INITIAL STATEMENT OF REASONS FOR PROPOSED BUILDING STANDARDS OF THE DIVISION OF THE STATE ARCHITECT (DSA-SS AND DSA-CC) REGARDING THE 2019 CALIFORNIA BUILDING CODE, CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (DSA-SS/CC 02-19)

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE and BENEFITS

Government Code Section 11346.2(b)(1) requires a statement of specific purpose of each adoption, amendment, or repeal and the problem the agency intends to address and the rationale for the determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carry out the purpose and address the problem for which it is proposed. The statement shall enumerate the benefits anticipated from the regulatory action, including the benefits or goals provided in the authorizing statute.

ITEM 1
Chapter 1 – SCOPE AND ADMINISTRATION
110.3.12

PURPOSE AND RATIONALE:

Executive Order B-52-18 directs DSA to consider adoption of provisions affecting mass timber, including Cross Laminated Timber (CLT), originating from ICC's Tall Wood Building Proposal, which has been approved by ICC committee in the 2019 Group B Structural provisions and is up for adoption into the 2021 IBC in October of 2019. ICC's changes subdivide Type IV construction into Types IV-A, IV-B and IV-C, which provide varying allowances of height and area of structures. The ICC provisions also include requirements for fire protection and special inspection of the mass timber.

This proposal incorporates the ICC changes by requiring special inspection of the mass timber connections. DSA intends to co-adopt this provision with the State Fire Marshal (SFM) and California Building Standards Commission (CBSC). DSA adoption of this item is dependent upon ICC's successful adoption into the 2021 IBC and the State Fire Marshal's adoption in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

No fiscal impact is anticipated since DSA already requires continuous inspection of mass timber construction by project inspectors and special inspectors certified by DSA who are specifically approved for each project.

ASSOCIATED SECTIONS TO ITEM 1:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 5) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Sections 1705A.5.7,

1705A.20

(ITEM 6) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.20 ITEM 10) CHAPTER 23, WOOD, Section 2304.10.1.2 (ITEM 11) CHAPTER 31, SPECIAL CONSTRUCTION, Sections 3102.3, 3102.6.1.1

ITEM 2
Chapter 2 – DEFINITIONS
202 DEFINITIONS

PURPOSE AND RATIONALE:

As described in the Purpose and Rationale in Item 1, the added definitions in this proposed item originate from ICC's Tall Wood Building Proposal to define mass timber, which is up for adoption into the 2021 IBC in October of 2019. DSA intends to co-adopt these definitions with the State Fire Marshal (SFM) and California Building Standards Commission (CBSC); however, DSA adoption of this item is dependent upon ICC's successful adoption into the 2021 IBC and the State Fire Marshal's adoption in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

No fiscal impact will result added definitions.

ASSOCIATED SECTIONS TO ITEM 2:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 1) CHAPTER 1, SCOPE AND ADMINISTRATION, Section 110.3.12

(ITEM 3) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.1.3.1

(ITEM 4) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.5.4

(ITEM 5) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.5.7

(ITEM 6) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.20

(ITEM 10) CHAPTER 23, WOOD, Sections 2304.10.1.2, 2304.11.3, 2304.11.4

(ITEM 11) CHAPTER 31, SPECIAL CONSTRUCTION, Sections 3102.3, 3102.6.1.1

(ITEM 12) CHAPTER 17A, REFERENCED STANDARDS

ITEM 3 Chapter 16 1617.3.2

PURPOSE AND RATIONALE:

In the 2016 CBC, DSA adopted additional load combinations for the design of bleachers, grandstands and folding and telescoping seating to account for other applicable conditions of loading. The ICC 300 committee considered and adopted, with adjustments, DSA's additional load combinations into the ICC 300-17 edition of the reference standard. This proposal repeals and amends DSA's previous requirements to align with the ICC 300-17

reference standard.

There is no fiscal impact as a result of this proposal.

