

# Attachment 1 - Sample CCO—Five Percent Limestone in Portland Cement

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Sheet  1  of  2

## CONTRACT CHANGE ORDER

CEM-4900 CT# 7541-3501-0

Change Requested by:  Engineer  Contractor

CCO NUMBER	SUPPL. NUMBER	CONTRACT NO.	ROAD	FEDERAL NUMBER(S)
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TO Contractor

*You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.***

Description of work to be done, estimate of quantities, and prices to be paid. (Segregate between additional work at contract price, agreed price, and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. The last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate

Amend Section 90-1.01, "Description," and Section 90-2.01, "Cement," of the *Standard Specifications* to require:

Concrete shall be proportioned to conform to the following shrinkage limitations when tested in conformance with the requirements of AASHTO Designation: T 160, modified as follows:

Condition	Maximum Shrinkage of Laboratory Cast Specimens at 28 days Drying (average of 3, %)
Paving and approach slab concrete	0.050
Bridge deck concrete	0.045
Note: Shrinkage requirement is waived for concrete that is used for precast elements.	

Shrinkage tests shall be either:

- A. Performed by a laboratory accredited to perform AASHTO Designation: T 160, or
- B. Performed by a laboratory that maintains a current rating of 3 or better for the Cement and Concrete Reference Laboratory (CCRL) concrete proficiency sample program.

Laboratory cast specimens shall have a 4" x 4" cross section. Specimens shall be removed from the molds  $23 \pm 1$  hour after mixing the concrete and placed in lime water at  $73 \pm 3^{\circ}\text{F}$  to 7 days' age. A comparator reading shall be taken at 7 days' age and recorded as the initial reading. Specimens then shall be stored in a humidity controlled room maintained at  $73 \pm 3^{\circ}\text{F}$  and  $50 \pm 4$  percent relative humidity for the remainder of the test. Subsequent readings shall be taken at 7, 14, 21, and 28 days' drying.

Test data verifying conformance to the shrinkage limitations shall be submitted with the mix design. Shrinkage testing data accepted by the Engineer no more than 3 years prior to the first working day of this contract will be acceptable for this entire contract, provided the data was for concrete with similar proportions and the same materials and material sources to be used on this contract. Concrete shall be considered to have similar proportions if, when compared to concrete to be used on this project, no more than 2 mix design elements are varied. Varied mix design elements shall fall within the tolerances in the following table:

**CONTRACT CHANGE ORDER**

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Mix Design Element	Tolerance (±)
Water to cementitious material ratio	0.03
Total water content	5 %
Coarse aggregate (weight per cubic yard)	10 %
Fine aggregate (weight per cubic yard)	10 %
Supplementary cementitious material content	5 %
Admixture (as originally dosed)	25 %

Note: Admixtures must be of the same brand.

Portland cement shall conform to the requirements in ASTM Designation: C 150 except the C<sub>3</sub>S content of Type II cement shall not exceed 65 percent.

There will be no cost to the State, and no time adjustment by reason of this change.

Estimated Cost: :  Decrease  Increase \$

By reason of this order, the time of completion will be adjusted as follows: **0 days**

**SUBMITTED BY**

SIGNATURE	(PRINT NAME & TITLE)	DATE
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**APPROVAL RECOMMENDED BY**

SIGNATURE	(PRINT NAME & TITLE)	DATE
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**ENGINEER APPROVAL BY**

SIGNATURE	(PRINT NAME & TITLE)	DATE
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We, the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment, therefore, the prices shown above. **NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specification as to proceeding with the ordered work and filing a written protest within the time therein specified.**

**CONTRACTOR ACCEPTANCE BY**

SIGNATURE	(PRINT NAME & TITLE)	DATE
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