

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS**

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Sections 1711, 1712, 1713, 1717 and 1721
of the Construction Safety Orders**Reinforcing Steel Concrete Construction and Post-Tensioning Operations**

There are no modifications to the information contained in the Initial Statement of Reasons (ISOR) except for the following substantive and/or sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Section 1711. Reinforcing Steel and Post-Tensioning in Concrete Construction.**Subsection (b) Definitions.**

Subsection (b) is modified to delete the definition for the term "Flying Deck Forms" since this term is not used in the proposed regulatory text and is therefore unnecessary.

Subsection (c)(2).

This subsection is modified to state the controlling contractor (CC) is exempt from providing a work area that is drained and graded where it is infeasible due to space constraints in dense metropolitan areas. This modification is necessary to provide the employer with a reasonable alternative to address real-world situations that arise where space may be constrained to the point that providing a drained and graded workspace is infeasible due to unique site conditions.

Subsection (d) Written Notifications Prior to the Commencement of Reinforcing Steel Activities.

Modifications are proposed to reword the subsection title for clarity and consistency with the regulatory text that follows under this title. The modification is necessary to ensure the regulated public is aware of notification requirements prior to commencement and immediately following reinforcing steel installation and concrete placement. The modification rewords the title to read: Written Notifications Prior to the Commencement of and Immediately Following Reinforcing Steel Installation and Concrete Placement.

Further modifications of subsection (d), (d)(1), (2) and (3) are proposed to clarify that prior to the beginning of reinforcing steel installation, the controlling contractor (CC) shall ensure ironworkers are notified that formwork/falsework meets the design requirements and will provide them with safe access following the installation of reinforcing steel and placement of concrete and that all formwork/falsework remains adequately braced, guyed and supported. Further modification is proposed to clarify that prior to commencement of reinforcing steel activities the

CC shall ensure notification is provided that states benching and shoring for excavations has been inspected by a competent person.

The aforementioned modifications are necessary to clarify to the employer when notifications required by this subsection are to be provided to ensure that the reinforcing steel contractor knows that formwork/falsework is safe to walk on and excavations and trenches will not collapse.

Subsection (d)(6) [new].

Subsection (d)(6) is added to require the reinforcing steel contractor to flag specific areas of the erection level for their work activity. This modification is necessary to ensure that other trades involved in performing work on the jobsite are warned to stay away from areas where post-tensioning work is taking place. The flagging is intended to avoid the possibility that an unauthorized employee in the area could come into contact with post-tensioning equipment, cables and other related equipment. Such contact could result in serious injury or fatality.

Subsection (h) Post-tensioning Operations.

Subsection (h)(5)(A) requires work platforms to include guardrails and toeboards as specified in Section 1620. A modification is proposed to correct an inaccurate cross reference and clarify that it is Section 1621 that addresses both railings and toeboards.

Summary and Response to Oral and Written Comments received during the 45-Day Notice:

I. Written Comments

Ms. Amber Rose, CIH, Area Director, United State Department of Labor, Occupational Safety and Health Administration, Region IX, by letter dated November 14, 2016.

Comment:

Ms. Rose stated the proposal appears to be commensurate with federal standards. Ms. Rose also stated that federal OSHA would like the state to ensure the changes to the trigger height being considered [a reference to a proposal to amend Title 8 residential construction fall protection standards] will not be affected or misrepresented and a suggestion to address “overturning” in proposed Section 1711(e)(1) to render it comparable to federal standard 1926.703(d)(1).

Response:

The Board would like to express its assurance that the proposed rulemaking will not have any adverse effect upon the Board’s residential fall protection trigger height proposal. Each proposal is a vertical standard that has specific applicability to its respective operation. With regard to federal OSHA’s second comment regarding overturning; failing post-tensioned structures do not overturn, they collapse. The federal Section 1926.703(d)(1) refers to general requirements for formwork; the proposal is a vertical standard specific to the type of formwork used in conjunction with post-tensioning tendons. There is no data in California to suggest that overturning is a risk for the operations addressed by the proposal.

The Board thanks Ms. Rose for her comments and participation in the rulemaking process.

The following commenters expressed support for the proposal via written letters and are grouped accordingly below.

Mr. Eric M. Dean, General President, International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers (IABSORI), by email dated December 6, 2016

Mr. Daniel S. Parker, Executive Director, Department of Reinforcing, IABSORI, by email dated December 6, 2016

Mr. Don M. Savory, Business Manager, Financial Secretary Treasurer, IABSORI, Local Union No. 155, by email dated December 6, 2016

Mr. Theodore L. Neff, P.E., Executive Director, Post-Tensioning Institute, by email dated December 6, 2016

Mr. Donald A. Zampa, President, District Council of Ironworkers of the State of California and Vicinity, by email dated December 6, 2016

Mr. Fred Coddington, Executive Vice President, National Association of Reinforcing Steel Contractors, by email dated December 7, 2016

Mr. Jeff McEuen, Business Manager, Financial Secretary/Treasurer, Iron Workers Local 378, Union Office of Bridge, Structural, Ornamental and Reinforcing, by email dated December 7, 2016

Mr. Charlie Hernandez, Business Manager, Ironworkers Local 377, IABSORI, by email dated December 7, 2016

Mr. David McDonald, Ph.D., P.E., President and CEO, Concrete Reinforcing Steel Institute, by email dated December 7, 2016

Ms. Jodie Yount, President, Rebar International, by email dated December 7, 2016

Mr. Lyle Sieg, Executive Vice President of Safety, Harris Rebar, by email dated December 8, 2016

Mr. Juan (Johnny) M. Galvan, Business Manager FS/T, IABSORI, Local Union No. 229, by email dated December 8, 2016

Mr. Hart Keeble, Business Manager, FST, IABSORI, Reinforcing Ironworkers, Local No. 416, by letter dated December 5, 2016

Mr. Edward Ulshafer, Ulshafer Insurance Consulting, by email dated December 14, 2016

Mr. Jim Kegebein, Kegebein Consulting, Inc., by email dated December 14, 2016

[no name and signature provided], Executive Vice President, Harris Rebar, by email dated December 13, 2016

Mr. Karl Pineo, Financial Secretary-Treasurer, Business Manager, IABSORI, Local Union No.118 by letter dated December 5, 2016

Mr. Robbie Hunter, President, State Building and Construction Trades Council, by letter dated December 12, 2016

Mr. Greg McClelland, Executive Director, Western Steel Council, by letter dated December 14, 2016

Mr. Steven L. Rank, Executive Director of Safety and Health, Ironworker International Union, IABSORI by letter dated December 13, 2016

Comment:

The individuals listed above represent labor, management and independent subject matter experts (consultants) who have expressed their support for the proposal urging the Board to adopt the proposal.

Response:

The Board acknowledges the comments expressed by these commenters and thanks them for their support and participation in the Board's rulemaking process.

The individuals below submitted comment letters expressing support for the proposal. They consist of current and retired (former) represented (IABSORI) ironworkers. Dates are provided where given.