ASSOCIATED SECTIONS TO ITEM 3:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 4) CHAPTER 16A, STRUCTURAL DESIGN, Section 1605A.4

ITEM 4 Chapter 16*A* 1605A.4

PURPOSE AND RATIONALE:

In the 2016 CBC, DSA adopted additional load combinations for the design of bleachers, grandstands and folding and telescoping seating to account for other applicable conditions of loading. The ICC 300 committee considered and adopted, with adjustments, DSA's additional load combinations into the ICC 300-17 edition of the reference standard. This proposal repeals and amends DSA's previous requirements to align with the ICC 300-17 reference standard.

There is no fiscal impact as a result of this proposal.

ASSOCIATED SECTIONS TO ITEM 4:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 3) CHAPTER 16, SPECIAL INSPECTIONS AND TESTS, Section 1617.3.2

ITEM 5 Chapter 17*A* 1701*A*.1.3.1

PURPOSE AND RATIONALE:

As defined in Education Code (EC) and Section 1.9.2.2., Chapter 1, CBC, community colleges may elect to utilize the applicable building standards adopted by the California Building Standards Commission (non "A" chapters) with the exception that Chapter 17A must be used. However, sections within Chapter 17A are only referenced to other "A" Chapters. The proposed revision clarifies existing language that corresponding provisions in the "non-A" chapters must be used when the "non-A" chapters are elected for use by adding the reference to the applicable building standards in Section 1.9.2.2.

There is no fiscal impact as a result of this proposal.

ASSOCIATED SECTIONS TO ITEM 5:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 6) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.5.4 (ITEM 7) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.5.7 (ITEM 8) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.20 (ITEM 9) CHAPTER 18A, SOILS AND FOUNDATIONS, Section 1801A.1.3.1 (ITEM 12) CHAPTER 23, WOOD, Section 2304.10.1.2

ITEM 6 Chapter 17*A* 1701*A*.5.4

PURPOSE AND RATIONALE:

DSA requires special inspection of the manufacturing of structural glued laminated timber, which has included cross-laminated timber (CLT) since its inclusion into previous model code editions and prior to ICC's current adoption of the 2019 Group B structural provisions into the 2021 IBC this October. This proposal clarifies DSA's requirement for special inspection of the manufacture of cross-laminated timber.

DSA considers CLT to be primary glued structural members in the same manner as glued laminated beams or columns since the material identification, gluing procedures, curing, storage and quality control requirements in ANSI/APA A190.1 Structural Glued Laminated Timber are similar and referenced in ANSI/APA PRG 320 Standard for Performance-rated Cross-laminated Timber.

The proposal also increases the maximum width of glued laminated members from 5 1/8-inch to 5 ½-inch in the Exception to recognize product that can be specified from within the standard ANSI/APA A190.1.

There is no fiscal impact as a result of this proposal.

ASSOCIATED SECTIONS TO ITEM 6:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 2) CHAPTER 2 – DEFINITIONS, Mass Timber

ITEM 7 Chapter 17*A* 1705*A*.5.7

PURPOSE AND RATIONALE:

As described in the Purpose and Rationale in Item 1 for the adoption of mass timber, this proposal explicitly requires special inspection of the mass timber installation, with an emphasis on connections, and is likewise up for adoption into the 2021 IBC in October of 2019. This proposal codifies requirements for inspections that DSA certified project inspectors currently perform on all projects within their required scope of work and are not new to projects with mass timber.

DSA intends to co-adopt these definitions with the State Fire Marshal (SFM) and California Building Standards Commission (CBSC); however, DSA adoption of this item is dependent upon ICC's successful adoption into the 2021 IBC and the State Fire Marshal's adoption in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

No fiscal impact will result of this provision since these inspections are within the scope of work already performed continuously on every project by DSA certified project inspectors and are not unique to projects with mass timber.

