

BEFORE THE
BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS
DEPARTMENT OF CONSUMER AFFAIRS
STATE OF CALIFORNIA

In the Matter of the Accusation Against:)	
)	
THOMAS CULBERTSON CLARK III)	Case No. 978-A
175 Ardmore Road)	
Kensington, CA 94707)	OAH No. 2012010660
)	
Civil Engineer License No. C 32383,)	
)	
Respondent.)	
_____)	

ORDER DENYING PETITION FOR RECONSIDERATION

The Petition for Reconsideration filed by the respondent in the above-entitled matter has been read and considered by the Board for Professional Engineers, Land Surveyors, and Geologists. Good cause for the granting of the petition has not been shown; therefore, the Petition for Reconsideration is hereby denied.

The Decision issued by the Board for Professional Engineers, Land Surveyors, and Geologists shall become effective upon expiration of the Order Granting Stay of Execution of Decision on **August 11, 2013**.

IT IS SO ORDERED August 2, 2013.

Original Signed

BOARD FOR PROFESSIONAL ENGINEERS,
LAND SURVEYORS, AND GEOLOGISTS
Department of Consumer Affairs
State of California

BEFORE THE
BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS
DEPARTMENT OF CONSUMER AFFAIRS
STATE OF CALIFORNIA

In the Matter of the Accusation against:)	
)	
THOMAS CULBERTSON CLARK III)	Case No. 978-A
175 Ardmore Road)	
Kensington, CA 94707)	OAH No. 2012010660
)	
Civil Engineer License No. C 32383,)	
)	
Respondent.)	
<hr/>		

ORDER GRANTING STAY OF EXECUTION OF DECISION

A Decision in the above matter was issued by the Board for Professional Engineers, Land Surveyors, and Geologists on June 13, 2013, to become effective on July 12, 2013. Respondent, by and through his attorney, has submitted a Request for Stay to Consider Petition for Reconsideration pursuant to Government Code section 11521, which was received by the Board for Professional Engineers, Land Surveyors, and Geologists on July 10, 2013. Pursuant to Government Code sections 11519 and 11521, a stay of execution of the Decision in this matter is granted for 30 days to allow the Board for Professional Engineers, Land Surveyors, and Geologists sufficient time to receive and consider the Petition for Reconsideration.

Execution of the Decision is stayed until August 11, 2013.

DATED: July 10, 2013

Original Signed

NANCY A. EISSLER
Enforcement Program Manager
Board for Professional Engineers, Land Surveyors,
and Geologists
Department of Consumer Affairs
State of California

BEFORE THE
BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS
DEPARTMENT OF CONSUMER AFFAIRS
STATE OF CALIFORNIA

In the Matter of the Accusation against:)	
)	
THOMAS CULBERTSON CLARK III)	Case No. 978-A
175 Ardmore Road)	
Kensington, CA 94707)	OAH No. 2012010660
)	
Civil Engineer License No. C 32383,)	
)	
Respondent.)	
<hr/>		

DECISION

Pursuant to Government Code section 11517, the Board for Professional Engineers, Land Surveyors, and Geologists of the State of California hereby adopts the attached Proposed Decision of the Administrative Law Judge as its Decision in the above-entitled matter.

In adopting this Proposed Decision as its Decision, the Board for Professional Engineers, Land Surveyors, and Geologists has reduced or otherwise mitigated the penalty order pursuant to Government Code section 11517(c)(2)(B) as follows:

Condition 8 of the Order relating to Seismic Principles Examination is removed and shall not be enforced.

Condition 10 of the Order is revised as follows:

Within two and one-half years from the effective date of this decision, respondent shall take and achieve the passing score as set by the board for the second division examination in civil engineering, consisting of the NCEES Principles and Practices of Civil Engineer examination, the California Seismic Principles examination, and the California Engineering Surveying examination. Respondent shall be required to pay the application and examination fees related to these examinations as specified in the board's regulations.

Furthermore, in adopting this Proposed Decision as its Decision, the Board for Professional Engineers, Land Surveyors, and Geologists has made the following technical or other minor changes pursuant to Government Code section 11517(c)(2)(C):

The issue date of Respondent's Civil Engineer License, as listed in Factual Findings Paragraph 3, is corrected to read "August 14, 1980."

The reference in Factual Findings Paragraph 13 to "respondent's house" is corrected to read "homeowner's house."

This Decision shall become effective on July 12, 2013.

IT IS SO ORDERED June 13, 2013.

Original Signed

BOARD FOR PROFESSIONAL ENGINEERS,
LAND SURVEYORS, AND GEOLOGISTS
Department of Consumer Affairs
State of California

BEFORE THE
BOARD FOR PROFESSIONAL ENGINEERS,
LAND SURVEYORS, AND GEOLOGISTS
DEPARTMENT OF CONSUMER AFFAIRS
STATE OF CALIFORNIA

In the Matter of the Accusation Against:

THOMAS CULBERTSON CLARK III,
Civil Engineer License No. C 32383

Respondent.

No. 978-A

OAH NO. 2012010660

PROPOSED DECISION

Administrative Law Judge Perry O. Johnson, Office of Administrative Hearings, State of California, heard this matter on October 16 through 19, October 22 through 25, 2012, March 5 through 8, March 12, March 13, March 15, March 19 through 22, and March 25, 2013 in Oakland, California.

Deputy Attorney General Nicholas P. Tsukamaki represented Richard B. Moore, Executive Officer of the Board of the Professional Engineers, Land Surveyors, and Geologists, Department of Consumer Affairs, State of California.

Respondent Thomas Culbertson Clark III was present at all phases of the hearing, but he was not otherwise represented.

On March 25, 2013, the parties submitted the matter for decision and the record closed.

FACTUAL FINDINGS

Accusation

1. On December 21, 2011, complainant Richard B. Moore, PLS (complainant), in his official capacity as Executive Officer of the Board for Professional Engineers, Land Surveyors, and Geologists, Department of Consumer Affairs, State of California (the board), made the Accusation against Thomas Culbertson Clark III (respondent).

2. During the course of the hearing of this matter on three separate dates, complainant amended the Accusation in 23 separate instances, including deletions. In this decision the initial paragraph for Factual Findings 57 through 73 and 76 through 89, reflects complainant's verbatim wording of the Accusation's allegations following the amendments.

License History - Civil Engineer

3. On August 14, 1989, the board issued respondent Civil Engineer License Number C 32383. The license issued to respondent will expire on December 31, 2014, unless renewed.

Other Occupational Licenses

4. Respondent is licensed as a civil engineer in the states of Connecticut and Wyoming.

5. On August 9, 1983, the Registrar of Contractors of the Contractors State License Board issued respondent general building (classification B) contractor's license number 444427 B. At the hearing, respondent represented that his general building contractor's license remains active.

6. Also during August 1983, the Commissioner of the Department of Real Estate issued respondent real estate broker license number 0853178. At the hearing, respondent represented that his real estate broker license remains active.

Background of the Controversy

HOMEOWNER'S DIFFICULTIES AND LOSSES DUE TO RESPONDENT'S OMISSIONS

7. Homeowner Eric Fisher (homeowner) offered compelling testimony at the hearing of this matter. By his demeanor while testifying, by the character of his testimony, by the consistency of his solemn account of various interactions with respondent and by his attitude towards the proceeding in this matter, homeowner demonstrated that he was a credible witness in this matter. Homeowner was called to testify on two dates (October 17, 2012, and March 25, 2013) during the proceeding.

8. In the spring of 2002, homeowner sought to add a living area onto his family residence because he hoped to gain additional living area in order to provide housing for his ill mother.

9. Homeowner had no experience with either the process of securing building permits or the methods for effectively navigating paths to gain local government approvals in order to lawfully add a level onto a single-family residence. Through acquaintances, homeowner learned about respondent's engineering

company, which had a principle place of business in the same city as homeowner's house.

10. In approximately April 2002, homeowner entered into a contract with respondent, doing business as Ironwood Engineering Company. Under the contract, respondent promised to perform services as a civil engineer and an architect for the preparation of drawings and calculations pertinent to securing municipal government permit approval for the contemplated addition to homeowner's house, and to aid a building contractor to construct the designed addition at homeowner's residence.

11. On approximately March 28, 2002, respondent prepared a form of contract that he titled "Work Order," which was signed by homeowner on April 10, 2002, and respondent on April 15, 2002. Respondent's agreement pledged that his engineering services would create drawings and generate calculations that would be adequate to acquire permit approval from both the City of El Cerrito's Building Official and the city's Planning Department. Of significance was that respondent promised to: "(1) provide plans and specifications for [a] 2nd story addition; (2) provide plans and specifications for foundation work related to [the second story addition]; (3) provide plans and specification for drainage work . . . (4) provide calculations and design to obtain all state and local permits . . . [and] (5) provide inspection services required to insure conformance with the design drawings . . ."

12. In accordance with his contract to prepare professional engineer-quality drawings, respondent contractually promised that his drawings could be used by a licensed building contractor to construct the contemplated second-story addition and deck at homeowner's residence in El Cerrito, California (homeowner's project).

13. Well before receiving the plans prepared by respondent, homeowner hired a long-term friend-Ken Greely, who was a general building contractor, to construct the additions to respondent's house.

14. Sometime after April 15, 2002, respondent presented homeowner and building contractor Greely with a sketch of drawings for preliminary review by the El Cerrito City Planning Department.

From the City's Planning Department, homeowner learned that the proposed project required "a variance and a special use permit" regarding two issues, namely: (1) an expanded or additional parking area was needed on the property's grounds because the project nearly doubled the size of the existing living area of the house; and, (2) the new structure's height took the house "outside the envelope" of allowable space allocated for single family houses in the neighborhood.

After homeowner had paid respondent approximately \$14,000, homeowner and Mr. Greely took respondent's set of drawings and plans to an El Cerrito City Planning Commission meeting regarding the application for a variance and special

use permits for homeowner's project. (Respondent told homeowner that it would be best that only the homeowner should present the project's scope at the public hearing.) At the planning commission hearing, respondent's plans were rejected on the issue of extending the structure "outside the envelope" for the acceptable dimensions of a building in the neighborhood around homeowner's residence. The next day homeowner met with the El Cerrito City Planning Commission's chief executive, who angrily informed homeowner that respondent had been advised before the meeting that his drawings for the project were unacceptable and that homeowner should not waste his efforts at a public hearing because the application for a construction variance would not be granted.

15. Homeowner confronted respondent about his disastrous experience with the City Planning Commission and he queried whether homeowner's expenditure of about \$14,000 had been wasted. Respondent informed homeowner that the subject civil engineer could prepare correct drawings and calculations for a price of \$24,000. Homeowner refused to pay the dramatically increased price for respondent's provision of services, and he demanded that respondent prepare a set of drawings that could pass approval by all municipal offices. And homeowner threatened to file a civil lawsuit against respondent should the subject engineer fail to deliver the service that he had promised to effect and for which respondent had been paid a large sum of money.

16. On September 6, 2002, respondent wrote homeowner a letter. The letter expressed respondent's willingness to "finish the permit drawings and [to] provide engineering support services during construction" for \$15,000 so as to avoid the litigation threatened by homeowner. In the letter, respondent stated that he would provide drawings that would be "sufficient to obtain . . . permits and for construction . . ." Respondent's letter proclaimed that the contract price would assure production of "a minimum set of drawings that *some other builder may not find adequate . . .*" Respondent promised to complete the permit drawings within 60 days.

By his September 2002 letter, respondent tacitly transmitted a disposition or attitude for the production of an engineering work product that would not meet the industry standards expected of a professional civil engineer.

17. On November 8, 2002, respondent prepared a permit set of drawings, consisting of 24 pages, and calculations, consisting of 23 pages. Homeowner paid respondent a total of \$17,000 for engineering services as of November 2002.

18. On February 21, 2003, the El Cerrito City Building Official-Brian C. Fenty, approved respondent's Permit Set¹ for homeowner's project. The City's Planning Commission also approved the construction project as revised by respondent's supplemental drawings.

¹ A Permit Set includes both an engineer's drawings and calculations.

19. When respondent completed the drawings for the new addition and deck for homeowner's project, Building Contractor Greely studied the plans and agreed to execute respondent's plans for the construction project.

20. After the general building contractor began construction work at homeowner's project, difficulties arose with Mr. Greely not being able to carry out construction details for various design features in the manner specified in respondent's drawings.

FAILURE TO COMPLETE OR CORRECT THE DESIGN SET FOR THE PRICE STATED IN SEPTEMBER 2002 CONTRACT AMENDMENT SO THAT HOMEOWNER WAS REQUIRED TO SECURE THE SERVICES OF OTHER ENGINEERS TO COMPLETE OR CORRECT RESPONDENT'S DEFICIENCIES AT A COST IN EXCESS OF THE AMENDED CONTRACT PRICE

21. After part of the roof of the existing house was removed and the existing chimney was demolished, and following placement of the foundation for the new addition, building contractor Greely became frustrated with his inability to interpret respondent's drawings for various design details.

In early 2003, homeowner heard Mr. Greely say that although the El Cerrito Building Official had approved respondent's plans, the drawings contained material deficiencies. Of particular concern to homeowner's contractor was the absence of a proper structure design or foundation detail to support the stairwell between the existing house and the new addition's second story.

Also homeowner heard from a roof truss manufacturer, Simon Truss Company, an assessment that that company's engineer could not comprehend respondent's drawings so as to complete the work of creating a customized roof truss support framing for the new house addition. Homeowner learned that the truss manufacturer retained a Washington-based engineer to confer with respondent in order to resolve the controversy.

And homeowner heard from Mr. Greely and the truss manufacturer that respondent refused to return telephone calls, or otherwise to communicate, about problems with the drawings created by respondent for homeowner's project.

22. From mid-2003 to very early 2004, over a span of many months both homeowner and Mr. Greely implored respondent to provide missing design details. Respondent, however, refused to reply to the requests from both homeowner and general building contractor Mr. Greely.

After demolition of part of the existing house and when the initial construction phase had come to a stop, Contractor Greely became greatly stressed and found that he could not execute the construction project with respondent's drawings, especially

as aggravated by respondent's non-response to the pleas for additional engineering details and drawings. Homeowner heard Mr. Greenly say, "No way I can do this." Hence, the contractor assisted homeowner to cover the exposed house from the rain and the building contractor terminated his contract to work on the project. (Nevertheless, rain water did intrude into the structure because the roof to the existing house had been partially removed. Thus, damage to the interior of the house occurred. Homeowner commenced a civil lawsuit against respondent; which was settled on an unspecified date before mid-September 2008.)

23. The project site sat idle for approximately two years, while respondent offered no assistance to homeowner's distressed circumstances. Then, in July 2005, homeowner hired a general building contractor, named Skip Bowser, to study respondent's drawings with the aim of completing the project. On his initial review of respondent's plans, Mr. Bowser expressed belief that he could complete the project. However, after he restarted the construction work, building contractor Bowser encountered problems and difficulties with the execution of respondent's drawings. Of special concern was the building contractor's determination that the drawings lacked specifications for an element at the new structure's foundation and a foundation-related post. Also, Mr. Bowser discovered errors in respondent's drawings of the ceiling joist detail, because building contractor Bowser concluded that the joists ran in a direction opposite the pattern as depicted in respondent's drawings. And the general building contractor determined that respondent's drawings lacked a design for supportive elements, which would have been expected in an engineer's design plans, needed for a manufactured roof truss system².

Homeowner heard general building contractor Bowser assert that another truss manufacturer, Keller Lumber Systems, had informed Mr. Bowser that respondent's plans were deficient in several material areas. In particular, Mr. Bowser learned that respondent's engineering plans lacked: (i) detail or engineering for the second stairwell penetration as there were no beams, columns, footings or dimensions set out for those building components; (ii) detail or design for the support of the second floor southeast corner, which was needed from the area of the cripple wall to the south wall for the family room area on the second floor; and (iii) dimensions for any second-story wall, which made it unlikely that the truss manufacturer would have been able to design for related loads at the second floor subfloor.

At that point in time, homeowner understood that the second story addition could not be constructed without abandoning respondent's deficient drawings so that a revised plan could depict the necessary missing foundation design details. Homeowner confronted respondent to relay that the permit set's calculations were

² A roof truss is a rigid, strong framework made up of wood members, such as 2" x 4"s, fastened and held together by metal connector plates. This framework accounts for the shape of the roof and supports the roofing materials. Roof trusses are designed according to well-established geometric principles.

incorrect and that the residence would not be structurally safe if the home addition were constructed as designed by respondent.

24. Both homeowner and building contractor Bowser made attempts to prompt respondent to furnish the missing structural details. Respondent, however, demanded an additional \$5,000 as compensation to perform the work. On September 2, 2005, homeowner paid respondent \$5,000.

Despite homeowner's payment of \$5,000 to respondent for the provision of supplemental engineering services to prepare revised drawing details so that the residence could be built safely, respondent refused to provide the missing essential detail.

25. Because of respondent's neglect in providing an essential drawing for a foundation detail, and the subject engineer's non-responsiveness over a long period of time, homeowner finally terminated all dealings with respondent in October 2005.

After homeowner voiced explicit demands upon him, respondent refunded \$5,000 to homeowner. But, respondent refused to return to homeowner any portion of the earlier tendered payments, which amounted to \$17,000, as paid to respondent for the production of supposed professionally-crafted drawings and calculations. (Complainant's industry expert witness compellingly established that respondent's drawings and calculations are incomplete, inaccurate and of little, safe use for construction of the two-story addition and deck at homeowner's project.)

26. In approximately October 2005, homeowner hired an architect called Strong and Associates as well as a structural engineer named Hobach-Lewin, Inc. to provide the necessary structural design, drawing details, calculations and plans to accomplish homeowner's objective of erecting an addition to his residence.

Sometime in early 2006, the architectural firm and the structural engineering company prepared the documents needed by a building contractor to complete the construction of the project in a safe, proper and efficient manner. Homeowner paid those two professional organizations more than \$25,000 to correct and complete the design work that respondent had filed to furnish homeowner.

27. Because of respondent's acts and omissions, homeowner suffered great financial losses. In addition to \$17,000 having paid to respondent, homeowner incurred more than \$50,000 in other related losses. However, the additional financial losses were associated with homeowner's damages due to non-contract related acts and omissions committed by respondent.

28. Respondent's reasonable restitution to homeowner in this matter is \$17,000.

Complainant's Initial Investigative Action

29. Ms. Tiffany Criswell, an Enforcement Analyst with the Board, offered credible and persuasive testimony at the hearing of this matter.

