City Council Agenda

City of Campbell, 70 North First Street, Campbell, California

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CAMPBELL CITY COUNCIL STUDY SESSION
Tuesday, September 5, 2017 – 6:00 p.m.
Council Chamber – 70 N. First Street

NOTE: No action may be taken on a matter under Study Session other than direction to staff to further review or prepare a report. Any proposed action regarding items on a Study Session must be agendized for a future Regular or Special City Council meeting.

CALL TO ORDER, ROLL CALL

NEW BUSINESS

1. **Civic Center Master Plan**
   Recommended Action: Conduct Study Session and provide direction to staff.

PUBLIC COMMENT

ADJOURN

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In compliance with the Americans with Disabilities Act, listening assistive devices are available for all meetings held in the City Council Chambers. If you require accommodation, please contact the City Clerk's Office, (408) 866-2117, at least one week in advance of the meeting.

MEMORANDUM

Public Works Department

To: Honorable Mayor and City Council **Date:** September 5, 2017

From: Todd Capurso, Public Works Director TC

Margarita Mendoza, Administrative Analyst MM

Via: Brian Loventhal, City Manager BL

Subject Study Session – Civic Center Master Plan

PURPOSE

Discuss and provide direction related to the Civic Center Master Plan. As a result of the Study Session, staff will have a better understanding of Council's interest in renovation or constructing new facilities, where those facilities should be located, and which financing mechanisms are recommended for further study.

BACKGROUND

On August 18, the City Council received an Information Memorandum (Attachment 1) providing a review of the work completed related to the Civic Center Master Plan (CCMP). This memorandum included information about the previously presented design options and scenarios as well as various financing mechanisms, including several tax assessment measures.

Prior to that, on May 16, the City Council authorized the Public Works Director to enter into an agreement with Biggs Cardosa Associates (BCA) to perform a Tier 1 seismic assessment – essential facilities for both City Hall and the Library.

The performance criteria used to evaluate buildings varies based on the use of that building. If a building houses a facility such as a police station, fire station, hospital, emergency operations center (EOC) etc., the building is classified as an essential facility and is required to remain operational after an extreme event such as a major earthquake. The performance level of an essential facility increases the seismic forces on the structure by a factor of two over the life safety criteria (which is commonly used for standard office occupancy buildings). This typically results in several additional retrofit measures that need to be implemented in order for the building to meet the performance criteria.

DISCUSSION

On August 23, the City received the results of the Tier 1 seismic assessment reports for the Campbell Library and City Hall buildings as performed by BCA. As stated in the

Information Memorandum, this assessment was necessary to determine if the buildings meet the requirements of an essential facility, since City Hall houses the Police Department and the Library building houses the EOC. The assessment would also identify the level of structural improvements that would be required for either building to meet this standard.

The findings (Attachments 2 and 3) indicate that while neither building meets the essential facility standard, in the event of a severe earthquake the buildings are likely to maintain their gravity load-carrying system. However, because they do not meet the seismic resistance requirements for the Immediate Occupancy Structural Performance Level, both buildings could experience significant structural damage. Therefore, the buildings would require considerable seismic retrofit work to reliably serve as an essential facility.

Following an earthquake, the structural damage sustained may not allow the buildings to be used for continued operations. Furthermore, the repair costs may be too high and therefore may not be economically viable. These findings are important, since following a significant earthquake event it is possible that the City may not have access to its EOC and the Police Department may not be allowed to occupy City Hall to continue operating the dispatch center or have access to other equipment or supplies in the building that would be needed for emergency response.

The Tier 1 seismic assessment findings also provided a conceptual cost estimate for the required retrofit work identified through the study. The cost estimate includes retrofit costs that are only directly related to structural strengthening of the building's primary lateral load-resisting system. Potential costs of all other improvements related to non-structural elements, such as mechanical, electrical, and plumbing (MEP) equipment and building systems, furnishings, utility services, etc. required to upgrade the building as an essential facility would require more detailed analysis. Design and project management costs are also not included – which are typically in the range of 30% to 35%, relative to construction costs.

The **conceptual cost estimate for the structural repair work under an essential facility performance level is $1.8 million for the Library, and $1.1 million for the City Hall building** (refer to Appendix 3 of the studies for details and assumptions). The BCA studies also define these figures as "order of magnitude" and recommend further evaluation of the structures using ASCE 41 Tier 2 Deficiency-Based procedures as well as field verification of various as-built conditions. This would be necessary in developing and finalizing the seismic retrofit program for either building. The costs required to bring MEP systems up to the essential facility standard are also expected to be significant.

The 2015 tier 1 assessments at the life safety performance level (suitable for office use) are significantly lower. Given the magnitude of the essential facility retrofit cost estimates, staff is requesting that Council provide direction on whether further study

should be undertaken to obtain more precise costs regarding retaining Police Department operations or an EOC in one or both of the existing buildings. The table below compares the cost estimates at the two performance levels already assessed.

Table 1. Retrofit Conceptual Cost Estimates
(Structural Construction Costs Only)

	Life Safety	Essential Facility
City Hall	$393,575*	$1.1 million
Library	$320,950*	$1.8 million

*2015 estimate

Conversely, if the Council prefers the option of constructing a new facility to house both Police and EOC functions, a site must be identified and other parameters such as size and cost should be discussed.

PROJECT SCALE AND COSTS

As outlined in the August Information Memorandum, staff has been focusing on developing a CCMP construction project between $40-50 million dollars (based on prior Council discussions). A project in this range would likely allow for the construction of only one new building and could be financed by various types of taxes, property assessments, or bonds. Now that the essential facility retrofit conceptual cost estimates are known, staff is focusing on CCMP facility scenarios that make the best use of existing buildings. While there may be a variety of design alternatives to consider, staff has identified the following alternatives to begin the discussion:

Alternative A

- Renovate City Hall, for non-public safety functions only (life safety improvements);
- Renovate Library building , continue to use for Library functions only (life safety improvements);
- Construct a new facility to house Police Department operations and an EOC function as an essential facility. Site to be identified.

Alternative B

- Renovate City Hall, for non-public safety functions only (life safety improvements);
- Renovate the Library building, relocate Police Department functions, EOC operations remain (essential facility improvements);
- Construct a new facility to house the Library functions. Site must be identified

Under either scenario, if a site other than the Civic Center campus is to be considered, additional site studies will be needed to determine the viability of the site as well as an evaluation of traffic/parking impacts. These time constraints should be considered if there is an expectation to place a financing measure on the June 2018 ballot.

COLLABORATION WITH THE LIBRARY

The Santa Clara County Library District (District) participated in previous CCMP discussions as part of the CCMP Core Team and has also participated in discussions related to financing of the CCMP and costs pertaining to the Library building. To date, there is a continued commitment by the District to fund any fixtures, furnishings, and equipment (FF&E) at the Library. The District will also continue to pay for ongoing maintenance and operations.

Furthermore, State legislation introduced in the current cycle, SCA 3 (Dodd), seeks to lower the local vote threshold for Library construction bonds from the current two-thirds vote to 55%. SCA 3 is currently in the State Senate (its house of origin) and has been ordered for a third reading. Should this legislation be signed as law, it may assist the Council in determining if a new Library could be constructed and financed by a bond, subject to a 55% approval threshold.

FINANCING FEASIBILITY

Information and preliminary analysis related to the following voter approved measures has previously been presented to the City Council. Staff is in the process of gathering additional information from the County regarding property information. This information may be necessary to develop a financing plan to any proposed improvements. Because there are several different financing mechanisms available, staff is seeking direction from Council on which type of measure, if any, should further research efforts focus on.

- Sales tax – City would need legislative exception to implement further sales tax.
- Utility Users Tax (UUT) – no current UUT in Campbell.
- Transit Occupancy Tax (TOT) – increased to 12% in 2010. A one percent increase would generate an estimated additional $383,000 annually.
- General Obligation (GO) bond – Based on Assessed Valuation (AV) referred to in increments of $100,000.
- Parcel tax – can apply as a flat rate or based on square footage – can be differing rates for residential versus others.

Should the City Council want to continue to move forward with consideration of a ballot measure in November 2018, staff will work immediately to engage consultants to conduct refined fiscal analysis (e.g. update to the 2015 NHA financing memo), and any polling to gauge support for a revenue measure.

NEXT STEPS

The City does not currently have a design firm under contract (formerly Anderson Brule Architects), or staff with significant capacity to serve as a project manager for the development and implementation of the CCMP. Additionally, should the Council identify a new location for facilities outside of the Civic Center, site assessments and site analyses would be required. In the event that Council confirms an interest in placing a measure on the November 2018 ballot, polling would likely be required. The Civic Center Master Plan reserve fund (established in 2015) has a balance of $407,859.

KEY QUESTIONS

At this point, staff is seeking direction from City Council on the questions below. The outcome of this discussion will refine future work and content of future study sessions.

1. Should the Police Department or EOC functions remain in their current locations?
   a. If yes, should staff initiate a Tier 2 Deficiency based procedure for either building?
   b. Should staff pursue further research on Alternative A or B (or any features of the alternatives)?
   c. Are there other design alternatives the City Council would like staff to research?

2. Should any function be considered for moving off-site? If so, site identification is needed.

3. Is there a preferred financing mechanism that should be studied further?

ATTACHMENTS

1. August 18, 2017 Civic Center Master Plan Information Memorandum
2. City Hall – Tier I Seismic Assessments
3. Library – Tier I Seismic Assessments

MEMORANDUM

Public Works Department

To: Honorable Mayor and City Council **Date:** August 18, 2017

From: Todd Capurso, Public Works Director

Via: Brian Loventhal, City Manager

Subject Information Memorandum – Civic Center Master Plan

PURPOSE

Provide the City Council with a review of work completed related to the Civic Center Master Plan (CCMP).

BACKGROUND

The CCMP project was adopted as a Council priority for FY 2013-14. In December 2013, Anderson Brulé Architects (ABA) was awarded the consultant services agreement to conduct work related to master planning services to the Civic Center campus, defined as the city blocks bounded by North First Street, Civic Center Drive, Harrison Street, and Grant Street. At this time, the CCMP Core Team was formed and consisted of one Councilmember (appointed by the Mayor), one Planning Commissioner (appointed by the Chair), Campbell Community Librarian, City Manager, City Clerk, and Department Directors from Community Development, Public Works, and Recreation and Community Services. ABA subsequently conducted several meetings and workshops, which led to the development of three design options and related cost model information. In 2015, the City retained the services of NHA Advisors to provide analysis and options regarding financing tools to fund the implementation of the CCMP.

The City Council has received presentation and updates from City staff and its design and financial consultants on:

- May 6, 2014
- July 1, 2014
- February 3, 2015
- March 25, 2015
- December 23, 2015
- March 1, 2016
- June 7, 2016
- July 19, 2016

To review a complete listing of previous Council reports, meeting notes and related documents, please visit the CCMP Project Page at: http://www.cityofcampbell.com/574/Civic-Center-Master-Plan-Project-14QQ.

DISCUSSION

Design Options and Project Scale

On March 1, 2016, the City Council held a Study Session to discuss the CCMP. The Council was presented with three design options created by ABA, cost model information, and options to finance construction of the selected design option. ABA's cost model estimates at that time showed a $151 - $164 million cost for full build-out of the various design options. ABA also separated each of the three design options into phases, which would allow for the incremental construction and funding of the design. These phase estimates showed that a Phase I project would cost between $49 - $62 million dollars (base year – no escalation). The preferred design and Phase I construction at that time, could have resulted in a new library building, new museum and storage, Orchard City Green improvements, and new parking and site improvements. However, the Core Team wanted to also include improvements that would address Police Department needs in a Phase I project.

In order to fund improvements to both the Library and Police Department within a Phase I construction project, the Core Team discussed reducing the proposed square footage (sq. ft.) of the facilities as follows:

- 15% reduction to the Library (50,808 sq. ft. to 43,187 sq. ft.)
- 25% reduction to the Police facility (23,692 sq. ft. to 17,769 sq. ft.)

Both the Library District and Police Department confirm that a reduction in the proposed square footage may be possible, though these have not yet been reconciled with the space needs that were identified during the programming phase of the project.

Based reduced square footage scale, ABA developed seven combinations of the desired design variables (Attachment 1). The estimated project costs (base year), ranged from $58-90 million dollars. At that time, the City could not find a financing mechanism to raise the revenue to pay for a project of this scope.

Financing Feasibility

NHA Advisors was retained to identify funding alternatives and provide an analysis related to potential voter-approved measures. A memorandum calculating project

bonding capacity based on a potential sales tax measure and issuance of General Obligation (GO) bonds or parcel tax was provided to the City Council in December 2015 (Attachment 2). A brief description of the voter approved measures that may be used to generate funding for a Phase I project is provided below.

i. Sales tax is the largest component of the City's budget, making up about 25% of the City's operating revenues. The City's current sales tax rate is 9.25%. The last increase to the City's sales tax rate was on April 1, 2017, as a result of a ½ of a cent increase to sales tax in Santa Clara County (2016 VTA Measure B). In FY 2017, Measure O funds are expected to generate approximately $2.7 million dollars. The State-allowed cap on sales tax is 2% above the State level, which is currently 7.5%.

   A general sales tax increase requires a simple majority. Utilizing current revenue estimates, a ¼ cent sales tax measure is estimated to generate between $2.7 and $3 million annually. NHA Advisors prepared two separate tables outlining estimated project funds resulting from the generation of either $2.7 or $3 million in new annual sales tax revenue. Using the conservative end of the estimated sales tax revenue, the 30-year project bonding capacity (depending on the term and interest rates) results in project funding in the amount of $41-52 million.

ii. The Utility User Tax (UUT). The City of Campbell does not currently impose a UUT. This type of tax may be imposed on the consumption of utility services, including (but not limited to) electricity, gas, water, sewer, telephone (including cell phone and long distance), sanitation and cable television. The Mobile Telecommunications Sourcing Act of 2000 (MTSA) expanded the tax to all cellular telephone charges for accounts with a primary place of use in the jurisdiction. However, Proposition 218 requires voter approval of any change in the methodology by which a tax is administered. Therefore, many agencies that rely on UUT's have successfully achieved voter approval of an updated ordinance to reflect the current modern telecommunications industry. As of January 2017, 161 cities in and counties in California imposed a UUT.

   According to the California Local Government Finance Almanac, City UUT rates range from 1 – 11%, where 5% is the most common rate.

iii. Transit Occupancy Tax (TOT). The City's current TOT rate is 12%, which was last updated in 2010. In Santa Clara County, only the City of Palo Alto has a higher TOT, which is 14%. The City estimates that FY 2017 TOT is expected to

raise $4.6 million. Based on this estimate, staff estimates that a 1% increase in TOT could raise an additional $383,000 in revenue for the City.

iv. A GO bond requires a 2/3 voter-approval which would then authorize an ad valorem property tax to be levied on property owners based on Assessed Valuation (AV). The amount levied is based on the AV of the property and is typically referred to in per $100,000 increments.

Per the analysis provided by NHA, the average residential property in Campbell has an AV of $462,568. Assuming a comparable GO bond to the annual sales tax revenue target of $2.7 million, the City could authorize a GO bond between the same range of $41-52 million. This would result in the following estimated property tax impacts (Attachment 3):

General Obligation Bond – Ad Valorem (AV) Property Tax		
Average Campbell Residential Property Assessment - $462,568		
	Average Residential Property	Amount per $100,000 AV
Average Property Tax	$101	$22
Maximum Annual Property Tax	$144	$31

iv. A parcel tax, which also requires 2/3 voter approval, can be formulated in a variety of ways. One based on square footage on all building area, and the other using a flat special tax regardless of parcel or building size. Applying a flat rate to all parcels in the City, a parcel tax of approximately $243 would be required to generate sufficient funds to support a project as defined in the range of $41-52 million (Attachment 3).