Mr. Charles Eckert, Local 416
Mr. Marcelo Perez, December 5, 2016
Mr. Agustin A. Obando, December 5, 2016
Mr. Michael Cardoza, December 5, 2016
Mr. Roberto Salgado, December 5, 2016
Mr. Paul Olivas, December 5, 2016
Mr. Eduardo Mendez, December 5, 2016
Mr. Albert Castillo, December 5, 2016
Mr. Issac Palacios, December 5, 2016
Mr. Benjamin Bonilla, December 5, 2016
Mr. Michael Duran, December 5, 2016
Mr. Ernesto Alcala, December 5, 2016
Ms. Guadalupe Fomab
Mr. Francesco Martinez
Mr. Robert Alexander, IABSORI, Local
416,
Mr. Juvenal Ramirez
Mr. Eduardo Felipe
Mr. Edgar Felix
Mr. Miguel Felix
Mr. David Cuevas
Mr. Taylor Carter
Mr. Pele Toailoa
Mr. Oscar Ramirez
Mr. Josuha Pineda
Mr./Ms. Caelan Hiegel
Mr. Miguel Huizar
Mr. Jeff Peterson
Mr. Colby Paxton
Mr. Arturo Mata

Mr. Jose Cruz Peralta
Mr. Jose Cuevas
Mr. Nathan Hilburn
Mr. Manuel Felix
Mr. Alberto Villalobos
Mr. Frankie Jorquez
Ms. Rhonda Rodriguez
Mr. Albert Rosales
Mr. Gerardo Perez
Mr. Jonathan Mercado
Mr. Pedro Yanez
Mr. Santiago Valadez
Mr. Michael Meza
Mr. Johnathan Vasquez
Mr. Dylan Amos
Mr. Aaron Hulse
Mr. Jacob Palomino
Mr. Alex Shilling
Mr. Bryce Bubion
Mr. Ted Alexander
Mr. Ernesto Necochea
Mr. Travis Knott
Mr. Arnalfo Duenas
Mr. Jaime Serna
Mr. Luis Garcia
Mr. Miguel Bravo
Mr. Pedro Zelaya
Mr. Neal Vanert
Mr. Chris Brencato
Mr. Mark Baldwin

Mr. Uriel Lopez
Mr. James Ervin
Mr. Carlos Fernandez
Mr. Ron Gordon
Mr. Gregg Granillo
Mr. Jason O'Lull
Mr. Juan Mendoza
Mr. Aron Rodriguez
Mr. Kevin Campbell
Mr. Rory Brill
Mr. Kyle Brill
Mr. Jesus Valdez
Mr. Diego Gonzalez
Mr. Isamer Peralta
Mr. Marcelo Peralta
Mr. John Crouch
Mr. Octavio Silva
Mr. Rapael Ramirez
Mr. Oscar Gavino
Mr. William Lopez
Mr. Mario Ramirez
Mr. Javier Correa
Mr. Devonte Holloway
Mr. Edward Bess
Mr. Jonathan Ruelas
Mr. James Faulkner Jr.
Mr. Michael Faulkner
Mr. Steve Gomez
Mr. James Shipley
Mr. Richard Santiago
Mr. Jorge Salazar
Mr. Rene Guerra
Mr. Felix Villasenor
Mr. Wesley Williams
Mr. Heath Perrault
Mr. Robert Berumen
Mr. Octavio Mozales
Mr. Junior Medina
Mr. Albert Castillo
Mr. Carlos Tafoya
Mr. Brian Suttle
Mr. Shawn Winterbourne
Mr. Danny Harmon
Mr. Frank Chavez
Mr. Ricardo Navarro
Mr. Zack Palfy
Mr. Reynaldo Colin
Mr. Luis Ocampo
Mr. Mario Ariza Jr.
Mr. Carlos Rios
Mr. Raymond Gray
Mr. Adrian Mendoza
Mr. Russell Easterling
Mr. Albert Garcia Jr.
Mr. Willie Alexander
Mr. Freeman Moore
Mr. Mike Rodriguez
Mr. Lawrence Smith
Mr. Chris Marin
Mr. Fabian Morales
Mr. Mike Allen
Mr. Juan Perez
Mr. Ryan Fisher
Mr. Richard Byrd
Mr. Michael Heredia
Mr. Eduardo Mendez
Mr. Roberto Salgado
Mr. Brad Huth
Mr. Uriel Arments
Mr. Rudolfo Palomera
Mr. Patrick Sanchez
Mr. Jose Espinoza
Mr. Hart Keeble
Mr. Fernando Gutierrez
Mr. Javier Valencia
Mr. Saul Ponce
Mr. Hector Barragan
Mr. Benjamin Lopez Jr.
Mr. Octavio Serrato
Ms. Noel Marin
Mr. Ronnie A. [no full last name given]
Mr. Roger Salas
Mr. Mark Estrada
Mr. James Cisneros
Mr. Larry Ramirez
Mr. James Drake
Mr. Rene Sanchez
Mr. Osiel Garcia

Mr. Marc Keller
Mr. John Montalvo
Mr. Dale Lupines
Mr. Luis Diaz
Mr. Rogelio Ruiz
Mr. Daniel Medrano
Mr. Esteban Bustamante

Mr. David Eggert
Mr. Agustin Obando
Mr. Hector Uribe
Mr. Alexander Garcia
Mr. Hector Miramontes
Mr. Francisco Morelda
Mr. Mario Martinez

Comment:

The individuals listed above (ironworkers) expressed their appreciation for passing the reinforcing rebar and post-tensioning standards and added that their loved ones thank the Board for helping to provide a safe work environment.

Response:

The Board acknowledges the support for the proposal by the ironworkers. The public hearing phase of the proposal is complete. This proposal will be scheduled for adoption at a future business meeting of the Board. The Board wishes to express its thanks to the ironworkers for their support and participation in the Board's rulemaking process.

Mr. Michael Walton, Secretary, Construction Employers' Association (CEA), by letter dated December 9, 2016.

Comment No. 1:

The CEA states that despite a precise accounting of the number of man hours California workers spent performing reinforcing steel (rebar) activities in California, the Initial Statement of Reasons is devoid of any accident, injury or fatality statistics to corroborate the necessity for the proposal. In addition, the CEA recognizes that much of the proposal derives from National Consensus Standard (ANSI/ASSE A10.9-2013); it is unclear what the specific hazards are with regard to post-tensioning and rebar operations and how each proposed section will mitigate those hazards. In addition, the benefits of the proposal appear speculative in nature.

Response:

A letter from Mr. Steve Rank, Director of Safety and Health, IABSORI dated August 28, 2016, listed 14 disabling injuries and fatalities. They included but are not limited to situations where employees involved in post-tensioning were struck in the chest by a post-tensioning jack and died, a fatality due to rebar column collapse and improper guying, a fatality resulting from a vertical concrete form collapse and a disabling injury related to material handling due to poor site conditions (insufficient space). Additionally, reinforcing steel post-tensioning claims and related worker compensation costs, general liability claim costs, medical treatment, rehabilitation and other related costs could range from \$20-\$40 million per year.

The Board does not accept CEA's comment indicating that the specific necessity for each proposed provision is not demonstrated. It is the Board's view that the ISOR provides adequate basis for necessity. The ANSI/ASSE A10.9-2013 standard developed by labor and management

identified the need for the standard's provisions based on their evaluation of the state of worker safety in the rebar and post-tensioning industry. This was the same conclusion reached by the advisory committee convened by Board staff.

Consequently, the Board believes no modification of the proposal based on CEA's Comment No. 1 is necessary.