30. Ms. Criswell noted that although the Enforcement Unit received a consumer complaint on behalf of homeowner in November 2006, and the matters in that complaint were viewed as serious, because of significant agency budget restraints and reduced agency staffing resources, the enforcement's unit's full attention could not be devoted to the controversy involving homeowner and respondent until 2009.³

31. Ms. Criswell established that on November 29, 2006, the board's Enforcement Unit received a letter from homeowner's lawyer. Homeowner's lawyer's complaint letter set out that homeowner had hired respondent to provide engineering services for a second-story addition; however, respondent delivered inadequate drawings that failed to include structural details for use by a general contractor in the construction of respondent's designed structure. Although at homeowner's demand, respondent did revise the original drawings that were approved by the El Cerrito Building Official, general building contractors encountered insurmountable difficulties attempting to interpret respondent's drawings. And those contractors voiced concerns that respondent's revised drawings continued to reflect material deficiencies. Of particular concern according to the homeowner's attorney's complaint letter, was the absence in respondent's revised drawings for structural design or foundation detail to support a stairwell.

By a letter, dated December 8, 2006, Enforcement Analyst Donna Vaum made the agency's first contact with respondent regarding the complaint filed on behalf of the homeowner. Enforcement Analyst Vaum's letter asked respondent to provide a reply to homeowner's complaint. On January 24, 2007, respondent sent Enforcement Analyst his reply to homeowner's complaint. Respondent denied the allegations in the complaint and grounded his defense on the notion that the drawings and calculations were adequate because the plans were sufficient for permit approval. On January 29, 2007, respondent provided the Enforcement Unit with additional documents in support of his defense.

After the passage of nearly one year, Enforcement Analyst Vaum sent homeowner a letter, dated January 9, 2008, to advise him that his complaint remained under investigation.

³ Respondent did not establish by competent evidence that he sustained any injury because of the reasonable delay related to complainant's enforcement action. An insubstantial basis exists to support facts giving rise to application of the doctrine of laches in respondent's favor.

On September 12, 2008, homeowner sent a letter to the Enforcement Unit requesting to withdraw the complaint against respondent, which had been filed in November 2006 by homeowner's lawyer.

On March 3, 2009, the Enforcement Unit received from respondent a letter, dated February 28, 2009, expressing that the El Cerrito Building Official had signed a declaration noting the supposed adequacy of respondent's plans and calculations for homeowner's project.

On April 6, 2009, the matter of homeowner's complaint was reassigned to Enforcement Analyst Christine Doering. On June 3, 2009, Enforcement Analyst Doering sent respondent's drawings and calculations for homeowner's project to Mr. Tsuyoshi "Ty" Bunden, a licensed professional civil and structural engineer. The transmission of respondent's materials to Mr. Bunden was to enable the board's Enforcement Unit to acquire an independent, industry expert-quality, assessment of respondent's acts or omissions pertinent to homeowner's project.

On December 17, 2009, the board's enforcement analyst received from Mr. Bunden a report expressing conclusions regarding respondent's negligence and incompetence as an engineer with regard to homeowner's project. Based on the opinions expressed by Mr. Bunden regarding his findings and determinations pertinent to respondent's negligence and incompetence, the board's Enforcement Unit forwarded its investigative files and related documents to the Attorney General's Office during February 2011, which was approximately 14 months after issuance of the report by Mr. Bunden.

Enforcement Analyst Tiffany Criswell completed the investigative report that led to the Accusation being filed in December 2011 against respondent. Respondent timely filed a Notice of Defense so that the hearing in this matter ensued.

Respondent's Evidence at the Hearing

i. RESPONDENT'S EXPERT WITNESS: MR. LAWRENCE W. KEIL

32. At the hearing of this matter, respondent called Mr. Lawrence W. Keil⁴ as his expert witness.

⁴ Mr. Keil earned a Bachelor of Science degree in Civil Engineering from Purdue University (Indiana) in 1980. The board issued him civil engineering license number 36692 in 1980. And after he completed "Master Level courses in Structural Engineering" at California State University at Pomona in 1982, the board issued Mr. Keil structural engineer license number 2961. Currently and since 1989, Mr. Kiel's work has been as a self-employed forensic engineering consultant, which often involves his review of the engineering work of others.

33. Respondent hired Mr. Keil as his expert witness with regard to two issues. First, respondent sought Mr. Keil's opinion regarding the industry standard with respect to an civil engineer's use of, and reference to, the 1997 Uniform Building Code rather than the 2001 California Building Code in the instance when such engineer prepares drawings and calculations with applications, which are submitted to local governmental building permit offices for the construction of single family home additions. Second, respondent retained the service of Mr. Keil to give expert witness testimony regarding the industry standard of care affecting an engineer with regard to the extent or volume of the calculations that must be filed in support of drawings, and which must be presented to a municipality's building official in order to acquire approval to construct a structure based upon the engineer's submitted drawings.

34. Mr. Keil is very familiar with the 1997 Uniform Building Code. But he has only "looked at" the 2001 California Building Code insofar as reaching the determination that the CBC is essentially the same as the UBC with regard to "structural issues." Mr. Keil expressed a belief that the CBC is "word-for-word" the same as the UBC. Mr. Keil noted that he last closely examined the 2001 California Building Code in approximately 2002. And his current practice revolves around the International Building Code.

35. Mr. Keil's opinion was not convincing that, even though the CBC is a more recent code, the prevailing industry standard enables an engineer to readily cite to the UBC in drawings that are filed with California local building offices.

Mr. Keil was not persuasive when he asserted that the Accusation is "ridiculous" where complainant's pleading alleges that respondent was negligent when he exclusively made reference to the 1997 UBC versus the 2001 CBC at various pages in the drawings filed with the El Cerrito Building Official for homeowner's project.

36. Mr. Keil expressed an unpersuasive opinion that it is routine for an engineer to not provide a city's building official with calculations for many elements specified in drawings, which comprise the permit submittal package for a project. Mr. Keil's opinion was not credible in his attempt at refuting the allegations in the Accusation against respondent.

37. Since the date he was retained by respondent to give "expert witness testimony," Mr. Keil never read any of the 10 pages⁵ of provisions from the 2001 CBC as presented by complainant into the record of this proceeding.

38. Mr. Keil was remiss in providing testimonial evidence regarding important matters under the CBC, such as CBC section 1633.2.9, which is cited at

⁵ Complainant's Exhibit 19.

Accusation paragraph 12e. He rendered no testimony regarding CBC sections 1630.1 and 1630.1.1, which are referenced at Accusation paragraph 12i, or Table 16-B, which is noted at Accusation paragraph 13o.

39. In his capacity as an expert witness, Mr. Keil acknowledged that in reaching the opinions expressed by him that he had not reviewed all of the relevant documents, reports, and drawings that were presented during the hearing of this matter. And the majority of documents produced by respondent had never been seen by Mr. Keil before the time that he underwent cross-examination by complainant's counsel.

40. By his testimony, Mr. Keil seemingly rejects the idea that during the permit approval stage, calculations are essential to justify an engineer's drawings and designs. Also respondent's expert witness unpersuasively asserts that engineer's calculations are not critical components of the work product from which an authority can assess whether the engineer has adhered to the standards of the industry. And according to Mr. Keil, an engineer's calculations do not demonstrate competency in fulfilling an engineer's licensing duties, functions and responsibilities because calculations are only a "tool" to aid the engineer.

Mr. Keil acknowledged that he had not studied, reviewed or tested all calculations formulated or made by respondent for homeowner's project. Moreover, respondent's industry expert witness asserted that he only began work on this matter approximately one week before the date of his testimony. And, except for a single meeting with respondent over four hours, the time that Mr. Keil spent reviewing respondent's July 2002 calculations⁶ consisted of approximately three hours during the week before the date of his testimony. Hence, as of the date of his testimony, Mr. Keil had only spent approximately seven hours for his preparation to render testimony at the hearing of this matter.

Before the testified at the hearing, Mr. Keil had not "reanalyzed" the structure as depicted in respondent's drawings. Mr. Keil had not performed his own analysis of respondent's design features. Hence at the hearing, Mr. Keil uttered no opinion on the specifics of respondent's design. For example, Mr. Keil observed that certain drawings have call outs for the hold-downs for shear walls, but he affirmed that he had not reviewed the specifications for the shear walls or hold-downs for correctness.

And, Mr. Keil acknowledged that he did not engage in a "detailed review" of respondent's drawings and calculations for the design of homeowner's project.

41. Mr. Keil's opinions, which were advanced as a supposed basis to dismiss the entire Accusation against respondent, are rejected. Mr. Keil's testimony,

⁶ Complainant's Exhibit 21.

which attempts to exonerate respondent by opining respondent's work meets industry standards, is found to be unpersuasive.

ii. RESPONDENT'S PERCIPIENT WITNESS: MR. BRYAN C. FENTY

42. Respondent called to the hearing Mr. Bryan Campbell Fenty as a percipient⁷ witness.

43. Mr. Fenty is licensed neither as a civil engineer nor as a structural engineer.

Mr. Fenty is licensed by the California Contractors' State License Board as a general building contractor. He claims that he has been engaged in the construction industry for approximately 37 years. Over a period of 26 years, Mr. Fenty has been employed by various local governments in the areas of building inspection and construction plan review. And over ten years before the hearing of this matter, Mr. Fenty has been employed as a building official.

44. In 2002 when respondent prepared the drawings, designs and specifications for homeowner's project. Mr. Fenty was the Chief Building Official for the City of El Cerrito. He is now the Building Official in Benica, California.

45. Mr. Fenty unpersuasively testified that in 2002, respondent's drawings, which reflected a conventional design, appeared to show "sufficient detail" to construct homeowner's residence's additions. In his estimation, respondent's work product was adequate to gain approval of the Permit Set; and, therefore, respondent's work product was sufficient to enable satisfactory construction of homeowner's project according to respondent's drawings and the calculations⁸, dated November 8, 2002.

46. Mr. Fenty was unbelievable when he asserted at the hearing of this matter that respondent's Permit Set for homeowner's project was a "good" set of drawings and design details.

During the hearing, Mr. Fenty's testimony regarding his claimed review of respondent's drawings and design details for homeowner's project were neither credible nor persuasive.

⁷ Respondent, however, attempted to qualify Mr. Fenty as an industry expert witness; but rulings at the hearing disallowed Mr. Fenty being designated as an expert witness for the purpose of expressing opinions regarding respondent's negligence and incompetence, or lack thereof, in the context of the Accusation against respondent.

⁸ Complainant's Exhibit 21.

47. Mr. Fenty was neither credible nor compelling when he attempted at hearing to express opinions regarding respondent's lack of negligence or competency regarding aspects of engineering features in respondent's drawings and specifications.

48. Mr. Fenty's character for truthfulness was brought into question during cross-examination by complainant's counsel. In particular, there were several instances when respondent's percipient witness was evasive, unnecessarily combative, and non-responsive to questions posed by complainant's counsel.

49. Mr. Fenty was not credible when he asserted at the hearing of this matter that no general building contractor ever expressed having been frustrated or impaired in completing homeowner's project because of deficiencies, omissions, errors or absent design elements in respondent's drawings associated with the Permit Set approved by the El Cerrito Building Official's Office.

50. Mr. Fenty showed bias in favor of respondent by way of Mr. Fenty's efforts to disprove the allegations of respondent's negligence and incompetence regarding the Permit Set for homeowner's project as submitted in 2002. Mr. Fenty has a motive to support respondent so as to protect the reputation of the plan review process on his part as well as on the part of the El Cerrito Building Official office in order to avoid an appearance of ineptness, plan review neglect or unprofessionalism.

Respondent's Character Witnesses

51. Respondent called two character witnesses, who expressed positive and glowing testimony regarding respondent's commitment to his professional pursuits, public service contributions as a good citizen and knowledge as a civil engineer.

a. MR. MARK HOFFMAN

Mr. Mark Hoffman is employed by the Oakland City Fire Department (OFD) as the deputy fire chief for field operations. He has been employed by the OFD for approximately 33 years.

Mr. Hoffman came to know respondent through their mutual volunteer services with the Federal Emergency Management Agency (FEMA) Urban Search and Rescue Team's Task Force Four. Through FEMA, Mr. Hoffman has known respondent for more than 20 years. Respondent joined FEMA's Task Force Four as a volunteer "structural specialist," which is a position usually filled by a structural engineer. Mr. Hoffman and respondent acted as volunteer professionals during the Loma Pieta Earthquake in 1989, the World Trade Center incident in 2001 as well as the Hurricane Katrina disaster. As of the date of the hearing, respondent continued to be classified as a volunteer lead structural specialist for FEMA's Task Force Four.

Respondent has been a FEMA instructor for courses on the techniques used on search and rescue missions regarding building having questionable integrity or suspected dangers.

As the Team Lead Structural Specialist for Task Force Four, respondent has participated in writing lesson plans for engineers who are recent volunteers. Respondent has the responsibility to “vet” applicants who seek to join FEMA’s corps of volunteer engineers.

Mr. Hoffman has determined respondent to be a mature leader, who is a dependable and knowledgeable volunteer for FEMA.

On cross-examination, Mr. Hoffman explained his knowledge of the volunteer position with FEMA held by respondent as a Structural Specialist.

b. MR. JOSEPH LOUIS ORTIZ

Mr. Joseph Louis Ortiz is a structural engineer, who is employed by the City of San Francisco. Mr. Ortiz has a master’s degree in structural engineering and materials, and a bachelor’s degree in civil engineering.

Mr. Ortiz has known respondent since the summer of 2001. They met through FEMA’s Task Force Four.

In 2009, Mr. Ortiz hired respondent to render a professional opinion regarding structural aspects of houses that Mr. Ortiz considered purchasing. And during 2011, Mr. Ortiz hired respondent to provide an engineering survey of the existing structural conditions of a house that Mr. Ortiz planned to remodel. For the latter project, respondent prepared design drawings. In both matters, Mr. Ortiz observed that respondent rendered exemplary services as a professional civil engineer. And in particular, Mr. Ortiz found respondent’s drawings to be complete and accurate.

For the recent home remodel project, Mr. Ortiz hired respondent’s construction company to execute most of the construction work for the remodel project. Although Mr. Ortiz attended to the final stages of the remodel construction work, when he encountered challenging structural problems he consulted with respondent to reach a solution.

Over the approximate 12 years that Mr. Ortiz has known respondent, the witness never perceived respondent to be careless, negligent or incompetent as an engineer. Mr. Ortiz would prospectively hire respondent to perform services as a licensed engineer.

On cross-examination, Mr. Ortiz acknowledged that he did not know any of the particulars of the allegations that constitute complainant's Accusation against respondent.

Complainant's Expert Witness

52. Tsuyoshi Bunden, P.E., S.E., (Mr. Bunden or complainant's industry expert), appeared at the hearing to offer reliable and persuasive evidence. By his demeanor while testifying, his attitude towards the proceeding, his clear and unhesitating presentation of evidence as well as his solemn, sincere and conscientious attitude towards the proposed action against respondent, Mr. Bunden established himself to be a credible,⁹ exceedingly knowledgeable and trustworthy witness at the hearing of this matter. Over a course of eight days of hearing time, complainant's industry expert rendered consistent, erudite and thorough testimonial evidence. He readily acknowledged those few, minor matters when he misspoke or had made typographical errors in his December 2009 report.

53. Mr. Bunden holds licenses as a structural engineer and a civil engineer. The State of California issued him a civil engineer's license in 1981 and a structural engineer's license in 1991. Also Mr. Bunden has been licensed as a structural engineer by the State of Arizona since November 2005. And in November 2008, the State of Florida issued him a license as a "professional engineer."

In 1978, the University of California, Berkeley, awarded Mr. Bunden a Bachelor of Science degree in civil engineering. And in December 1981, he received a Master's degree from the University of Washington, Seattle, in Structural Engineering and Structural Mechanics.

Since 1993, Mr. Bunden has been the principal of his own company, called Narwhal Enterprises. The company engages in providing "full service structural engineering consulting" work. However, to the current date Mr. Bunden continues to design structures as a licensed engineer.

Complainant's industry expert, Mr. Bunden, was shown to be proficient in several areas, including designing new buildings and structures, retrofitting existing buildings, plan checking, structural investigative engineering, seismic risk analysis and evaluations, designing equipment bracing, and peer review consulting.

54. Mr. Bunden wrote the board's Enforcement Analyst Doering a technical report, dated December 14, 2009. Complainant's industry expert's report comprehensively described respondent's acts and omissions that indicate violations of

⁹ Government Code section 11425.50, subdivision (b), third sentence.

standards of practice for a professional engineer with regard to the preparation of calculations and drawings relating to homeowner's project.

55. After an exhaustive, comprehensive review of all the documents, including respondent's working files (drawings and calculations), Mr. Bunden issued his industry expert report, dated December 14, 2009. In the report, the industry expert expressed, in part:

[Respondent's] overall procedures and methodologies for the design of the referenced project were not complete and appear to be abbreviated, and there were errors and omissions in the calculations and in the project drawings.

Mr. Bunden observed that from his review of the contract with homeowner as well as respondent's drawings and calculations along with other pertinent documents, homeowner hired respondent as an engineer to design a second floor addition to an existing house as well as to design a new deck "in the back" of the residence.

Complainant's industry expert found that respondent's drawings and calculations reflected numerous errors. In Mr. Bunden's view certain calculations and drawings by respondent reflected errors on respondent's part that not only demonstrated negligence, but also revealed respondent's incompetence.

56. The industry expert's report along with the extensive testimony rendered by him at the hearing of this matter lead to the conclusion that clear and convincing evidence exists to sustain the allegations in complainant's Accusation against respondent. The factual bases for imposition of discipline against respondent's license are set forth below:

Factual Bases for Imposition of Discipline against Respondent's Civil Engineer License

i. MATTERS RAISED UNDER PARAGRAPH 12 OF THE ACCUSATION

NEGLIGENCE

57. Respondent's calculations for the Permit Set pertinent to the project, reflect a title page that references use of the 1997 Uniform Building Code. The title page should reference the 2001 California Building Code.

In particular, respondent's drawings for the Permit Set cite the 1997 Uniform Building Code (UBC) as the controlling authority for formulation of the details and particulars for the document that was presented to the El Cerrito Building Officials

for approval to build homeowner's project. Respondent's exclusive citation to the 1997 UBC is incorrect and negligent.

Under industry standards, the California Building Code (CBC) should have served as the referenced controlling authority for the details and particulars set out in respondent's drawings and calculations. The CBC was the code in effect at the time of respondent's design of homeowner's project.

