THIS CHANGE ORDER PROVIDES FOR (Use additional pages as needed):

Allowing concrete pavement that does not comply with the pavement smoothness mean roughness index (MRI) requirement in Section 40-1.01D(8)(c) (i) "General" of the 2015 and 2018 Standard Specifications to be accepted with a deduction, provided it complies with the new smoothness acceptance ranges using the MRI values of the revised specification. In addition, the area of localized roughness (ALR) acceptance requirement will be increased from 120 to 160 inches per mile.

CPD 19-X incorporates the new smoothness acceptance ranges using the MRI values of the revised specification. Upon completion of paving work, the contractor may request to take disincentive pay deductions rather than grinding to meet acceptable smoothness requirements of the existing specification. The existing specification has MRI requirements equal to MRI 60 inches per mile. The deductions will start at MRI 60 and extend to the upper limit of the acceptance values of the revised specification. In addition, the ALR acceptance requirement will be increased from 120 to 160 inches per mile. Additional funds are not available for incentive payments.

In the revised specification, pavement smoothness requirements are defined for two concrete pavement types used for new alignments or reconstruction and for widening or lane replacements. The four pavement scenarios are: Continuously Reinforced Concrete Pavement (CRCP) New Alignment, CRCP Widen, Jointed Plain Concrete Pavement (JPCP) New Alignment, and JPCP Widen. The attached four sample change orders address the four concrete pavement scenarios, incorporating the new smoothness acceptance requirements and associated deductions instead of grinding. The deductions are prorated from the required smoothness of MRI 60 inches per mile in the existing specification to the smoothness deduction limit defined in the revised specification.

The attached change orders can be summarized as follows:

CRCP New Alignment or Reconstruction:
Existing contract specification smoothness requirements of maximum MRI = 60 in/mi and maximum ALR = 120 in/mi

- Change order allows prorated deductions instead of grinding
- Prorated deduction zone for MRI 60 - 80; $112.50 per MRI point
- Maximum deduction = $2,250 for a 0.1 mile of a lane
- Mandatory correction if MRI > 80 in/mi
- Mandatory correction if ALR > 160 in/mi

CRCP Widen:
Existing contract specification smoothness requirements of maximum MRI = 60 in/mi and maximum ALR = 120 in/mi

- Change order allows prorated deductions instead of grinding
- Prorated deduction zone for MRI 60 - 90; $75.00 per MRI point
- Maximum deduction = $2,250 for a 0.1 mile of a lane
- Mandatory correction if MRI > 90 in/mi
- Mandatory correction if ALR > 160 in/mi

JPCP New Alignment or Reconstruction:
Existing contract specification smoothness requirements of maximum MRI = 60 in/mi and maximum ALR = 120 in/mi

- Change order allows prorated deductions instead of grinding
- Prorated deduction zone for MRI 60 - 90; $75.00 per MRI point
- Maximum deduction = $2,250 for a 0.1 mile of a lane
- Mandatory correction if MRI > 90 in/mi
- Mandatory correction if ALR > 160 in/mi
JPCP Widen:
Existing contract specification smoothness requirements of maximum $\text{MRI} = 60 \text{ in/mi}$ and maximum $\text{ALR} = 120 \text{ in/mi}$
- Change order allows prorated deductions instead of grinding
- Prorated deduction zone for MRI 60-90; $50.00$ per MRI point
- Max deduction = $1,500$ for a 0.1 mile of a lane.
- Mandatory correction if MRI > 90 in/mi
- Mandatory correction if ALR > 160 in/mi

Reason for Change
Caltrans is implementing an incentive/disincentive specification for concrete pavement smoothness. The revised specification recognizes different smoothness requirements for the two concrete pavement types (CRCP and JPCP). Pavement smoothness requirements are affected when matching existing adjacent lanes, so widening projects where the new edge of pavement matches the existing pavement will have slightly rougher pavement. This is reflected in the target smoothness MRI values for the four concrete pavement scenarios. Additionally, the revised specification encourages better concrete paving practices and smoother pavement with incentives and requires payment deductions for rougher pavement. There should be no contract time extension for implementing the contractor requested change order.

Concurrence
FHWA concurrence, dated July XX, 2019

Method of Payment
Adjustment at Agreed Lump Sum
The agreed lump sum $\langle$<lump sum price> is based on an analysis of pavement smoothness MRIfinal values filed in the project records.

Time Adjustment
This change order will not affect the controlling activity; therefore, no time adjustment is warranted.
### Change Order Memorandum

<table>
<thead>
<tr>
<th>Change Order Number</th>
<th>Supplement Number</th>
<th>Contract Number</th>
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<tbody>
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<td>ESTIMATE OF COST</td>
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<tr>
<td>Project Engineer</td>
<td>DATE</td>
<td>ITEMS</td>
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<td>Project Manager</td>
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<td>FORCE ACCOUNT</td>
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<td>FHWA Rep.</td>
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<td>AGREED PRICE</td>
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<tr>
<td>Resident Engineer Signature</td>
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**FEDERAL PARTICIPATION**

- Participating
- Participating in Part
- Non-Participating
- None

**FEDERAL SEGREGATION** (If more than one funding source or P.I.P. type)

- Change Order Funded Per Contract
- Change Order Funded As Follows

**FEDERAL FUNDING SOURCE**

<table>
<thead>
<tr>
<th>Federal Funding Source</th>
<th>Percent</th>
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