Comment No. 2:

The CEA stated that while there are elements of the proposed amendments that are substantially duplicative of other Construction Safety Order (CSO) requirements, it supports the concept of a vertical standard to address rebar and post-tensioning safety. However, the CEA indicated that such a proposal should not be overly burdensome or prescriptive to the controlling contractor and his/her responsibilities and be consistent with other CSO standards. Pursuant to Section 336.11, in the event of a citation, the controlling contractor does not have an affirmative defense but subcontractors do.

Response:

The Board acknowledges the support of the CEA for a vertical rebar and post-tensioning standard. The Board does not believe the consensus proposal is overly prescriptive or burdensome upon the CC. The proposal follows the assignment of duties and responsibilities that the national consensus ANSI/ASSE A10.9-2-13 committee reasoned was required to assure the safety of all jobsite employees. That committee concluded that, from an administrative point of view, to assure the safety of all jobsite employees the CC who has the overall authority over site operations should have the responsibility for ensuring the safety of those employees. That responsibility cannot be delegated to subcontractors such as rebar contractors (RC) who do not have that authority. This is the same operating philosophy expressed in Title 8, Steel Erection Standards commencing with CSO Section 1710.

The CEA enforcement oriented argument regarding Section 336.11 and the employer's affirmative action defense is an enforcement issue which the Board is precluded from responding to as it is the responsibility of the Division to apply, enforce and interpret Title 8 standards and is not relevant to any particular proposed amendment.

Comment No. 3:

The CEA stated both the CC and the RC appreciate the importance of having adequate space to ensure the overall efficiency of the operation, however in tight urban environments it is not always possible to provide space as required by Section 1711(c)(2). The CEA recommends subsection (c)(2) be modified to state that in dense metropolitan areas where it is infeasible due to space constraints, to provide a work area that is drained and graded, the CC shall be exempt from the space requirement.

Response:

The Board accepts this comment from the CEA and will modify the proposed language in subsection (c)(2). The Board recognizes that the space set aside for RC and their employees will

make the operation safer and the project more efficient, which will prevent accidents and help contain project costs.

Comment No. 4:

The CEA notes that proposed Section 1711(d) requires the CC to provide written notice to the RC that formwork/falsework has been inspected by a competent person. The CEA states this proposed requirement appears to duplicate CSO Section 1717(c)(1) and (2) of the falsework and vertical shoring regulation. The inspection is typically performed up to two days prior to concrete placement. The CEA believes it is unnecessary for the formwork/falsework contractor to re-inspect during and immediately after installation of rebar and the placement of concrete since the formwork/falsework contractor would have had to provide the RC with notice before beginning installation.

The CEA suggests language be added that would require the RC to submit a laydown plan with all the expected load weights and locations to the CC prior to the materials being placed on the falsework deck.

Response:

The Board notes the RC are not trained to provide the load weights of the materials that are to be placed on the falsework deck. It is the responsibility of the formwork/falsework contractor to develop and provide the load capacity of the falsework deck as they are in the best position from a technical competency point of view to make that calculation. The RC already develops and provides laydown plans to the CC, which includes load information. Therefore, it appears that what the CEA is requiring of the RC is already a standard operational practice by the RC.

Consequently, no modification to the proposal as suggested by CEA is necessary.

Comment No. 5:

The CEA suggested adding language to require the RC to have a competent person on site to ensure that site conditions are stable and secure, meaning the RC should have the responsibility to check the sloping, benching and shoring of all jobsite excavations. The CEA brought forward again Section 336.10(a) of the Division's regulations as justification for the necessity of this modification by stating that it would be inconsistent with Section 336.10(a) for the RC not to have the responsibility to ensure the stability of excavations being the exposing employer in terms of the multi-employer worksite requirements.

Response:

The Board notes the RC has nothing to do with the sloping and benching of excavations and shoring. They do not possess the training and experience to determine whether an excavation has been dug and shored in a manner that will ensure its stability. Therefore, the Board is of the opinion that this suggestion by CEA is not reasonable. Title 8 regulates excavations in Article 6 of the CSO, which contains extensive and detailed standards specifically relating to sloping and benching. Those standards already require all sloping and benching to be performed in accordance with accepted engineering practices as required by a registered professional engineer.

The recommended CEA language is inconsistent with what is required by the ANSI/ASSE A10.9-2013 standard for this issue, which states in chapter 8.3:

“8.3.3 The project constructor (i.e. general contractor or CC) shall ensure that the erected shoring equipment is inspected by a competent person prior to, during and immediately after the installation of reinforcing bars and placement of concrete.”

The Board believes no modification to the proposal is necessary.

Comment No. 6:

The CEA stated the RC should be required to ensure the assemblies and supporting structure erected for reinforcing steel and post-tensioning operations will not fail catastrophically. In addition, the CEA suggests the RC be required to perform an analysis to determine if the vertical reinforcing assemblies for walls, piers and columns are capable of sustaining wind and construction loads, free standing, and if they are not capable they should design the guying or bracing system to be used. This analysis and any required bracing or support should be performed by a licensed engineer who shall be available at the jobsite.

Response:

The Board notes that while proposed Section 1711(e) is silent with regard to who is to perform the design analysis for systems used to guy, brace and support vertical and horizontal columns, walls and other reinforcing assemblies, the ANSI A10.9-2013 is clear as stated in Chapter 10.3.3.7, that this is the function of a competent person retained by the project constructor or CC. The Board also notes that there is no necessity for the suggested CEA modification to Section 1711(c) and the CEA suggestion is beyond the scope of what is being proposed. All through the ANSI A10.9 standard the project constructor or CC is given the responsibility for ensuring that many of the provisions including this one are carried out. The Board finds no reason to deviate from that path and believes no modification to Section 1711(e) is necessary.

Comment No. 7:

The CEA stated the proposed requirement in Section 1711(e)(5) to provide the RC with exclusive access to the erection level for setting any and all reinforcing elements would have the effect of “piece-mealing” the work. It is CEA’s opinion that this would create an unsafe disruption in the cycle of activities for any concrete structure that depends upon sequential curing of the various elements. Any interruption would result in a change in the engineering cycle and approach to the project, which is based on a predetermined amount of time for each cycle. Repetitive cycles so common in this type of construction would be adversely impacted and add additional time to complete the construction activities for each floor. Delays add up to increased owner costs and such costs are not reflected in the ISOR’s cost analysis.

The CEA suggests a modification to the proposal to require the RC to flag specific areas of the erection level for their work activity and serve as a warning to the other trades of the hoisted vertical elements and that the guying and bracing shall be in place before the release of the reinforcing assembly from the hoist rigging.

Response:

The Board agrees with the concerns expressed, accepts this comment by the CEA and has modified the proposal using the CEA wording proposed in their December 9, 2016, letter to the Board.

Comment No. 8:

The CEA stated Section 1711(f) inappropriately shifts critical responsibilities for impalement protection from the reinforcing steel contractor to the controlling employer. The proposal should indicate that the contractor who creates impalement hazards should be responsible for making sure the covers remain in place for the benefit of all the trades that may be exposed. The CEA proposed language that would shift that responsibility away from the CC to the RC.