At the March 1, 2016 Study Session, the Council directed staff to conduct public opinion polling to gauge resident support for either a General Obligation (GO) bond or parcel tax measure (each requiring 2/3 voter approval) to fund CCMP implementation. Godbe Research and Analysis conducted an opinion survey from May 4-18, 2016. Results found that likely voters surveyed did not strongly support either a GO bond or parcel tax measure (Attachment 4). Support for a GO bond was slightly higher, but the consultant cautioned that an extensive information and outreach campaign would need to occur before the election. The City Council was presented with those results at a Study Session on June 7, 2016. After considering and discussing the polling results, design, and construction phasing options, the City Council directed staff to return with information regarding how much funding could be generated and what type of CCMP

improvements could be made with those funds. Below are staff estimates for renovation of City Hall and Library building, a new building for the Police Department based on estimates previously developed by Anderson Brule Architects at that time.

	Square Footage	Const. Cost/per sq. ft.	Est. Const. Cost
Renovated City Hall	21,808	$275	$5,997,200
Renovated Library	24,000	$275	$6,600,000
New Library Annex (Admin./Shipping Functions)	5,000	$450	$2,250,000
New Police Building	16,000	$600	$9,600,000
TOTAL ESTIMATED CONSTRUCTION COSTS			$24,447,200
Construction Contingency (5%)			$1,222,360
Soft Costs Allowance (35%)			$8,556,520
Project Contingency (10%)			$2,444,720
Site Work - Site Prep., Development & Utilities			$1,633,978
TOTAL ESTIMATED PROJECT COSTS*			**$38,304,778**

*Does not include Parking costs and FF&E

The total estimated project costs do not include parking costs and fixtures, furnishings and equipment (FF&E). In prior discussion, the Santa Clara County Library District has indicated a willingness to bear the FF&E costs which have been previously estimated at $1.5 million.

Given the results of the public opinion polling, and the tight timeline to place a measure on the ballot, the City Council voted to postpone further consideration of a revenue measure on the November 2016 ballot. Staff was asked to bring the issue of a potential revenue measure to fund CCMP implementation back to the City Council to consider as part of the 2018 General Election ballot.

Items to consider going forward

The significant costs to build new facilities for all of the Civic Center buildings (City Hall, Police Department, and Library) triggered an interest in re-evaluating the structural condition of existing City Hall and Library buildings, with a focus on identifying the required elements needed to extend the useful life of the buildings.

The Library, City Hall and Police Department were all constructed in the early 1970's. The facilities are in need of various repairs and improvements. Staff has performed a

variety of short-term fixes to provide aesthetic improvements; however, these do not adequately address the longer term space requirements of the City nor have they addressed infrastructure deficiencies associated with the current structure.

Essential Facility Studies

In May and November 2015, Biggs Cardoza Associates conducted Tier 1 seismic assessments and conceptual seismic retrofit recommendations for the Campbell Library and City Hall. The findings of these assessments presented helpful information regarding the structural condition and seismic vulnerabilities of the building.

The Library assessment found that the building may be vulnerable to seismic damage but is likely to maintain its gravity load-carrying system. The preliminary cost estimate for the required seismic retrofit work identified through the Tier 1 evaluation is $320,950, including a small allowance for waterproofing of the masonry walls. Assessment of drainage / waterproofing issues by a specialist firm is recommended. Not included in the estimate were the costs of upgrading or replacing building systems, bringing the building into ADA compliance, or other access issues (these costs have yet to be determined). It must be noted that if the EOC is to remain at its current location, the Library building would then be required to follow Essential Facility requirements.

The City Hall assessment indicated that while the building apparently has a complete lateral load resisting system, it may have deficiencies in the required continuity and/or strength for some of its structural elements that are necessary for satisfactory seismic behavior. The building may be vulnerable to seismic damage but is likely to maintain its gravity load carrying system after the design level earthquake. The existing Campbell City Hall, however, does not fully meet the requirements for the Life Safety performance level. The conceptual cost estimate for the required seismic retrofit work identified through this Tier 1 evaluation to meet the Life Safety performance level is $393,575.

In May 2017, the City Council approved funding for an Essential Facility Study of City Hall and Library Buildings. This study is necessary to determine if City Hall is a viable home for the Police Department, and similarly, if the Library building can continue to house the City's Emergency Operations Center (EOC). The findings from this study will be presented to Council in early fall to assist with discussions related to Civic Center Master Plan next steps.

September 2017 Study Session

A Study Session to discuss the CCMP is expected to be held on September 5, 2017. At that Study Session, the Council will be asked to provide feedback on a variety of items that will help staff analyse and refine potential revenue measures and community outreach related to the implementation of the CCMP. A few of the key questions to consider are:

- What services are envisioned in the CCMP
- Collaborative financing with the library district
- Library sponsored construction bond (55% approval threshold)
- Further facility/design considerations and corresponding timelines
- Project cost and type of financing measure
- Budget for work going forward

2018 General Election Measure

In particular, staff would like to discuss with Council at the September Study Session, the anticipated timeline to place a revenue measure on the November 2018 general election ballot. At this time, based on known information, below is a suggested timeline for basic next steps:

- Monthly Council Updates to the Council (November 2017 – May 2018)
- November 2017 – April 2018 Community Engagement
- June 5, 2018 – Council resolution placing revenue measure on the ballot.
- June 19, 2018 – For and Against Arguments Due
- June 29, 2018 – Rebuttal Arguments Due

Attachments:

1. ABA – Civic Center Design Option 2 - Phase I Cost Models (7 scenarios)
2. NHA Financing Memo
3. NHA - $46 Million Project Amount Bond/Parcel Tax Scenario
4. Godbe Public Opinion Poll – May 2016

TIER 1 SEISMIC EVALUATION

Immediate Occupancy Structural Performance Level

Campbell City Hall

Campbell, California

Draft Report

Prepared For:
City of Campbell
70 North First Street
Campbell, California

Prepared By:
Biggs Cardosa Associates, Inc.
101 California Street, Suite 875
San Francisco, California

August 22, 2017

BCA Job No. 2015274.2

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APPENDICES

EXECUTIVE SUMMARY

Biggs Cardosa Associates has been retained by the City of Campbell to provide a Tier 1 seismic assessment of the Campbell City Hall in order to upgrade the existing building as an Essential Facility. As prescribed in ASCE 41-13, the reference document used for this seismic evaluation, the lateral load-resisting system of an Essential Facility must comply with requirements of the Immediate Occupancy Structural Performance Level. This report contains the structural/seismic findings, qualitative conceptual seismic retrofit recommendations and an order-of-magnitude construction cost estimate for the required retrofit work based on our Tier 1 seismic assessment (using the Immediate Occupancy performance level) as well as our experience with buildings of similar size, age and construction type.

The Campbell City Hall is a 2-story, 32,600 sf structure that was constructed in 1970. The building consists of wood-framed roof and second floor, with steel columns, and concrete masonry walls at the 1st story and wood-framed walls at the 2nd story. The building is constructed with two rectangular wings that are connected with a smaller rectangular lobby. Foundations consist of isolated spread footing below columns and continuous footings below walls. The lateral system comprises of plywood roof and floor diaphragms, plywood shear walls at the 2nd story and masonry walls at the 1st story. The first floor is a slab-on-grade.

Overall, the building is currently in good structural condition. The Campbell City Hall contains a complete vertical load-carrying system with no observed evidence of any significant structural damage, distress or deterioration. There were no visible indications that the building has undergone any significant settlement or differential settlement.

The deficiencies identified were based on a review of the available drawings, a limited walk-through of the building, completion of Tier 1 seismic assessment checklists, and our experience with structures of similar size, age and construction type. No destructive investigation was undertaken to either verify the existing conditions shown in the available documents, to identify unknown conditions, or to ascertain the extent of damage where evidence of potential structural damage was present.

Since the City Hall building houses the City of Campbell Police Department, it is therefore, by code, an Essential Service Building. For this type of building, the primary structural elements are required to meet the Immediate Occupancy Structural Performance Level as described in ASCE 41-13. However, originally as directed by the City, a seismic evaluation was performed using the Life Safety seismic performance criteria based on the assumption that the Police Department would be relocated to a new facility. The findings and recommendations of the Life Safety seismic evaluation were summarized in our “Tier 1 Seismic Evaluation (Life Safety)” report, dated December 16, 2015.

As per current direction from the City, the building is likely to continue housing the Campbell Police Department (which makes it an essential facility) and, therefore, a seismic evaluation needs to be performed using the Immediate Occupancy performance criteria. An Immediate Occupancy performance level is significantly more stringent than the Life Safety performance level, and thus requires considerably more seismic retrofit work to upgrade an existing building due to the much higher seismic demands.

The findings of this Tier 1 seismic assessment indicate that while the existing City Hall building apparently has a complete lateral load-resisting system, it may have significant deficiencies in the required continuity and/or strength for many of its structural elements/connections that are necessary for satisfactory seismic behavior under the design earthquake. The building is likely to maintain its gravity load-carrying system after the design level earthquake but may experience significant structural damage. Continued post-earthquake building operations may not be possible and the repair costs may be too high to be economically feasible. The existing Campbell City Hall, therefore, does not meet the seismic resistance requirements for the Immediate Occupancy Structural Performance Level and would require considerable seismic retrofit work to reliably serve as an Essential Facility.

The order-of-magnitude conceptual cost estimate for the required seismic retrofit work identified through our Tier 1 seismic evaluation to meet the Immediate Occupancy performance level is **$1.1 million** (refer to Appendix 3 for details and assumptions). This estimate only includes retrofit costs directly related to structural strengthening of the building's primary lateral load-resisting system. Potential costs of all other improvements (related to non-structural elements, MEP equipment and systems, furnishings, utility services, etc.) required to upgrade the building as an Essential Facility are excluded.

Further evaluation of the structure using ASCE 41 Tier 2 Deficiency-Based procedures as well as field verification of various as-built conditions are required and recommended before finalizing the seismic retrofit program for the City Hall building.

Continued post-earthquake use of a building is not limited just by the extent of earthquake damage to its structural system but, more often than not, might be limited by damage or disruption to non-structural elements of the building, furnishings, MEP components and systems, and availability of utility services. A seismic evaluation of these items is recommended to ensure that all non-structural items of the City Hall are also adequately upgraded to comply with the Essential Facility requirements.

PROJECT OVERVIEW

Biggs Cardosa Associates has been retained by the City of Campbell to provide a Tier 1 seismic assessment (using ASCE 41-13 methodology) and conceptual seismic retrofit recommendations for the existing Campbell City Hall in order to upgrade the building as an Essential Facility. As outlined in ASE 41-13, the appropriate seismic performance level for essential facilities is the Immediate Occupancy Structural Performance Level.

Since the City Hall building houses the City of Campbell Police Department, it is therefore, by code, an Essential Service Building. For this type of building, the primary structural elements are required to meet the Immediate Occupancy Structural Performance Level as described in ASCE 41-13. However, originally as directed by the City, a seismic evaluation was performed using the Life Safety seismic performance criteria based on the assumption that the Police Department would be relocated to a new facility. The findings and recommendations of the Life Safety seismic evaluation were summarized in our "Tier 1 Seismic Evaluation (Life Safety)" report, dated December 16, 2015.

As per current direction from the City, the building is likely to continue housing the Campbell Police Department (which makes it an essential facility) and, therefore, a seismic evaluation needs to be performed using the Immediate Occupancy performance criteria. An Immediate Occupancy performance level is significantly more stringent than the Life Safety performance level, and thus requires considerably more seismic retrofit work to upgrade an existing building due to the much higher seismic demands.

This report contains the structural/seismic findings based on our Tier 1 seismic assessment (using the Immediate Occupancy performance level), our limited observation of existing field conditions, and our experience with buildings of similar size, age and construction type. Potential seismic deficiencies are identified and qualitative conceptual recommendations are outlined for remedial work. An order-of-magnitude conceptual cost estimate is provided for the proposed seismic retrofit work.

The findings and recommendations of our Tier 1 assessment outlined herein pertain only to the existing City Hall building's primary lateral load-resisting system. This assessment does not cover seismic anchorage and/or bracing of non-structural items such as electrical/mechanical equipment, ceilings, partitions, or other architectural elements. Further, an assessment of other building systems/features such as mechanical, electrical, plumbing, fire protection, accessibility, egress, drainage, waterproofing, utility services, etc. is beyond the scope of this report.

The scope of services for the Tier 1 structural/seismic assessment described in this report is summarized below:

1. Review available as-built structural drawings, previous seismic assessment reports,

geotechnical reports, etc. for the building.

2. Perform a site visit to observe the existing structural conditions of the building, including the nature and layout of the primary lateral load-resisting system, physical condition of structural members and connections, and damage or deterioration of existing structural framing/connections. [Building finishes will not be disturbed during the site visit and our observation will be limited to the readily visible framing elements].
3. Perform a Tier 1 seismic assessment of the building based on the methodology outlined in ASCE41-13, using the Immediate Occupancy performance level.
4. Identify structural/seismic deficiencies in the building's framing system based on our field observations during the site visit(s) and the Tier 1 (Immediate Occupancy) seismic assessment.
5. Prepare qualitative conceptual recommendations for the required retrofit work to remedy the identified structural/seismic deficiencies in order to upgrade the building to the Immediate Occupancy performance level as well as for the repair/replacement of the damaged or deteriorated structural framing observed during the site visit.
6. Coordinate with our cost estimating subconsultant, Faithful + Gould (F+G), to prepare an order-of-magnitude conceptual-level construction cost estimate for the proposed structural/seismic retrofit work.
7. Prepare a brief letter report describing the findings of structural/seismic assessment, recommendations for seismic retrofit/repair, and conceptual construction cost estimate for seismic retrofit.

AVAILABLE DOCUMENTS

The City researched its records for available documents – structural drawings, geotechnical reports, previous seismic assessment reports, etc. – and provided us the following drawings to review for this seismic assessment:

- Accessibility Modifications, S-1 to S-3, Steven Duquette, SE and Starks Miers Scott, Architects, dated Aug. 1, 1994.
- Partial Roofing Framing Details, S1, Duquette Engineering, dated July 2004
- Police Station Renovations, A2.01, A4.01, and A5.01, Stowers Associates Architects, date Aug. 20, 2004
- City Hall Remodel – New Steel Rigid Frame, S1 and S2, Duquette Engineering, dated April 14, 2005
- Original design drawings (architectural and structural) for "Campbell City Hall." This set included:

- Six architectural drawings (sheets 7-12), prepared by William W. Hedley, Jr. Architects, dated March 23, 1970, and
- Thirteen structural drawings (sheets S1-S13), prepared by Donald R. James, Civil Engineer, dated March 13, 1970.

The findings and conclusions in this report are based on the available drawings and our site visits on October 22, 2015 and July 18, 2017. While most of the structural framing and detailing of the City Hall are covered up by architectural finish materials and cannot be observed directly, areas that could be observed suggest that the building's construction appears to conform with the original design drawings, although this needs to be verified as the project develops.

BUILDING DESCRIPTION

The 2-story Campbell City Hall was constructed in the early 1970's and houses the following city services and departments:

- Construction Division
- City Clerk
- City Manager
- Code Enforcement
- Finance Department
- Human Resources
- Police Department
- Public Works

The building has administrative offices, meeting rooms, council chambers, staff facilities, and public areas.

The existing Campbell City Hall building is a 2-story, 32,600 sf structure constructed in the early 1970's. The structure is divided in three areas; the North Wing, which is 15,400 sf; the South Wing, which also is 15,400 sf; and the Central Lobby which is located between the two wings and is 1,800 sf.

The building is located on a relatively flat site but has been graded so that the South Wing has full basement walls on south, east and west sides and a partial basement wall on the north side next to the Central Lobby. The North Wing has a full basement wall on the east side and partial basement walls on the south side, next to the Central Lobby, west side and north side which leads to the fenced in parking lot for police vehicles and equipment.

Access to the building is available on all four elevations with the primary access for the public through the East and West elevations of the Central Lobby.

DESCRIPTION OF STRUCTURE

The building is constructed with two 70-ft x 110-ft rectangular wings that are offset by 30 feet in the east-west direction. These two wings are separated by a 30-ft x 30-ft central lobby area. The floor- to-floor height of the basement is 12'-4" while the second level floor-to-roof heights are divided into two heights of either 12'-0" for the lower roof framing and 19'-4" for the upper roof framing.