On page one and page nine of the Permit Set, for which respondent procured approval from the El Cerrito Building Officials, the municipal agency's agents affixed a stamp that reads: "reviewed for compliance to CBC 2001." Furthermore, in a letter, dated January 29, 2003, from the Contra Costa County Building Inspection Department, the Supervising Structural Engineer stated that respondent's project work product was "reviewed for compliance with the 2001 CBC."

Respondent's reference to the 1997 UBC indicates the likelihood that he was designing to a "lower standard" than expected under the CBC. Respondent is incorrect when he asserts that he was justified in making reference to, and using, the 1997 UBC, as opposed to the 2001 CBC regarding the preparation of calculations and drawing for homeowner's project. Respondent's omission reflects negligence.

In addition to the foregoing at the Permit Set's sheet 3¹⁰, on the far left column, two references appear to the "1994 UBC." The proper industry standard of care dictates that consistency should be maintained throughout the drawings. Although respondent erred when he made reference to the 1997 UBC as the controlling authority for the Permit Set, his citation to the 1994 UBC shows a lack of due care on respondent's part that breaches industry standards.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12a" to the Accusation.

58. On the "lateral loads" page of the Permit Set, respondent omitted the calculations for the wind force in the east-west direction.

The load or "force" on the page titled "Lateral Forces" is not correctly defined as impacting the roof element and upper floor element to homeowner's project. Contrary to respondent's view that only the most exposed surface for the structure, namely the "north-south" direction, need be depicted or shown, the industry standard requires that calculations in all directions must be shown in the engineer's design. In this matter, the east-west direction is as much a principal direction as the north-south direction, which is partially addressed by respondent's drawings and calculations. Although the calculations cite a formula for wind in the north-south direction,

¹⁰ Complainant's Exhibit 30, Sheet 3.

respondent's omission of the wind force load in the east-west direction on the lateral loads page indicates that respondent's work product falls below industry standards.

Respondent is not correct when he asserts that it is "unnecessary to calculate the east-west wind force because it is so much smaller than the north-south wind force and it was clear that seismic forces would control." The Permit Set's Lateral Forces page must reflect the calculations omitted by respondent because the industry standard of care dictates that calculations must show a comprehensive and complete presentation of a buildings loads. Calculations are representative of a design engineer's recognition of the industry requirement for a wind analysis for each exposed portion of a structure. Respondent's omissions reflect negligence.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12b" to the Accusation.

59. On the "seismic resistance" page, the design of the upper floor shear wall does not satisfy the special load combination required by the standard of care. Respondent also failed to provide anchorage design for the shear wall indicating the size and spacing of anchor bolts and details of the holddowns including embedment into the foundation to resist uplift.

The 2001 CBC's section 1612.4 operates as a directive to any design engineer who must consider the special load combination when there are unusual conditions in the building. A schematic representation¹¹ makes plain this topic. Because of the connection between the existing structure and respondent's proposed new addition, an engineer's design must recognize the necessity for an allowance for stress design and strength design. Respondent's calculations on the Permit Set's Seismic Resistance page¹² illustrates respondent's neglect. Respondent's use of "4130" as a numerator in his calculations for the upper floor leads to an incorrect result for the special load combination insofar as rods are used for anchorage. Respondent's "overturning calculation" is erroneous because the basic number in the formula was required to be "factored up" in order to take into account the connection issue of the anchorage rods and their depth into embedment. Respondent's calculations fail to meet the requirement of the 2001 CBC's section 1612.4.

Respondent is not correct when he argues that CBC section 1612.4 is referred to in section UBC 1612.1, which applies section UBC 1630.8.21, where there is a "plan discontinuity" or "vertical discontinuity" greater than the length of the shear wall. Because neither concept is at play in this instance, CBC section 1612.4 does not apply to any of the shear walls designed in respondent's drawings for homeowner's

¹¹ Complainant's exhibit 30.

¹² Complainant's exhibit 21, page 21.

project. The standard of care dictates that an engineer must design above a superficial reading of section 1612.4. UBC section 1612.1¹³ does not change the requirement that respondent, as a licensed civil engineer, must provide adequate drawings and calculations according to industry standards.

The concept of “redundancy” in the design of walls is important on this topic. Respondent’s deficient design neglects the concept of redundancy as an engineering principle, which is devised to assure the construction of a sturdy, safe structure. On the Seismic Resistance page, respondent did not take into account the higher level of capacity as expected in the CBC regarding resisting load levels

A shear wall, in its capacity as a structural element that exists as a vertical wall panel, is intended to resist in-plane lateral loads. A shear wall is an important aspect of the lateral load resistance system in a structure.

Respondent’s design of the shear wall for the upper floor falls below the standard of care expected of a civil engineer. Respondent’s inexact calculations and his omissions undermine a critical life-safety issue for the construction of the home addition when using respondent’s design and calculations. Respondent’s omission reflects negligence.

The essential aspect of anchorage bolts is a feature that is measured against principles of load paths. On that topic, respondent’s anchorage design is inexact and omitted critical features. Overall respondent only designed one wall and that design is unacceptable. A drawing¹⁴ illustrates compelling evidence on this topic. Respondent’s drawing for anchorage design misses important details as there is nothing in the drawing to justify an engineer’s representation of anchorage of the first floor wall to the foundation or anchorage between the first floor wall and the second floor. Of important note is that no builder could use the drawing to construct a safe building. Accordingly, respondent’s anchorage design on the Seismic Resistance page falls below the industry standard in the drawings and calculations for homeowner’s project.

Respondent is erroneous that he only needed to design the “worse case” shear wall, which was purportedly at the front wall for the residence. Respondent’s notations¹⁵ are incorrect regarding anchor bolts. Although respondent’s recently

¹³ UBC section 1612.1 provides: “General. Buildings and other structures and all portions thereof shall be designed to resist the load combinations specified in Section 1612.2 or 1612.3, and where required by Chapter 16, Division IV, or Chapters 18 through 23, the special seismic load combinations of Section 1612.4.”

¹⁴ Exhibit 20-B, sheet 14.

¹⁵ Complainant’s exhibit 23, attachment 5, pages 6 through 12.

presented notations attempt to show that he had designed an appropriate shear wall, the drawings produced by respondent in September 2012 were after-the-fact justifications for the original inadequate drawings and calculations, which had been incorrectly included in the Permit Set's calculations used in 2002/2003. Also respondent's newly presented documents misuse hold-down calculations. Furthermore, respondent is incorrect with his use of National Design Standards (NDS) Commentary section 8.2.3 (Wood-to-Concrete Connections) because respondent's proposed design plan was opposite to the single shear connection design as contemplated in section 8.2.3 of the NDS Commentary.

On this aspect of respondent's drawings, an upper wall is off-set relative to a lower wall. The special load combination principle tells the engineer to increase details at that particular wall. Respondent's avoidance of the special load combination principle mistakenly relies upon 2001 CBC 1630.8.2 along with Table 16L and Table 16M, which set out principles espousing that only the irregularities mentioned in those interacted provisions need be accounted for in an engineer's design documents. The interaction of 2001 CBC sections 101.3, 101.9.1, and 1629.5.3 supersedes the general provisions relied upon by respondent. In particular, 2001 CBC section 1629.5.3¹⁶ provides the specific, definitive statement regarding an engineer's obligation towards an irregular structure, such as the one that might result from the proposed second-story addition to homeowner's residence.

Respondent's Permit Set fails to account for the special load combination for the irregular wall in his design.

Respondent's omission reflects negligence on the Permit Set's "seismic resistance" page because the design of the upper floor shear wall does not satisfy the special load combination required by the industry standard of care. And respondent fails to provide correct anchorage design for the shear wall indicating the size and spacing of anchor bolts, and details of the hold downs including embedment into the foundation to resist uplift, and thus reflects negligence.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12c" to the Accusation.

¹⁶ 2001 CBC provides: "Irregular structures have significant physical discontinuities in configuration or in their lateral-force-resisting systems. Irregular features include . . . those described in Tables 16-L and 16M. [¶] 2. Structures having any of the features listed in Table 16-L shall be designated as if having a vertical irregularity. . . . [¶] 3. Structures having any of the features listed in Table 16-M shall be designated as having a plan irregularity.

60. Respondent omitted the lateral design for all shear walls located on the north, south and west sides of the building. Respondent essentially designed only one shear wall for the entire building as set out in the calculations for the Permit Set.

Within respondent's calculations¹⁷ there exists a representation for the design of the proposed structure's shear walls only for the east side of the building. Nowhere in the Permit Set does a design appear for the other three walls. An established principle of design requires an engineer's design to account for all shear walls. According to respondent's argument since there are only perimeter shear walls, no shear wall details needed be specified in his drawings. But respondent's use of a "worse case" theory for seismic resistance design is inadequate. Respondent's short-cut approach for his shear wall design, under his worse case theory, shows a departure from standard industry practices expected of an engineer. The industry standard of practice requires an engineer to study each principal direction of forces, independent of each other, upon the structure. Also the industry standards require an engineer to examine all lines of seismic resistance in each principal direction so as to evaluate the actual forces that may be imparted onto each wall. Respondent's approach is below industry standards regarding the east wall in the application of design principles as a means to forego production of design documents for the other three walls

On the "Upper Floor Framing Plan" sheet, respondent's drawings depict a single nailing pattern for the shear wall's construction. Respondent's Permit Set's key¹⁸ notes indicate that the subject engineer prescribes a "heavily loading" scheme in the nailing pattern for all shear walls without respondent having made an attempt to evaluate the actual demands on all sides of the building. The approach taken by respondent manifests as a disservice to homeowner by being "extremely conservative" with extensive nailing when such technique may not have been necessary had proper calculations been effected by respondent. Respondent's scheme calls for extra labor and extra materials that would have imposed unnecessary extra costs to homeowner.

Respondent's drawings omit the lateral designs for the shear walls on the north, south and west sides of the building. Such omission reflects negligence because respondent's drawings lack justification for the structural system, that is the information, which should have been presented on the drawings, was missing.

Respondent's arguments and evidence are not persuasive that "the designs for the other shear walls were not shown because the stresses were lower than for the

¹⁷ Complainant's Exhibit 21, page 21.

¹⁸ Complainant's Exhibit 20, sheet 11, upper right hand margin's two "Key" notes set out, in part, "near shear wall with joist perpendicular to wall. One-half inch structural plywood with 10 penny nails at two inches apart at edges and at six inches in field."

worse case wall and [respondent's office] intended to use the same nailing, size and spacing, anyway.”

Respondent's omission of lateral design for all shear walls located on the north, south and west sides of the building constitutes negligence.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph “12d” to the Accusation.

61. Respondent omitted the design for the second floor and roof horizontal diaphragms,¹⁹ which is required by California Building Code section 1633.2.9.²⁰

Respondent fails to employ the long-standing formula used for a multiple story building specified under CBC section 1633.2.9. First, in respondent's plans, the design for the diaphragm is omitted completely. Respondent neglects the use of the subject formula in determining the demands on the structure. And respondent's design fails to provide for a “capacity,” that is the structural element injected to resist the demand, which is the thickness of the diaphragm and the nailing onto the diaphragm of the structure system. Accordingly, respondent's drawings and calculations omit the whole process for construction of diaphragms.

Also, the second diaphragm, namely the roof diaphragm, is omitted in respondent's design. This topic represents another example of respondent omitting critical elements in the design. This omission shows respondent's neglect in accounting for load path aspects for homeowner's proposed structure.

The weight of competent evidence discredits respondent's arguments that without the selection of the truss manufacturer and specific knowledge of the specification of the manufacturer's end project, respondent's efforts to have created design details at that point in the process would have been a waste of the consumer's money. Contrary to respondent's contentions, the industry standard requires²¹ that,

¹⁹ A diaphragm pertains to the project's second floor roof system's subfloor, which is a structural element and is considered a horizontal member that is usually covered by a floor over-layment or finished floor.

²⁰ The 2001 CBC section 1633.2.9, subparagraph 2, reads, in part: “Floor and roof diaphragms shall be designed to resist the forces determined in accordance with [the formula shown at diagram (33-1).]”

²¹ In addition, homeowner compellingly testified that his two contractors each informed homeowner that respondent refused, or neglectfully avoided, to communicate with different truss manufacturers when those companies' agents voiced problems with their respective interpretation of respondent's drawings that impacted the structure's upper level, including the stair well's terminating point.

(i) respondent cannot omit elemental structural design features upon which the truss system would be installed, and (ii) the truss manufacturer's information, within the final design set, is not so comprehensive that respondent should have produced the inordinately substandard design for the structure's upper level, which is the focus of the accusation's allegation of negligence.

The evidence does not support respondent's claim that he needed to first secure the truss manufacturer's truss design before diaphragms could be designed. Respondent's calculations²² show that respondent initially communicated to the truss manufacturer certain specifications. And within respondent's calculations, there is a sheet, dated July 16, 2002, prepared by Simon Evans Truss, that establishes respondent's communications with that truss manufacturer several months before respondent's presentation to the El Cerrito Building Official of homeowner's Permit Set drawings. Hence, with that information (namely spacing and the preliminary truss layout), respondent had sufficient data to create a design to include inclusion of the truss into the Permit Set drawings. There was not much more that a truss manufacturer could have presented for which respondent was obligated to await before creating an acceptable design.

Neglect on respondent's part regarding the Permit Set is shown with regard to: (i) the horizontal sheathing and (ii) the nailing of the sheathing to the structural system, with regard to roof horizontal diaphragms.

On respondent's drawing, a note for the "new lower floor plan" reads: "New Stairs: 17 risers -7.2 inches plus/minus rise; 16 treads -10.5 inches plus/minus. Verify in field." That detail gives the location of the beginning of the stairwell, the engineer has a "good idea" where the opening must be in order to accommodate the new stairwell opening at the second floor. That opening is essentially a hole in the diaphragm, which must be strengthened through proper design elements. On respondent's newly produced calculations²³ for diaphragms, respondent fails to account for the stairwell opening through the diaphragm, and thus he does not account for the resultant weakening caused by the opening. The calculations only ask for consideration of the shear forces in a front-to-back direction. Respondent's calculation is not correct as set out on the page titled "diaphragms."

As to the diaphragms, respondent possessed ample information to have properly designed those elements. Respondent is negligent in the omission of the design of the second floor and roof horizontal diaphragms.

²² Complainant's Exhibit 21, page 03. "Roof trusses 16 inches on center" and "floor trusses 16 inches on center" are respondent's notes.

²³ Complainant's Exhibit 23, attachment 5, page 019.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12e" to the Accusation.

62. Respondent omitted the design of the second floor and roof horizontal diaphragm chords²⁴ and drag²⁵ members.

Chords and drag members are integral components of a floor diaphragm. The industry standard of practice requires an engineer's design to consider the means by which forces are collected and distributed to the shear walls. The chords and drag members are part of the load path system that distributes the forces.

Respondent's calculations²⁶ and Permit Set drawings²⁷ lack indication for the diaphragm chords and drag members.

Respondent is negligence by way of the omission of the design of the second floor and roof horizontal diaphragm chords and drag members. Respondent's failure to present the detailed information shows that the design is not complete in accordance with the California Building Code. And the minimal notes on the drawings have no justification that can be supported in respondent's calculations for chords and drag members.

²⁴ Chords represent structural boundary elements around the edge of a diaphragm. In the instance of respondent's drawing, a diaphragm is analogous to a beam, and especially an I-beam. The top and bottom of the analogous I-beam represent the chords, which reflect tension capacity or resistance. A chord consists of the wood elements, including the top plates. Chords must be designed to resist certain tension forces. The chords and drag members are parts of the diaphragm.

²⁵ Drag members are similar to chords; but, these structural members may or may not exist around the perimeter of the building. They are associated with shear walls so that a design must reflect the interface between the members. The drag member collects loads from one end of a building into an area design to take the force to the shear wall. Complainant's Exhibit 32 represents the operation of a drag member.

²⁶ Complainant's Exhibit 21, page 21.

²⁷ Complainant's Exhibit 20, sheet 11. Although respondent's subject drawing attempts to show a chords and drag member through a note that reads "strap new top plates to beam at this location with Simpson MSTC 40 same other side of building." that note is inadequate because no justification for the same exists in the calculations.

Respondent's assertions²⁸ are not correct that, "[t]hese calculations were not omitted just not presented within [respondent's] permit calculation summary. See attached documents for chord ties and drag strut design." Respondent's recently produced calculations, which were submitted in September 2012, are themselves faulty with regard to respondent's depiction²⁹ of "chord ties." Respondent did not provide capacity calculations for chord members. Hence, the splice features between the chords and drags were not prescribed in the calculations.

Respondent's recent calculations are erroneous with regard to his calculations for the provision of 10-penny nails at 2 inches as shown on the shear wall design page. Respondent's design contemplated a double-sheeted wall, but the calculations only reflect a one-sided wall. The drawings also fail to denote that chord ties with regard to the use of 10-penny nails "on center." The calculations is deficient as it fails to account for forces at the splice, and the drag load is not set forth on the subject calculations page.

The industry standard of care requires an engineer to provide calculations together with the drawing set. The principle contemplates that thorough calculations provide justification for the drawing set. Respondent's calculations omit the design for the chords and drag members for the second floor and horizontal diaphragm, and thus show negligence.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12f" to the Accusation.

63. Respondent omitted the foundation design for all the new footings shown on Sheet 9³⁰ of the drawings in the Permit Set.

The calculations fail to note the required specifications for isolated footings. Respondent's omission ran counter to the principle that an engineer must show expertise in "defining the problem." The calculations are intended to provide justification for the drawings; but, respondent failed in this regard.

In his recently filed written statements to the board's Enforcement Unit, respondent contends that the foundation design had not been omitted, rather the design's calculations "were just not presented as part of the permit submittal set of documents for approvals." Respondent advanced that he probed the soil and found "very firm sandstone" at a depth of approximately 18 inches to 24 inches below grade. In this particular matter, respondent contends that he acted not only as the

²⁸ Complainant's Exhibit 22, page 5.

²⁹ Complainant's Exhibit 23, attachment 8, pages 20 and 21.

³⁰ Complainant's Exhibit 20, page 9.

engineer of record but also he served as a geotechnical professional, who provided an analysis for the soil bearing pressure. And respondent argues that his principal place of business, is located 100 yards from homeowner's project so that he was "quite comfortable with the results of the soil probes and the values that [his office] used for the allowable soil pressure. But, despite respondent's professed understanding of the soil condition in the proximity of his office, respondent is making a faulty assumption regarding the ground under and around homeowner's project. Soil conditions can dramatically change within a short distance and "variability of soils" is so notorious that respondent is assuming risks that homeowner may not have desired.