Response:

The Board believes the CC is the ultimate jobsite authority for ensuring the safety of all jobsite employees and therefore should have the responsibility as indicated by the proposed language to make sure rebar caps and covers remain in place as long as they are needed to protect all jobsite workers. Chapter 10.3.4.3.1 of the ANSI A10.9-2013 standard clearly places the responsibility of ensuring that impalement protection is left in place at the direction of the CC. Again, the CC has ultimate jobsite authority for all employees/trades that enter and work on the jobsite and if any trade were to remove a protective cover they would have to answer to the CC not the RC who does not have overall jobsite authority. The Board believes the CC must take responsibility for the covers and ensure they are not tampered with or removed.

Comment No. 9:

The CEA believes the responsibility for ensuring that no employees are in the prohibited area under hoisting operations should not be exclusive to the CC and suggests striking the term “controlling contractor” from the language in subsection (g)(6). This would make Section 1711(g)(6) consistent with Section 1710(d) of the steel erection standard.

Response:

The Board notes that the proposed requirement in subsection (g)(6) is consistent with ANSI A10.9-2013; specifically Chapter 10.3.5.5 places the responsibility called forth above with the CC. The Board is of the opinion the proposal is consistent with Section 1710(d) to the extent that CC’s involved in steel erection have the responsibility of ensuring that no employee is present under the rigged and hoisted loads. This is accomplished by pre planning routes for suspended loads to ensure that no employee is working below a suspended load except under specified conditions. The true consistency of the issue is that Section 1711(g)(6) is specific to post-tensioning and rebar operations and is an attempt to put what is industry practice in steel erection into Section 1711(g)(6) for clarity. The Board believes no modification of the proposal for this issue is necessary.

Comment No. 10:

The CEA supports the proposed language in Section 1711(h)(1) as it is vital that information pertaining to the achieved compressive strength of the post-tensioned elements be communicated in a clear and unambiguous fashion.

Response:

The Board agrees and acknowledges the CEA's support for the language in Section 1711(h)(1).

Comment No. 11:

With regard to proposed Section 1711(h)(3), which requires the erection of barricades and signs to limit access to the stressing areas are erected and in place, the CEA believes proposed subsection (h)(4) requiring the CC to bar other trades from working in the barricaded area during stressing operations is unnecessary. If the barricades have been sufficiently set-up by the reinforcing steel contractor, then subsection (h)(4) should be struck. The reinforcing steel contractor has certain responsibilities under the multi-employer regulation.

Response:

The Board does not agree with CEA. It is one thing to require barricades and signs be erected to prevent and warn employees to stay out of stressing areas, and quite another to enforce or otherwise make sure that no one enters areas that are off limits. Again, the ANSI standard referenced earlier and the Board staff advisory committee agreed the responsibility to ensure there are no unauthorized entrances by employees across barriers and in spite of signs is the responsibility of the CC who has the authority to enforce this requirement; the RC does not. The Board believes no modification of the proposal is necessary.

Comment No. 12:

With regard to the requirement in Section 1711(h)(5), the CEA stated that where space is available, most projects already incorporate a platform for stressing tendons, cutting tendon tails and grouting. The CEA stated that neither the Initial Statement of Reasons nor the Informative Digest addressed why 36 inches for the platform extension length was selected. The CEA proposed language that would stipulate the employer assure that an adequate work platform is provided, such as an extension of the formwork for performing post-tensioning/rebar related work.

Additionally, the CEA cited an example of a jobsite condition where a 3-foot platform would not be possible due to space constraints created by the unusual architecture of an urban parking garage. For such cases the CEA proposed exception language to their revised subsection (h)(5) that would state that where the design, structure, or space constraint precludes the installation of exterior platforms the employer does not have to provide the space specified in the revised subsection (h)(5).

Response:

The Board notes that the proposed requirement in subsection (h)(5) is based on language from ANSI/ASSE A10.9-2013, Chapter 10.3.6.6. That standard specifies a minimum 3-foot safe work

platform extension be provided by the CC, which can include extension of the formwork. The Board believes the CEA suggested language is performance in nature, a bit vague and would not necessarily result in providing adequate platforms. The CEA proposed revision creates the possibility that the CC would not pre-plan for platform extensions and utilize elevating work platforms, such as a scissor lifts or scaffolding, to provide a safe work area. This type of equipment is both unstable and cost prohibitive and there would still be issues with adequate safe space to erect a scaffold and move or articulate the equipment safely. The Board also recognizes that CCs have the ability to perform some early on planning and design to ensure to the extent possible, the platform extensions can be provided.

It is the Board's view the CEA revised subsection (h)(5) is not as effective as the proposed language and national consensus language. The Board wishes to clarify that Board staff's proposed exception to subsection (h)(5) would allow the employer to forgo providing the 3 foot extension (an additional 36 inches) in situations where space and/or adjoining structures preclude its installation. Therefore, the CEA revised exception language is unnecessary.

Comment No. 13:

The CEA suggested adding language to subsection (h)(5) to require the RC, while stressing beams during the construction of a parking garage, to provide access to the cables below the elevated slabs of the Cunningham beams by mobile equipment such as aerial boom lifts, scissor lifts or scaffolding.

Response:

The Board finds this suggested revision by the CEA to be unacceptable. The use of scissor lifts, scaffolding and aerial device platforms do not provide the same level of safety provided by platform extensions. Problems could arise with cost, stability and sufficient space for aerial devices and aerial booms to safely articulate. The CC has the responsibility to design in and plan for the needed safe platform space required by proposed subsection (h)(5).

Comment No. 14:

The CEA stated that their employers are safety conscious, taking their CC responsibilities seriously. However, they suggest Sections 1711(h)(6)-(8) be deleted from the proposal as they place significant responsibilities upon CC that should be placed on the contractor doing the work. The reinforcing steel contractor is hired for their unique skills and expertise. It is confounding that they would need this level of oversight by the CC. The proposed language removes the responsibility and oversight for ensuring the safety of their employees from the reinforcing steel contractor. The CEA also stated that while they are in favor of a safe workplace, the proposal is largely without necessity and it does not accurately depict the economic impact of the proposal. The CEA requests the Board to consider alternatives to the proposal.

Response:

The Board's believes that as modified these provisions are critical and necessary to effectively protect post-tensioning and rebar workers. It is also the Board's belief that from an administrative point of view, when you (the CC) have the authority then you have the safety

responsibility and oversight to ensure the safety of jobsite personnel. That responsibility cannot be delegated.

This was borne out repeatedly in both Board staff advisory committee deliberations and those conducted at the national level by the American National Standards Institute and the American Society of Safety Engineers. The provisions that the CEA suggests be deleted and which are taken essentially verbatim as Section 1711(h)(6-8) are taken from Chapter 10.3.5 of the ANSI/ASSE A10.9-2013 standard. The Board believes there are no reasonable alternatives to this proposal that will ensure the safety of jobsite post-tensioning and rebar workers as effectively as this national consensus based proposal. Consequently, the Board believes that the proposal should not be modified as suggested by the CEA and there is no need to consider alternatives at this stage.

The Board disagrees with the CEA assertion that the economic analysis is inaccurate. On the contrary, the Board notes that the Economic and Fiscal Impact Statement Form 399 and addenda were carefully crafted by Board staff based on the best available data and was subjected to economic/fiscal impact analysis by the Departments of Industrial Relations and Finance.

The Board would like to thank the CEA for its comments and participation in the Board's rulemaking process.

II. Oral Comments

Oral comments received at the December 15, 2016, Public Hearing in Sacramento, California.