ASSOCIATED SECTIONS TO ITEM 7:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 1) CHAPTER 1, SCOPE AND ADMINISTRATION, Section 110.3.5

(ITEM 8) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.20 (ITEM 12) CHAPTER 23, WOOD, Sections 2304.10.1.2

ITEM 8 Chapter 17*A* 1705*A*.5.7

PURPOSE AND RATIONALE:

As described in the Purpose and Rationale in Item 1 for the adoption of mass timber, this proposal explicitly requires special inspection of the mass timber installation, with an emphasis on connections, and is likewise up for adoption into the 2021 IBC in October of 2019. This proposal codifies requirements for inspections that DSA certified project inspectors currently perform on all projects within their required scope of work and are not new to projects with mass timber.

DSA intends to co-adopt these definitions with the State Fire Marshal (SFM) and California Building Standards Commission (CBSC); however, DSA adoption of this item is dependent upon ICC's successful adoption into the 2021 IBC and the State Fire Marshal's adoption in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

No fiscal impact will result of this provision since these inspections are within the scope of work already performed continuously on every project by DSA certified project inspectors and are not unique to projects with mass timber.

ASSOCIATED SECTIONS TO ITEM 8:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 1) CHAPTER 1, SCOPE AND ADMINISTRATION, Section 110.3.12 (ITEM 7) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.5.7 (ITEM 12) CHAPTER 23, WOOD, Sections 2304.10.1.2, 2304.11.3, 2304.11.4

ITEM 9 Chapte r18A 1801A.1.3.1 1809A.10

PURPOSE AND RATIONALE:

For section 1801A.1.3.1, as defined in EC and Section 1.9.2.2., Chapter 1, CBC, community colleges may elect to utilize the applicable building standards adopted by the California Building Standards Commission (non "A" chapters) with the exception that section 18A must be used. However, sections within Chapter 18A are only referenced to other "A" Chapters. The proposed revision clarifies existing language that corresponding provisions in the "non-A" chapters must be used when the "non-A" chapters are elected for use by adding the reference to the applicable building standards in section 1.9.2.2.

For section 1809A.10, this is a minor clarification with no net regulatory change effect.

No fiscal impact results from this proposed item.

ASSOCIATED SECTIONS TO ITEM 9:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 5) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.1.3.1

ITEM 10 Chapter 19 1909.4.4 1909.4.5

PURPOSE AND RATIONALE:

The proposal for both sections regarding sand blasting recognizes that such a method is generally not used due to environmental concerns; alternative roughening techniques are now used by the shotcrete industry.

For section 1909.4.4, using the saturated surface dry (SSD) language is consistent with shotcrete industry terminology (e.g., reference ACI 506.2-13, Section 3.1.2, and ACI Concrete Terminology 2018, which are accepted concrete industry standards).

No fiscal impact results from this proposed item.

ASSOCIATED SECTIONS TO 10:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 11) CHAPTER 19A, CONCRETE, Sections 1908A.1, 1908A.7, 1908A.12

ITEM 11 Chapter 19A Section 1908A.1 Section 1908A.7 Section 1908A.12

PURPOSE AND RATIONALE:

For section 1908A.1, using the saturated surface dry (SSD) language is consistent with shotcrete industry terminology (e.g., reference ACI 506.2-13, Section 3.1.2, and ACI Concrete Terminology 2018, which are accepted concrete industry standards). No fiscal impact results from this provision as it aligns regulation with industry standards.

For section 1908A.7, this revision alleviates an inconsistency with amendment language in 1908A.1. Additionally, the proposal recognizes that sand blasting is generally not used due to environmental concerns; alternative roughening techniques are now used by the shotcrete industry. No fiscal impact results from this provision as it aligns regulation with industry standards.

For section 1908A.12, this proposal provides a reference pointer for special inspection and testing requirements applicable to shotcrete. No fiscal impact results from this provision since no new tests nor special inspections are specified.

ASSOCIATED SECTIONS TO ITEM 11:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 10) CHAPTER 19, CONCRETE, Sections 1909.4.4, 1909.4.5

ITEM 12 Chapter 23 Section 2304.10.1.2 Section 2304.11.3 Section 2304.11.4

PURPOSE AND RATIONALE:

As described in the Purpose and Rationale in Item 1, the sections in this proposed item originate from ICC's Tall Wood Building Proposal to enhance use mass timber, which is up for adoption into the 2021 IBC in October of 2019.