The roof and second floor of the building are primarily wood-framed construction, with the second floor constructed with wood-framed exterior walls and steel tubular columns located at the interior and at the exterior perimeter walls. The basement (and partial basement), which serves as the 1st floor level, is constructed with concrete masonry block walls with some cast-in-place concrete sections and with interior steel tubular columns.

The upper roof which is located over the central lobby and the main corridor, which ties the North and South Wings together, has built up roofing on ½" plywood sheathing supported on 2x6 rafters spaced at 24" oc. The 2x6 rafters are supported on either 4x8 or 6x8 timber beams. The 4x and 6x beams are supported on 5x5 steel tubular steel columns located along the outside walls of the corridor. These steel corridor columns are supported at the second floor level.

The low roof, which comprises a major portion of the roof, has built-up roofing installed over either ¾" or ½" plywood sheathing. The ¾" sheathing spans a maximum of 48" between fabricated truss-joists while the ½" plywood spans a maximum of 24" between 2x rafters. The truss-joists and rafters are supported on either sawn timber beams, glue-laminated beams or steel wide flange beams. These roof beams are supported on tubular steel columns which are located on the interior of the building and at the exterior perimeter walls.

The second floor framing has a 2-inch cellular concrete topping slab poured over 5/8" T&G (tongue and groove) plywood sheathing supported on 2x floor joists spaced at 16" oc. Depending on the span length of the floor joists, 2x6, 2x8, 2x12 and 2x14 floor joists are used. The floor joists are supported on either interior glue-laminated beams of various sizes, 4x sawn timber beams, built-up 2x beams or on the perimeter basement walls of the North and South wings. The perimeter basement walls are 8 inch fully-grouted reinforced concrete masonry block with, in some locations, a cast-in-place reinforced concrete beam located at the top of the concrete masonry block walls. The various size floor beams are supported on interior 5x5 steel tubular columns located in the basement.

The basement floor is a 4" slab-on-grade with welded wire mesh reinforcement. The slab is placed on a prepared subgrade consisting of 2" sand layer, membrane vapor barrier and 4" crushed rock layer. The building foundation system consists of continuous reinforced concrete footings below basement masonry walls and isolated reinforced concrete spread footings below steel tube columns.

The building was designed to resist both wind and seismic loads using the plywood sheathing at the high and low roof levels and at the second floor as horizontal diaphragms. The high roofs are laterally braced using the flexural strength of the 5x5 steel tubular columns which transfer lateral loads to the larger lower roof. The lower roof is laterally supported with either plywood shear walls, which are located at the perimeter of each wing of the building, interior plywood shear walls, which are located on each side and at each end of the main corridor of the building and one steel rigid frame that replaced one of the corridor shear walls in the North Wing during a remodeling project. The second floor diaphragm is laterally braced with the reinforced masonry block basement walls at the perimeter of each wing of the building and interior plywood shear walls at the same approximate locations as the second floor plywood shear walls.

There are four entrances to the building at the first story. At grade doors at the north and south ends provide access to finished grade, while a long sloping ramp provides access to both floors near the main entrance located on the east and west sides of the building. The second story has two entrances at each wing of the building and as well as access at the sloping ramps. The roof overhangs the perimeter walls by approximately 3-ft and is supported by exterior steel columns.

Selected recent photos of the building are included in Appendix 1.

EXISTING CONDITIONS

In order to perform a Tier 1 seismic assessment of the Campbell City Hall, the nature of construction and layout of the current structure had to be determined. The available drawings (noted above) and our site visits on October 22, 2015 and July 18, 2017 provided the basic information to accomplish this task.

No destructive investigation or physical testing of existing conditions or materials was performed as part of this assessment. As most of the structural framing is concealed by architectural finishes, not all structural elements of the building were visible during the site visit and not all of the building components relevant for this assessment were able to be verified. The available structural drawings were used to ascertain various details, materials and components. For final design of the retrofit work, a field investigation requiring the removal of finishes in selected areas of the building may be required to verify additional existing conditions and materials.

Overall the building appears to be in good physical condition. The wood framing observed at the second floor and roof showed no signs of moisture-related damage or any other type of deterioration. The steel columns and steel connection hardware showed no signs of corrosion. There were no visible indications (cracks in walls, slabs, sidewalks, etc.) that the building has undergone any significant settlement or differential settlement.

The masonry walls appeared to be in good structural condition. No significant visible cracks were present during the site visits although the masonry wall has been painted and this could obscure small cracks.

The presence of steel clips, wood blocking, and other details indicate that the City Hall building was originally designed considering seismic loads. There have been several modifications to the building since its original construction. An existing wood-framed shear wall was removed at the first floor to modify the interior office space. In order to replace the strength of the removed shear wall a new steel moment frame was constructed in a nearby location. Based on the reviewed structural drawings, the moment frame appears to have adequately detailed and constructed to resist seismic loads. Several other non-seismic modifications were made to the building, including new access doors and roof framing strengthening for new rooftop mechanical equipment.

SEISMIC EVALUATION AND FINDINGS

Evaluation Basis

The purpose of this evaluation was to determine whether significant seismic deficiencies exist, to determine the potential seismic risk, and to provide general conceptual recommendations for reduction of seismic risk through mitigation. The Tier 1 methodology of ASCE 41-13 was used for this preliminary assessment; a full ASCE 41 compliance review using more advanced procedures (such as Tier 2 or Tier 3) was neither intended nor performed. The ASCE 41 Basic Configuration and Structural Checklists for Immediate Occupancy performance level were completed to help identify the potential seismic deficiencies in the City Hall building's lateral load-resisting system. See Appendix 4.

The performance criteria used to evaluate a building varies based on the occupancy use of the building. If a building houses a facility such as a police station, fire station, hospital, etc., the building is classified as an essential facility and is required to remain operational after an extreme event such as a major earthquake. The evaluation methodology of ASCE 41 requires an essential facility to be evaluated to the more stringent Immediate Occupancy performance standard. This performance level increases the seismic forces on the structure by a factor of two over the Life Safety criteria (which is commonly used for standard office occupancy buildings). This results in several additional retrofit measures that need to be implemented in order for the building to meet the Immediate Occupancy performance criteria.

The analysis methodology of ASCE 41 includes three levels of analytical procedures for seismic assessment of existing structures: a quick check procedure (Tier 1) intended to serve as an aid in quickly identifying high seismic risk structures; a more intensive deficiency-based analysis procedure (Tier 2), and a systematic analysis procedure (Tier 3).

The Tier 1 quick check employs a set of checklists for each building type, which contain evaluation statements that help identify areas of concern with regard to the structure's ability to adequately transmit earthquake forces to the foundation and supporting grade. This evaluation utilized the Tier 1 checklists, along with the Quick Checks required under this procedure. See Appendix 4.

It should be noted that with each building code cycle (every three years), building codes for new design are modified to enhance structural performance during seismic events. However, engineering standards developed to evaluate existing buildings have lagged behind in development. Revisions to ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings were recently completed and this document is intended to replace previous evaluation guidelines as the standard of practice for the seismic evaluation of existing buildings. One of the primary goals of this document is to include lessons learned from past earthquakes.

For the Campbell City Hall, only a structural seismic evaluation of the primary lateral load-resisting system was done per ASCE 41. An assessment of non-structural elements, fire protection, egress, accessibility, mechanical, electrical, plumbing, utility services, waterproofing or drainage requirements was not performed. The Campbell City Hall would require these other improvements to meet the Essential Facility code requirements, but an assessment of these systems was beyond the scope of this report.

Lateral Load-Resisting System

Lateral loads for buildings result primarily from earthquake inertia forces acting on structural and non-structural elements. Out-of-plane forces acting on interior and exterior walls are transferred to the roof and floor diaphragms, then to seismic system elements (shear walls, braced frames, etc.) parallel to the direction of the earthquake or wind loads. These elements then transfer the forces to the foundations.

At the high roof of the City Hall, the plywood roof diaphragm transfers lateral forces through the steel cantilevered columns into the lower roof diaphragm. At second story the plywood roof diaphragm transfers lateral forces into the perimeter plywood shear walls. At the first story, the plywood second floor diaphragm transfers lateral forces into the masonry shear walls at perimeter of the building. The forces from the second-story plywood shear walls are transferred directly into the first-story masonry shear walls, which then transfer the combined lateral forces to the foundations.

Seismic Evaluation Results

Our assessment of Campbell City Hall was based on ASCE 41 Tier 1 analysis, our field observations, our review of the structural drawings, and our experience with buildings of similar size, age and construction type.

The findings of our Tier 1 seismic assessment indicate that while the City Hall building apparently has a complete lateral load-resisting system, it may have significant deficiencies in the required continuity and/or strength for many of its structural elements/connections that are necessary for satisfactory seismic behavior under the design earthquake. The building is likely to maintain its gravity load-carrying system after the design level earthquake but may experience significant structural damage. Continued post-earthquake building operations may not be possible and the repair costs may be too high to be economically feasible. The existing Campbell City Hall, therefore, does not meet the seismic resistance requirements for the Immediate Occupancy Structural Performance Level and would require considerable seismic retrofit work to reliably serve as an Essential Facility.

Based on the original structural drawings, the masonry shear walls at the first story are fully grouted and reinforced and appear to be adequate for transferring the in-plane seismic loads to the foundations. The in-plane shear connection between the second floor diaphragm and the masonry walls below consists of wood blocking and steel angle clips attached to a continuous wood sill plate with anchor bolts embedded into the masonry wall at each joist. This connection appears to be inadequate for transferring the seismic loads. New anchor bolts will need to be drilled and epoxied through the wood sill and into the masonry walls.

The plywood shear walls at the second story appear to be inadequate for transferring the in-plane seismic loads at the Immediate Occupancy performance level. Additional shear walls or other seismic resisting elements will be required. Holdowns at the ends of plywood shear walls, while present on the drawings, were concealed by architectural finishes and could not be observed during our site visit. The holdowns shall be field verified and unless their strength is adequate, additional holdowns will need to be added to the existing walls

The shear capacities of the roof and second floor plywood diaphragms appear to be adequate for transferring the seismic forces to the shear walls; the details and capacities of the roof diaphragm chords/collectors, however, need strengthening. The steel cantilever columns supporting the high roof appear to be inadequate for transferring the seismic forces into the main roof diaphragm. New lateral elements will need to be added in the clearstory between the high roof and low roof.

Based on the Tier 1 evaluation performed (using the Immediate Occupancy performance level), we believe the Campbell City Hall may have the following potential seismic deficiencies:

1. At low roof level, collectors along shear wall lines are inadequate for transferring the diaphragm load to the shear walls. Addition of new steel straps with blocking between joists is required.
2. At second floor level, building cross-ties are inadequate for transferring out-of-plane masonry wall loads into the floor diaphragm. Addition of new horizontal steel straps or steel rods with holdowns is required at beam splice locations (typically at columns).

3. At the second floor level, the wood shear walls are inadequate to transfer in-plane seismic loads. Addition of new plywood at the existing shear walls along with steel straps, and steel rods with holdowns is required.
4. At the second floor level, the masonry wall-to-floor connections appear to be inadequate for both in-plane and out-of-plane wall loads. The addition of new anchor bolts will be required.
5. At the high roof level the steel cantilever columns are inadequate for transferring seismic loads into the main roof diaphragm. New infill stud walls with plywood sheathing are required.

RECOMMENDATIONS

Based on the seismic deficiencies identified through this preliminary assessment, we believe that the Campbell City Hall requires, at a minimum, the following retrofit work:

1. At low roof level, provide new collectors along shear wall lines by adding new steel straps over plywood sheathing, with new blocking between the joists. [See Deficiency 1 above].
2. At second floor level, provide building cross-ties by adding new horizontal steel straps or steel rods with holdowns at beam splice locations (typically at columns). [See Deficiency 2 above].
3. At second floor level, provide new plywood at several existing shear walls along with new steel straps and steel rods with holdowns. [See Deficiency 3 above].
4. At the second floor level, provide new anchors bolts drilled through the existing wood sill plate and epoxied into the top of the existing masonry walls. [See Deficiency 4 above].
5. At the high roof level, provide several new infill wood stud walls with new plywood sheathing at the clearstory between the low roof diaphragm and high roof diaphragm.

Refer to Appendix 2 for conceptual seismic retrofit plans showing the extent of this proposed seismic retrofit work.

CONCEPTUAL COST ESTIMATE

The order-of-magnitude conceptual cost estimate for the required seismic retrofit work identified through our Tier 1 seismic evaluation to meet the Immediate Occupancy performance level is **$1.1 million** (refer to Appendix 3 for details and assumptions). This estimate only includes retrofit costs directly related to structural strengthening of the building's primary lateral load-resisting system. Potential costs of all other improvements (related to non-structural elements, MEP equipment and systems, furnishings, utility services, etc.) required to upgrade the building as an Essential Facility are excluded.

FURTHER ACTIONS

As indicated by the potential seismic deficiencies in the Campbell City Hall building outlined above - most of which need further field work, analysis and verification – we recommend the following further steps to fully define the scope of required seismic retrofit:

1. Perform an investigative field verification of existing conditions to determine the necessary information on pertinent structural framing and connection details.
2. Perform a detailed ASCE 41 Tier 2 Deficiency-Based Seismic Evaluation of the building using the deficiencies outlined above to allow a more accurate verification and definition of the building's seismic retrofit needs. Develop retrofit concepts.
3. Continued post-earthquake use of a building is not limited just by the extent of earthquake damage to its structural system but, more often than not, might be limited by damage or disruption to non-structural elements of the building, furnishings, MEP components and systems, and availability of utility services. A seismic evaluation of these items is recommended to ensure that all non-structural items of the City Hall are also adequately upgraded to comply with the Essential Facility requirements.

The implementation of these actions will help determine the full extent of structural and non-structural upgrades required for the building and ensure that the upgraded City Hall facility meets the seismic safety requirements for Essential Facilities as well as help define the project's anticipated total construction costs.

LIMITATIONS AND DISCLAIMERS

The evaluation, findings, conclusions and recommendations outlined in this report were based on limited information. This report has been prepared using the same degree of care and skill ordinarily exercised for this type of professional service by structural engineers practicing in this area at this time. No other warranty, expressed or implied, is made as to the professional advice in this report.

This report has been prepared for exclusive use of the City of Campbell and may not be used by any other individual or entity without the express written approval of Biggs Cardosa Associates, Inc.