Mr. Hart Keeble, Reinforcing Ironworkers, Local 416

Comment:

Mr. Keeble expressed support for the proposal stating that it will save lives by giving reinforcing steel contractors the tools they need to keep their workers safe.

Response:

The Board acknowledges Mr. Keeble's support for the proposal and thanks him for his participation in the Board's rulemaking process.

Mr. Greg McClelland, Western Steel Council

Comment:

Mr. McClelland stated the proposal will not nullify the reinforcing steel contractor's responsibility to protect his/her workers. The controlling contractor will assure that the necessary design requirements have been installed safely. He also indicated that much of what the proposal requires is already required by Title 8 steel erection standards. He stated that heavy steel is capable of inflicting serious injury to employees and that the 36-inch deck extension is not an

arbitrary number. A great deal of consideration was given to the deck extension and providing employees with a safe place to stand during the tensioning process.

Response:

The Board acknowledges Mr. McClelland's support for the proposal and thanks him for his participation in the Board's rulemaking process.

Mr. Carlos Crisonino, Gerdau and Mr. Robert Carpenter, Commercial Metals Company Rebar

Comment:

Mr. Crisonino and Mr. Carpenter both expressed support for the proposal stating that it goes beyond the existing Title 8 requirements for this issue, which do little to assure the controlling contractor will implement many of the best practices aimed at protecting ironworkers. The proposal will require written confirmation that decks are safe for workers, improve communication between the controlling contractor and subcontractors and that hazards such as providing rebar covers are controlled even when reinforcing steel contractors are not on site.

Response:

The Board acknowledges Mr. Crisonino and Carpenter's support for the proposal and thanks them for their participation in the Board's rulemaking process.

Mr. Bill Benham, Bill Benham Consulting

Comment:

Mr. Benham noted a great deal of communication takes place between all trades on a jobsite every day; they coordinate, plan and execute work often at the same time. As far as barricading is concerned, whoever creates a hazard should mitigate it or at least provide a barrier to prevent others from coming in contact with the hazard or hazardous area. In the case of stressing operations, the general contractor must work closely with the reinforcing steel contractor to determine which part of the structure is being stressed and place signs and take measures to keep people out of those areas.

Response:

The Board recognizes the need for communication between CC's and reinforcing steel contractors and as noted above in the comments by Mr. Crisonino and Mr. Carpenter, very often there are hazards created by persons other than the reinforcing steel contractor. In this case, the site overseer, CC, must ensure that regardless of who left an exposed hazard, the hazard is mitigated. This was the national consensus standard view by the ANSI A10.9 committee made up of CC's and reinforcing steel contractors. The accepted best practice is to have the CC responsible for things like barricades and signs. The Board agrees with this recommendation by the ANSI A10.9 committee.

Consequently, the Board believes no modification to the proposal for this issue is warranted. The Board thanks Mr. Benham for his comment and participation in the Board's rulemaking process.

Mr. Steve Rank, Ironworkers International Union

Comment:

Mr. Rank stated this proposal addresses post-tensioning and rebar hazards that have been prevalent in the industry for many years. He notes that the advisory committee was well attended and there was no widespread opposition at that time. Mr. Rank made a number of observations relating to steel erection that have comparable standards proposed for post-tensioning operations such as but not limited to: a reduction in accidents relating to site conditions, written notifications, stabilizing and guying off columns by a competent person and impalement protection. Mr. Rank concluded by saying that the proposed training requirement will ensure that the affected parties involved in rebar and post-tensioning operations will know and understand their responsibilities.

Response:

The Board thanks Mr. Rank for his support of the proposal and participation in the Board's rulemaking process.

Comment:

The Following individuals also commented in support of the proposal:

- Kurt Johnson, Harris Rebar
- David Jones, Associated General Contractors of California (AGC)
- Robert Alexander, Ironworkers Local 416, Los Angeles
- Dan Fonseca, Pacific Steel Group
- Jason Gallia, Iron Workers Union Local 378
- John Hernandez, Iron Workers Local 155
- Eddie Reyes, Iron Workers Local 377, San Francisco
- Wade Williamson, Iron Workers Local 229, San Diego
- Kevin Bland, Representing the California Framing Contractors Association and the Residential Contractors Association
- Don Zampa, District Council of Iron Workers of the State of California and Vicinity
- Jeremy Smith, State Building Construction Trades Council

Response:

The Board acknowledges the support for the proposal expressed by the individuals listed above and thanks them for their participation in the Board's rulemaking process.

Ms. Cindy Sato, Construction Employers Association (CEA)

Comment:

Ms. Sato stated that the CEA is not opposed to the specific reinforcing steel and post-tensioning proposal, but believes the regulations should be consistent with other construction safety orders

by being less burdensome to controlling contractors. She referred to figures quoted in the economic impact analysis relating to the number of man hours spent performing reinforcing steel operations in California. However, no injury accident statistics or facts related to those man-hours spent performing rebar and post-tensioning operations were included in the ISOR or the Informative Digest. Given the statement that the employer will likely see a reduction in operating costs vis-a-vis the reduction in injuries and accidents, that data should be provided.

Response:

See the Board's response to Comment No. 1 by Mr. Michael Walton, dated December 9, 2016.

The Board acknowledges CEA support of the proposal and wishes to emphasize that the advisory committee convened by Board staff reached the same position with regard to the delegation of responsibilities to the CC. The proposal is based on the recommendation of the ANSI A10.9 committee. Both committees recognized that giving the CC's overarching authority on the job ensured the safety of all participants in the rebar and post-tensioning operations and the other trades.

The Board thanks Ms. Sato for her comment and participation in the Board's rulemaking process.

Mr. Donald Anderson, CEA, Safety Steering Committee

Comment No. 1:

Mr. Anderson suggested that formwork inspections should continue under Section 1717 and suggested adding a requirement stating the rebar contractor follow the engineer's laydown plan to control the heavy weight of the concentrated rebar or rolls of post-tensioning cables on the deck. In addition, Mr. Anderson suggested deleting Section 1711(d)(1) and replacing it with a requirement that the rebar contractor submit a staff engineered laydown plan to the CC.

Response:

It is the Board's understanding that reinforcing steel contractors already provide the engineer's laydown plan to ensure that live loads do not exceed the load bearing capacity of the decks, which could result in catastrophic collapse. Therefore, the Board believes an additional requirement is not necessary. The Board does not agree to delete the requirement proposed in Section 1711(d)(1), which represents the consensus recommendation of both the advisory committee and the ANSI A10.9-2013 committee. The Board believes the CC is the jobsite entity to acquire verification from the form/falsework contractor that the form/falsework is safe to work on/around.

Comment No. 2:

Mr. Anderson stated that with regard to the proposed written notification requirement in Section 1711(d)(2), it is unnecessary as it duplicates existing requirements that require bracing of concrete forms to prevent collapse. He stated that the current standard is sufficient and should not be modified.

Response:

The Board does not accept Mr. Anderson's suggestion that the proposed notification requirement be deleted as duplicative, as the Board finds no duplication. The proposal requires the CC to provide written notification to the reinforcing steel contractor that the decks and formwork are structurally sound to work from. This responsibility is similar to what is required by the steel erection standard and has been captured here for reinforcing steel and post-tensioning work, an entirely different process, and must be so stated in the proposal to ensure compliance.