The absence of calculations for placement of the various isolated footings suggests respondent's lack of due diligence for the footings' justification.

Respondent's drawings omit the foundation design for all the new footings because his work product lacks proper justification for the drawings. His drawings depict the isolated footings on Sheet 9 of the Permit Set, which is misleading.

Respondent is negligent in the omission of the design of the foundation design of all the new footings shown on Sheet 9 of the drawings in the Permit Set.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12g" to the Accusation.

64. Respondent failed to include a complete design of the exterior elevated deck located at the west end of the building, including calculations for the foundation, framing, and the vertical and lateral load-resisting systems.

Respondent's design in the Permit Set for homeowner's project includes a deck that extended the full width of the building. Respondent's design specifies that the deck is a free-standing, self-supporting structure that is to have its own separate load path, and which needs its own bracing system, diaphragm and foundation.

Respondent's drawings of the framing for the second story portion of the building sets out a well-defined gap relative to the deck and the exterior wall of the new structure. The building, therefore, affords the deck no lateral force resistance. Accordingly, the deck is required to be equipped with its independent load bearing system.

In respondent's Permit Set there is no information in the calculation set for the guardrail and other components for the deck.

Although respondent did provide information³¹ in the drawings regarding the design for the deck, the drawings are nevertheless incomplete and misleading. For

³¹ Complainant's Exhibit 20, page 15.

example, the Permit Set's drawings indicate diagonal bracing notations,³² on the "North Shear wall Elevations" page, but the drawing design is incomplete. First, the location where the diagonal braces intersect or connect to the column is not specified. And the length of each brace is unknown. Hence, if the placement of the braces, whose dimensions are unknown, is not precisely prescribed through an exact drawing and supported by calculations, a contractor might affix the braces in a manner as to over-stress the columns by imparting undesired lateral loads. And, those missing components as well as the lack of specifics for the placement of the bolts render the design defective.

Respondent's design for the deck inexactly "calls out" the bracing members' location, length and bolting systems.

In the original calculations from 2003, respondent did not state the force resistance for the deck's guardrail. In the recently presented 2012 calculations, respondent fails to adequately treat the deck as a separate structure that needed to have an independent load bearing system.

Respondent's argument is not correct that "the actual numerical hand calculations for the deck were not . . . presented within [respondent's] calculation summary in an effort to only provide the documents that the contract required in order to obtain a permit [¶] . . . [A]n experienced plan checker would be able to examine the drawings and be able to determine 'by inspection' the adequacy of [the] deck as designed and shown on the drawings." Rather, thorough calculations are necessary to determine the force resisting qualities for the deck in its capacity as an independent structure.

2001 California Building Code section 106.3.2³³ and section 106.3.3³⁴ are important on this topic. Under the guidance of the CBC provisions, respondent has

³² One note reads: "see I.E.C. for bracing -typical." Another note reads: "[Two inches by six inches] PTF [pressure treated Fir wood] X [diagonal] braces with five-eighths round machine bolts, top and bottom."

³³ The 2001 California Building Code section 106.3.2 provides, in pertinent part: "**Submittal documents.** Plans, specifications, engineering calculations, diagrams, soil investigation reports, special inspection and structural observation programs and other data shall constitute the submittal documents and shall be submitted in one or more sets with each application for a permit." (Bold emphasis in text.)

³⁴ The 2001 California Building Code section 106.3.3 sets forth, in part: "**Information on plans and specifications.** Plans and specifications shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the

no defense in his inadequate provision of design features for the deck at homeowner's project. The subject Code provisions dictate a standard requiring an engineer to set out sufficient information to justify the design for the deck. An engineer's reliance upon an anticipated review and comment from a plan checker after submission of inadequately furnished calculations is not acceptable professional practice by a civil engineer. Before an engineer's submission of plans to a plan checker, the California Building Code's minimum requirements must be satisfied by an engineer, whose paramount directive must be guided by life-safety concerns.

Respondent is negligence when the Permit Set's calculations fail to include a complete design of the exterior elevated deck located at the west end of the building, including calculations for the foundation, framing, and the vertical and lateral load-resisting systems.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12h" to the Accusation.

65. Respondent failed to correctly determine and apply the seismic pho factor³⁵ as defined by California Building Code sections 1630.1 and 1630.1.1, or to submit calculations for the seismic pho factor to the City with his drawings and calculations.

2001 CBC sections 1630.1 and 1630.1.1 prescribe directives for earthquake loads and modeling requirements, as well as set out detailed formulas for ascertaining earthquake loads. These provisions afford guidance to engineers in determining "pho."

Homeowner's project exists as a shear-wall oriented building for which pho must be used. An engineer must provide an evaluation under pho factor considerations in design and plan submissions to a municipality's building officials.

Respondent breaches the industry standard of care by failing to submit to the city officials the calculations for the seismic pho factor. Under CBC section

location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations." (Bold emphasis in text.)

³⁵ The seismic pho factor is an indication of redundancy in the structure. Using complainant's exhibit 30, the industry expert showed that the pho factor pertains to consideration of the type of redundancy in lateral load resistance systems. The pho factor must be employed where, as in this matter, there is only a single shear wall provided in the drawings for a wall. The concept is underscored by questions regarding the possible failure of a wall due to seismic forces.

1630.1.1, very great significant must attach to the Code's guidance: "[t]he maximum element-story shear ratio r_{max} is defined as the largest of the element story shear ratios, r_i , which occurs in any of the story levels at or below *the two-thirds height level of the building.*" (Emphasis added in accordance with complainant's industry expert's testimony.)

With reference to the design for the lower floor on the east side of the building as shown in respondent's drawing, a page³⁶ filled with numerals and formulas, which partially constitutes respondent's recently furnished (September 2012) calculations, is replete with errors. The correct pho factor tells an engineer to bump up the force levels so that the shear paneling, including the nailing pattern, can be designed for a higher lateral force load.

Also as to the Permit Set's Seismic Resistance page, respondent's calculations, whether in the original 2002 version or in the more recent September 2012 presentations, are not "well organized." Among other things, the calculations lack a table of contents or other device to enable a plan reviewer to extract important information such as the pho factor.

And a more egregious matter on this topic is that the original Calculations Sheet for the Permit Set, as presented to the El Cerrito Building Officials, put forward no calculations for the pho factor. Further the recent calculations, which were sent by respondent in September 2012, are "off" by a factor of nearly 40 percent. Hence, respondent's calculations represent an under-designed building, which is a serious life/safety issue.

Due to the higher forces for the lower floor on the east side that necessitates the correct recognition for the pho factor, the elements of the wall (plywood sheeting, the thickness of the plywood, the anchorage and its attachment to the foundation, the hold-downs that resist the overturn of a structure) must be analyzed as being affected by the known loads upon a structure. Respondent's inexact calculations lead to an overstressed building. Based on respondent's incorrect design and inexact calculations, there is a 113 percent overstress upon the studied wall. That overstress raises a "collapse hazard." A studious review of respondent's design prompts a competent engineer to be "very disturbed by what [respondent] has done." Respondent's errors result from his failure to consider the pho factor in the original calculations.

The newly produced calculations, as presented in September 2012, reveal respondent's failed attempt to reduce the actual forces upon the structure before application of the pho factor. When one compares respondent's calculations page for

³⁶ Complainant's Exhibit 23, tab 11, page 33.

“dead load” (weights for elements within the building)³⁷ with respondent’s “Lateral Forces” page³⁸, it is apparent that respondent consciously reduced forces upon the proposed structure. Respondent’s egregious error falsely reduces the building weight in order to fit the design into a workable pho factor. This matter is very serious in light of the credible, forceful and persuasive testimony by complainant’s industry expert.

On another of respondent’s calculations page³⁹ titled “Shearwall Design”, respondent’s “red mark revisions” reflect significant errors. There is no justification for respondent’s use of “one” as the pho factor on the page. And among other things, respondent incorrectly defines the wall height at eight feet, when the correct wall dimension should have been 10 feet high. Respondent’s grave errors reflect a lack of knowledge as to the proper use of the pho factor and its precise application. These grave errors, therefore, reveal respondent’s incompetence as a civil engineer.

Respondent’s arguments⁴⁰ are not correct that “shortly prior to submittal for permit the windows at the upper story were changed [E]ven when the pho factor is used, all of the design drawings and details would remain unchanged from what [respondent] showed on [his] approved drawings” Respondent’s changes to the subject side of the building only affect the upper floor of the structure in the way of shifting windows closer together. However, seismic occurrences generally affect the lower levels of buildings; hence, the pho factor is concerned with the lower level of a structure. Respondent’s changes to the project’s design drawings,⁴¹ which show changes in design, have little material impact on lateral force resistance design for the shear wall for which pho factor computations are necessary. The weight of the evidence establishes as false respondent’s claim that “all of the details shown in [respondent’s drawings and calculations] would comply with the . . . values using the pho factor calculations.” Rather, the length of the wall is immaterial to pho factor calculations.

Respondent is negligent when he failed to correctly determine and apply the seismic pho factor as defined by California Building Code sections 1630.1 and 1630.1.1, and to submit calculations for the seismic pho factor to the City with his drawings and calculations.

³⁷ Complainant’s Exhibit 21, page 3.

³⁸ Complainant’s Exhibit 23, tab 11, page 34.

³⁹ Complainant’s Exhibit 23, tab 11, page 30.

⁴⁰ Complainant’s Exhibit 22, page 7.

⁴¹ Complainant’s Exhibit 23, tab 19, pages 58 and 59.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12i" to the Accusation.

And as to the Accusation's paragraph 12i, complainant's proof reveals not only respondent's negligence, but also his incompetence.

66. Respondent omitted the roof framing design for connecting the breezeway between the existing garage and the main building as shown on Sheet 5 of the drawings in the Permit Set.

The framing system for the breezeway, which is part of the building, must have design features that describe the physical attachment to the existing building. Respondent fails to provide a notation for use by the building contractor for prospective construction of an attachment between the sections. The breezeway, moreover, is omitted from respondent's framing plan's calculations for the project.

Respondent's argument is not correct that he had to wait for the complete demolition of a portion of the house before respondent could apply engineering calculations upon the problems associated with the breezeway connections. Rather, the standard of care requires the engineer to show that the breezeway must be addressed in the construction phase. Respondent could have drawn a reference or made a note on the drawings to alert others to the attachment problem. If an engineer is unclear regarding framing for the breezeway, the engineer could create a note on the drawing with instructive language, such as "verify in field." However on this topic, respondent provides nothing in the way of instructions in the Permit Set.

The industry practice does not support respondent's ill-conceived argument that "the building department understood that the actual framing design drawings, details and calculations for both the floor and roof area would be coming when the truss manufacturer's engineered working drawings and specifications were submitted for approval by [respondent] as engineer of record . . . for use on [homeowner's] project." The truss manufacturer's drawings posed no barrier to a diligent engineer making appropriate notes on the drawings for the framing design of the breezeway connection.

Respondent argument is not correct that "nothing would have changed in the plans and specifications presented by [respondent] . . ." To the contrary, had respondent provided framing details on the drawing for the breezeway connection such engineering detail would have specified a required detail for the chimney structure, which respondent also omitted from the Permit Set.

Respondent is negligent in a broader sense because his drawings and calculations for homeowner's project ignored the important area of framing and attachment between the breezeway and the structure. And in particular, respondent is

negligent when his drawings omitted the roof framing design for connecting the breezeway between the existing garage and the main building as shown on Sheet 5 of the drawings in the Permit Set.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12j" to the Accusation.

67. Respondent omitted connection details and calculations for the design of the new chimney and the chimney attachment to the structure.

Respondent's drawings lack particulars regarding the chimney's overall geometry, attachment details, the actual configuration for nailing, and the size of the chimney. An engineer is expected to set out such details in drawings that are presented to a city's building officials for approval to begin construction.

The contemplated project includes an additional floor that intrudes into the space occupied by an existing chimney; but, the drawings fail to express that either all or part of the existing chimney would be demolished. If part of the plan's design is to allow part of the chimney to remain, respondent's drawings do not indicate the level of the existing chimney that will remain. And if the entire chimney is to be removed, respondent's design does not address the need for a new foundation to accommodate a newly constructed chimney.

Respondent's permit set for homeowner's project provides nothing in the way of details when known fire hazards exist with all chimneys. Respondent's drawings set forth vague outlines and bare representations in the drawings; but, those images lack adequate engineering details. And there are no calculations for the chimney connections relative to the proposed new house addition. And of great importance, respondent's Permit Set does not even tell a contractor about the materials to be used for construction of the chimney and its attachment to the structure.

With regard to providing attachment details, the industry standard of care requires the provision of a level of information to permit the construction of the fixed chimney in relationship with the structure.

Respondent's permit set neglects the "Special Construction"⁴² principles in 2001 CBC's Chapter 31, which pertains to chimneys.

Respondent's repeated arguments did not embrace industry standards that the omission of the chimney connection "was done purposefully because [drawings]

⁴² Complainant's Exhibit 65. In particular, 2001 CBC sections 3102.3.1 (Chimney Support), 3102.3.2 (Construction), 3102.2.3 (Clearance), and 3102.3.6 (Height and termination).

would depend on how the truss manufacturer would want to do it with their particular system None of this could be accomplished without the selection of the truss manufacturer having been made.” A practicing engineer must be committed to advance the project. In this instance, respondent could have generated a straight-forward design that could have interfaced with whatever truss design might be produced by the truss manufacturer. Respondent fell below the standard of care in meeting the principle that an engineer defines the problem and works accordingly.

Detailed documents⁴³ from truss manufacturers highlight respondent’s neglect. Moreover, an engineer receives little job-specific information from a truss manufacturer so as to limit an engineer’s ability to make appropriate entries regarding the features of a chimney and its attachment to the proposed building. Contrary to respondent’s argument, an engineer actually should provide a truss manufacturer with significant details, layouts and parameters for creation of a truss that fits within the engineer’s design.

In this regard, respondent’s negligence is shown through his use of faulty logic that he could not adequately define the chimney attachments because the truss manufacturer had to first define the truss, along with “sizing” the wood members for the truss, and do the work for respondent. Respondent’s system of excuses are without merit when he asserts that the truss manufacturer first had to design the truss system before respondent could adequately create a design drawing and craft calculations for the chimney attachment and new chimney.

When respondent fails to provide information to truss manufacturer and then he claims that because the truss manufacturer did do its work respondent could not perform the design engineering work, respondent is not acting within the parameters of the standard of care for licensed civil engineers.

Respondent is negligent when his drawings omitted connection details and calculations for the design of the new chimney, and the chimney attachment, to the structure.

Hence, complainant’s more credible and persuasive evidence establishes the allegation at paragraph “12k” to the Accusation.

68. Respondent omitted the design of the second floor framing around the stair opening.

Respondent’s Permit Set’s drawing⁴⁴ titled “Upper Floor Framing Plan” shows that respondent provides no details for beams, joists or other structural member

⁴³ Complainant’s Exhibit 27 and Exhibit 28.

⁴⁴ Complainant’s Exhibit 20, sheet 11.

around the perimeter for the opening intended for the stairwell. And there are no indications on the drawing for walls, columns or posts that might be associated with the stairway. The standard of care requires, at least, an engineer to provide a basic outline of the structural members around an opening for a stairwell when those members are essential to support the floor.

Respondent's file document⁴⁵, which is titled "Proposed Upper Floor Framing Plan," demonstrates respondent's deficient design. That document, dated "7/9/02," shows that respondent knew that he had responsibility for framing layout design for the stairwell into the upper floor-framing plan. That document is an acknowledgement on respondent's part that he had the prerogative to give key instruction to the truss manufacturer as to the scope for the truss roof elements.

Had respondent correctly designed framing details around the opening for the stairwell, those features would have appeared on Sheet 11 of respondent's Permit Set drawings.

Respondent's argument is not correct that the framing design for the stairwell opening "was not omitted just not presented with the permit submittal documents [because] no destructive testing was allowed [and] . . . [respondent was] unsure of whether there was footing adjacent to the proposed stairway opening or not The walls adjacent to the stairwell were to have provided supported if the foundation/slab was found to be adequate when construction began and we had no reason to believe that it wasn't adequate" The design of the opening had nothing to do with the foundation because the stairwell opening should be considered as a self-supporting element. Hence, destructive testing is not necessary to prepare engineering drawings or calculations for the framing of the stairwell opening onto the second floor level.

Respondent confuses the Accusation's allegation regarding the framing for the opening by erroneously interjecting under this topic the matter of the design for the foundation support to the stair system itself. Proper engineering of the opening for the stairwell would have had the opening's weight transferred to the grade beams that are depicted as being placed around the exterior of the building. Thereby the force created by the opening would be directed downward towards the structure's foundation.

Respondent's drawings,⁴⁶ which supposedly show the framing for the opening, are inexact and misleading as a complete design for the stairwell opening. Respondent's drawings reflect depictions of wood members that do not correctly indicate the size of the beams, the depth of the beams, the spans for the beams, how

⁴⁵ Complainant's Exhibit 23, tab 13, page 42.

⁴⁶ Complainant's Exhibit 22, tab 12, pages 35 and 36.

the beams might be supported by cross members on the north-south side of the buildings, or the attachment for the beams.

Respondent is negligent when his drawings omitted the design of the second floor framing around the stairwell opening. Respondent's drawings are, in essence, asking some other building professional to "come up with" the support devices, namely framing, for the opening for the stairwell. And as noted in the testimony of Mr. Fisher, homeowner heard both of his contractors express frustration with attempts at constructing the stairwell according to the drawings presented by respondent.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "121" to the Accusation.

69. Respondent omitted the design of the foundation for the stairway.

The industry standard of care requires an engineer to depict on the foundation plan either an outline for a contemplated footing at the base of foundation, or, in the alternative, that the design should specify recognition that some form of support is available at the low end of the stairs. Absent such notation or drawing recognition, the foundation appears to "hang in the air." Moreover, the contractor has no idea whether the foundation would be thick enough or possessed with adequate strength to support the stairway system. Respondent's Permit Set's calculations fail to address this matter on the footings' calculation page; and respondent neglects to prepare an adequate foundation design for the stairway on the drawings' Foundation Plan page.

Further on this topic, respondent's plans show a pattern of obvious deficiencies. For example, a poor foundation design can lead to an inordinately high degree of cracking.