Appendix 1

Photos

Photo 1 – West elevation view

Photo 2 – West elevation view (north end)

Photo 3 – South elevation view

Photo 4 – East entrance view

Photo 5 – North elevation view

Photo 6 – Ramp at East entrance

Photo 7 – High roof with steel cantilevered columns

Photo 8 – Clearstory at High roof

Photo 9 – Broken tiles at upper roof

Photo 10 – Interior steel columns at second floor

Photo 11 – Interior open roof framing below upper roof

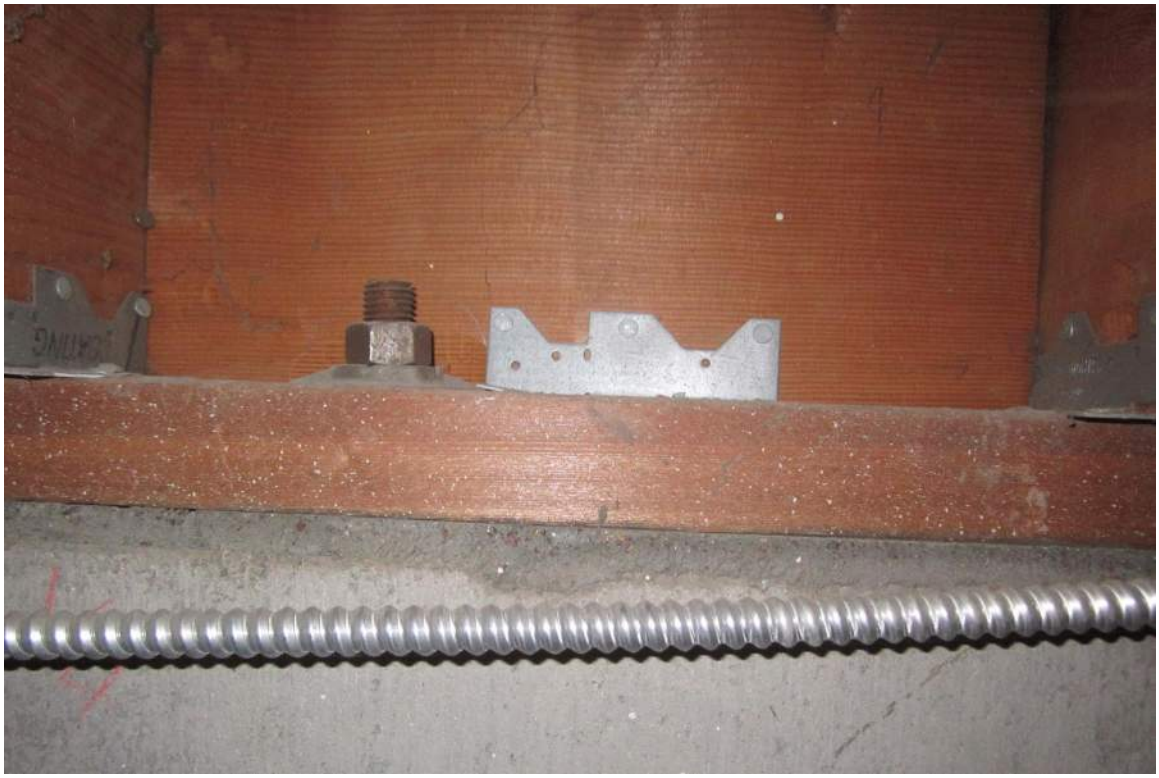


Photo 12 – Bolted wood sill plate at masonry wall

Photo 13 – Wood floor joists

Photo 14 – Wood blocking at plywood diaphragm

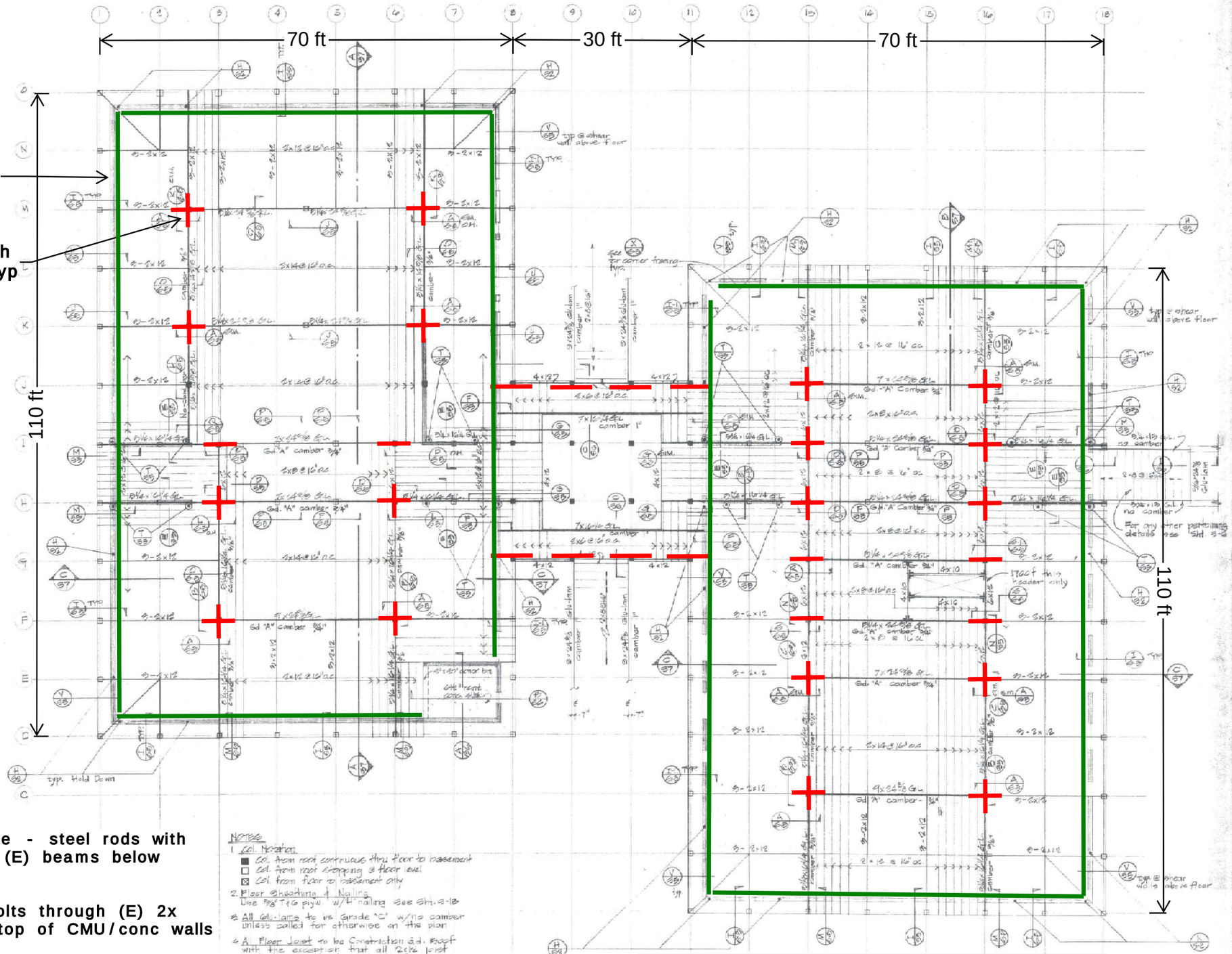
Photo 15 – Simpson steel clips at floor framing

Photo 16 – Ramp at West elevation

Photo 17 – Wood ledger at concrete vault

Appendix 2

Conceptual Seismic Retrofit Plans



Indicates (N) seismic tie - steel rods with holdowns each side of (E) beams below second floor diaphragm

Indicates (N) anchor bolts through (E) 2x wood sill epoxied into top of CMU/conc walls at 4'-0" on center

Notes
1. Col. Notation
   - ■ Col. from roof continuous thru floor to basement
   - □ Col. from roof stopping @ floor level
   - ⊠ Col. from floor to basement only
2. Floor Sheathing & Nailing
   Use 7/8" T&G plyw. w/ H nailing See Shts. S-1.0-1.2
3. All Glu-lams to be Grade "C" w/no camber unless called for otherwise on the plan
4. All Floor Joist to be Construction g.d. Doug fir with the exception that all 2x12 joist shall be Construction Gd. 1700f

SECOND FLOOR PLAN

Campbell City Hall (Immediate Occupancy)
70 N. First St, Campbell, CA
August 22, 2017

FLOOR FRAMING PLAN

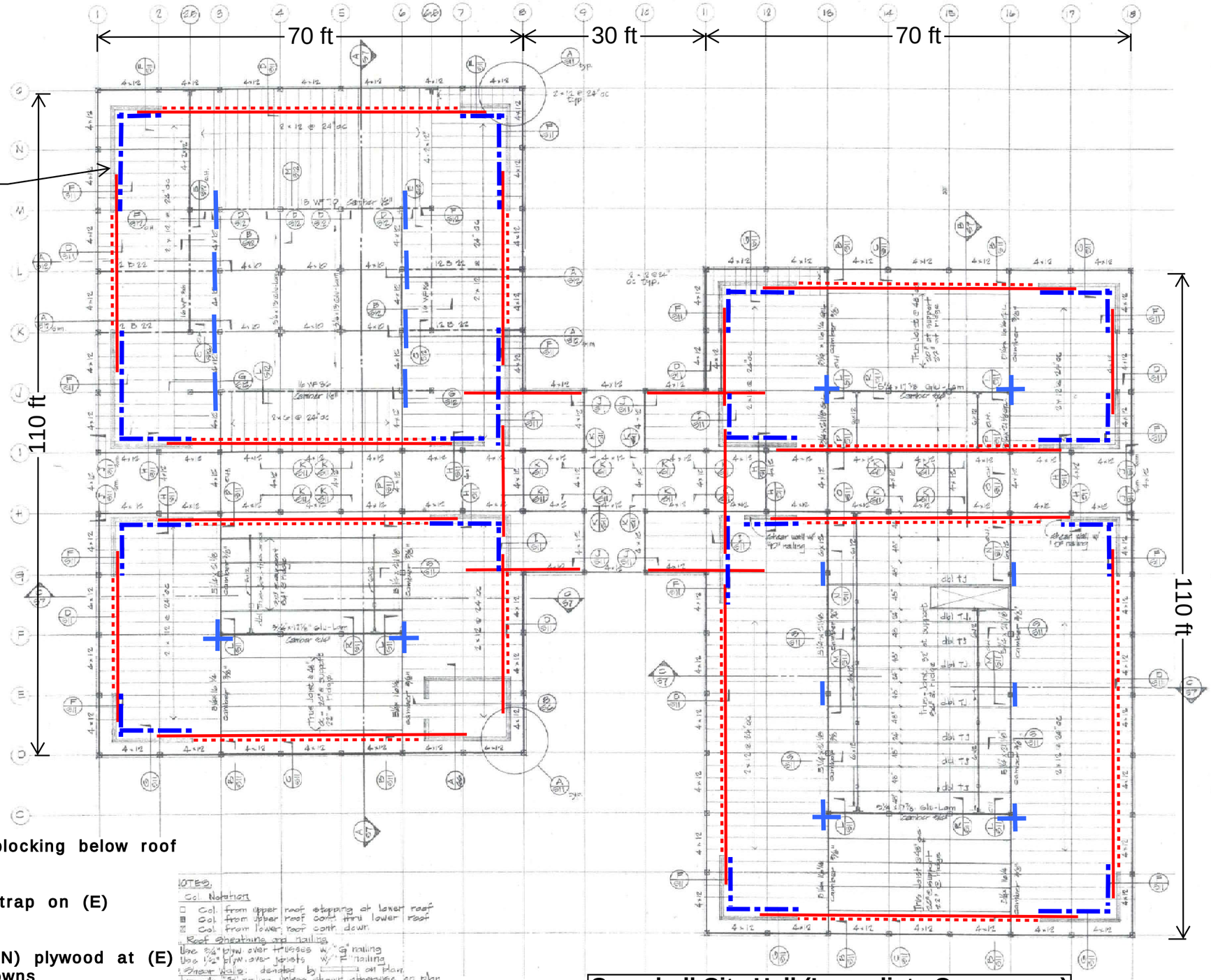
REVISIONS

DONALD R. JAMES
CIVIL ENGINEER

THE OFFICE OF
WILLIAM W. HEDLEY JR.
architect
250 N. CAMPBELL AVE.
CAMPBELL, CALIFORNIA

CAMPBELL CITY HALL
CAMPBELL, CALIFORNIA

SHEET NO. S4 OF 12



Indicates (N) wood blocking below roof diaphragm

Indicates (N) steel strap on (E) plywood diaphragm

Indicates additional (N) plywood at (E) shearwalls with holdowns

Indicates (N) seismic tie - steel rods with holdowns each side of (E) beams below lower rood diaphragm

NOTES:
Col. Notation
□ Col. from upper roof stepping at lower roof
▣ Col. from upper roof cont thru lower roof
⊠ Col. from lower roof cont down

Roof Sheathing and nailing
Use 3/4" plyw. over trusses w/ "G" nailing
Use 1/2" plyw. over joists w/ "F" nailing
Shear Walls denoted by [ ] on plan
typically "B" nailing unless shown otherwise on plan
Glu-Lams to be grade "C" w/ ½ Camber
unless noted otherwise on plan

LOWER ROOF PLAN

Campbell City Hall (Immediate Occupancy)
70 N. First St, Campbell, CA
August 22, 2017

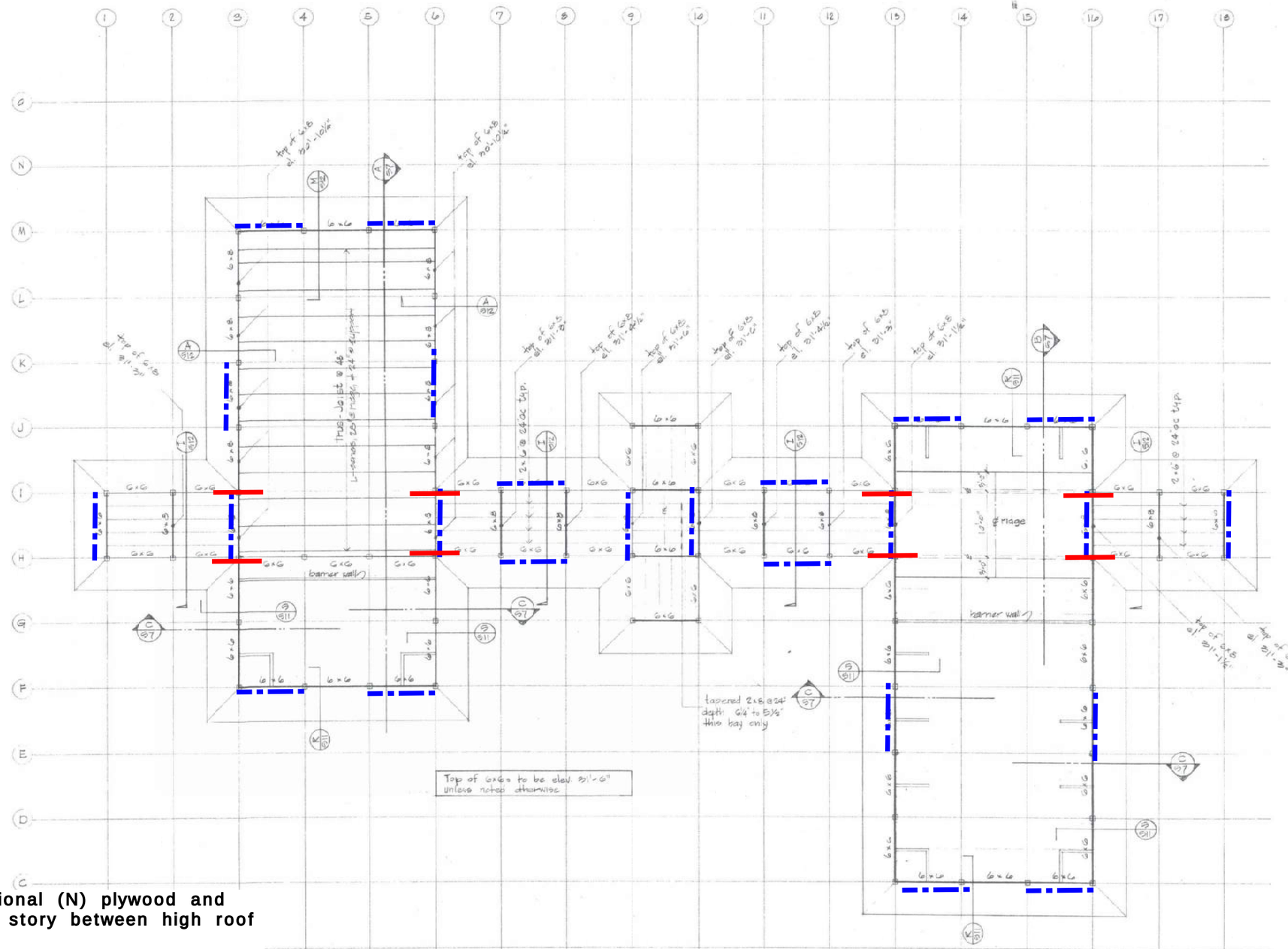
LOWER ROOF FRAMING PLAN

REVISIONS

DONALD R. JAMES
CIVIL ENGINEER

THE OFFICE OF
WILLIAM W. HEDLEY JR.
architect
CAMPBELL CITY HALL
CAMPBELL, CALIFORNIA

SHEET NO. S 8 OF 18



Indicates additional (N) plywood and studs at clear story between high roof and low roof

Indicates (N) seismic tie - steel rods with holdowns each side of (E) beams below high roof

Campbell City Hall (Immediate Occupancy)
70 N. First St, Campbell, CA
August 22, 2017

HIGH ROOF PLAN

UPPER ROOF FRAMING PLAN
1/8" = 1'-0"

UPPER ROOF FRAMING PLAN

THE OFFICE OF
WILLIAM W. HEDLEY JR.
architect a.i.a.
DONALD R. JAMES
CIVIL ENGINEER

REVISIONS

CAMPBELL CITY HALL
CAMPBELL, CALIFORNIA

SHEET NO. S10

Appendix 3

Conceptual Cost Estimate

Campbell City Hall

Tier 1 - Seismic Assessment (Essential Facility)

Campbell, CA

Rough Order of Magnitude Cost Estimate (DRAFT)

August 15, 2017

Faithful+Gould
332 Pine Street, 5th Floor, San Francisco CA 94104
phone: 415.781 6677 fax: 415.781.0906

INTRODUCTION

This opinion of probable cost has been prepared to reflect the anticipated construction cost for the proposed seismic retrofit work based on a Tier 1 Seismic Assessment (Essential Facility) for Campbell City Hall, Campbell, California.