Comment No. 3:

Mr. Anderson stated that proposed Section 1711(d)(3), the requirement for written notification by the CC that an excavation has been inspected, is unnecessary because it is addressed by Section 3336.10 under the multi-employer law and requires the excavating contractor to provide such verification. He demonstrated awareness that excavators are the controlling contractor and must ensure per other applicable Title 8 requirements the excavations they create are inspected prior to their employees entering them. Excavation standards require a competent person present while work proceeds to ensure that employees are not subjected to injury/fatality should the soil become unstable. This requirement should be retained.

Response:

The Board believes that Mr. Anderson is citing Section 336.11 of the regulations of the Division that pertains to determination of applicability of defenses; an enforcement related regulation enforced by the Division. Consequently, the Board does not agree with the comparison made by Mr. Anderson between this Division enforcement standard and the proposed Section 1711(d)(3) requirement intended to ensure that reinforcing steel employees are not exposed to excavation hazards through notification by the CC to the reinforcing steel contractor that the required excavation inspections have taken place and the excavation is safe. Only the CC has the authority to ensure the excavation subcontractor will provide this critical information to the RC. Therefore, the Board believes no modification of the proposal is necessary.

Comment No. 4:

Mr. Anderson suggested adding language in proposed Section 1711(e)(2) to require systems for guying, bracing and supporting the vertical rebar structures to be designed by a California registered engineer and be kept on site at all times. This is necessary to avert the serious collapse risks posed by reinforcing steel structures that are getting longer and taller every day. Some of these structures are supported internally others externally and it is not always clear to the employee which one is safe to climb. He also indicated that the CC relies on the RC to ensure that these assemblies are structurally sound and well supported.

Response:

See the Board's response to written Comment No. 6, submitted by Mr. Michael Walton, on December 9, 2016. The Board notes that it was the advisory committee's consensus recommendation to require such systems to be designed by a qualified person and removed and installed by a competent person. Therefore, the Board believes no modification of the proposal is necessary.

Comment No. 5:

Mr. Anderson stated that Section 1711(e)(5) holds the CC accountable for prohibiting construction in work areas below or near vertical rebar assemblies being erected. He stated this responsibility should belong to the RC; in fact, Section 5002 of the GISO prohibits working under suspended loads. He suggested that the RC be responsible for demarcating hazard areas under these structures.

Response:

The Board accepts this comment by Mr. Anderson to the extent that the Board will modify the proposal to require the reinforcing steel contractor to flag specific areas of the erection level for their work activity and to ensure that all guying and bracing be in place before the release of the reinforcing assembly from hoist rigging. However, all trade employers on site are responsible for their employees and ensuring those employees comply with standards such as Section 5002. This does not mean the RC can be expected to make other trade employers and their employees comply. Only the CC has the supervening authority for all site employees. Therefore, the Board rejects the proposal to have the RC prohibit other trades from entering the site and does not believe the proposal should be modified as such.

The Board thanks Mr. Anderson for his comments and participation in the Board's rulemaking process.

Mr. Robert Ortiz, Nibbi Brothers and Associates

Comment:

Mr. Nibbi is concerned about Section 1711(h)(5) and the requirement for a 3-foot work platform. He stated that workers may not have room to go that far due to structures, property lines, power lines, and other obstacles and other times 3 foot may not be adequate. He also mentioned that he would like to see language that does not limit it to the formwork. He suggested perhaps the use of aerial devices and platforms as alternatives.

Response:

The Board does not accept the comment by Mr. Nibbi because proposed Section 1711(h)(5) already contains an exception that allows the employer to forgo use of the platform extension in situations where adjoining structures or other spatial constraints preclude the installation of such a platform. The use of scissor lifts and aerial devices were discussed during the advisory committee proceedings and were deemed to be highly unstable when substituting for a platform extension subjecting the device to catastrophic failure and the employees to a risk of fall. The Board notes no reason given for Mr. Nibbi's suggestion to not limit the extension or the exception to formwork. The proposed requirement is a consensus requirement of the Board staff's advisory committee and the ANSI A10.9 committee; therefore, the Board finds no reason to modify this proposed standard.

Mr. Robert Downey, CEA

Comment:

Mr. Downey stated the proposal does not improve safety, does not establish necessity and is not supportable by virtue of accident statistics. He also speculated that it may not save employer's money. Placing responsibility on CC's will distract from safety. Excavation safety may be compromised due to the reliance upon a letter of assurance from the general contractor that the excavation is safe for employees rather than actual safety monitoring and assessment of the excavation/trench. He opined further that multi-employer responsibilities should not remove responsibilities from creating employers.

Response:

The Board does not accept the comments by Mr. Downey. There are accident reports/data provided by the District Council of Ironworkers supporting the claim that rebar and post-tensioning operations are capable of inflicting very serious injury or fatality to their workers who perform these tasks. In a letter dated August 28, 2016, the International Association of Ornamental and Reinforcing Iron Workers described 14 disabling injuries and fatalities relating to post-tensioning and related iron work along with the associated dollar costs. The letter states that while the 14 listed accidents are a small portion of the total claims, the District Council of Ironworkers projects that reinforcing steel and post-tensioning claims costs due to worker compensation benefits, general liability claims, medical treatment, first aid, vocational rehab, and increased insurance costs could range from \$20-\$40 million per year.

Therefore, the Board rejects Mr. Downey's assertions that there is no necessity for this rulemaking and that there are likely to be no savings to employers.

The Board also rejects the notion by Mr. Downey that CC's will be distracted from safety. This proposal will focus site responsibilities upon the CC, the only entity on the jobsite with the authority to ensure that overall site safety is achieved and maintained among the trades. It is the Board's view that this proposal does not abrogate, delegate or in any way reduce the individual site trade employer's responsibility for creating any hazards and controlling their own portion of the jobsite where they must conduct their operations safely according to existing Title 8 standards. Excavation contractors will continue to be required to provide competent person management of trenches and excavations to ensure they are safe.

See also the Board's response to Mr. Michael Walton's written comment letter to the Board dated December 9, 2016, specifically Comment No. 14 and the Board's response to that comment.

Based upon the foregoing discussion, no modification to the proposal is necessary. The Board thanks Mr. Downey for his comment and participation in the Board's rulemaking process.

Mr. Eric Peterson, Webcor Builders, San Francisco

Comment No. 1:

Mr. Peterson notes the comprehensive nature of the proposal as it addresses a number of issues other than post-tensioning. He believes it is important for ironworkers to provide vertical stability of erected rebar and have it reviewed by a registered engineer as stated in the previous comment letter by the CEA. He also stated it would be a good idea to have a release process to ensure formwork is safe for use.

Response:

With regard to the issue of the vertical stability of rebar, see the Board's response to Comment No. 6 in Mr. Michael Walton's, written comment letter to the Board dated December 9, 2016. See also the Board's response to Mr. Donald Anderson, Comments Nos. 4 and 5 received at the December 15, 2016, Public Hearing. The Board also notes that proposed Section 1711(e) adequately addresses the issue of vertical stability for formwork, decks and other walking and working surfaces and that proposed Section 1711(d) requires written notification that all formwork and falsework has been inspected to meet the design requirements by a competent person, which by definition includes a registered engineer. The Board sees no necessity to impose a process requirement for vertical and horizontal reinforcing steel structures formwork given what is proposed by subsections (d) and (e).