Respondent's explanation is not persuasive that "the stair [system] was adjacent and parallel to . . . an existing pair of parallel [load] bearing walls" so that the stairs "could be supported by the adjacent . . . walls, which would be supported, in turn, by the slab/foundation on grade." If such were the approach for the design, respondent is obligated to clearly specify that the subject drawings, which depict walls being adjacent to the stair system, in fact, and are load-bearing walls. While respondent's drawings do indicate load-bearing walls around the perimeter of the structure, the walls near the stairs are not properly labeled as load-bearing walls. Such neglect, in not correctly labeling the adjacent walls near the stairs, could foreseeably confuse or mislead a building contractor.

Respondent's explanations were not correct when he wrote⁴⁷ an array of inexact statements regarding the foundation for the stair system. Respondent's

⁴⁷ Complainant's Exhibit 22, page 9.

explanations turn upon a “hybrid-like” proposal that avoids the exactness and clarity expected in an engineer’s design drawings, specifications and calculations. Respondent rendered, in essence, a “misguided design” through his explanation; yet, his Permit Set proppos a single design approach that requires precise and unequivocal guidance being relayed to a building contractor. And respondent’s recent written explanation presents specification for only one end of the stairway, but still leaves unaddressed engineering recognition for the foundation slab at the end of the stairway.

Respondent’s assertions are not correct that: “[p]ossibly even a second or third wall could have been provided depending on what the problem was, if any, and *what option the client and or contractor might like the best.*” (Emphasis added.) The standard of practice does not contemplate any such course of action that respondent expresses. If any option were to have been communicated to the building contractor or homeowner, such “options” had to be clearly laid out in the engineer’s drawings of the Permit Set.

Respondent is negligent when his Permit Set omitted the design of the foundation for the stairway.

Hence, complainant’s more credible and persuasive evidence establishes the allegation at paragraph “12m” to the Accusation.

70. Respondent omitted the design of the second floor framing to support the southeast corner of the building.

The industry standard of care requires production of the most complete a picture as possible in the engineer’s drawings. Respondent’s failure to design the second floor framing to support the southeast corner of the building underscores respondent’s neglect in providing a complete picture in the engineer’s drawings. Respondent’s Permit Set may be analyzed by way of an analogy of a table with a missing fourth leg. In this matter, the missing fourth leg of the table would be the absent southeast corner in respondent’s subject drawing. The right-side of the drawings, supposedly depicting an exterior wall as the southeast corner, has a hand-written note that reads, “floor framing details?” The weight of the evidence establishes that the note’s question mark on the sheet 11 of the Permit Set was made by an El Cerrito City plan checker, who had recognized the problem with respondent’s design for the chimney.

Respondent’s neglect in his design reveals that the design of the second floor framing does not support the southeast corner of the building.

Respondent’s argument is not correct that “at the southwest [*sic*] corner of the building, the walls stack so no additional support or ‘design’ is needed.” The building’s southeast corner does not represent a feature constituting walls stacking.

The first floor plan shows a building extension on the southeast corner that does not show walls would align with the exterior east wall, and there is an opening for a bay window, which is contraindicated for wall stacking. Hence, the walls do not stack. Respondent's referenced sheets⁴⁸ highlight his negligent engineering work.

Also a glaring aspect of respondent's omission on this topic is a missing load-bearing beam as well as a missing beam over a window.

Respondent's inadequate drawings reflect poorly on him and are indicative of negligence because of: a lack of completeness in the drawing; a lack of accountability for the load path; a lack of understanding of the scope of work; and a lack of providing for all components necessary in the drawings in addressing the scope of work.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12n" to the Accusation.

71. Respondent omitted the design of the guardrails for the exterior deck.

Respondent provides "nothing" in the calculations for guardrail construction. And in the drawings, which depict the guardrails, there are no justifications for the guardrails. In respondent's conflicting or inconsistent drawings, respondent creates a "problem" insofar as the drawings disclose a missing two-by-four wood post member when one compares respondent's Permit Set sheet 11 with sheet 23. Sheet 11 calls for three "2 x 12" pressure treated fir timber, while sheet 23 shows only two of those wood members. A detailed drawing,⁴⁹ which was created at the hearing, illustrates the effect of a missing wood member in respondent's design of the guardrails. Such a missing wood member dramatically weakens the deck.

Also, an out-of-plane connection is missing from the drawings. The load upon the deck is supported by only a single "2 by 12." Respondent's error translates into the deck being under-designed. Respondent's deficiency in this regard is critical as a breach of the industry standard. Importantly, respondent's under-design of the deck poses a serious life-safety concern.

Respondent's argument is not correct that "while not omitted the calculations for the rail were not submitted for permitting" had the engineer been asked by building officials, respondent "would have been happy to produce" the calculations. The industry standard of care requires that critical calculations for any design

⁴⁸ Complainant's Exhibit 20, sheet 13, detail 1. or the note "1/13"; sheet 11 and sheet 12.

⁴⁹ Complainant's Exhibit 42.

component, which has important life-safety concerns, must be submitted by an engineer with his drawings.

Respondent is negligent when his Permit Set drawings and calculations omitted the design of the guardrails for the exterior deck.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12o" to the Accusation.

72. Respondent omitted the design of steel columns and a wood post specified on pages 8, 9, and 11 in the drawings⁵⁰ in the Permit Set.

Respondent's Permit Set's sheet 9 does "call out" designs for steel columns and wood posts; however, the designs for a "parallam post" and the steel column "structural tube" have no justifications for the designs. Such omissions beg questions such as: are the items properly sized?; or are the items "properly called out" insofar as specifications for materials making up the items?

A post is an important component of the load-resisting system. The objective of a properly depiction of a post is to assure efficient design so as to neither under-design or overdesign the components. There is no design for wood posts on pages 8, 9 or 11 of respondent's Permit Set.

Respondent is negligent when he omitted the design of steel columns and a wood post specified on pages 8, 9, and 11 in the drawings in the Permit Set.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12p" to the Accusation.

73. Respondent omitted the design of the connections of the existing roof structure over the main entrance and the breezeway to the new second floor addition.

An illustration⁵¹ provides a vivid visual depiction of the matters omitted by respondent in the Permit Set for homeowner's project with respect to the connections on the roof plan between the existing structure and the new addition to the house.

The industry standard of care requires the complete design of the interface connection between the existing roof and the new structure over the main entrance and breezeway. Failure to provide such design may result in a contractor's failure to execute a building feature that will adversely affect life-safety issues. And there is

⁵⁰ Complainant's Exhibit 20.

⁵¹ Complainant's Exhibit 43.

too much missing on respondent's drawings so that a reasonable contractor cannot be informed of the correct connection design at the roof structure near the front of the building. It amounts to guess work for a building professional to ascertain "what's going on" at the subject roof-line area between the new structure and the existing house.

Respondent's non-receipt of truss details from a truss manufacturer would not have impacted respondent in creating a correct design for the connections for the existing roof structure at the subject area of the building. And respondent's argument is not correct that destructive testing might have been necessary to prepare the plans. The design for framing systems and connections, which would include the geometry and scope of work particulars for the connections, did not need to be determined through destructive testing. Moreover respondent could have used the "VIF" (verify in field) notation on the Permit Set's drawings had he been exceedingly conservative in his design of the connections.

Respondent is negligent when the Permit Set created by him omitted the design of the connections to the existing roof structure over the main entrance and the breezeway to the new second floor addition.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "12q." to the Accusation.

INCOMPETENCE REGARDING MATTERS UNDER PARAGRAPH 12

74. On one of respondent's calculations page⁵² titled "Shearwall Design," respondent's "red mark revisions" reflect significant errors. There is no justification for respondent's use of "one" as the phi factor on the page. And among other things, respondent incorrectly sets the wall height at eight feet, when the correct dimension should have been 10 feet high. Respondent's significant errors in these matters stand out as a lack of knowledge by an engineer for the proper use of the phi factor and its precise application. These grave errors, therefore, reveal respondent's incompetence as a civil engineer with regard to the application of the phi factor.

75. Respondent's deficiencies as shown in paragraphs 12, subparts (a) through (q), taken together, constitute incompetence on respondent's part.

⁵² Complainant's Exhibit 23, tab 11, page 30.

ii. MATTERS RAISED UNDER PARAGRAPH 13 OF THE ACCUSATION

NEGLIGENCE

76. On Sheet 8, detail 1 (Section at Steel Post), respondent provides information about a steel column and a foundation associated with that steel column. However, respondent omitted calculations to justify this information in his Calculations Set submitted for permit approval.

The calculation page in respondent's Permit Set does not reflect any calculations for the steel column on Sheet 8. That single column is very important for the support of a substantial portion of the proposed building. The standard of care requires calculations for such a critical support column. In this instance, calculations are intended to present justification for solutions with regard to recognized problems or challenges in the new structure.

Respondent's argument is not correct that the "design was not omitted. It just wasn't included with the permit submittal calculations." Respondent's recently-presented⁵³ calculations did provide explanations, however, that the extent of calculations should have been presented in 2002/2003 with the original Permit Set submitted to the El Cerrito City Building Official. Nevertheless, respondent's September 2012 supplemental calculations are deficient because the calculations lack the specifications pertinent to the nature or quality of the steel that will make up the steel column.

And respondent's reliance on the soil strength and quality from his probes, which are described in his recently filed calculations,⁵⁴ does not provide satisfactory justification for the omitted design for the steel column.

On Sheet 8, detail 1 (Section at Steel Post), respondent provides information about a steel column and a foundation associated with that steel column. Respondent is negligent when he omits calculations to justify this information in his Calculations Set as submitted for permit approval.

Hence, complainant's more credible and persuasive evidence establishes the allegation at the paragraph "13b" to the Accusation.

⁵³ Complainant's Exhibit 23, tab15, pages 46 through 48.

⁵⁴ Complainant's Exhibit 23, tab 9, page 22 and page 23.

77. On Sheet 9, respondent omitted the design of all new isolated and continuous footings. Also, although respondent included a note calling for five-eighths-inch diameter bolts at 16 inches spacing for a double sheathed shear wall located at the east side of the building, he failed to include calculations to justify this design.

No design is found within respondent's drawings and calculations with regard to the footings for the project.

Respondent's design reflects overstressed walls. On Sheet 9⁵⁵ the improperly sized and spaced anchor bolts create a deficiency that threatens the structure following its erection. This defect, taken along with the phi factor errors by respondent, constitutes a breach of the industry standard.

A detailed drawing,⁵⁶ made at the hearing, illustrates the interrelationship between anchor bolt spacing and bolt size (five-eighth inch) in a foundation design. The evidence establishes respondent's design neglects to compensate for the shear walls' lateral loads' transfer into the base of the foundation system. The passive pressure resistance and skin friction regarding elements, which affect the foundation beneath the shear walls, are not accounted for in respondent's calculations.

Respondent is negligent when on Sheet 9 of the drawings, he omitted the design of all new isolated and continuous footings. Also, although respondent includes a note calling for five-eighths-inch diameter bolts at 16 inches spacing for a double sheathed shear wall located at the east side of the building, respondent fails to include calculations to justify this design.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13c" to the Accusation.

78. On Sheet 10 at Detail 1 respondent omitted the connection detail and member call out of the second floor deck.

A deficiency on respondent's drawing depicts three beams that are acting as a single beam. Respondent's drawing does not specify the manner or the mechanism for the "composite action" that the engineer is attempting to achieve with respect to "three discrete" elements specified as one beam. The information that is missing in respondent's design includes: a lack of a correct "call-out" of all the members for the network of beams; imprecision for the beams "functionality"; the absence of hangers;

⁵⁵ Complainant's Exhibit 20, sheet 9, top right-hand side, "Key: Anchor Bolts."

⁵⁶ Complainant's Exhibit 44.

the lack of deck information; the absence of spacing of the resultant gaps, and the absence of the interconnection between the various two-by-twelve wood members.

Of great significance is that respondent provided only one drawing regarding the connection detail for the subject part of the building. A paramount industry standard demands that comprehensive details be set out regarding the connectivity for the three members for the second floor deck.

Respondent is negligent on Sheet 10 at Detail 1 when he omitted the connection detail and member call out of the second floor deck.

Among other things, respondent's drawings fail to account for necessary splice areas at joints between beams and column connections points.

Respondent's argument is not correct that no connections details relative to the existing buildings are shown because "the deck was designed to be free standing for required seismic, wind and gravity loads." The free standing nature of the deck requires respondent's drawings and calculations to comprehensively depict the details to assure the viability of the deck. Respondent's Permit Set is defective on this topic.

Respondent is negligent on Sheet 10 at Detail 1, when his Permit Set omit the connection detail and member call out of the second floor deck.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13d" to the Accusation.

79. On Sheet 10 at Detail 2 and on Sheet 13, respondent omitted the connection detail of the second floor truss to the exterior wall. Respondent also on that sheet omitted the ceiling joist size, spacing and connection details.

The industry standard requires an engineer's design to identify and "call out" all essential connection elements. Respondent's design is deficient.

On the Permit Set's sheet 10,⁵⁷ respondent's design did not label the second floor truss, which is intended to assure that the new roof does not fall into the structure. In respondent's drawing a condition is suggested where a truss appears to be supported by a beam, but the connection detail is not depicted on the drawing. The negative effect of in-line shear transfer and out-of-plane loads in this area underscores respondent's lack of due care.

⁵⁷ Complainant's Exhibit 20.

Use of Permit Set's Sheet 11⁵⁸ reveals respondent's drawings' deficiency on Sheet 10. Respondent's error is shown where the new flooring system interacts with the ceiling joist system. Such condition indicates "interference" problems that would make the installation of truss members upon the designed ceiling joists as "un-doable" or impracticable.

In addition, respondent's alteration of his design changed the truss's depth from 24 inches to 16 inches. However, with the change in that dimension, respondent's drawings do not make corresponding changes to other elements on the second floor roof and supporting walls. Hence, proper alignment is jeopardized.

With the scope of a responsible design for a second floor truss, its associated joists, walls and connections, a knowledgeable engineer would expect to see with the Permit Set an entire design for the layout of the ceiling truss. A building contractor would not know how to construct the ceiling joists and connection details with the drawings prepared by respondent.

Respondent's argument is fallacious that "connection details are not shown on Sheet 10 because Sheet 10 is clearly labeled as 'FOUNDATION DETAILS,' and detail 2, is clearly labeled as 'FOUNDATION SECTION,' and as labeled that item is a foundation detail not a framing detail. The framing details that clearly show this information are shown on page 13 that is labeled 'FRAMING SECTION,' detail 1 or 1 of 13." (Capitalization emphasis in text.) Respondent's drawings, however, for this section of the structure are not complete.

Respondent's design for the drawings is inconsistent. There are too many aspects of the drawings that cannot be verified. Respondent's drawings reflect a pattern of providing insufficient data in a manner that would not assist a building contractor to build the structure.

Respondent is negligent when on the Permit Set's drawings known as Sheet 10 at Detail 2 and on Sheet 13, his work product omitted the connection detail of the second floor truss to the exterior wall. Also respondent's omission of the ceiling joist size, spacing and connection details constituted negligence.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13e" to the Accusation.

80. On Sheet 11, respondent omitted the following: floor framing around the stairway opening; floor framing to support the southeast corner of the building; ceiling joist plan and associated connection details; connection details for the support of the second floor trusses around the existing chimney; window header beam sizes;

⁵⁸ Complainant's Exhibit 20, sheet 11.

roof framing for the breezeway and canopy at the eastside of the building; details of the existing roof framing; and ceiling framing over the front part of the living room.

There is inconsistency between respondent's drawings and calculations for this area. First, on the Permit Set's Sheet 12,⁵⁹ respondent wrote: "four-by-four parrallam heading – typical" to connote that above each window opening a wood beam (header) should be installed. But on respondent's recently furnished calculations pages, a note⁶⁰ regarding installation of headers reads, "use tube steel." And on the same page there are diagrams that show a four-foot span and an eight-foot span. But, upon examining sheet 12 of the drawings, a sole eight-foot span is depicted. In a design such as involved in this matter, steel is not used for headers. And the drawings and calculations page are in conflict and inconsistent.

The industry standard of care requires an engineer to produce a table with regard to windows and corresponding headers. And the design's drawings must be complete to a degree so as to give clear guidance to a building contractor's objective of executing a construction project from the drawings.

Respondent's design is deficient with respect to details for the existing roof framing and ceiling framing over the front part of the living room. Respondent fails to meet an engineer's obligation to call out ceiling information. That missing information seriously undermines the prospects for successful construction of the matters shown on Sheet 12 of the Permit Set.

Respondent is negligent on Sheet 11, when the Permit Set's drawings omit the following: floor framing around the stairway opening; floor framing to support the southeast corner of the building; a ceiling joist plan and associated connection details; connection details for the support of the second floor trusses around the existing chimney; window header beam sizes; roof framing for the breezeway and canopy at the eastside of the building; and details of the existing roof framing and ceiling framing over the front part of the living room.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13F" to the Accusation.

81. On Sheet 12, respondent omitted the following: roof framing around the existing and/or modified chimney; connection details of the roof trusses to the walls; and attic and/or ceiling framing to support a 50-gallon gas hot water heater noted on the plans.

⁵⁹ Complainant's Exhibit 20, Sheet 12.

⁶⁰ Complainant's Exhibit 23, tab 16, page 54.

In a roof framing around the existing and/or modified chimney, an engineer must show truss extensions on both sides of the chimney. Respondent's drawings are lacking on this topic.

Respondent fails to properly design the connection details of the roof trusses to the walls. Because roof trusses are subject to uplift forces, a diligent engineer must specify in plans the installation of components deemed hurricane anchors or in-plane anchors; but, in respondent's drawing such a precautionary design is missing. Respondent neglects to correctly design the connection details of the roof trusses to the walls. Respondent's design is "unworkable" relative to the connection details of the roof trusses to the walls. Respondent's design does not recognize that the connection points, along the wall, account for a heavier load upon the girder truss. The missing design on respondent's part places an onerous burden on the truss manufacturer to design an extraordinarily detailed truss system.

Respondent's design specifies construction in the attic of the new addition an area for the installation of a 50-gallon gas hot water heater. The industry standard of care requires that a framing detail for construction of an area for a water heater must show specifications for a platform as well as correct dimensions for a means of ready access by a technician to render service upon the water heater. Respondent's drawings lack details for both a platform upon which the water heater could be placed, and specifications for a proper access route for maintenance of the water heater. Respondent's deficiencies reflect negligence regarding the design of the area where a 50-gallon hot water heater might be placed according to respondent's drawings.