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other works not covered in the drawings and programs as stated in this document. The unit rates reflected herein have been obtained from historical records and discussion with subcontractors and suppliers. All unit rates relevant to subcontractor works include the subcontractors' overheads and profit.

Project Scope

The proposed seismic retrofit work covers 2 levels that includes seismic ties using steel rods and hold downs at existing glu-lam beams and anchor bolts to perimeter walls below the second floor diaphragm. The work on the lower roof plan consists of wood blocking, steel straps and new plywood with steel rods and hold downs at corner walls. The high roof clearstory will be selectively replaced with infill plywood on stud framing. Finishes are replaced only at locations where seimsic work are needed.

Documentations

Faithful+Gould received the following documents from Biggs Cardosa Associates, Inc. for the preparation of this estimate:

Drawings

Marked-up existing second floor, lower roof and high roof plans dated August 15, 2017.
Architectural drawings sheet 7, 8, 9, 10, 11 and 12 dated March 23, 1970
Photographs extracted from Draft Report Tier 1 Seismic Evaluation Campbell City Hall dated November 12, 2015.

Reports

No reports or narratives are available

Phasing and Temporary Works

No phasing or temporary works have been included in the cost estimate.

Design Contingency

A design contingency of 20% is included for the development of the design drawings to 100% CD set.

Escalation

No escalation has been included in the cost estimate.

Exclusions

Legal and accounting fees
Relocation of existing owner's furniture, furnishings and equipment
Removal of unforeseen obstructions behind walls
Overtime and weekend work
Hazardous material abatement

INTRODUCTION

Temporary swing space and temporary accommodation for the various functional spaces while under construction.

Design-build procurement delivery

Phased work is excluded.

Escalation

Fire inspection fees

Special inspection fees

Permits, expediting and filing

Items that may affect the cost estimate

Modifications to the scope of work included in this estimate.

Unforeseen sub-surface conditions.

Restrictive technical specifications or excessive contract conditions.

Non-competitive bid/market situations.

Recommendation for Cost Control

Faithful+Gould recommends that the owner, architect and engineers carefully review this document, including line item descriptions, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and markups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the Bidding phase.

Requests for modifications of any apparent errors or omissions to this document must be made to Faithful+Gould within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

Opinion of Probable Cost

This opinion has been based on a competition open bid situation with a recommended 5 - 7 reputable bids from general contractors and a minimum of 3 bidders for all items of sub-contracted work. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Faithful+Gould has no control over the cost of labor, materials, or equipment, or over the contractor's method of determining prices, or over competitive bidding or market conditions, the opinion of probable construction cost provided for herein is made on the basis of professional experience and qualifications. The opinion represents Faithful + Gould's best judgment as a professional construction consultant familiar with the construction industry. However, Faithful+Gould cannot and does not guarantee that proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

Area Tabulation

Location	*Wing (SF)*	*Central Lobby (SF)*	*Total Area (SF)*
First Floor	15,400	900	***16,300***
Second Floor	15,400	900	***16,300***
Total	**30,800**	**1,800**	**32,600**

COST SUMMARY

	Descriptions		$	32,600 SF
1	General Requirements			0.00
2	Existing Conditions		156,223	4.79
3	Concrete			0.00
4	Masonry			0.00
5	Metals		138,821	4.26
6	Woods and Plastics		104,719	3.21
7	Thermal Moisture and Waterproofing		51,857	1.59
8	Doors and Windows			0.00
9	Finishes		159,345	4.89
10	Specialties			0.00
11	Equipment			0.00
12	Furnishings			0.00
13	Special Construction			0.00
14	Conveying Equipment			0.00
21	Fire Suppression			0.00
22	Plumbing			0.00
23	Heating, Ventilating and Air-conditioning (HVAC)		6,000	0.18
25	Integrated Automation			0.00
26	Electrical		12,000	0.37
27	Communications			0.00
28	Electronic Safety and Security			0.00
31	Earthwork			0.00
32	Exterior Improvements			0.00
33	Utilities			0.00
TOTAL Building and Siteworks			***628,964***	***19.29***
18	Phasing and Temporary Works	*0.00%*	0	0.00
19	Insurance and Bond	*2.00%*	12,579	0.39
20	General Requirements (4 months construction)		145,000	
21	Profit	*10.00%*	78,654	2.41
BASIC CONSTRUCTION ESTIMATE			***865,198***	***22.09***
22	Design Contingency	*20.0%*	173,040	5.31
TOTAL CONSTRUCTION COST (Present)			***1,038,238***	***27.40***
23	Escalation (Excluded)	*0.00%*	0	0.00
I . TOTAL CONSTRUCTION COST (Future)			**1,038,238**	**27.40**
A.	Architect and Engineering Fees	*0.00%*	0	0.00
B.	Project Management Fees	*0.00%*	0	0.00
C.	Miscellaneous Consulting Services	*0.00%*	0	0.00
D.	Project/Construction Contingency	*0.00%*	0	0.00
II. TOTAL SOFT COST			**0**	**0.00**
GROSS TOTAL (I+II (Future Cost)			***1,038,238***	***27.40***

DETAILED ESTIMATE

	Description	Qty	Unit	Rate	Total
1	**GENERAL REQUIREMENTS**				
	See Summay page				
	TOTAL GENERAL REQUIREMENTS				
2	**EXISTING CONDITIONS**				
	Selective Demolition				
	Open up ceiling soffits to access work areas				
	hard ceiling (25% assumption)				
	beam below second floor	163	SF	25.00	4,063
	perimeter concrete / CMU wall	348	SF	25.00	8,688
	below roof diaphragm at lower roof	505	SF	25.00	12,625
	- suspended ceiling (75% assumption)				
	beam below second floor	488	SF	10.00	4,875
	perimeter concrete / CMU wall	1,043	SF	10.00	10,425
	below roof diaphragm at lower roof	1,515	SF	10.00	15,150
	Remove roofing tile for new metal strap	864	LF	10.00	8,640
	Remove existing finishes and prepare for new plywood wall lining	3,850	SF	5.00	19,250
	Remove glazed clearstory				
	interior	198	SF	30.00	5,940
	exterior	594	SF	30.00	17,820
	Temporary barricades and protection	56	LOC	500.00	28,000
	Miscellaneous				
	Miscellaneous demolition	1	LS	10,747.50	10,748
	Haul and dispose	1	LS	10,000.00	10,000
	TOTAL EXISTING CONDITIONS				**156,223**
3	**CONCRETE**				
	Not Applicable				
	TOTAL CONCRETE				
4	**MASONRY**				
	Not Applicable				
	TOTAL MASONRY				

DETAILED ESTIMATE

Description	Qty	Unit	Rate	Total
5 METALS				
Seismic tie comprising steel rods with hold-downs each side of glu-lam beams where indicated				
- intersecting cross beams	18	LOC	1,089.39	19,609
- longitudinal beams at interior walls	6	LOC	704.70	4,228
- longitudinal beams at exterior walls	8	LOC	432.35	3,459
- longitudinal beams below high roof	8	LOC	704.70	5,638
New anchor bolts including drilling through existing 2 x wood sill and epoxied into top of CMU / concrete wall	174	EA	75.00	13,031
Prepare existing plywood roof diaphragm and install steel straps	864	LF	45.00	38,880
Hold downs at plywood wall lining	30	LOC	800.00	24,000
Miscellaneous metal allowance	1	LS	10,321.00	10,321
Scaffolding, allowance	9,828	SF	2.00	19,655
TOTAL METALS				**138,821**
6 WOODS AND PLASTICS				
3 x Wood blocking between roof joists	540	LF	35.00	18,900
1/2" thick plywood wall sheathing	3,850	SF	10.00	38,500
Clearstory window infill comprising plywood on wood stud framing				
interior (plywood lining both sides)	198	SF	50.00	9,900
exterior (plywood lining one side)	594	SF	40.00	23,760
Miscellaneous rough carpentry etc	1	LS	13,659.00	13,659
TOTAL WOODS AND PLASTICS				**104,719**
7 THERMAL MOSITURE AND WATERPROOFING				
Replace roofing tiles to match including membrane underneath	864	LF	25.00	21,600
Wall insulation at infill to clearstory opening	594	SF	3.00	1,782
Flashing at clearstory infill	486	LF	35.00	17,010
Caulking and sealants	1,638	LF	7.00	11,465
TOTAL THERMAL MOSITURE AND WATERPROOFING				**51,857**
8 DOORS AND WINDOWS				
Not Applicable				
TOTAL DOORS AND WINDOWS				
9 FINISHES				
Exterior Finishes				
Cement plaster including paint finish at clearstory infill to match existing exterior walls	594	SF	35.00	20,790

DETAILED ESTIMATE

Description	*Qty*	*Unit*	*Rate*	*Total*
Interior Finishes				
Wall Finishes				
Patch and paint gypsumboard wall sheathing	3,850	SF	10.00	38,500
Paint plywood infill at clearstory	990	SF	12.50	12,375
Allowance for wall tiles in restroom walls	481	SF	15.00	7,219
Ceiling Finishes				
Patch and paint gypsumboard ceiling soffits	1,015	SF	35.00	35,525
Replace suspended ceiling tiles	3,045	SF	10.00	30,450
Miscellaneous				
Make good adjacent finishes, allowances	1	LS	14,485.88	14,486
TOTAL FINISHES				**159,345**
10 SPECIALTIES				
Not Applicable				
TOTAL SPECIALTIES				
11 EQUIPMENT				
Not Applicable				
TOTAL EQUIPMENT				
12 FURNISHINGS				
Not Applicable				
TOTAL FURNISHINGS				
13 SPECIAL CONSTRUCTION				
Not Applicable				
TOTAL SPECIAL CONSTRUCTION				
14 CONVEYING EQUIPMENT				
Not Applicable				
TOTAL CONVEYING EQUIPMENT				
21 FIRE SUPPRESSION				
Not Applicable				
TOTAL FIRE SUPPRESSION				

DETAILED ESTIMATE

	Description	Qty	Unit	Rate	Total
22	**PLUMBING**				
	Not Applicable				
	TOTAL PLUMBING				
23	**HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)**				
	Allowances for diffuser removal and relocation etc	1	LS	6,000.00	6,000
	TOTAL HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)				**6,000**
25	**INTEGRATED AUTOMATION**				
	Not Applicable				
	TOTAL INTEGRATED AUTOMATION				
26	**ELECTRICAL**				
	Allowances for light fixture removal and relocation etc	1	LS	12,000.00	12,000
	TOTAL ELECTRICAL				**12,000**
27	**COMMUNICATIONS**				
	Not Applicable				
	TOTAL COMMUNICATIONS				
28	**ELECTRONICS SAFETY AND SECURITY**				
	Not Applicable				
	TOTAL ELECTRONICS SAFETY AND SECURITY				
31	**EARTHWORK**				
	Not Applicable				
	TOTAL EARTHWORK				
32	**EXTERIOR IMPROVEMENTS**				
	Not Applicable				
	TOTAL EXTERIOR IMPROVEMENTS				
33	**UTILITIES**				
	Not Applicable				
	TOTAL UTILITIES				

Appendix 4

ASCE 41 Tier 1 Checklists

APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Campbell City Hall Date: 7/17/17

Building Address: 70 N First Street, Campbell, CA

Latitude: 37.288 N Longitude: 121.944 W By:

Year Built: 1970 Year(s) Remodeled: Original Design Code: UBC 1967

Area (sf): 32,600 Length (ft): 170 Width (ft): 140

No. of Stories: 2 Story Height: 12 Total Height: 31.83

USE ☐ Industrial ☒ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other:

CONSTRUCTION DATA

Gravity Load Structural System: Plywood roof on glu-lam beams over steel columns

Exterior Transverse Walls: Wood framed / Masonry Openings?

Exterior Longitudinal Walls: Wood framed / Masonry Openings?

Roof Materials/Framing: Plywood / 2x wood joists / Glu-lam beams

Intermediate Floors/Framing: Plywood / 2x wood joists / Glu-lam beams

Ground Floor: Slab on grade

Columns: Steel tubes Foundation: Spread footings

General Condition of Structure: Good

Levels Below Grade? 0

Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	First Story -Longitudinal-	Second Story -Transverse-
System:	Concrete-masonry shear walls	Wood shear walls
Vertical Elements:	CMU Walls / Steel Columns	Stud walls / Steel Columns
Diaphragms:	5/8" Plywood	3/4" Plywood
Connections:	Sill plate and anchor bolts	Wood Blkg and nails

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = 1.059 S_{D1} = 0.602

Soil Factors: Class = D F_a = 1.0 F_v = 1.5

BSE-1E Spectral Response Accelerations: S_{XS} = 1.01 S_{X1} = 0.548

Level of Seismicity: High Performance Level: Immediate Occupancy

Building Period: T = 0.254 sec

Spectral Acceleration: S_a = 1.01

Modification Factor: $C_mC_1C_2$ = 1.1 Building Weight: W = 1465 kips

Pseudo Lateral Force: V= 1.11 W

$C_mC_1C_2S_aW$= 1626 kips

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☒	☐
Building Type _____ **Structural Checklist** W2 / RM1	☒	☐
Nonstructural Component Checklist	☐	☒

FURTHER EVALUATION REQUIREMENT:

Project: Campbell City Hall Location: Campbell, CA

Completed by: GJT Date: 7/17/17

16.1.2IO IMMEDIATE OCCUPANCY BASIC CONFIGURATION CHECKLIST

Very Low Seismicity

Building System

General

(C) NC N/A U LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

(C) NC N/A U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

C NC (N/A) U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

(C) NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction shall not be less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)

(C) NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story shall not be less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffnessof the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

(C) NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

(C) NC N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Low Seismicity: Complete the Following Items in Additionto the Items for Very Low Seismicity.