Comment No. 2:

Mr. Peterson indicated the CEA letter described language which better addresses the issue of lay down in proposed Section 1711(c)(2).

Response:

The Board notes that Section 1711(c)(2) is proposed for modification to provide an exception to the requirement that a firm, graded, drained area, readily accessible to the work with adequate space for reinforcing contractors equipment and materials be provided and maintained. The modification would allow the CC to forgo this space requirement in cases where it was deemed to be infeasible due to space constraints in dense metropolitan areas. The Board believes this language addresses Mr. Peterson's concern.

Comment No. 3:

Mr. Peterson stated Section 1711(e) pertains to proximity and requires exclusive use of areas while vertical steel is being erected which is not always practical since you can have situations where a number of trades are working efficiently together in the same location. He stated that having exclusive areas would affect how these workers interact and how the construction process is executed as well as the ownership of the projects and who constructs them.

Response:

The Board believes Mr. Peterson's third comment is somewhat cryptic. Proposed Section 1711(e) pertains to the stability requirements for vertical and horizontal columns, walls and other reinforcing assemblies. The only part of this proposed requirement that might have anything to

do with proximity is subsection (e)(5) which requires the CC to prohibit site workers from being subjected to hazards posed by unsecured vertical and horizontal columns, walls and other reinforcing assemblies. The Board speculates that Mr. Peterson might be referring to this requirement in the sense that such workers must be kept out of proximity to unsecured structures. The Board does not believe this requirement should be modified in the interest of the safety of employees who need to be protected from hazardous contact. The Board is also not aware of any issues regarding a diminishment of efficiency or ownership of the project by site workers that could be adversely affected by subsection (e)(5).

See also the Board's response to Mr. Michael Walton's Comment No. 7 as it relates to flagging and demarcation of areas on site where employees need to be aware of the presence of hoisted vertical structural elements that may require securing.

Comment No. 4:

Regarding Section 1711(f), Mr. Petersen stated that the reinforcing contractor should be responsible for mitigating the hazard that he/she creates with regard to the replacement of rebar caps for impalement protection.

Response:

The Board is aware of situations that have occurred at jobsites where the impalement protection provided by the reinforcing steel contractor is without the permission of reinforcing steel contractor, removed after he/she has left the jobsite for the day. In such cases the reinforcing steel contractor would need to identify the guilty party and have them replace the covers they removed. However, since the reinforcing steel contractor is just one of many trades on site, he/she lacks the authority to make that happen. Therefore, the advisory committee and the ANSI A10.9 committee placed the requirement that the CC, who as stated earlier is the entity on site with authority over the site and the various trades, is the only entity that can assure the covers stay in place. The proposal does not allow the reinforcing steel contractor from abandoning his/her responsibility to provide and use covers nor any other subcontractor.

The Board believes no modification of subsection (f) is necessary.

Comment No. 5:

Mr. Peterson stated the 3-foot deck extension requirement is ideal but may not be achievable in all circumstances. He suggested allowing employers to craft an extension of varying lengths such as between 24 and 30 inches or simply use some sort of performance criteria such as enough extension room to take into account the stressing jack and tendons. He requested the Division convene an advisory committee to see if some number other than 3 feet could be agreed upon.

Response:

The Board notes that it has been the District Council of Ironworkers experience to observe no or very little safe workspace provided for their workers voluntarily by the CC that has resulted in numerous injuries and near fatalities to ironworkers. The Board is of the opinion that leaving it up to the discretion of the CC may not ensure the necessary safe workspace will be provided. It

must be a specific enforceable requirement. The Board believes in the consensus recommendation by the advisory committee and the national ANSI A10.9 committee to specify a 3-foot extension be provided except in cases where 3 feet is not feasible the CC can utilize a smaller platform or no platform at all under the terms of the proposed exception.

This rulemaking proposal was developed by Board staff with the assistance of a committee convened by Board staff as directed in the petition Decision for OSHSB Petition File No. 537; therefore, if any further committee work was necessary it would be convened by the Board not Division staff. The Board does not believe such action is necessary, and accepts the advisory committee's recommendation for a 3-foot platform extension with the exception statement for situations where such a platform may be infeasible.

The Board thanks Mr. Peterson for his comments and participation in the Board's rulemaking process.

Mr. Drew Shank, McClellan Construction

Comment:

Mr. Shank repeated Mr. Peterson's last comment as described above.

Response:

See the Board's response to Mr. Peterson's Comment No. 5 as indicated above. The Board thanks Mr. Shank for his participation in the Board's rulemaking process.

Mr. Karl Pineo, Iron Workers Local 118, Sacramento

Comment:

Mr. Pineo stated that he would like to see site conditions addressed by the proposal given the condition of sites in rural areas during inclement weather.

Response:

The Board notes that there are ample provisions to ensure a safe site layout in the proposal; namely proposed Section 1711(c) which requires the CC to ensure that adequate access roads are provided, a firm, properly graded and drained site is provided for staging and storing equipment and materials and adequate sloping benching and shoring of all excavations is provided in accordance with applicable Title 8 standards. Consequently, the Board believes no modification to the proposal is necessary.

The Board thanks Mr. Pineo for his comment and participation in the Board's rulemaking process.

SUMMARY AND RESPONSE TO 15-DAY NOTICE COMMENTS

April 7, 2017 – April 24, 2017

Summary and Response to Written Comments:

Mr. Michael Walton, Secretary, Construction Employers' Association, by letter dated April 24, 2017

Mr. Walton's letter calls the Board's attention to three portions of the proposal, Section 1711(e), (h)(5) and (i), which were not proposed for modification. Generally, commenters are to confine their 15-Day Notice comments to only those portions of the proposal that have been modified. Staff wishes to point out that this is based on California Rulemaking Law, Section 11346.9(a)(3), which pertains to the Final Statement of Reasons, which states in relevant part, "*For the purposes of this paragraph, a comment is "irrelevant" if it is not specifically directed at the agency's proposed action or to the procedures followed by the agency in proposing or adopting the action.*" Mr. Walton commends the Board for the modifications that were made which they believe are good for the industry. Mr. Walton then expressed three comments as follows:

Section 1711(e)

Comment:

Mr. Walton suggested strengthening the requirement in subsection (e) which calls for a qualified person to design the systems for guying, bracing or supports by requiring a licensed engineer to perform the design. Mr. Walton stated that only a licensed engineer can evaluate wind and buckling loads for vertical rebar stability. Mr. Walton also suggested an exception to allow the use of rebar as internal bracing of vertical column elements. The unintended disruption of external bracing has resulted in fatalities.

Response:

The Board notes that the process of guying and bracing is not without the involvement of a competent person, (a person who is able to diagnose problems and has the authority and knowledge to correct them), which in practice usually equates to a registered engineer. Subsection (e)(2)(B) states clearly that all guys, braces and supports shall be installed and removed by a competent person. Subsection (e) therefore requires the guy, bracing support system to be designed by a qualified person which by definition is someone able to perform his/her duties safely by reason of training, experience, or instruction and, when required, is properly licensed in accordance with federal, state, or local laws and regulations. This definition does not exclude a registered engineer. The Board also notes that formwork and falsework stability is addressed by Sections 1713 and 1717. These standards not only set separate performance standards for stability, they require inspection of all vertical shoring and falsework systems by a registered California civil engineer.