82. On Sheet 14 at Detail 2, the end wall is a cripple wall according to the design at the second floor level. By specifying a cripple⁶¹ wall at that location, a vertical hinge point⁶² must be introduced in the wall that must be braced for out-of-plane loads. Respondent's bracing design for this wall is not complete and no details are provided to address this condition. Respondent's design shows no bracing for the cripple wall, and the hinge points lack bracing. The lack of bracing details potentially renders the building unstable because of the likelihood that the cripple wall may collapse under the application of foreseeable forces upon the structure.

⁶¹ A cripple wall in this context is a short wall added above an existing first floor wall. The cripple wall is approximately two feet in height and is present to accommodate new trusses so that those wood members will not interfere with ceiling framing.

⁶² A vertical hinge point was illustrated by Mr. Bunden in his drawing, which was marked as Complainant's Exhibit 53.

Respondent's Permit Set's drawing⁶³ of the "rear shear wall elevations" as well as by respondent's recently produced calculations,⁶⁴ and respondent's design for the hinge points are contradictory and conflicting.

Respondent is negligent when on Sheet 14 at Detail 2, the end wall is shown as a cripple wall design for the second floor level. When respondent's Permit Set's drawing specifies a cripple wall at the described location on the drawing, a vertical hinge point is introduced in the wall that must be braced for out-of-plane loads. Respondent's bracing design for that wall is not complete and no details are provided to address that condition.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13j" to the Accusation.

83. On Sheet 15 at Details 1 and 3, respondent omitted deck bracing and framing details. While the drawing does include a handwritten note to add two-inch by six-inch braces to the deck with five-eighths inch bolts, respondent omitted the exact details of the connection, including the slope, length, and exact location of the braces.

Respondent's Permit Set drawings on the "South Shear-wall elevations" page⁶⁵ shows the inexactness of respondent's design for the bracing beneath the deck. There are more significant errors on the drawings beyond respondent incorrectly characterizing components as "cross braces." (The "2 by 6" pressure-treated-fir lumbar braces, are actually deemed diagonal braces.) The errors have dire consequences such as a building contractor not knowing the connection points for the two diagonal braces. In this regard, questions arise such as: do the braces overlap?; and, is there a gap between the braces? Also respondent's drawings lack the exact distance from the ground level to the place on the wood column where the braces are to be attached to that vertical deck support member. Also the angle of inclination for the braces is absent from the drawing and calculations for the deck design. Serious life-safety shortcomings are shown in respondent's deck design.

Bracing connections are another example of respondent's inconsistent and contradictory work product for homeowner's project. Respondent's drawings pose questions regarding the proper angle for the bracing as well as the placement of bolts and the edge distance of the brace to the deck's end. The consequences of the improper design turn upon a contractor's potential placement of the bolts too close to

⁶³ Complainant's Exhibit 20, Sheet 14.

⁶⁴ Complainant's Exhibit 23, tab 18, page 57.

⁶⁵ Complainant's Exhibit 20, Sheet 15.

the end the deck that cannot tolerate the load path forces. In a nutshell, the contractor would “have no idea of how to construct” the deck with correctly mounted support braces and correct bolt placement.

Respondent’s calculations⁶⁶ as compared with another document created by respondent⁶⁷ to show respondent’s formula for the “R” (resilience) value are incorrectly given as “5.5.” The correct “R” value should have been specified as “2.2” for the deck’s cantilever system, which has less resilience than a shear wall. Respondent’s design is 150 percent less strong as the properly designed system as shown by complainant’s industry expert’s comprehensive drawings and testimony. Respondent prepared a Permit Set that produces an under-designed deck for lateral loads.

Respondent is negligent on Sheet 15 at Details 1 and 3 because the Permit Set omits deck bracing and framing details. Although respondent’s drawing includes a handwritten note that adds two-inch by six-inch braces to the deck with five-eighths inch bolts, respondent’s drawing omit the exact details of the connections, including the slope, length, and exact location of the braces.

Hence, complainant’s more credible and persuasive evidence establishes the allegation at paragraph “13k” to the Accusation.

84. On Sheet 19, respondent omitted details for a possible extension and/or modification of the existing chimney to accommodate the higher roofline associated with the second floor addition.

Another omission in respondent’s drawings reflects respondent’s deviation from the CBC requirements for the height of the chimney in relationship with the top of the roof for the proposed new structure. Respondent neglects to design a chimney with a required two-foot clearance away from the nearest part of the roof outside a 10-foot radius from the chimney’s exterior. Respondent’s design also omits details pertaining to the connections between the chimney and the new structure at the proposed new roofline. Moreover, there is no clear understanding gained from respondent’s drawings regarding the means to construct the proposed structure.

Respondent is negligent when on Sheet 19, the Permit Set’s drawings omit details for a contemplated extension or modification of the existing chimney to accommodate the higher roofline associated with the second floor addition.

⁶⁶ Complainant’s Exhibit 23, tab 10, page 26.

⁶⁷ Complainant’s Exhibit 21, page 20.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13l" to the Accusation.

85. On Sheet 22, respondent omitted information regarding the deck, including the slope and length of the deck braces, the connection points of the braces to the deck framing system, the sizes of deck posts and deck beam, and connection details. Respondent also omitted engineering calculations for the deck elements in the Calculations Set submitted for permitting.

Numerous instances exist where construction deficiencies can flow from respondent's poor design work as represented by the Permit Set. Respondent's argument is not correct that "an experienced plan checker would be able to examine the drawings and be able to determine 'by inspection' the adequacy of that deck as designed and shown on the drawings" Respondent has a misguided idea that a plan checker could simply scan visually respondent's drawings without examining calculations to ascertain whether the drawings meet all requirements of the California Building Code and standards in the engineering profession. Respondent's argument must be interpreted to mean that respondent has a perspective that no genuine quality control should occur; and, hence, the protection of the public would be diminished.

Respondent's written assertion⁶⁸ is false that "document No. 10 contains calculations that verify the items shown on [respondent's] plans and specifications are adequate and in conformance with the code." The calculations referenced by respondent are not "done correctly." Hence, respondent's calculations cannot be viewed as submitted in conformance with the California Building Code.

Respondent is negligent when on Sheet 22⁶⁹, respondent's Permit Set drawings omitted information pertinent to the proposed deck, including the slope and length of the deck braces, the connection points of the braces to the deck framing system, the sizes of the deck posts and deck beam, and connection details. Also respondent's drawings omit engineering calculations for the deck elements on the Calculation Set submitted to the El Cerrito Building Official office that issues building permits.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13n" to the Accusation.

86. On Sheet 23, respondent omitted the design of the guardrail as required by California Building Code table 16-B.

⁶⁸ Complainant's Exhibit 22, tab 10, pages 24 to 27.

⁶⁹ Complainant's Exhibit 20, Sheet 22.

The “Special Loads”⁷⁰ rules derived from Table 16-B of the 2001 California Building Code are important on this topic. As to the guardrail, on the subject table beneath the heading “Category” there appears at item 9-Balcony Railings and Guardrails concepts. With regard to this matter, the general practice for the design of guardrails for residential structures falls under the description labeled, “Other Than Exit Facilities.” From that description under the “lateral load” heading, the specification is set at “20.” The numeral “20” represents that 20 pounds per lineal foot can be applied to the top of the guardrail as a design level force, which an engineer must account for in a permit set. And beneath the “Handrail Category,” footnote 11 specifies, “the mounting of handrails shall be such that the completed handrail and supporting structure are capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.” Hence, there are two design parameters that must be dealt with, namely the lineally applied load along the top of the guardrail and the concentrated point load anywhere along the guardrail. Respondent’s deficiencies spring from a comparison between the Permit Set’s drawing’s Sheet 24⁷¹ and respondent’s recently filed calculations⁷² page.

Respondent is negligent when on Sheet 23⁷³, the Permit Set’s drawing omitted the design of the guardrail as required by California Building Code table 16-B. Respondent’s work product in the calculations did not address the concentrated load requirements for the guardrail design. Respondent’s omission constitutes a material deficiency. Moreover, the guardrail connections are under designed.

Hence, complainant’s more credible and persuasive evidence establishes the allegation at paragraph “130” to the Accusation.

87. On Sheet 20, there is a new roof above the first floor between the east wall and the re-entrant corner of the building. Respondent omitted the framing design for this new roof in the permit set.

Because the new roof is a structural component, respondent’s design is required to provide a detail for that proposed addition. Respondent’s drawing is woefully lacking in detail and breaches the standard of care in the industry due to a missing detail.

The standard of care for an engineer requires framing design for a proposed new structure. Even though the design detail might have been placed on Sheet 20,

⁷⁰ Complainant’s Exhibit 19, page 8.

⁷¹ Complainant’s Exhibit 20, Sheet 24.

⁷² Complainant’s Exhibit 23, tab 14, page 43.

⁷³ Complainant’s Exhibit 20, Sheet 23.

Permit Set Sheet 11 or 12 is the most likely place to indicate specific details for the new roofing system. But neither Sheet 11 nor Sheet 12 sets out any information for the new roof construction.

On Sheet 20, there is depicted a new roof above the first floor between the east wall and the re-entrant corner of the building. Respondent is negligent when his drawing omits the framing design for the new roof in the Permit Set.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13p" to the Accusation.

88. On Sheet 18, respondent calls out a glass block assembly on the north side of the building. Respondent omitted the details and specifications for the installation and construction of the glass block in the permit set.

An engineer's design must alert a contractor with a note that broadcasts details and specifications regarding the nature or texture of the glass block that is to be installed during construction. Respondent's design "call out" is lacking, which among other things does not state the applicable code provision for the glass-masonry construction. Critical information regarding glass block assembly is missing from the drawings so that a building contractor could be misled in attempting to execute the drawings made by respondent.

On Sheet 18, his drawing calls out a glass block assembly on the north side of the building. Respondent is negligent when his drawing omit the details and specifications for the installation and construction of the glass block in the Permit Set.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13q" to the Accusation.

89. On Sheets 15 and 20, there are discrepancies between the south wall elevations.

The discrepancies on the Permit Set's Sheet 15 and Sheet 20 pertain to south wall elevations. On Sheet 15, a detail for the second floor exterior wall aligns with the first floor exterior wall in a manner so as to indicate a vertical line. But on Sheet 20 a roof above the first floor at the re-entrant corner is shown; but the same area, which is marginally depicted on Sheet 15, does not show a roof area. Also the second floor exterior wall near the re-entrant corner does not align vertically with the face of the first floor because there is a projection at the roof. Hence, supposedly identical areas in respondent's drawings are different. The discrepancies between the two sheets illustrate two "overall geometries," so that a builder will be confused as to "what to build." On Sheet 15, the second floor area seems even larger so that the southern portion of the floor is shown to be even farther south than on related page 20. In essence, the floor plans are different between Sheets 15 and 20.

Respondent is negligent when on Sheets 15 and 20, respondent's drawings reflect discrepancies between the south wall elevations.

Hence, complainant's more credible and persuasive evidence establishes the allegation at paragraph "13r" to the Accusation.

INCOMPETENCE REGARDING MATTERS UNDER THE ACCUSATION'S PARAGRAPH 13

90. Respondent's deficiencies described in the Accusation's paragraph 13, subparts (b), (c), (d), (e), (f), (h), (j), (k), (l), (n), (o), (p), (q), and (r), taken together, constitute incompetence on respondent's part.

91. In addition, respondent's incompetence is shown for those aspects of the Accusation's paragraph 13 that pertain to life-safety topics. In particular, there are three aspects of the deck's material deficient design that reflect incompetence, namely: the triple two-by-twelve beam issue; the lateral load errors on the entire deck; and, the out-of-plane loading on the guardrail.

Matters that Suggest a Lack of Rehabilitation Evidence

92. From the outset of the investigation by the board's Enforcement Division's personnel, respondent has displayed disdain towards many individuals, including the board's personnel, complainant's industry expert and the complainant's legal counsel. Respondent accused various individuals of committing unethical acts. Of great importance is that through the course of the 18 days of the subject administrative adjudication proceeding, respondent refused to acknowledge that he made the range of serious errors and omissions, which were established at the hearing, in his provision of engineering services to homeowner. At most, respondent represented that following the dissolution of the relationship with the homeowner, the superior court lawsuit that followed the dispute and the board's investigation of his work, that he fostered "tunnel vision" that related to his rage and emotional upset towards homeowner.

93. Respondent provides insubstantial evidence that suggests that he has taken steps to avoid future negligence, incompetence and unprofessional conduct similar to that proven by complainant's comprehensive investigation and prosecution. Rather, throughout the proceeding, respondent sought to minimize the extent of his substandard work product and to make excuses for the breaches of industry standards established at the hearing of this matter.

Matters in Aggravation

RECORDS OF PAST BOARD DISCIPLINARY ACTION AGAINST RESPONDENT'S
CIVIL ENGINEER LICENSE

94. On March 30, 1994, the board's executive officer issued an Accusation in Case Number 567-A against respondent alleging, among other things, that respondent "provided design and specifications for foundation removal and replacement [that] failed to adequately address the clients' foundation problem and [that] had the potential for aggravating the problem. That accusation further alleged respondent "provided design and specifications for a drainage system [that] was not properly located and [that] did not have an appropriate discharge location." The 1994 accusation alleged respondent's acts and omissions constituted both negligence and incompetence

On December 13, 1995, in accordance with the settlement of the action, the board's executive officer withdrew the accusation filed against respondent titled *In the Matter of the Accusation Against Thomas Culbertson Clark*, under Case Number 567-A. In accordance with a stipulation by and between the parties for the withdrawal of the accusation, respondent agreed: to reimburse \$5,622.75 to the board for its costs of investigation and enforcement and to complete and pass coursework in the areas of Engineering Ethics and Professionalism.

95. Effective August 28, 2000, respondent's license was revoked; however, the revocation was stayed, and respondent was placed on probation for a period of three years due to a disciplinary action in a matter titled *In the Matter of the Accusation Against Thomas Culbertson Clark before the Board of Professional Engineers, Land Surveyors and Geologists* under Case Number 683-A. The disciplinary action was the result of respondent's alleged negligence and incompetence in preparing plans and specifications for a drainage project at a consumer's personal residence. The three-year period of probation required respondent to comply with specific terms and conditions including: that he pay the board more than \$4,100 to defray the board's costs of investigation and prosecution; that he complete 16 hours of professional continuing education courses in civil engineering; that he successfully complete and pass the California Laws and Board Rules examination as administered by the board; and that he pay the full amount of a superior court settlement amount owed by respondent to the injured homeowner.

PAST DISCIPLINARY ACTION BY THE CONTRACTORS' STATE LICENSE BOARD
AGAINST RESPONDENT'S GENERAL CONTRACTOR'S LICENSE

96. In January 2000, an Accusation in Case Number N-99-151 was issued on behalf of the Registrar of Contractors, Contractors' State License Board, in a matter titled "In the Matter of the Accusation Against Thomas Culbertson Clark, dba

Ironwood Construction Company.” The accusation alleged three causes for discipline including that respondent “willfully and/or fraudulently induced [a homeowner] to enter into . . . contracts for services by [respondent’s engineering corporation and respondent’s general building construction corporation] by representing to [the homeowner] that [the engineering corporation] would provide plans suitable to be used by any licensed contractor, and that [respondent’s engineering corporation and construction corporation] would obtain all permits for [the homeowner’s] project, when, in fact, the plans provided by [respondent’s engineering corporation] were incomplete and negligent, and could not be used . . . by [respondent’s construction corporation], and that neither [respondent’s engineering corporation or respondent’s construction corporation] applied for or obtained . . . necessary permits.”

Effective October 8, 2000, a Stipulation and Waiver was adopted by the Interim Registrar of Contractors. The stipulation included an order that revoked respondent’s general building contractor’s license, stayed the revocation and placed respondent on probation for three years. By the settlement, the Registrar imposed discipline upon respondent only for violation of Business and Professions Code section 7110 due to respondent’s failure to obtain a building permit for a wall. Respondent agreed to pay the Registrar \$6,200 as the costs of investigation and prosecution. Also respondent was required to post a disciplinary bond in the amount of \$20,000. And respondent was required to pay a settlement dollar amount to the injured homeowner, who brought civil actions at law against respondent in the Contra Costa County Superior Court.

OTHER MATTERS DETECTED BY COMPLAINANT’S INDUSTRY EXPERT

97. Respondent crafted a “Notice of Special Defenses” that are set out in respondent’s “Post Hearing Conference Statement.”

a. Respondent’s Special Defense “a” makes no sense that:

Complainant’s reviewer has suggested that the permit submittal prepared by [respondent] should have included calculations and details in excess of those ‘sufficient to obtain [homeowner’s] permits and for construction by [homeowner’s] builder Ken’ as was agreed in [respondent’s and homeowner’s] contract modification dated September 6, 2002 If [respondent] had done that, [respondent] would have been in breach of [respondent’s] contract with the client and subjected [respondent] to discipline for violation of [California Business and Professions] Code section 6775 [subdivision] (d), ‘breach or violation of a contract to provide professional services.’

Respondent's argument seeks to avoid the true nature of the issue, which has nothing to do with respondent's acts or omission that might constitute breach a contract. The actual point in this matter concerns the standard of care that is expected of an engineer faced with producing drawings and calculations for homeowner's project. The standard of care is directly related to building requirements that revolve around "life-safety" dictates. For example, respondent's calculations under the phi factor, which were associated with the shear wall design and were essential to the structure resisting seismic forces, are wholly neglected or dramatically misapplied by respondent. Under respondent's design the shear wall is overstressed. Hence, respondent's notion of providing a minimum set of design features to fit into his fee schedule is in direct conflict with California Building Code requirements. Moreover, regarding respondent's deck design, which reflects a poor framing plan and the failure of respondent's design to meet the lateral loads problem, results in another life-safety concern. It was wholly illogical for respondent to argue that his provision of calculations and details in excess the bare minimum set of documents to pass the city's building department's approval process would amount to a breach of contract from which his license might be subject to discipline.

b. Compelling evidence exists in opposition to respondent's Special Defense b. Respondent's defense is paraphrased as follows- had respondent produced truss design and calculations, such work product would have "defrauded [homeowner] by providing services [that homeowner] would then have to pay others for," because respondent knew full well that similar engineered calculations would be required from the truss system's manufacturer's own engineer. Respondent contends that his license would have been subject to discipline for violation of Business and Professions Code section 6775, subdivision (c), any deceit or misrepresentation, or fraud in the practice of an engineer.