Geologic Site Hazards

(C) NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

(C) NC N/A U SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

(C) NC N/A U SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

Moderate and High Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Foundation Configuration

(C) NC N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

Project: Campbell City Hall Location: Campbell, CA

Completed by: GJT Date: 7/17/17

16.3IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPE W2: WOOD FRAMES, COMMERCIAL AND INDUSTRIAL

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the following values (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1):

Structural panel sheathing	1,000 lb/ft
Diagonal sheathing	700 lb/ft
Straight sheathing	100 lb/ft
All other conditions	100 lb/ft

(C) NC N/A U STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used as shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec. 5.5.3.6.2)

C NC (N/A) U HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-2. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec. 5.5.3.6.3)

C NC (N/A) U CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4)

C NC (N/A) U OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5)

(C) NC N/A U HOLD-DOWN ANCHORS: All shear walls have hold-down anchors, constructed per acceptable construction practices, attached to the end studs. (Commentary: Sec. A.3.2.7.9. Tier 2: Sec. 5.5.3.6.6)

Connections

(C) NC N/A U WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U GIRDER/COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

C NC N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

Diaphragms

(C) NC N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)

C (NC) N/A U ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1)

C NC (N/A) U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

(C) NC N/A U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. Wood commercial and industrial buildings may have rod-braced systems. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less, with proper edge and end distance provided for wood and concrete. (Commentary: Sec. A.5.3.7. Tier 2: Sec. 5.7.3.3)

Project: Campbell City Hall Location: Campbell, CA

Completed by: GJT Date: 7/17/17

16.15IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES RM1: REINFORCED MASONRY BEARING WALLS AND RM1A: REINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C NC N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

(C) NC N/A U REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3)

Connections

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

(C) NC N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

(C) NC N/A U FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

C (NC) N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)

Stiff Diaphragms

C NC (N/A) U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)

C NC (N/A) U TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

(C) NC N/A U REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides. (Commentary: Sec. A.3.2.4.3. Tier 2: Sec. 5.5.3.1.5)

(C) NC N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30. (Commentary: Sec. A.3.2.4.4. Tier 2: Sec. 5.5.3.1.2)

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

C NC (N/A) U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

C NC (N/A) U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

(C) NC N/A U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

TIER 1 SEISMIC EVALUATION

Immediate Occupancy Structural Performance Level

Campbell Library

Campbell, California

Draft Report

Prepared For:
City of Campbell
70 North First Street
Campbell, California

Prepared By:
Biggs Cardosa Associates, Inc.
101 California Street, Suite 875
San Francisco, California

August 22, 2017

BCA Job No. 2015098.2

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

Biggs Cardosa Associates has been retained by the City of Campbell to provide a Tier 1 seismic assessment of the Campbell Library in order to upgrade the existing building as an Essential Facility. As prescribed in ASCE 41-13, the reference document used for this seismic evaluation, the lateral load-resisting system of an Essential Facility must comply with requirements of the Immediate Occupancy Structural Performance Level. This report contains the structural/seismic findings, qualitative conceptual seismic retrofit recommendations and an order-of-magnitude construction cost estimate for the required retrofit work based on our Tier 1 seismic assessment (using the Immediate Occupancy performance level) as well as our experience with buildings of similar size, age and construction type.

The Campbell Library is a 2-story, 24,000 sf structure that was constructed in the early 1970's and opened to the public in 1975. The facility houses library functions on both floors as well as the City of Campbell's Emergency Operations Center (EOC) at the first floor. The Library building consists of wood-framed roof and second floor, with steel columns, and concrete masonry wall at 1st story and wood-framed walls at 2nd story. The rectangular shaped structure is symmetrical in plan. Foundations consist of isolated spread footing below columns and continuous footings below walls. The lateral system comprises of plywood roof and floor diaphragms, plywood shearwalls at 2nd story and masonry walls at 1st story. The first floor is a slab-on-grade.

Overall, the building is currently in good structural condition. The Campbell Library contains a complete vertical load-carrying system with no observed evidence of any significant structural damage, distress or deterioration. There were no visible indications that the building has undergone any significant settlement or differential settlement.

The deficiencies identified were based on a review of the available drawings, including drawings of a similar adjacent building (City Hall), a limited walk-through of the building, completion of Tier 1 assessment checklists, and our experience with structures of similar size, age and construction type. No destructive investigation was undertaken to either verify the existing conditions shown in the available documents, to identify unknown conditions, or to ascertain the extent of damage where evidence of potential structural damage was present. No structural drawings were available for review for the building and many details were inferred from the adjacent City Hall building.

Since the first floor of the Campbell Library houses the City's Emergency Operations Center (EOC), the building is therefore, by code, an Essential Service Building. For this type of building, the primary structural elements are required to meet the Immediate Occupancy Structural Performance Level as described in ASCE 41-13. However, originally as directed by the City, a seismic evaluation was performed using the Life Safety seismic performance criteria based on the assumption that the EOC would be relocated to a new facility. The

findings and recommendations of the Life Safety seismic evaluation were summarized in our "Tier 1 Seismic Evaluation (Life Safety)" report, dated June 19, 2015.

As per current direction from the City, the building is likely to continue housing the EOC and/or the relocated Campbell Police Department currently located in the nearby City Hall building. As either one of these occupancies would make the Campbell Library building an essential facility, a seismic evaluation needs to be performed using the Immediate Occupancy performance criteria. An Immediate Occupancy performance level is significantly more stringent than the Life Safety performance level, and thus requires considerably more seismic retrofit work to upgrade an existing building due to the much higher seismic demands.

The findings of this Tier 1 seismic assessment indicate that while the exiting Campbell Library building apparently has a complete lateral load-resisting system, it may have significant deficiencies in the required continuity and/or strength for many of its structural elements/connections that are necessary for satisfactory seismic behavior under the design earthquake. The building is likely to maintain its gravity load-carrying system after the design level earthquake but may experience significant structural damage. Continued post-earthquake building operations may not be possible and the repair costs may be too high to be economically feasible. The existing Campbell Library, therefore, does not meet the seismic resistance requirements for the Immediate Occupancy Structural Performance Level and would require considerable seismic retrofit work to reliably serve as an Essential Facility.

The order-of-magnitude conceptual cost estimate for the required seismic retrofit work identified through our Tier 1 seismic evaluation to meet the Immediate Occupancy performance level is **$1.8 million** (refer to Appendix 3 for details and assumptions). This estimate only includes retrofit costs directly related to structural strengthening of the building's primary lateral load-resisting system. Potential costs of all other improvements (related to non-structural elements, MEP equipment and systems, furnishings, utility services, etc.) required to upgrade the building as an Essential Facility are excluded.

Further evaluation of the structure using ASCE 41 Tier 2 Deficiency-Based procedures as well as field verification of various as-built conditions are required and recommended before finalizing the seismic retrofit program for the Campbell Library building.

Continued post-earthquake use of a building is not limited just by the extent of earthquake damage to its structural system but, more often than not, might be limited by damage or disruption to non-structural elements of the building, furnishings, MEP components and systems, and availability of utility services. A seismic evaluation of these items is recommended to ensure that all non-structural items of the Campbell Library are also adequately upgraded to comply with the Essential Facility requirements.

PROJECT OVERVIEW

Biggs Cardosa Associates has been retained by the City of Campbell to provide a Tier 1 seismic assessment (using ASCE 41-13 methodology) and conceptual seismic retrofit recommendations for the existing Campbell Library in order to upgrade the building as an Essential Facility. As outlined in ASE 41-13, the appropriate seismic performance level for essential facilities is the Immediate Occupancy Structural Performance Level.

The 24,000 sf, 2-story Campbell Library was constructed in the early 1970's and opened to the public in 1975. The facility houses library functions on both floors as well as the City of Campbell's Emergency Operations Center (EOC) at the first floor.

Since first floor of the Campbell Library houses the City of Campbell's EOC, the building is therefore, by code, an Essential Service Building. For this type of building, the primary structural elements are required to meet the Immediate Occupancy Structural Performance Level as described in ASCE 41-13. However, originally as directed by the City, a seismic evaluation was performed using the Life Safety seismic performance criteria based on the assumption that the EOC would be relocated to a new facility. The findings and recommendations of the Life Safety seismic evaluation were summarized in our "Tier 1 Seismic Evaluation (Life Safety)" report, dated June 19, 2015.

As per current direction from the City, the building is likely to continue housing the EOC and/or the relocated Campbell Police Department currently located in the nearby City Hall building. As either one of these occupancies would make the Library building an essential facility, a seismic evaluation needs to be performed using the Immediate Occupancy performance criteria. An Immediate Occupancy performance level is significantly more stringent than the Life Safety performance level, and thus requires considerably more seismic retrofit work to upgrade an existing building due to the much higher seismic demands.

This report contains the structural/seismic findings based on our Tier 1 seismic assessment (using the Immediate Occupancy performance level), our limited observation of existing field conditions, and our experience with buildings of similar size, age and construction type. Potential seismic deficiencies are identified and qualitative conceptual recommendations are outlined for remedial work. An order-of-magnitude conceptual cost estimate is provided for the proposed seismic retrofit work.

The findings and recommendations of our Tier 1 assessment outlined herein pertain only to the existing Campbell Library building's primary lateral load-resisting system. This assessment does not cover seismic anchorage and/or bracing of non-structural items such as electrical/mechanical equipment, ceilings, partitions, or other architectural elements. Further, an assessment of other building systems/features such as mechanical, electrical, plumbing,

fire protection, accessibility, egress, drainage, waterproofing, utility services, etc. is beyond the scope of this report.

The scope of services for the Tier 1 structural/seismic assessment described in this report is summarized below:

1. Review available as-built structural drawings, previous seismic assessment reports, geotechnical reports, etc. for the building.
2. Perform a site visit to observe the existing structural conditions of the building, including the nature and layout of the primary lateral load-resisting system, physical condition of structural members and connections, and damage or deterioration of existing structural framing/connections. [Building finishes will not be disturbed during the site visit and our observation will be limited to the readily visible framing elements].
3. Perform a Tier 1 seismic assessment of the building based on the methodology outlined in ASCE41-13, using the Immediate Occupancy performance level.
4. Identify structural/seismic deficiencies in the building's framing system based on our field observations during the site visit(s) and the Tier 1 (Immediate Occupancy) seismic assessment.
5. Prepare qualitative conceptual recommendations for the required retrofit work to remedy the identified structural/seismic deficiencies in order to upgrade the building to the Immediate Occupancy performance level as well as for the repair/replacement of the damaged or deteriorated structural framing observed during the site visit.
6. Coordinate with our cost estimating subconsultant, Faithful + Gould (F+G), to prepare an order-of-magnitude conceptual-level construction cost estimate for the proposed structural/seismic retrofit work.
7. Prepare a brief letter report describing the findings of structural/seismic assessment, recommendations for seismic retrofit/repair, and conceptual construction cost estimate for seismic retrofit.

AVAILABLE DOCUMENTS

The City researched its records for available documents – structural drawings, geotechnical reports, previous seismic assessment reports, etc. – and provided us the following drawings to review for this seismic assessment:

- Drawings for "Campbell Library Remodel," prepared by Jensen, Johnson & Associates, dated August 28, 1987. This drawing set was prepared for non-structural remodeling work and included one cover sheet (C), four architectural sheets (A1-A4), four electrical sheets (E1-E4), and two mechanical/plumbing sheets (MP-1 & MP-2). No structural

modifications to the building appeared to have been be made as part of this remodeling work.

- Original design drawings (architectural and structural) for "Campbell City Hall." This set included:
  - Six architectural drawings (sheets 7-12), prepared by William W. Hedley, Jr. Architects, dated March 23, 1970, and
  - Thirteen structural drawings (sheets S1-S13), prepared by Donald R. James, Civil Engineer, dated March 13, 1970.

The original as-built structural plans for the Campbell Library building were not available.

The existing City Hall is located on a nearby site, just west of the Library. We understand the two buildings were designed by the same design team, were built during the same period in the early 1970's, and utilize similar construction materials, framing and details.

The findings and conclusions in this report are based on the available drawings and our site visits on April 14, 2015 and July 18, 2017. With no structural drawings available for the Library, we have assumed that the structural framing and detailing of the Library are similar to those shown on the plans for the City Hall. While most of the structural framing and detailing of the Library is covered up by architectural finish materials and cannot be observed directly, areas that could be observed suggest that this is a reasonable assumption, although this needs to be verified as the project develops.

BUILDING DESCRIPTION

The Campbell Library is a 2-story, 24,000 sf structure of primarily wood-framed construction, with selected structural elements constructed of steel, concrete or masonry. The building is rectangular in plan (approximately 146-ft L x 86-ft W) and has a story height of 12-ft at both levels. It was built in the early 1970's and opened to the public in 1975. The facility houses library functions on both floors as well as the City of Campbell's Emergency Operations Center (EOC) at the first floor.

The building is located on a flat site. The first story is partially depressed below grade with the exterior masonry walls retaining soil up to approximately their mid-height. There is a short (2 to 3-ft height) masonry retaining wall approximately 10-ft away from the building footprint enclosing the entire perimeter of the building. The finished grade slopes down several feet from this retaining wall to a level just below the windows in the masonry walls at the building perimeter, resulting in surface runoff draining toward the building. See Photos 1 through 5.

There are three entrances to the building at the first story. Stairways at the north and south ends provide access to finished grade, while a long sloping ramp provides access to both

floors near the main entrance located on the east side of the building. The second story is symmetrical in plan with entrances on all four sides of the building. The roof overhangs the perimeter walls by approximately 3-ft (see Photo 6) and is supported by exterior steel columns spaced evenly around the building. The flat roof contains two large mechanical units protected from view by a continuous roof screen.

The first story consists of 8" fully-grouted, reinforced concrete masonry perimeter walls and interior steel columns supporting a wood-framed floor. The masonry wall is essentially continuous along the north end (with just one opening for door leading to the stairs) and has window openings along the other three sides. The wood-framed floor consists of 5/8" plywood sheathing and non-structural concrete topping supported by 2x wood joists at 16" on center that span between glu-laminated wood beams. The beams are supported by the interior 5-in square steel tube columns and perimeter concrete-masonry walls that are continuous to the foundation. The wood framing supported by the masonry walls sits on a continuous sill plate with anchor bolts spaced at 48" on center (or 32" oc where plywood shear walls occur above).

The second story consists of steel columns supporting a wood-framed roof. Exterior wood framed walls are non-load bearing shear walls, sheathed with ½" plywood. The ½" thick plywood roof is supported by 2x wood joists at 16" on center that span between glu-laminated wood beams supported by the interior steel columns and perimeter stud walls. The stud walls are supported by the masonry walls below. The interior steel columns align with the columns below and are continuous to the foundation.

The first floor is a 4" slab-on-grade with welded wire mesh reinforcement. The slab is placed on a prepared subgrade consisting of 2" sand layer, visqueen membrane (vapor barrier) and 4" crushed rock layer. The building foundation system consists of continuous footings below masonry walls and isolated spread footings below steel tube columns.

The building's lateral load-resisting system consists of plywood roof and second floor diaphragms and the plywood/masonry shear walls at its perimeter – plywood shear walls at the second story and concrete masonry shear walls at the first story. Inferring from the City Hall drawings, the second-story plywood shear walls are anchored into the masonry walls below with Simpson hold-downs at each end (but this needs to be field verified).

Selected recent photos of the building are included in Appendix 1.

EXISTING CONDITIONS

In order to perform a Tier 1 seismic assessment of the Campbell Library, the nature of construction and layout of the current structure had to be determined. The available drawings (noted above) and our site visits on April 14, 2015 and July 18, 2017 provided the basic

information to accomplish this task. No specific information on the building's structural framing system or details has been available.

No destructive investigation or physical testing of existing conditions or materials was performed during the site visit. As most of the structural framing is concealed by architectural finishes, not all structural elements of the building were visible during the site visits and not all of the building components relevant for this assessment were able to be verified. Since the adjacent City Hall building was constructed around the same time as the Library and has very similar visible finishes, materials and layout, the available structural drawings for the City Hall were used to infer the various details, materials and components. A field investigation requiring the removal of finishes in selected areas of the building may be required to verify the existing conditions and materials.

Overall the building appears to be in good physical condition. While signs of minor water intrusion were observed at several locations (see Photos 15 & 16), the wood framing observed at the second floor and roof showed no signs of moisture-related damage or any other type of deterioration. The steel columns and steel connection hardware showed no signs of corrosion. There were no visible indications (cracks in walls, slabs, sidewalks, etc.) that the building has undergone any significant settlement or differential settlement.

The masonry walls appeared to be in good structural condition. No visible cracks were present during the site visits although the masonry wall has been painted and this could obscure small cracks. Signs of previous water seepage through the masonry walls were observed at several locations, suggesting that a waterproofing/drainage system on the soil-side of masonry walls either was not originally installed or may have been compromised if installed. [The City Hall drawings show that a waterproofing membrane and a gravel backfill with weep holes at wall base were installed on soil-side of masonry walls in that building.]

The presence of steel clips and other details appear to provide an indication that, like the City Hall structure, the Library building was originally designed by considering seismic loads. There was no indication that the building has been modified or seismically retrofitted since its original construction.

