File: Category 39, Independent Assurance Tests

District _____ County _____

Route _____ P.M. _____

Contract No. _____

Federal No. _____

Resident Engineer: _____

Contractor: _____

Test No. _____

Material Being Tested: _____

Test Procedure (No. and Title):

Samples from: _____

Location of Source:

Certificate of Proficiency
(Yes/No/Not Applicable)

Sampler/Tester: _____

RESULTS:

Were the sampling and testing procedures satisfactory?

Remarks: _____

Signed by

Witness: _____

Independent Assurance Sampler and Tester

MR-0103 (New 4/90)

State of California - Department of Transportation
CORROBORATION REPORT
Form MR-0104 (Rev.6/94)

File: Materials Category 100

Instructions: Use this form to compare Split-Sample Test results (Acceptance Tester's test results of the Independent Assurance Sample and Tester)

NAME (Acceptance Tester) Valid MR-0111
[] YES [] NO

DATE (When the split sample was presented to the Acceptance Tester)	DATE (when the Acceptance Tester's results were received by the IAST)	DATE (When the Independent Assurance Sampler's & Tester's results were completed.)
---	---	--

CORROBORATION OF TEST RESULTS

TEST PROCEDURE OR CALIFORNIA TEST NUMBER	ACCEPTANCE TESTER (AT)		INDEPENDENT ASSURANCE SAMPLER & TESTER (AST)		CORROBORATION BETWEEN THE AT AND THE AST		
	TEST RESULTS	SAMPLE ID NUMBER	TEST RESULTS	SAMPLE ID NUMBER	GOOD	FAIR	POOR

(1) SUBSEQUENT ACTION TAKEN FOR POOR CORROBORATION (List all actions taken and follow-up tests performed. Attach copy of each test report. If no action was taken, document reason(s) for no action taken).

LAST NAME (Please print)	DISTRICT
SIGNATURE (Last)	AST CERTIFIED? [] YES [] NO
IF YES, AST CERTIFICATE NUMBER	REPORT DATE

FM93 1901 M
APPENDIX C

NOTE: ATTACH ALL TEST DATA (Form MR-0107)

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
**INDEPENDENT ASSURANCE SAMPLING
AND TESTING LOG SUMMARY**
TL-0110 (REV. 9/95)

FILE : MATERIALS CATEGORY 100

LAST LOG SUMMARY SHEET: (Print Full Name of Acceptance Tester) _____ DISTRICT _____

DATE	WITNESS OF TEST PROCEDURE <i>(Indicate Test Number)</i>	WITNESS OF MATERIALS SAMPLING <i>(Indicate Test Number)</i>	Did the Acceptance Tester successfully pass the Witness Test? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was equipment in good working condition? <input type="checkbox"/> Yes <input type="checkbox"/> No	Did equipment have a current calibration sticker? <input type="checkbox"/> Yes <input type="checkbox"/> No	SPLIT-SAMPLE COMPARISON <i>(Check one)</i> <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	COMMENTS OR FOLLOW-UP ACTION
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	
			<input type="checkbox"/> Yes <input type="checkbox"/> No				

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
NOTICE OF MATERIALS TO BE USED
DC-CEM-3101 (OLD HC-30 REV. 10/92) 7541-3511-1

INSTRUCTIONS TO CONTRACTOR

Section 6 of the Standard Specifications states that, "Promptly after the approval of the Contract, the Contractor shall notify the Engineer of the proposed sources of supply of all materials to be furnished by him, using a form which will be supplied by the Engineer upon request."

In order to avoid delay in approval of materials, the Department of Transportation must receive notice as soon as possible.

Please comply with the following as closely as possible:

The Contract number and job limits should be the same as appears on the Special Provisions.

The column headed "Contract Item No." should show all the item numbers for which the material is to be used.

The column headed "Material Type" should be a description of the material and not necessarily the name of the contract item.

The column headed "Name and Address of Inspection Site" should be that of the actual source of supply and not subcontractor or jobber.

If the sources of all materials are not known at the beginning of a Contract, report those known. Supplemental "Notices of Materials to Be Used" should be submitted for the others as soon as possible thereafter. Do not delay submitting the original notice until all information is known.

All changes in kinds and/or sources of materials to be used should be reported on supplemental "Notices of Materials to Be Used" immediately.

Retain your copy and mail all other copies to the Resident Engineer.

Note: When placing orders for materials that required inspection prior to shipment, be sure to indicate on your order that State inspection is required.

RE/ Br Rep
Contract file

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
OFFICE OF MATERIALS
ENGINEERING AND TESTING SERVICES
REPORT OF INSPECTION OF MATERIAL

Dist.: _____ Co.: _____ Rte.: _____ P.M.: _____
 Contract No.: _____
 F.A.P. No.: _____
 Purchase Order: _____
 Estimate (Requisition) No.: _____
 Date Inspected: _____

The following material has been inspected in accordance with Section 6 of the Standard Specifications and found to substantially comply* with contract plans and specifications at the source which is at _____

Lot Number	Quantity	Description of Material
H -		

Identification: _____ Contractor _____

RESIDENT ENGINEER

Shipped to: JOBSITE

Signed _____

NAME _____
 ADDRESS _____
 CITY _____

*Based on random sampling, testing and inspection procedures. Subject to final inspection and by the Resident
 MR-0029 (old:TL-29) (Rev. 9/94)

EXHIBIT 17-G MATERIALS CERTIFICATE

Materials Certificate

CITY/COUNTY LETTERHEAD
(Sample)

Date: _____
Federal-Aid Project No.: _____
Caltrans File Category 61: _____
Job Stamp _____

Subject: 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 were in conformity with 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.

Signature of local agency engineer in responsible charge of project and title

Distribution: (For all projects) 1) Local agency Project Files (original)
2) DLAE (1 copy in Report of Expenditures)
(For projects on the NHS) 3) FHWA (1 copy)