Consequently, the Board believes that the proposed qualified-competent person approach to ensure the stability of vertical and horizontal columns is achieved by having a qualified person

perform his/her duties under the supervision of a competent person (a person who is able to recognize existing and predictable hazards and has the authority to correct them). This approach was also accepted by the post-tensioning/rebar advisory committee and the consensus recommendation of the ANSI/ASSE A10.9 committee (Chapters 10.3.3.3, 3.3.4, and 3.3.7).

With regard to the suggestion by Mr. Walton for an exception to allow the use of rebar as internal bracing of vertical column elements, no such exception is permitted by the ANSI/ASSE A10.9-2013 standard upon which the proposal is largely based. There was no discussion either way on this issue by Board staff's advisory committee. The CEA has not provided any documentation to substantiate whether rebar would even be suitable for such purposes. Given this, the Board believes further modifications to the proposal are unnecessary.

Section 1711(h)(5)

Comment:

Mr. Walton agrees to the need for a safe work platform; however, mandating a three-foot platform (more than 24 inches) will have negative consequences. Providing a platform that is more than 24 inches (minimum 3 feet as proposed) creates a larger overturning moment due to increased cantilever, which could lead to deck collapse.

Response:

The Board notes the minimum 3-foot deck extension concern was raised via oral and written comments by the CEA during the pre-Public Hearing phase of this rulemaking proposal. The Board also notes that it was the consensus of the advisory committee to propose Title 8 be amended consistent with the consensus recommendation of the ANSI/ASSE A10.9-2013 committee. The Board staff's committee accepted the recommendation by the ANSI/ASSE national committee that a three-foot extension platform was both reasonable and necessary to ensure adequate space for reinforcing steel employees to perform post-tensioning operations (stressing cables). The Board also notes that consistent with the ANSI/ASSE standard, an exception to the platform requirement has been proposed to accommodate employers when spatial constraints between buildings render such a platform infeasible.

The Board believes therefore that no further modification of the proposal is necessary.

Section 1711(i)

Comment:

Mr. Walton stated that allowing reinforcing ironworkers to be able to work up to 24 feet without fall protection, (a reference to the point-to-point travel exception in subsection (i)) is not in the best interest of safety. Mr. Walton questioned why this exception is permitted for ironworkers but no other trades and stated that the ironworkers should be required to use fall protection (during point-to-point travel).

Response:

The Board notes that Section 1711, California's steel erection standard applies to ironworkers and contains references to various trigger heights ranging from 15 feet to 30 feet depending on

the nature of the work performed. Work performed above reinforcing steel is also addressed by fall protection standards contained in Section 1712. Section 1712 specifies a 6-foot trigger height. Again, the Board notes that the proposed Section 1711(i) is substantially similar to Chapter 10.3.7 contained in the ANSI/ASSE A10.9-2013 standard. Chapter 10.3.7 permits a point-to-point horizontal and vertical travel on reinforcing steel exception up to 24 feet. The proposed exception is identical to that contained in the national consensus standard and contains a stipulation that the exception shall be permitted provided the worker is not exposed to impalement hazards. The Board believes the issue of trigger heights in construction is both expansive and controversial and that such comments are clearly outside the scope of the 15-Day Notice of Proposed Modifications since no modification of Section 1711(i) was proposed.

Therefore, the Board believes no modification of Section 1711(i) is necessary.

SUMMARY AND RESPONSE TO SECOND 15-DAY NOTICE COMMENTS
August 3, 2017 – August 21, 2017

Summary and Response to Written Comments:

Mr. Bradley D. Closson, CRAFT Forensic Services, by email dated August 8, 2017.

Comment No. 1:

The major portion of Mr. Closson's comments pertain to Section 1711(b), (c)(2), (g), (g)(5) and (6) relating to definitions. Mr. Closson suggested rewording some definitions and eliminating the term, "dense metropolitan areas" as well as the title to subsection (g), Reinforcement Assemblies. Mr. Closson also stated the inspection and design requirements overseen by a principal engineer do not improve safety. Finally, he noted there is no definition for the term "hazard area" as used in Section 1711(g)(6).

Response:

Mr. Closson's comments relating to definitions were not subject to modification as indicated in the Second Notice of Proposed Modifications (Notice) dated August 3, 2017, and are therefore outside the scope of the Notice and do not require response by the Board. Generally, commenters are to confine their 15-Day Notice comments to only those portions of the proposal that have been modified. Please see Board staff's summary to Mr. Michael Walton's April 24, 2017, letter.

The Board believes the inspection requirement stipulated in Section 1711(g)(5) is a significant enhancement to the level of safety currently provided.

Comment No. 2:

Regarding Section 1711(d), Mr. Closson commented that all wording after the term "Written Notifications" is confusing, repetitive and should be deleted. He suggested the title read "Written Notifications."

Response:

The Board finds there is no confusion with the wording that follows the term “Written Notifications.” The title was modified to accurately call the employer’s attention to the location of the requirements that follow that address notifications given by the CC before and after the placement of reinforcing steel and concrete. The Board believes this modification also provides precise clarity especially on the issue of the CC ensuring that formwork, platform, walking/working surfaces and deck stability remains intact throughout the time the reinforcing steel contractor employees are at work on those surfaces. The failure to ensure stability throughout the process could result in catastrophic failure and serious employee injury or fatality. Consequently, the Board believes the proposed modified language is crucial to the safety of reinforcing steel employees. The Board finds no modifications to the proposal are necessary.

The Board thanks Mr. Closson for his comments and participation in the Board’s rulemaking process.

Mr. Michael Walton, Secretary, Construction Employers’ Association by letter dated August 18, 2017.

Comment:

Mr. Walton stated that they have not changed their position regarding proposed Sections 1711(d), (1-3) and that is rooted in their belief that any trade which performs work below grade should be competent to evaluate the safety of an excavation prior to beginning work. Supervisors should be trained to direct such work safely and react to changing site conditions. Such responsibilities should be that of the reinforcing steel contractor. Mr. Walton again stated that the accident data upon which the proposal is based are vague and that it is impossible to reason whether the accidents (14) would have been prevented by the proposed modifications.

Response:

See the response to Mr. Donald Anderson’s, CEA, Safety Steering Committee, oral comment, at the Board’s December 15, 2016, Public Hearing, Response No. 3. regarding the excavation issue raised by Mr. Walton. With regard to that part of Mr. Walton’s comment related to the significance of the 14 cited accident statistics provided by the Ironworkers in a letter from Mr. Steve Rank dated August 28, 2016, see the response to Mr. Robert Downey’s, CEA, oral comment at the December 15, 2016, Public Hearing. The Board believes no further modification of the proposal is necessary. The Board appreciates Mr. Walton’s comment and his participation in the Board’s rulemaking process.

ADDITIONAL DOCUMENTS RELIED UPON

Letter from Mr. Steven L. Rank, Executive Director of Safety and Health, International Association of Bridge, Structural, Ornamental and Reinforcing Ironworkers (IABSORI), Re: Estimated Costs of Injuries Incurred During Reinforcing Steel and Post-Tensioning Activities, dated August 28, 2016.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These regulations do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed regulation. No alternative considered by the Board would be (1) more effective in carrying out the purpose for which the action is proposed; or (2) would be as effective as and less burdensome to affected private persons than the adopted action or (3) would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law. Board staff were unable to come up with any alternatives or no alternatives were proposed by the public that would have the same desired regulatory effect.