SEISMIC EVALUATION AND FINDINGS

Evaluation Basis

The purpose of this evaluation was to determine whether significant seismic deficiencies exist, to determine the potential seismic risk, and to provide general conceptual recommendations for reduction of seismic risk through mitigation. The Tier 1 methodology of ASCE 41-13 was used for this preliminary assessment; a full ASCE 41 compliance review using more advanced procedures (such as Tier 2 or Tier 3) was neither intended nor performed. The ASCE 41 Basic Configuration and Structural Checklists for Immediate

Occupancy performance level were completed to help identify the potential seismic deficiencies in the Library building's lateral load-resisting system. See Appendix 4.

The performance criteria used to evaluate a building varies based on the occupancy use of the building. If a building houses a facility such as a police station, fire station, hospital, etc., the building is classified as an essential facility and is required to remain operational after an extreme event such as a major earthquake. The evaluation methodology of ASCE 41 requires an essential facility to be evaluated to the more stringent Immediate Occupancy performance standard. This performance level increases the seismic forces on the structure by a factor of two over the Life Safety criteria (which is commonly used for standard office occupancy buildings). This results in several additional retrofit measures that need to be implemented in order for the building to meet the Immediate Occupancy performance criteria.

The analysis methodology of ASCE 41 includes three levels of analytical procedures for seismic assessment of existing structures: a quick check procedure (Tier 1) intended to serve as an aid in quickly identifying high seismic risk structures; a more intensive deficiency-based analysis procedure (Tier 2), and a systematic analysis procedure (Tier 3).

The Tier 1 quick check employs a set of checklists for each building type, which contain evaluation statements that help identify areas of concern with regard to the structure's ability to adequately transmit earthquake forces to the foundation and supporting grade. This evaluation utilized the Tier 1 checklists, along with the Quick Checks required under this procedure. See Appendix 4.

It should be noted that with each building code cycle (every three years), building codes for new design are modified to enhance structural performance during seismic events. However, engineering standards developed to evaluate existing buildings have lagged behind in development. Revisions to ASCE 41 Seismic Evaluation and Retrofit of Existing Buildings were recently completed and this document is intended to replace previous evaluation guidelines as the standard of practice for the seismic evaluation of existing buildings. One of the primary goals of this document is to include lessons learned from past earthquakes.

For Campbell Library, only a structural seismic evaluation of the primary lateral load-resisting system was done per ASCE 41. An assessment of non-structural elements, fire protection, egress, accessibility, mechanical, electrical, plumbing, utility services, waterproofing or drainage requirements was not performed. The Campbell Library would require these other improvements to meet the Essential Facility code requirements, but an assessment of these systems was beyond the scope of this report.

Lateral Load-Resting System

Lateral loads for buildings result primarily from earthquake inertia forces acting on structural and non-structural elements. Out-of-plane forces acting on interior and exterior walls are

transferred to the roof and floor diaphragms, then to seismic system parallel to the direction of the earthquake or wind loads. These elements then transfer the forces to the foundations.

At second story of the Campbell Library, the plywood roof diaphragm transfers forces into the perimeter plywood shearwalls. At the first story, the plywood second floor diaphragm transfers forces into the masonry shearwalls at perimeter of the building. The forces from the second-story plywood shearwalls are transferred directly into the first-story masonry shearwalls, which then transfer the combined lateral forces to the foundations.

Seismic Evaluation Results

Our assessment of Campbell Library was based on ASCE 41 Tier 1 analysis, our field observations, our review of the structural drawings for the adjacent City Hall (which has similar construction), and our experience with buildings of similar size, age and construction type.

The findings of our Tier 1 seismic assessment indicate that while the Library building apparently has a complete lateral load-resisting system, it may have significant deficiencies in the required continuity and/or strength for many of its structural elements/connections that are necessary for satisfactory seismic behavior under the design earthquake. The building is likely to maintain its gravity load-carrying system after the design level earthquake but may experience significant structural damage. Continued post-earthquake building operations may not be possible and the repair costs may be too high to be economically feasible. The existing Campbell Library, therefore, does not meet the seismic resistance requirements for the Immediate Occupancy Structural Performance Level and would require considerable seismic retrofit work to reliably serve as an Essential Facility.

Inferring from the City Hall drawings, the masonry shearwalls at the first story are presumably fully grouted and reinforced and appear to be adequate for transferring the in-plane seismic loads to the foundations. The in-plane shear connection between the second floor diaphragm and the masonry walls below consists of wood blocking and steel angle clips attached to a continuous wood sill plate with anchor bolts embedded into the masonry wall at approximately 4’-0” on center. This connection appears to be insufficient for transferring the seismic loads. New anchor bolts will need to be drilled and epoxied through the wood sill and into the masonry walls.

The plywood shearwalls at the second story appear to be inadequate for transferring the in-plane seismic loads. New plywood will need to be added to the existing shearwalls. Holdowns at the ends of plywood shearwalls, if present, were concealed by architectural finishes and could not be observed during our site visits. The drawings for the adjacent City Hall building indicate holdowns at several wood shearwalls, but unless holdowns are field verified and their strength is adequate, they will need to be added to the existing walls.

The shear capacity of the second floor plywood diaphragm appears to be inadequate for transferring the seismic forces to the shear walls. Additional nails and new wood blocking will need to be added to the existing plywood diaphragm. The shear capacity of the roof diaphragm appears to be adequate for transferring the forces to the shear walls; the details and capacities of the roof diaphragm chords/collectors, however, need verification.

Based on the Tier 1 evaluation performed (using the Immediate Occupancy performance level), we believe the Campbell Library may have the following potential seismic deficiencies:

1. At roof level, wood wall-to-roof connections appear to be adequate for out-of-plane wall loads but their details and capacities need verification. If found deficient, new closely-spaced steel straps will need to be added.
2. At roof level, building cross-ties are inadequate for transferring out-of-plane wall loads into the roof diaphragm. Addition of new horizontal steel straps or steel rods with holdowns is required at beam splice locations (typically at columns).
3. At roof level, collectors along shearwall lines are inadequate for transferring the diaphragm load to the shearwalls. Addition of new steel straps with blocking between joists is required.
4. At roof level, diaphragm chords appear to be adequate but their details and capacities need verification.
5. Holdowns at the ends of second story plywood shearwalls, if present, were not visible during the site visit. Holdowns will need to be added to the existing plywood shearwalls unless holdowns are field verified and their strength is found to be adequate.
6. The plywood shearwalls at the second floor appear to be inadequate for in-plane seismic loads. Addition of new plywood will be required at the existing shearwalls.
7. The plywood diaphragm at the second floor appears to be inadequate for transferring seismic loads to the shearwalls. New nails and blocking will be required at the second floor diaphragm.
8. At second floor level, masonry wall-to-floor connections appear to be inadequate for both in-plane and out-of-plane wall loads. Addition of new anchor bolts will be required.
9. At second floor level, building cross-ties are inadequate for transferring out-of-plane masonry wall loads into the floor diaphragm. Addition of new horizontal steel straps or steel rods with holdowns is required at beam splice locations (typically at columns).

RECOMMENDATIONS

Based on the seismic deficiencies identified through this preliminary assessment, we believe that the Campbell Library requires, at a minimum, the following retrofit work:

1. At roof level, provide building cross-ties by adding new horizontal steel straps at beam splice locations (typically at columns). These straps will be installed over the roof plywood sheathing, directly above the beams below. [See Deficiency 2 above].
2. At roof level, provide new collectors along shearwall lines by adding new steel straps over plywood sheathing, with new blocking between the joists. [See Deficiency 3 above].
3. At second floor level, provide new nailing and wood blocking at the plywood diaphragm. [See Deficiency 7 above].
4. At the second floor level, provide new anchors bolts drilled through the existing wood sill plate and epoxied into the top of the existing masonry walls. [See Deficiency 8 above].
5. At second floor level, provide building cross-ties by adding new horizontal steel straps or steel rods with holdowns at beam splice locations (typically at columns). [See Deficiency 9 above].

Refer to Appendix 2 for conceptual seismic retrofit plans showing the extent of this proposed seismic retrofit work.

CONCEPTUAL COST ESTIMATE

The order-of-magnitude conceptual cost estimate for the required seismic retrofit work identified through our Tier 1 seismic evaluation to meet the Immediate Occupancy performance level is **$1.8 million** (refer to Appendix 3 for details and assumptions). This estimate only includes retrofit costs directly related to structural strengthening of the building's primary lateral load-resisting system. Potential costs of all other improvements (related to non-structural elements, MEP equipment and systems, furnishings, utility services, etc.) required to upgrade the building as an Essential Facility are excluded.

The estimate above also includes a small allowance for the installation of a new waterproofing membrane on the interior face of first-story masonry walls, although we believe this item needs to be evaluated by a firm that specializes in drainage and waterproofing.

FURTHER ACTIONS

As indicated by the potential seismic deficiencies in the Campbell Library building outlined above - most of which need further field work, analysis and verification – we recommend the following further steps to fully define the scope of required seismic retrofit:

1. Perform an investigative field verification of existing conditions to determine the necessary information on pertinent structural framing and connection details.

2. Perform a detailed ASCE 41 Tier 2 Deficiency-Based Seismic Evaluation of the building using the deficiencies outlined above to allow a more accurate verification and definition of the building's seismic retrofit needs. Develop retrofit concepts.
3. Continued post-earthquake use of a building is not limited just by the extent of earthquake damage to its structural system but, more often than not, might be limited by damage or disruption to non-structural elements of the building, furnishings, MEP components and systems, and availability of utility services. A seismic evaluation of these items is recommended to ensure that all non-structural items of the Campbell Library are also adequately upgraded to comply with the Essential Facility requirements.

The implementation of these actions will help determine the full extent of structural and non-structural upgrades required for the building and ensure that the upgraded Campbell Library meets the seismic safety requirements for Essential Facilities as well as help define the project's anticipated total construction costs.

Masonry Walls – Drainage & Waterproofing

We recommend that the City retain a drainage and waterproofing specialist firm to assess these issues as they pertain to the first-story masonry walls. Potential solutions to preventing water seepage through the walls may include removing all existing finish materials on interior face of wall, epoxy injection of cracks, and applying a coating/membrane to interior face of the wall, or alternatively repairing/installing the drainage and waterproofing system behind the wall.

LIMITATIONS AND DISCLAIMERS

The evaluation, findings, conclusions and recommendations outlined in this report were based on limited information. This report has been prepared using the same degree of care and skill ordinarily exercised for this type of professional service by structural engineers practicing in this area at this time. No other warranty, expressed or implied, is made as to the professional advice in this report.

This report has been prepared for exclusive use of the City of Campbell and may not be used by any other individual or entity without the express written approval of Biggs Cardosa Associates, Inc.

Appendix 1

Photos

Photo 1 – East elevation view

Photo 2 – North elevation view (from northeast corner)

Photo 3 – West elevation view

Photo 4 – South elevation view

Photo 5 – Exterior perimeter retaining wall and first story masonry walls.

Photo 6 – Exterior overhangs and steel columns

Photo 7 – Interior space at first floor with masonry shearwalls beyond

Photo 8 – Interior space at second floor

Photo 9 – Typical glulam beam to steel column connection

Photo 10 – Typical Joist to glulam beam connection

Photo 11 – Joist bridging and glulam beam to column connection beyond

Photo 12 – Bolted wood sill plate at masonry wall

Photo 13 – Bolt and Simpson steel clips at wood sill plate

Photo 14 – Typical floor framing at masonry wall

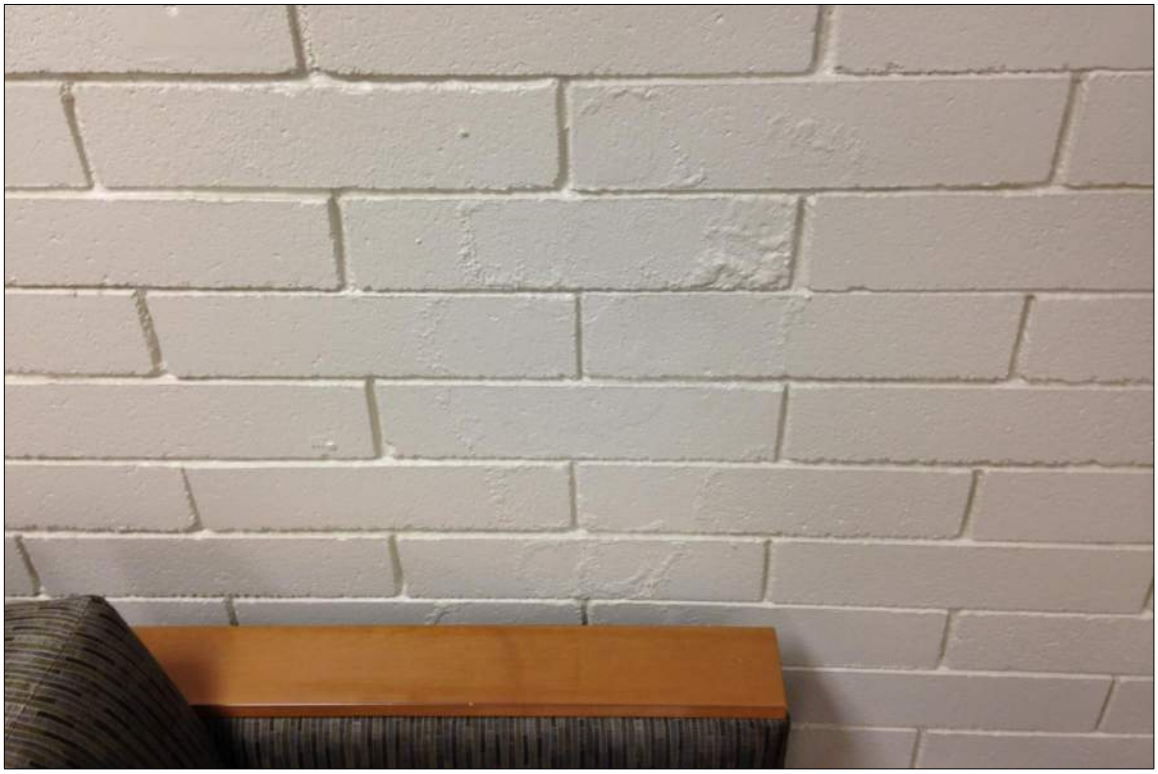


Photo 15 – Signs of water intrusion through masonry wall

Photo 16 – Water damage at ceiling tile

Appendix 2

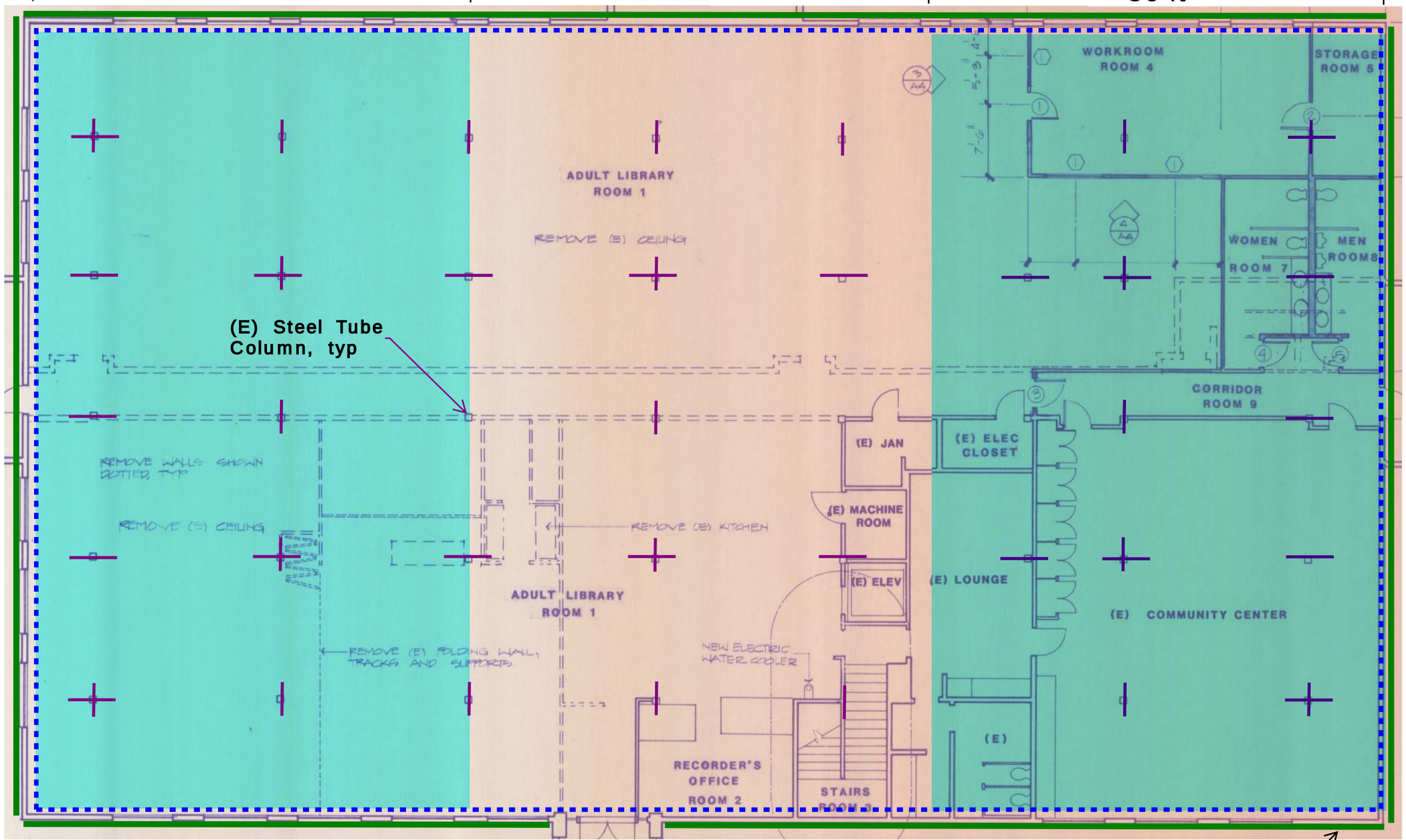
Conceptual Seismic Retrofit Plans

146 ft

50 ft

50 ft

86 ft



Indicates (N) seismic tie - steel rod or strap on each side of (E) glu-lam beam.