A drawing⁷⁴, which was crafted by complainant's industry expert, shows respondent's rationale for Special Defense b is "baseless." That drawing indicates the proactive need for the scope of work created by an engineer with regard to girder design, window header design, roof hip members design and other roofing members design that later guides the truss manufacturer's design of the specialized truss system. A competent engineer's handling of the design in the roof does not result in any duplicate work that would be better handled by the truss manufacturer. An engineer does not need final calculations from a truss manufacturer to understand the loads upon a window header or other parts of the upper floor to the structure. Rather, an engineer recognizes that he has an utmost obligation to be forthright with, and to give guidance to, other professionals, who are associated with aspects of the project. Under industry standards, because an engineer has paramount control with regard to the execution of the overarching plans, specifications and calculations, the engineer must exercise control, rather than wait for other professionals, including truss

⁷⁴ Complainant's Exhibit 51.

manufacturers, to direct the engineer's final work product. The engineer must exercise the control that the construction industry vests in the engineer.

98. On the 17th day of the hearing and the eighth day during which he gave testimony, complainant's industry expert, Mr. Bunden, identified, during re-direct examination, no less than four other areas in respondent's drawings for the Permit Set for homeowner's project that reflected errors or inconsistencies. Complainant, however, elected not to amend the Accusation so as to allege those errors, omissions or inconsistencies as matters upon which disciplinary action would be based against respondent.

99. Grave light is casted on respondent's credibility regarding the point in time that respondent created documents that he presented to complainant's counsel in September 2012 for the defense of his case. The evidence shows that in June 2009 the board's Enforcement Unit sent to complainant's industry expert all known drawings and calculations used by respondent not only at the time of preparation for the homeowner's project in 2002/2003, but also before June 2009 when Mr. Bunden began to study the records before his preparation of the December 2009 report. In September 2012, respondent sent hundreds of pages of material to the deputy attorney general. The documents presented in September 2012 indicate recent preparation, rather than representing calculations that existed in 2002/2003.

Complainant's Request for Recovery of Costs of Investigation and Prosecution and Respondent's Objection to Imposition of Costs

100. Complainant requests that respondent be ordered to pay the board the costs of prosecution under Business and Professions Code section 125.3. In support of the request for cost recovery, complainant offers a declaration, dated October 10, 2012, by Tiffany Criswell, Enforcement Analyst of the board, as well as the declaration, dated October 15, 2012, by Nicholas Tsukamaki, Deputy Attorney General. The declarations state that the board has incurred the following costs in connection with the investigation and enforcement of complainant's accusation as follows:

California Department of Justice, Office of Attorney General	\$17,687.50
Enforcement Unit of the Board	
Technical Expert Costs through November 2011	\$1,937.
Total Costs of Investigation and Prosecution	\$19,624.50

101. The declarations by Enforcement Program Analyst Criswell and Deputy Attorney General Tsukamaki fairly present requisite information by which the reasonableness of the costs may be determined and weighed for the board's recovery for the investigation and prosecution activities before October 16, 2012, which was the commencement date for the hearing in this matter. The declarations and their attachments set forth general, yet clear, descriptions of the tasks performed during the investigation and prosecution of the matter, as well as the time spent in attending to such tasks, and the methods of tabulating the hours involved in calculating the costs, as required by California Code of Regulations, title 1, section 1042.

The comprehensive nature of the declarations and supporting documents for the certifications of costs establish that the board is entitled to the total measure of its costs of investigation and enforcement. The time expended by personnel of the Department of Justice is well within reason and was justified and necessary to establish the extent of respondent's negligence, incompetence, and unprofessional conduct. The facts developed at the hearing indicate that the deputy attorney general devoted a reasonable amount of time, which is found to have been of a prudent nature, for the prosecution of this matter.

102. In this matter, respondent did not advance a meritorious defense in the exercise of his right to a hearing in this matter insofar as to justify reduction of the total amount of the costs sought for recovery. And, respondent cannot be seen, under the facts set out above, to have committed slight or inconsequential misconduct in the context of the accusation. Also, respondent did not raise a "colorable challenge" to the accusation's paramount causes for discipline, namely respondent's unprofessional conduct, as manifested by negligence and incompetence regarding drawings and calculations relating to homeowner's project. Further, respondent failed to acknowledge the mental anguish and financial injury inflicted upon homeowner Eric Fisher and his wife because of respondent's negligence, incompetence and lack of professionalism.

At the hearing of this matter, respondent did not offer evidence that he is impaired financially or fiscally destitute. Respondent provided no financial records or statement under oath from a certified public accountant that establishes respondent's financial liabilities are greater than his total assets. Moreover, the record shows that respondent is not only a licensed civil engineer but also he is licensed as a general building contractor and as a real estate broker.

The immediate foregoing factors indicate that the imposition upon respondent of the full costs of investigation and prosecution will not unfairly penalize respondent. A substantial basis does not exist to warrant a reduction of the assessment against respondent for the costs⁷⁵ of prosecution and investigation incurred by complainant.

⁷⁵ The allowable costs of investigation and prosecution, as specified above, are a fraction of the total costs incurred by the board through the 18-day hearing. As

103. Respondent did not provide adequate, competent evidence that complainant's certification of costs of investigation and prosecution is unreasonable in a total amount of \$19,624.50. Accordingly, as of the time immediately before commencement of the hearing of this matter, the reasonable amount of costs owed by respondent to the Department of Consumer Affairs, on behalf of the board, is set at \$19,624.50.

Matters in Mitigation

104. Respondent graduated from Syracuse University in 1976 with a Bachelor of Science degree in Civil Engineering. He engaged in graduate work at the University of California, Berkeley; but he has no master's degree from that institution. Hence, respondent has had a professional involvement in civil engineering for more than 35 years.

105. Respondent conducts all business endeavors as a board licensee under a fictitious business entitled called Ironwood Engineering Company, which is a corporation. And he executes building construction projects as a licensed general contractor under the name of Ironwood Construction Company. Complainant did not establish that either of respondent's corporations has received consumer complaints over the past 10 years, except for the complaint by homeowner Mr. Fisher.

106. For two decades, respondent has been a volunteer for the Federal Emergency Management Agency (FEMA). He is a member of the Steering Committee for FEMA's Task Force Four Urban Search and Rescue unit, which is based in Oakland, California. Respondent was deployed with the FEMA unit to the Loma Prieta and Northridge earthquakes, the World Trade Center Collapse and hurricanes Katrina and Rita. With FEMA, respondent holds a title of Structural Specialist and he has been a field instructor for courses titled "Structures Specialist I," "Structures Specialist II," and "Rigging and Heavy Equipment." Also, respondent is a member of the California Office of Emergency Services' Structural Specialists Working Group as well as the Homeland Security's Technical Sub Group for Structures. And respondent is a Damage Assessment Disaster Service Worker for the California Governor's Office of Emergency Services.

indicated above, the recoverable costs paid to complainant's industry expert before the hearing is \$1,937; however, under cross-examination by respondent on approximately the 15th day of the administrative adjudication proceeding, Mr. Bunden testified that as of that date he had billed complainant approximately \$9,000 for his time as hearing preparation and hearing testimony. Also the costs of prosecution through the 18 days of trial work by the deputy attorney general, along with the assessment by the Office of Administrative Hearings for the hearing and decision-writing time, are significant expenses that are not recoverable from respondent.

107. Respondent is a member of the American Society of Civil Engineers, the Structural Association of Northern California, the East Bay Structural Engineering Society, the Earthquake Engineering Research Institute, and the American Concrete Institute International.

108. Respondent proclaims that he has served as a design/build consulting engineer for “thousands of successful projects” in the Bay Area alone. And he has acted as an expert witness in “dozens of cases.”

109. For nearly four decades, respondent has resided in the Bay Area. He is married and has two children.

110. Respondent demonstrated that he possesses basic knowledge of civil engineering and structural engineering concepts, terms and processes. He displayed fluency with engineering terms of art and other building trade topics and subjects. He has taken a number of distinct continuing education classes in engineering principles.

Ultimate Finding

111. Despite respondent’s serious acts and omissions that constitute negligence and incompetency in the instance of the Permit Set for homeowner’s project, it is found that through a period of probation whereby he may study, and be tested on, current engineering principles and board regulations, respondent may reach full redemption from his past negligence and incompetence so that the public interest can be protected and served. Therefore, it is found that respondent’s conduct does not require, at this time, revocation of his civil engineer’s license.

LEGAL CONCLUSIONS

The Standard of Proof

1. The standard of proof in an administrative disciplinary action that seeks the suspension or revocation of a professional’s license is “clear and convincing evidence to a reasonable certainty.” (*Ettinger v. Board of Medical Quality Assurance* (1982) 135 Cal.App.3d 583.)

“Clear and convincing evidence” means evidence of such convincing force that it demonstrates, in contrast to the opposing evidence, a high probability of the truth of the facts for which it is offered. “Clear and convincing evidence” is a higher standard of proof than proof by “a preponderance of the evidence.” (CACI15 201) “Clear and convincing evidence” requires a finding of high probability for the propositions advanced in an accusation against a targeted respondent licensee. It must be so clear as to leave no substantial doubt and to command the unhesitating assent of every reasonable mind. (*In re Michael G.* (1998) 63 Cal.App.4th 700.)

And, the standard of proof known as clear and convincing evidence is required where particularly important individual interests or rights are at stake. (*Weiner v. Fleischman* (1991) 54 Cal.3d 476.)

2. Complainant established by clear and convincing evidence the factual findings and the legal conclusions upon which disciplinary action is imposed upon the respondent herein.

Great weight is given to the comprehensive, practical and erudite expert witness testimony provided, as well as the array of illustrations and renderings, by Mr. Tsuyoshi Ty Bunden, P.E., S.E., during the hearing of this matter.

Respondent's testimony, however, was biased by vainly attempting to cast in a favorable light his work product for homeowner's project.

The testimony from respondent's single expert witness, Mr. Lawrence Keil, can be given little weight. First, Mr. Keil acknowledged that he spent little time personally scanning respondent's drawings and calculations, and also he testified further that many pages in the documents offered by respondent were never even seen or closely reviewed by him. Furthermore, unlike complainant's industry expert witness, Mr. Keil has little recent experience with actual design work in that he is a consultant who is hired by insurance companies and litigants in civil lawsuit to render opinions. Mr. Keil provided no testimony regarding the provisions of the California Building Code, especially the 2001 CBC provisions specifically alleged to have been violated in the Accusation. Moreover, Mr. Keil rendered no testimony regarding the issues of negligence and incompetence upon which the disciplinary action is grounded. And, Mr. Keil offered no opinion regarding respondent's "Special Defenses."

Respondent's percipient witness, Mr. Brain Fenty, provided little substantive evidence that can be determined to have refuted any portion of the learned and comprehensive expert witness opinions advanced by Mr. Bunden and the weight of documentary evidence presented by complainant. And importantly, because of the bias on the part of Mr. Fenty, his testimony is disregarded in its entirety.

Respondent's testimony regarding questions pertaining to the standard of care is accorded little weight. Most importantly, despite the extensive and overwhelming expert witness testimony that highlights respondent's negligence and incompetence, respondent was unwilling to acknowledge the extent of his errors and omissions. And respondent refused to articulate recognition of the financial loss, frustration and, emotional distress inflicted upon homeowner by respondent's negligence and incompetence.

3. Two important themes run throughout this controversy for which respondent and complainant are at odds. Those themes pertain to, (i) the range and

extent of the board's regulation of "engineering design" and (ii) the impediment, if any, upon respondent's ability to submit an accurate set of drawings and calculations because of necessary input from the work product by a roof-truss manufacturer.

i. Engineering Design

Complainant's view regarding the concept of the board's authority for regulating engineering design must prevail as the expression of the board. With the comprehensive testimony and expression of cogent opinions by Mr. Bunden, complainant established that the concept of regulating engineering design pertains to both an engineer's drawings and calculations taken together. That is, an engineer's drawings must be justified by calculations that constitute the complete engineering design.

The type of project that is represented by homeowner's desired addition of a second-story to an existing house along with the erection of a backyard deck requires the engineer not only to prepare drawings, but also to reduce to writing calculations that justify the drawings. And most importantly, the calculations, which have life-safety impact, must be submitted in their entirety to a governmental building official for approval of the design of a planned unconventional structure. The paramount authority in this area, namely the California Building Code sets out several provisions to support complainant's position. The first of the provisions is 2001 CBC's Index at page 1-427 for term "Calculations," which is defined at section 106.3.2, that uses the word "required" as a modifier with respect to "submittal documents." The second set of provisions is 2001 CBC sections 106.3.1 and 106.3.2, which prescribe mandatory language for filing calculations with a building official.

Section 106.3.1 of the 2001 CBC establishes, with regard to making an application for a building permit, that:

To obtain a permit, the applicant shall first file an application therefore in writing on a form furnished by the code enforcement agency for that purpose. Every application *shall*⁷⁶ . . . 4. *be accompanied by plans, computations and specifications and other data as required by Section 106.3.2.*

(Emphasis added.)

⁷⁶ The word "shall" is defined as meaning to have "a duty to . . .," or "is required to . . ." And as a commentator, to a dictionary of terms of art in the law, has stated that the word "shall" in this context "is [used in] the mandatory sense that drafters typically intend and the courts typically uphold." The word also carries a meaning of "should," which is another variation often interpreted by courts. (Black's Law Dict. (8th ed. 2004) p. 1407, col. 2.)

And section 106.3.2 of the 2001 CBC requires with regard to submittal documents:

Plans, specifications, *engineering calculations*, diagrams, soil investigation reports, special inspection and structural observation programs and other data *shall constitute the submittal documents* and shall be submitted in one or more sets with each application for a permit.

(Emphasis added.)

Hence, taking the aforementioned two CBC provisions together, complainant reasonably advances that an engineer has no choice in that calculations must be submitted with drawings.

Based in substantial part upon the testimony given by Mr. Bunden, complainant showed that the exception⁷⁷ to the requirement of the 2001 CBC's section 106.3.2 does not apply. First, the exception applies when the construction project is conventional. Here, in the compelling expert opinion of Mr. Bunden the subject homeowner's project was not conventional. Second in order for the exception to apply, the building official must issue a written waiver. Here, no evidence exists to establish that the El Cerrito Building Official issued a waiver to the requirement of 2001 CBC section 106.3.2. And the language in the exception makes clear that the exception applies when "reviewing of plans is not necessary to obtain compliance with this code." The building official's review of respondent's plans was necessary.

Contrary to respondent's assertions throughout the proceeding, an engineer's calculations, which impact life-safety concerns, must be submitted along with an engineer's drawings for the building official's approval.

ii. *Truss Manufacturer's Input Defense*

In defense against several allegations⁷⁸ in complainant's Accusation, respondent offered evidence and argued extensively that certain deficiencies in his

⁷⁷ The exception to Section 106.3.2 states, "The building official may waive the submission of plans, calculations, construction inspection requirements and other data if it is found that the nature of the work applied for is such that reviewing of plans is not necessary to obtain compliance with this code."

⁷⁸ Respondent's defense regarding the negative impact upon his design details due to the lack of specifications for a truss system as produced by a truss manufacturer was raised as to the Accusation's paragraphs: 12e, 12j, 12k, 12q, 13e, 13h and 13l.

drawings were attributable to the engineer's supposed inability to produce final details because specifications for a roof truss system had not been delivered to respondent by a truss manufacturer. Respondent unpersuasively advanced that many roof system details were deliberately omitted by him in the Permit Set, but were planned by respondent to be introduced upon receipt of the precise specifications created by the truss manufacturer.

Respondent's defense regarding the retarding effect of non-receipt of truss manufacturer's specifications is without merit. First, as set out in the factual findings, many instances, when respondent raised the defense, had little association with a truss system. For example, the inexact dimensions for the roof extension had meager relationship with the absent truss system design. Second, an experienced engineer must be aware of the foreseeable dimensions of a truss system that would be produced by the truss manufacturer. With such awareness the engineer is equipped to complete the design for the surrounding area that supports the truss system. Third, through the "deferred submittal" procedure, 2001 CBC section 106.3.4.3⁷⁹ provides latitude for an engineer to proceed with properly completing a project, when such engineer is confronted with a portion of a design that cannot be precisely fixed or specified at the time of submittal of a proposed permit set for plan check review. However, respondent neither made use of the deferred submittal procedure nor did he make proper notations on the Permit Set drawings to alert a plan check reviewer or a builder regarding the inexactness in the roof design and stair well system because of missing truss manufacturer's specifications.

Respondent's Written Admissions of a Plan to Provide Homeowner With a Work Product that Breached the Standard of Care Expected of an Engineer

4. As set out in Factual Finding 16, respondent wrote homeowner a letter on September 6, 2002. In that letter respondent made an admission alluding to the impending inadequacy of his work product. Respondent could be understood as being not committed to upholding the industry standard expected of a professional engineer when he agreed to produce "a minimum set of drawings that some other builder may not find adequate"

⁷⁹ Section 106.3.4.3 of the 2001 CBC set out, in pertinent part:

[D]eferred submittals are defined as those portions of the design that are not submitted at the time of the application and that are to be submitted to the building official within a specified period. [¶] Deferral of any submittal items shall have prior approval of the building officials. The architect or engineer of record shall list the deferred submittals on the plans and shall submit the deferred submittal documents for review by the building official.

Respondent's admissions showed his disposition in 2002 to present a consumer a work product that breached the standard of care expected of a civil engineer.

Causes for Discipline

5. Business and Professions Code section 6775, subdivision (c), provides that the Board for Professional Engineers, Land Surveyors and Geologists may reprove, suspend for a period not to exceed two years, or revoke the registration of any professional engineer "who has been found guilty by the board of negligence or incompetence in his . . . practice"

NEGLIGENCE

6. California Code of Regulations, title 16, section 404, subdivision (dd), defines "negligence" as:

For the sole purpose of investigating complaints and making findings thereon under Sections 6775 and 8780 of the Code, 'negligence' as used in Sections 6775 and 8780 of the Code is defined as *the failure of a licensee, in the practice of professional engineering . . . to use the care ordinarily exercised in like cases by duly licensed professional engineers . . . in good standing.*

(Emphasis added.)

7. With regard to respondent's negligence, cause exists for discipline under Business and Professions Code section 6775, subdivision (c), as that statutory provision interacts with California Code of Regulations, title 16, section 404, subdivision (dd), by reason of the matters set out in Factual Findings 57 through 73, and 76 through 89.

INCOMPETENCE

8. California Code of Regulations, title 16, section 404, subdivision (u), defines "incompetence" as:

For the sole purpose of investigating complaints and making findings thereon under Sections 6775 and 8780 of the Code, 'incompetence' as used in Sections 6775 and 8780 of the Code is defined as *the lack of knowledge or ability in discharging professional obligations as a professional engineer*

(Emphasis added.)