Section 2304.10.1.2 proposes testing and thermal design requirements for fire protection of mass timber framing connections of Types IV-A, IV-B and IV-C heavy (mass) timber construction.

Sections 2304.11.3 and 2304.11.4 proposes the allowance of concealed spaces in mass timber construction under specified rated conditions. There is no fiscal impact as a result of this proposal.

DSA intends to co-adopt these provisions with the State Fire Marshal (SFM) and California

Building Standards Commission (CBSC); however, DSA adoption of this item is dependent upon ICC's successful adoption into the 2021 IBC and the State Fire Marshal's adoption in this 2019 Intervening Code Cycle and will be withdrawn if not successfully adopted.

ASSOCIATED SECTIONS ITEM 10:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 1) CHAPTER 1, SCOPE AND ADMINISTRATION, Section 110.3.5

(ITEM 5) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705.A.7, Table 1705A.5.7

ITEM 13 Chapter 31 Section 3102.3 Section 3102.6.1.1

PURPOSE AND RATIONALE:

As described in the Purpose and Rationale in Item 1, the sections in this proposed item originate from ICC's Tall Wood Building Proposal to enhance use mass timber, which is up for adoption into the 2021 IBC in October of 2019. Both sections in this proposal are editorial in that they make reference to Type IV construction as heavy timber with the suffix "HT".

This item has no fiscal or economic impact.

ASSOCIATED SECTIONS ITEM 13:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 1) CHAPTER 1, SCOPE AND ADMINISTRATION, Section 110.3.5

(ITEM 5) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705.A.7, Table 1705A.5.7

ITEM 14 Chapter 35 ASTM D3498-03(2011)

PURPOSE AND RATIONALE:

As described in the Purpose and Rationale in Item 1, the sections in this proposed item originate from ICC's Tall Wood Building Proposal to enhance use mass timber, which is up for adoption into the 2021 IBC in October of 2019. This item adds applicable specification for adhesives to be used in mass timber.

This item has no fiscal or economic impact as it is an industry standard.

ASSOCIATED SECTIONS ITEM 11:

Represents sections that may be impacted by this proposed code change item – see the other items for related changes.

(ITEM 2) CHAPTER 2, DEFINITIONS, Mass Timber

(ITEM 6) CHAPTER 17A, SPECIAL INSPECTIONS AND TESTS, Section 1705A.5.4

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

Government Code Section 11346.2(b)(3) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).

ICC's 2018 Tall Wood Building Proposal report and findings from the State Fire Marshal Workshop in compliance with Executive Order B-52-18 provide justification for the proposed amendments in Items 1, 2, 5, 7, 8, 12, 13 and 14.

Items 3 and 4 repeal and amend DSA amendments to align with ICC 300-17 reference standard pertaining to additional load combinations for design of bleachers, grandstands, and folding and telescoping seating.

Items 6 and 9 were clarifications of existing provisions and do not require additional documentation.

Items 10 and 11 are based on ACI 506.2-13 Section 3.1.2 with additional information in ACI 506R-16 Sections 3.1 and 3.1.2.

The following documents were referenced in the determination of these proposed amendments.

2018 IBC: International Building Code.

2018 IEBC: International Existing Building Code.

ICC 300-17: ICC Standard on Bleachers, Folding and Telescoping Seating and Grandstands

ASCE 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other structures with Supplement No. 1

ASCE 41-17: Seismic Evaluation and Retrofit of Existing Buildings

ACI 318-14: Building Code Requirements for Structural Concrete and Commentary.

AWC NDS-18: National Design Specification (NDS) for Wood Construction.

STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS

Government Code Section 11346.2(b)(1) requires a statement of the reasons why an agency believes any mandates for specific technologies or equipment or prescriptive standards are required.

The proposed amendments do not contain any mandates for specific technologies or equipment or prescriptive standards. Use of mass timber, including cross-laminated timber (CLT), is voluntary, and specifications for CLT were included in the 2016 California

Building Code.

CONSIDERATION OF REASONABLE ALTERNATIVES

Government Code Section 11346.2(b)(4)(A) requires a description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered as an alternate. It is not the intent of this paragraph to require the agency to artificially construct alternatives or describe unreasonable alternatives.

The Division of the State Architect (DSA) considered the findings from the State Fire Marshal Workshop in compliance with Executive Order B-52-18 and did not identify nor determine any reasonable alternatives to these regulations pertaining to use of mass timber. For the other proposals in this package, DSA did not identify or consider any other reasonable alternatives.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

Government Code Section 11346.2(b)(4)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business.

The Division of the State Architect did not identify any reasonable alternatives that would lessen adverse impact on small business.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS

Government Code Section 11346.2(b)(5)(A) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.

No significant adverse impact on business was determined and no other documents or evidence was determined applicable to the proposed provisions.

ASSESSMENT OF EFFECT OF REGULATIONS UPON JOBS AND BUSINESS EXPANSION, ELIMINATION OR CREATION

Government Code Sections 11346.3(b)(1) and 11346.5(a)(10) The Division of the State Architect has assessed whether or not and to what extent this proposal will affect the following:

- **A.** The creation or elimination of jobs within the State of California.
 - The Division of the State Architect did not promulgate any amended regulation that would lead directly to the creation or elimination of jobs. However, adoption of these and future regulations involving mass timber products may potentially have a positive impact on creation of jobs in California.
- **B.** The creation of new businesses or the elimination of existing businesses within the State of California.

The Division of the State Architect did not promulgate any amended regulation that would lead directly to the creation of new businesses or the elimination of existing businesses within the State. However, adoption of these and future regulations involving mass timber products may potentially have a positive impact on creation of businesses in California.

C. The expansion of businesses currently doing business within the State of California.

The Division of the State Architect did not promulgate any amended regulation that would lead directly to the expansion of businesses currently doing business within the State of California. However, the adoption of these and future regulations involving mass timber products may potentially have a positive impact on expansion of businesses currently doing business within California.

D. The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.

The continued advancement and adoption of regulations involving mass timber products will benefit the health and welfare of California residents, worker safety, and the state's environment by improving forest health from use of wood materials, energy production, and reduction in the carbon emissions from fires, material decay and forest service industries.

ESTIMATED COST OF COMPLIANCE, ESTIMATED POTENTIAL BENEFITS, AND RELATED ASSUMPTIONS USED FOR BUILDING STANDARDS

Government Code Section 11346.2(b)(5)(B)(i) states if a proposed regulation is a building standard, the initial statement of reasons shall include the estimated cost of compliance, the estimated potential benefits, and the related assumptions used to determine the estimates.

The proposed changes to the regulations are not expected to have a fiscal impact to the cost of compliance or societal benefits from application of the California Building Code since the use of mass timber is voluntary and dependent upon the economic viability of mass timber for a construction project and the environmental mindset of the project owner/developer. For school or essential services building projects, DSA does not anticipate these regulations to result in any significant increase in use of mass timber. The current regulations have resulted in one project constructed with mass timber since inclusion in the 2016 CBC, and we would expect the same in 2019/2020. This is because mass timber is not considered economically feasible for one- or two-story buildings that are typical in school and essential services building construction. The *Mass Timber Market Analysis Completed for Council of Western States Foresters* by The Beck Group (November 2018) indicates that CLT is most advantageous and competitive in terms of cost and appropriateness of application in buildings 6 – 16 stories tall

The other changes proposed are editorial clarifications that will have no effect on the estimated cost of compliance nor provide a direct benefit to the public, schools districts and essential services buildings owners/agencies.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

Government Code Section 11346.2(b)(6) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment.

DSA is not affiliated with the EPA or Resources Agency; and these proposed administrative regulations do not duplicate or conflict with federal regulations. DSA did participate in State Fire Marshal workgroup to assess use of mass timber in tall building construction. Proposed items 1, 2, 3, 5, 6, 10, 11 and 12 resulted from findings of the workgroup.