9. With regard to respondent's incompetence, cause exists for discipline under Business and Professions Code section 6775, subdivision (c), as that statutory provision interacts with California Code of Regulations, title 16, section 404, subdivision (u), by reason of the matter set out in Factual Findings 65, 74, 75, 90 and 91.

Restitution to Homeowner

10. Government Code section 11519, subdivision (d), provides that "specified terms of probation may include an order of restitution. Where restitution is ordered and paid pursuant to the provisions of this subsection, the amount paid shall be credited to any subsequent judgment in a civil action." Respondent must pay restitution to the victim homeowner because of respondent's substandard design work which could not be executed by building contractors. Moreover homeowner was compelled to pay fees well in excess of the contract with respondent to produce drawings and specifications that respondent failed to produce. Homeowner paid respondent more than \$17,000. By reason of Factual Findings 9 through 12, 16, 17, 20 and 21 through 28, the fair and just restitution amount is set at \$17,000.

Costs of Investigation and Prosecution

11. Business and Professions Code section 125.3 prescribes that a "licentiate found to have committed a violation or violations of the licensing act" may be directed to pay a sum not to exceed the reasonable costs of the investigation and enforcement of the case.

California Code of Regulations, title 16, section 419 provides, in pertinent part: "In addition to the disciplinary orders . . . all decisions shall address recovery of the board's investigative and enforcement costs, as described in and authorized by Business and Professions Code section 125.3."

California Code of Regulations, title 1, section 1042, subdivision (2), sets forth "a certificate or affidavit in support of costs incurred by the agency for services provided by regular agency employees should include sufficient information by which the ALJ can determine the costs incurred in connection with the matter and the reasonableness of such costs, for example, a general description of tasks performed, the time spent on such tasks, and the method of calculation the cost for such services."

The California Supreme Court's reasoning as to the obligation of a licensing agency to fairly and conscientiously impose costs in administrative adjudications as articulated in *Zuckerman v. State Board of Chiropractic Examiners* (2002) 29 Cal.4th 32, 45-46, is persuasive and should be considered in this matter. Scrutiny of certain factors, which pertain to the board's exercise of discretion to analyze or examine factors that might mitigate or reduce costs of prosecution upon a licensee found to

have engaged in unprofessional conduct, are set forth in Factual Finding 102.

By reason of Factual Findings 100, 101, and 103, the reasonable cost of investigation and prosecution is set at \$19,624.50.

Ultimate Determinations

12. Although respondent's acts and omissions regarding homeowner's project are significant, complainant presented this single consumer complaint regarding respondent's negligence and incompetence. Even though board has a record that reveals two instances when disciplinary action has been directed against respondent's license, those past actions occurred respectively approximately 18 years ago and 13 years ago. By respondent's involvement as a volunteer in FEMA search and rescue actions in a capacity as an engineering specialist, respondent shows that he has an interest in community service and aiding his fellow American citizens and residents. With further training and board monitoring, respondent has the potential to adequately deliver services to the public as a licensed civil engineer. Hence, probationary status for respondent is more appropriate than license revocation.

13. All arguments that were advanced by respondent yet were not expressly discussed in this decision have been considered and rejected as being without merit.

ORDER

Civil Engineer License No. C 32383 issued to respondent Thomas Culbertson Clark III is revoked, by reason of Legal Conclusions 7 and 9. Provided, however, that the revocation of licensure shall be stayed for five (5) years, during which time respondent's licenses shall be placed on probation subject to the following terms and conditions:

1. Respondent shall obey all federal, state, and local laws. He will fully comply with state law governing the practice of professional engineering and professional land surveying in California.

2. From the effective date of the decision, respondent shall submit and cause to be submitted special reports as required by board.

3. The period of probation shall be tolled during the time the respondent is practicing exclusively outside the state of California. If, during the period of probation, the respondent practices exclusively outside the state of California, respondent shall immediately notify the board in writing.

4. Within 45 days of the effective date of the decision, respondent shall provide the board with evidence that he has provided all persons or entities with

whom he has a contractual or employment relationship in the area of professional engineering with a copy of the decision and order of the board. Within 30 days of the effective date of the decision, respondent shall provide the board with the name and business address of each person or entity required to be so notified. During the period of probation, respondent may be required to provide the same notification of each new person or entity with whom he has a contractual or employment relationship provided that the relationship is in the area of practice of professional engineering in which the violation occurred and he shall report to the board the name and address of each person or entity so notified.

5. Within two years from the effective date of this decision, respondent is hereby ordered to reimburse the board the amount of \$19,624.50 for its investigative and enforcement costs up to the date of the hearing. Failure to reimburse the board's cost of its investigation and prosecution shall constitute a violation of the probationary order, unless the board or its Executive Officer agrees in writing to payment by an installment plan because of financial hardship. However, full payment must be received no later than 18 months prior to the scheduled termination of probation.

6. Within 60 days of the effective date of the decision, respondent shall successfully complete and pass the California Laws and Board Rules examination, as administered by the board.

7. Within two years of the effective date of the decision, respondent shall successfully complete and pass a course in professionalism and ethics, approved in advance by the board or its designee. Respondent shall provide the board with an official transcript as proof of successful completion within 60 days of the completion date of the course.

8. Within two and one-half years of the effective date of the decision, respondent shall successfully complete and pass the California Civil Engineer's Seismic Principles examination.

9. Within two and one-half years from the effective date of the decision, respondent shall successfully complete and pass, with a grade of "C" or better, three college-level civil engineering courses, approved in advance by the board or its designee. At least two of the courses must be related to structural engineering. Such courses shall be specifically related to the area of violation. For purposes of this subdivision, "college-level course" shall mean a course offered by a community college or a four-year university of three semester units or the equivalent; "college-level course" does not include seminars.

10. Within one and one-half years from the effective date of this decision, respondent shall take and achieve the passing score as set by the board for the second division examination (including the seismic principles and engineering surveying

examinations for civil engineers). The board or its designee may select the specific examination questions such that the questions relate to the specific area of violation and comprise an examination of the same duration as that required of an applicant for licensure. Respondent shall be required to pay the application fee as specified by the board's regulations, and he shall be afforded all examination appeal rights as provided by the board's regulations.

11. Respondent, his corporation, the licensee's surety or assignee, must make restitution to homeowner Eric Fisher in the amount of \$17,000, within 180 days from the effective date of this decision. And within 210 days from the effective date of this decision, respondent shall provide verifiable proof to the board that restitution has been fully paid as ordered. (Verifiable proof may include homeowner's letter, signed and dated in the presence of a California notary public, where the letter recites the amount of restitution paid and the date respondent made the restitution.)

12. If respondent violates probation in any respect, the board, after giving respondent notice and the opportunity to be heard, may revoke his probation and reinstate the disciplinary order that was stayed. If an accusation or petition to revoke probation is filed against respondent, or if the matter has been submitted to the Office of the Attorney General for the filing of such, during probation the board shall have continuing jurisdiction until all matters are final, and the period of probation shall be extended until all matters are final.

13. Upon successful completion of probation, including the fulfillment of all conditions, respondent's engineering license will be fully restored.

DATED: May 17, 2013

Original Signed

PERRY O. JOHNSON

Administrative Law Judge

Office of Administrative Hearings

1 KAMALA D. HARRIS
Attorney General of California
2 FRANK H. PACOE
Supervising Deputy Attorney General
3 NICHOLAS TSUKAMAKI
Deputy Attorney General
4 State Bar No. 253959
455 Golden Gate Avenue, Suite 11000
5 San Francisco, CA 94102-7004
Telephone: (415) 703-1188
6 Facsimile: (415) 703-5480
E-mail: Nicholas.Tsukamaki@doj.ca.gov
7 *Attorneys for Complainant*

8 **BEFORE THE**
9 **BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND**
10 **GEOLOGISTS**
11 **DEPARTMENT OF CONSUMER AFFAIRS**
12 **STATE OF CALIFORNIA**

11 In the Matter of the Accusation Against:
12 **THOMAS CULBERTSON CLARK, III**
13 **175 Ardmore Road**
14 **Kensington, CA 94707**
Civil Engineer License No. C 32383
15 Respondent.

Case No. 978-A

A C C U S A T I O N

16
17 Complainant alleges:

18 **PARTIES**

19 1. Richard B. Moore, PLS (Complainant) brings this Accusation solely in his official
20 capacity as the Executive Officer of the Board for Professional Engineers, Land Surveyors, and
21 Geologists (Board), Department of Consumer Affairs.

22 2. On or about August 14, 1980, the Board issued Civil Engineer License Number C
23 32383 to Thomas Culbertson Clark, III (Respondent). The Civil Engineer License was in full
24 force and effect at all times relevant to the charges brought herein and will expire on December
25 31, 2012, unless renewed.

26 ///

27 ///

28

1 **COSTS**

2 8. Section 125.3 of the Code provides, in pertinent part, that the Board may request the
3 administrative law judge to direct a licentiate found to have committed a violation or violations of
4 the licensing act to pay a sum not to exceed the reasonable costs of the investigation and
5 enforcement of the case.

6 **FACTUAL BACKGROUND**

7 9. In or around April 2002, Respondent entered into a contract with E.F.¹ to provide
8 drawings and calculations necessary for E.F. to obtain a building permit for the addition of a
9 second story to E.F.'s home in El Cerrito, California.

10 10. In or around November 2002, Respondent supplied E.F. with the drawings and
11 calculations for permit submittal to the El Cerrito Building Department.

12 11. In or around December 2002, the Plan Check Manager of the El Cerrito Building
13 Department informed E.F. that Respondent's drawings and calculations were inadequate in that
14 they failed to include many structural details necessary for the safe construction of the second
15 story addition. Respondent then revised the drawings and calculations (Permit Set) and
16 resubmitted them to the City for review. A City building official reviewed the Permit Set for
17 compliance with the 2001 California Building Code and approved it in or around February 2003.

18 12. The calculations in Respondent's Permit Set contain several errors and omissions,
19 including the following.

20 a. The title page of the calculations references the 1997 Uniform Building Code. The
21 title page should reference the 2001 California Building Code.

22 b. On the "lateral loads" page, Respondent omitted the calculation for the wind force
23 in the E-W direction.

24 c. On the "seismic resistance" page, the design of the upper floor shear wall does not
25 satisfy the special load combination set forth in California Building Code section 1612.4.

26 Respondent also failed to provide anchorage design for the shear wall indicating the size and

27 ¹ E.F.'s full name will be released to Respondent upon request in discovery. Initials are
28 utilized herein to protect E.F.'s privacy.

1 spacing of anchor bolts, and details of the holddowns including embedment into the foundation to
2 resist uplift.

3 d. Respondent omitted the lateral design for all shear walls located on the north,
4 south, and west sides of the building. Respondent essentially designed only one shear wall for the
5 entire building.

6 e. Respondent omitted the design of the second floor and roof horizontal diaphragms,
7 which is required by California Building Code section 1633.2.9.

8 f. Respondent omitted the design of the second floor and roof horizontal diaphragm
9 chords and drag members.

10 g. Respondent omitted the foundation design of all the new footings shown on Sheet
11 9 of the drawings in the Permit Set.

12 h. Respondent failed to include a complete design of the exterior elevated deck
13 located at the west end of the building, including calculations for the foundation, framing, and the
14 vertical and lateral load-resisting systems.

15 i. Respondent failed to determine the seismic pho factor as defined by California
16 Building Code section 1630.1.

17 j. Respondent omitted the roof framing design for connecting the breezeway
18 between the existing garage and the main building as shown on Sheet 5 of the drawings in the
19 Permit Set.

20 k. Respondent omitted connection details and calculations for the design of the new
21 and existing chimney attachment to the roof.

22 l. Respondent omitted the design of the second floor framing around the stair
23 opening.

24 m. Respondent omitted the design of the foundation for the stairway.

25 n. Respondent omitted the design of the second floor framing to support the
26 southwest corner of the building.

27 o. Respondent omitted the design of the guardrails for the exterior deck.

28 ///

1 p. Respondent omitted the design of steel columns and a wood post specified in the
2 drawings in the Permit Set.

3 q. Respondent omitted the design of the connection of the existing roof structure over
4 the main entrance and the breezeway to the new second floor addition.

5 13. The drawings in Respondent's Permit Set contain several errors and omissions,
6 including the following.

7 a. On Sheet 5, the proposed site plan shows a connecting roof between the garage
8 and the main building that is not shown or referenced on any other drawing.

9 b. On Sheet 8, Respondent omitted the design of the foundation and steel column
10 referenced in Detail 1.

11 c. On Sheet 9, Respondent omitted the design of all new isolated and continuous
12 footings. Also, although Respondent included a note calling for 5/8" diameter bolts at 16"
13 spacing for a double sheathed shear wall located at the west side of the building, he failed to
14 include calculations to justify this design.

15 d. On Sheet 10 at Detail 1, Respondent omitted the connection detail and member
16 call out of the second floor deck.

17 e. On Sheet 10 at Detail 2, Respondent omitted the connection detail of the second
18 floor truss to the exterior wall. Respondent also omitted the ceiling joist size, spacing, and
19 connection details.

20 f. On Sheet 11, Respondent omitted the following: floor framing around the stairway
21 opening; floor framing to support the southwest corner of the building; ceiling joist plan and
22 associated connection details; connection details for the support of the second floor trusses around
23 the existing chimney; window header beam sizes; roof framing for the breezeway and canopy at
24 the west side of the building; and details of the existing roof framing and ceiling framing over the
25 front part of the living room.

26 g. On Sheet 11, Respondent made no attempt to evaluate whether the second floor
27 truss located directly below or near the full length transverse partition wall and parallel with the
28 truss needed to be strengthened or doubled.

1 h. On Sheet 12, Respondent omitted the following: roof framing around the existing
2 and/or modified chimney; the size of the header beams for the windows; connection details of the
3 roof trusses to the walls; and attic and/or ceiling framing to support a 50 gallon gas hot water
4 heater noted on the plans.

5 i. On Sheet 13 at Detail 2, Respondent omitted the plate washer 2"x2"x3/16" for the
6 anchor bolt, which is required by California Building Code section 1806.6.1.

7 j. On Sheet 14 at Detail 2, the end wall is a cripple wall per design at the second
8 floor level. By specifying a cripple wall at this location, a vertical hinge point will be introduced
9 in the wall that must be braced for out-of-plane loads. Respondent's bracing design for this wall
10 was not completed and no details were provided to address this condition.

11 k. On Sheet 15 at Details 1 and 2, Respondent omitted deck bracing and framing
12 details. While the drawing does include a handwritten note to add 2"x6" braces to the deck with
13 5/8" bolts, Respondent omitted the exact details of the connection, including the slope, length,
14 and exact location of the braces.

15 l. On Sheet 19, Respondent omitted details for a possible extension and/or
16 modification of the existing chimney to accommodate the higher roofline associated with the
17 second floor addition.

18 m. On Sheet 21, the elevation around the exterior deck does not correspond to the
19 elevation shown on Sheet 15 at Detail 3. On Sheet 21, there is a solid wall below the deck,
20 whereas there is no wall below the deck on Sheet 15 at Detail 3.

21 n. On Sheet 22, Respondent omitted the following: deck bracing and framing details;
22 and design or engineering calculations for the deck elements.

23 o. On Sheet 23, Respondent omitted the design of the guardrail as required by
24 California Building Code table 16-B.

25 14. In or around 2003, E.F. was informed by his contractor that even though the Permit
26 Set had been approved by the City, it nonetheless contained many material deficiencies.

27 15. In or around December 2003 and January 2004, E.F. and E.F.'s contractor attempted
28 to obtain from Respondent the design details missing from the Permit Set. Respondent, however,

1 did not respond to these efforts. As a result, E.F.'s contractor terminated his contract with E.F.
2 The project then came to a standstill.

3 16. In or around July 2005, E.F. entered into a contract with a different contractor to take
4 over the project. The new contractor, however, like E.F.'s first contractor, discovered errors in
5 Respondent's Permit Set.

6 17. In or around October 2005, E.F. terminated his contract with Respondent.

7 CAUSE FOR DISCIPLINE

8 (Negligence and/or Incompetence)

9 18. Respondent is subject to disciplinary action under section 6775, subdivision (c) of the
10 Code and California Code of Regulations, title 16, section 404, subdivisions (u) and (dd) for
11 negligence and/or incompetence in that the calculations and drawings in the Permit Set that
12 Respondent prepared for E.F. for submittal to the El Cerrito Building Department contain
13 numerous errors and omissions. The circumstances of Respondent's conduct are set forth above
14 in Paragraphs 12.a. through 12.q. and 13.a. through 13.o.

15 DISCIPLINARY CONSIDERATIONS

16 19. To determine the degree of discipline, if any, to be imposed on Respondent,
17 Complainant alleges the following.

18 a. On or about November 6, 1995, in a prior action entitled *In the Matter of the*
19 *Accusation Against Thomas Culbertson Clark* before the Board for Professional Engineers, Land
20 Surveyors, and Geologists, Case Number 567-A, the Board withdrew an Accusation filed against
21 Respondent alleging negligence and incompetence. Pursuant to a stipulation, Respondent agreed
22 to reimburse the Board for costs and complete coursework in Engineering Ethics and
23 Professionalism. That decision is now final and is incorporated by reference as if fully set forth.

24 b. On or about July 28, 2000, in a prior disciplinary action entitled *In the Matter of*
25 *the Accusation Against Thomas Culbertson Clark* before the Board for Professional Engineers,
26 Land Surveyors, and Geologists, Case Number 683-A, Respondent's license was placed on
27 probation for three years as a result of Respondent's negligence and incompetence in preparing
28 plans and specifications for drainage work. That decision is now final and is incorporated by

1 reference as if fully set forth.

2 **PRAYER**

3 WHEREFORE, Complainant requests that a hearing be held on the matters herein alleged,
4 and that following the hearing, the Board for Professional Engineers, Land Surveyors, and
5 Geologists issue a decision:

6 1. Revoking or suspending Civil Engineer License Number C 32383 issued to Thomas
7 Culbertson Clark, III;

8 2. Ordering Thomas Culbertson Clark, III to pay the Board the reasonable costs of the
9 investigation and enforcement of this case pursuant to Business and Professions Code section
10 125.3;

11 3. Taking such other and further action as deemed necessary and proper.

13 DATED: 12/21/11

Original Signed

14 RICHARD B. MOORE, PLS
15 Executive Officer
16 Board for Professional Engineers, Land Surveyors,
17 and Geologists
18 Department of Consumer Affairs
19 State of California
20 *Complainant*

21 SF2011200570