Indicates (N) waterproofing on inside face of first story walls

Indicates (N) anchor bolts through (E) 2x wood sill epoxied into top of CMU walls @ 4'-0" on center

Indicates (N) nailing on (E) wood diaphragm

Second Floor Plan

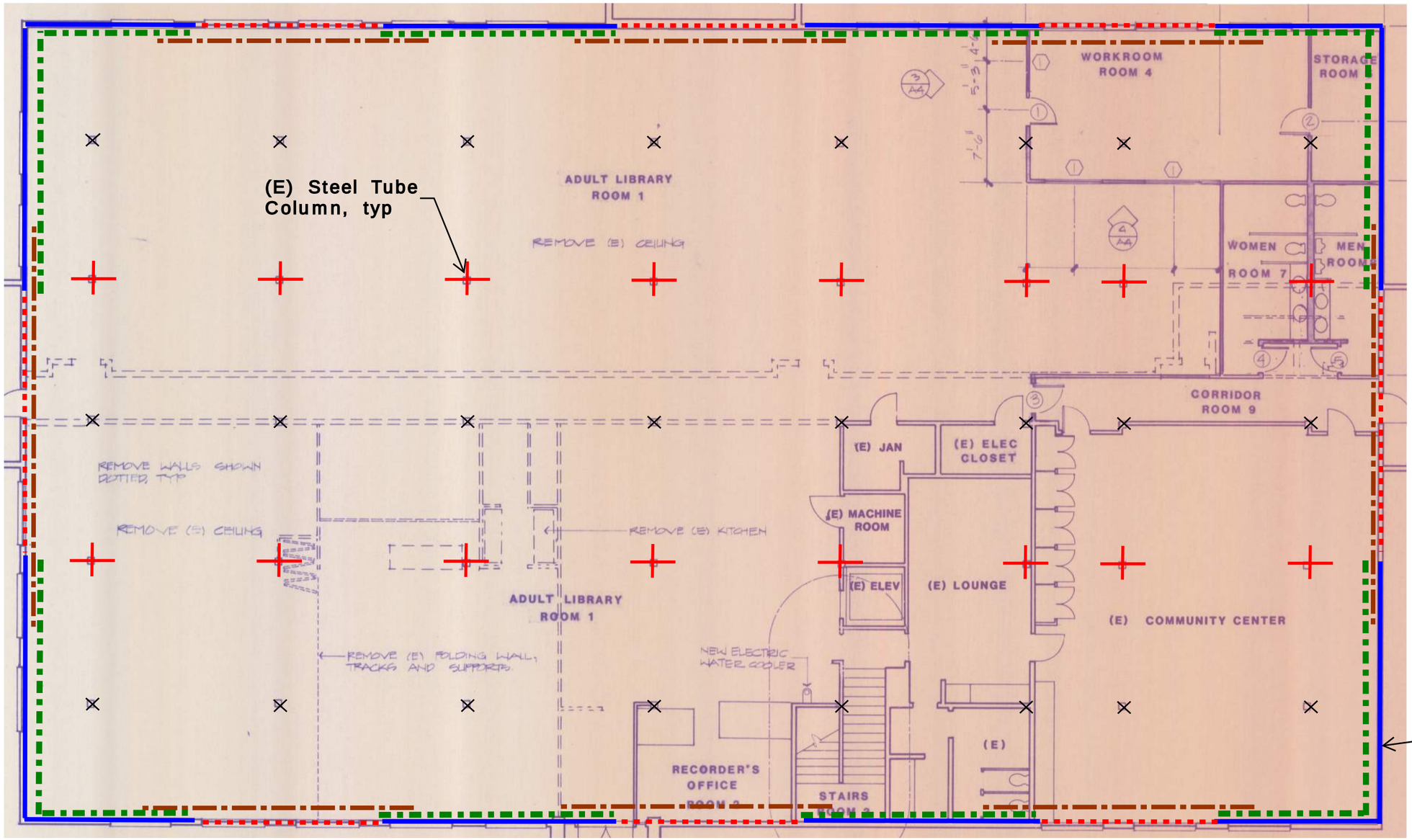
→ N

(E) Concrete Masonry Shearwall below, typ

Campbell Library (Immediate Occupancy)
77 Harrison Ave, Campbell, CA
August 22, 2017

146 ft

86 ft



Indicates (N) steel strap on (E) plywood diaphragm

indicates (N) steel strap on (E) wood framing

Indicates (N) wood blocking

Indicates (E) Wood shearwall below

Indicates (N) plywood at (E) shearwalls with steel holdowns

Roof Plan

→ N

Campbell Library (Immediate Occupancy)
77 Harrison Ave, Campbell, CA
August 22, 2017

Appendix 3

Conceptual Cost Estimate

Campbell Library

Tier 1 - Seismic Assessment (Essential Facility)

Campbell, CA

Rough Order of Magnitude Cost Estimate (DRAFT)

August 15, 2017

Faithful+Gould
332 Pine Street, 5th Floor, San Francisco CA 94104
phone: 415.781 6677 fax: 415.781.0906

INTRODUCTION

This opinion of probable cost has been prepared to reflect the anticipated construction cost for the proposed seismic retrofit work based on a Tier 1 Seismic Assessment (Essential Facility) for Campbell Library, Campbell, California.

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other works not covered in the drawings and programs as stated in this document. The unit rates reflected herein have been obtained from historical records and discussion with subcontractors and suppliers. All unit rates relevant to subcontractor works include the subcontractors' overheads and profit.

Project Scope

The proposed seismic retrofit work covers 2 levels that includes seismic ties using steel rods and hold downs at existing glu-lam beams and anchor bolts to perimeter walls below the second floor diaphragm. In addition, the existing wood diaphragm requires new nailing and blocking. The perimeter masonry wall will also require waterproofing on the inside face. The work on the roof plan consists of steel straps on top of existing plywood diaphragm and existing wood framing over openings. The perimeter existing shear walls will need new plywood with steel rods and hold downs. Finishes are replaced only at locations where seismic work are needed.

Documentations

Faithful+Gould received the following documents from Biggs Cardosa Associates, Inc. for the preparation of this estimate:

Drawings

Marked-up existing second floor and roof plans dated August 10, 2017.

Reports

Tier 1 Seismic Evaluation Campbell Library Draft Report dated May 13, 2015.

Phasing and Temporary Works

No phasing or temporary works have been included in the cost estimate.

Design Contingency

A design contingency of 20% is included for the development of the design drawings to 100% CD set.

Escalation

No escalation has been included in the cost estimate.

Exclusions

Legal and accounting fees

Relocation of existing owner's furniture, furnishings and equipment

Removal of unforeseen obstructions behind walls

Overtime and weekend work

Hazardous material abatement

Temporary swing space and temporary accommodation for the various functional spaces while under construction.

INTRODUCTION

Design-build procurement delivery
Phased work is excluded.
Escalation
Fire inspection fees
Special inspection fees
Permits, expediting and filing

Items that may affect the cost estimate

Modifications to the scope of work included in this estimate.
Unforeseen sub-surface conditions.
Restrictive technical specifications or excessive contract conditions.
Non-competitive bid/market situations.

Recommendation for Cost Control

Faithful+Gould recommends that the owner, architect and engineers carefully review this document, including line item descriptions, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and markups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the Bidding phase.

Requests for modifications of any apparent errors or omissions to this document must be made to Faithful+Gould within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

Opinion of Probable Cost

This opinion has been based on a competition open bid situation with a recommended 5 - 7 reputable bids from general contractors and a minimum of 3 bidders for all items of sub-contracted work. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Faithful+Gould has no control over the cost of labor, materials, or equipment, or over the contractor's method of determining prices, or over competitive bidding or market conditions, the opinion of probable construction cost provided for herein is made on the basis of professional experience and qualifications. The opinion represents Faithful + Gould's best judgment as a professional construction consultant familiar with the construction industry. However, Faithful+Gould cannot and does not guarantee that proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

Area Tabulation

Location	*SF*		*Total Area (SF)*
First Floor	12,556		***12,556***
Second Floor	12,556	-	***12,556***
Total	**25,112**	**-**	**25,112**

COST SUMMARY

	Descriptions		$	25,112 SF
1	General Requirements			0.00
2	Existing Conditions		329,492	13.12
3	Concrete			0.00
4	Masonry			0.00
5	Metals		121,588	4.84
6	Woods and Plastics		122,566	4.88
7	Thermal Moisture and Waterproofing		137,500	5.48
8	Doors and Windows			0.00
9	Finishes		413,370	16.46
10	Specialties			0.00
11	Equipment			0.00
12	Furnishings			0.00
13	Special Construction			0.00
14	Conveying Equipment			0.00
21	Fire Suppression			0.00
22	Plumbing			0.00
23	Heating, Ventilating and Air-conditioning (HVAC)		5,000	0.20
25	Integrated Automation			0.00
26	Electrical		10,000	0.40
27	Communications			0.00
28	Electronic Safety and Security			0.00
31	Earthwork			0.00
32	Exterior Improvements			0.00
33	Utilities			0.00
TOTAL Building and Siteworks			***1,139,516***	***45.38***
18	Phasing and Temporary Works	*0.00%*	0	0.00
19	Insurance and Bond	*2.00%*	22,790	0.91
20	General Requirements (6 months construction)		217,500	
21	Profit	*10.00%*	137,981	5.49
BASIC CONSTRUCTION ESTIMATE			***1,517,787***	***51.78***
22	Design Contingency	*20.0%*	303,557	12.09
TOTAL CONSTRUCTION COST (Present)			***1,821,344***	***63.87***
23	Escalation (Excluded)	*0.00%*	0	0.00
I . TOTAL CONSTRUCTION COST (Future)			**1,821,344**	**63.87**
A.	Architect and Engineering Fees	*0.00%*	0	0.00
B.	Project Management Fees	*0.00%*	0	0.00
C.	Miscellaneous Consulting Services	*0.00%*	0	0.00
D.	Project/Construction Contingency	*0.00%*	0	0.00
II. TOTAL SOFT COST			**0**	**0.00**
GROSS TOTAL (I+II (Future Cost)			***1,821,344***	***63.87***

DETAILED ESTIMATE - B1

	Description	Qty	Unit	Rate	Total
1	**GENERAL REQUIREMENTS**				
	See Summary				
	TOTAL GENERAL REQUIREMENTS				
2	**EXISTING CONDITIONS**				
	Selective Demolition				
	Open up ceiling soffits to access work areas				
	hard ceiling (25% assumption)				
	second floor soffit	2,150	SF	25.00	53,750
	perimeter concrete / CMU wall at second floor soffit	46	SF	25.00	1,150
	perimeter wall at second floor ceiling	232	SF	25.00	5,800
	- suspended ceiling (75% assumption)				
	second floor soffit	6,450	SF	10.00	64,500
	perimeter concrete / CMU wall at second floor soffit	138	SF	10.00	1,380
	below roof diaphragm at lower roof	696	SF	10.00	6,960
	Remove built up roofing for new metal strap	256	LF	10.00	2,560
	Remove existing finishes at perimeter wall and prepare for waterproofing membrane	2,784	SF	5.00	13,920
	Remove existing finishes at perimeter wall and prepare for new plywood wall lining	4,640	SF	5.00	23,200
	Remove floor finishes and concrete screed / topping on second floor	8,600	SF	7.50	64,500
	Temporary barricades and protection	1,720	SF	25.00	43,000
	Miscellaneous				
	Miscellaneous demolition	1	LS	23,772.00	23,772
	Haul and dispose	1	LS	25,000.00	25,000
	TOTAL EXISTING CONDITIONS				**329,492**
3	**CONCRETE**				
	Not Applicable				
	TOTAL CONCRETE				
4	**MASONRY**				
	Not Applicable				
	TOTAL MASONRY				

DETAILED ESTIMATE - B1

Description	Qty	Unit	Rate	Total
5 METALS				
Seismic tie comprising steel rods with hold-downs each side of glu-lam beams where indicated				
- intersecting cross beams	10	LOC	1,089.39	10,894
- longitudinal beams	25	LOC	704.70	17,617
New anchor bolts including drilling through existing 2 x wood sill and epoxied into top of CMU / concrete wall	114	EA	75.00	8,513
Prepare existing plywood roof diaphragm and install steel straps	256	LF	45.00	11,520
Prepare existing perimeter roof beams and install steel straps	276	LF	45.00	12,420
Hold downs at plywood wall lining	24	LOC	800.00	19,200
Miscellaneous metals	1	LS	8,016.38	8,016
Scaffolding, allowance	11,136	SF	3.00	33,408
TOTAL METALS				**121,588**
6 WOODS AND PLASTICS				
3 x Wood blocking between floor joists	1,075	LF	35.00	37,625
Wood blocking over openings on second floor	180	LF	35.00	6,300
Nailing at 2" o.c. at floor diaphragm	19,350	EA	0.84	16,254
1/2" thick plywood wall sheathing	4,640	SF	10.00	46,400
Miscellaneous rough carpentry etc	1	LS	15,986.85	15,987
TOTAL WOODS AND PLASTICS				**122,566**
7 THERMAL MOSITURE AND WATERPROOFING				
Waterproofing to inside face of perimeter walls (assume 6' high)	2,784	SF	25.00	69,600
Patch built up roofing to match adjacent existing roofing	256	LF	20.00	5,120
Caulking and sealants	25,112	SF	2.50	62,780
TOTAL THERMAL MOSITURE AND WATERPROOFING				**137,500**
8 DOORS AND WINDOWS				
Not Applicable				
TOTAL DOORS AND WINDOWS				
9 FINISHES				
Floor Finishes				
Cement screed	8,600	SF	5.00	43,000
Carpet tiles	8,600	SF	10.00	86,000

DETAILED ESTIMATE - B1

Description	*Qty*	*Unit*	*Rate*	*Total*
Interior Finishes				
Wall Finishes				
Patch and paint perimeter walls to ceiling height	9,280	SF	10.00	92,800
Allowance for wall tiles in restroom walls	350	SF	25.00	8,750
Ceiling Finishes				
Patch and paint gypsumboard ceiling soffits	2,428	SF	35.00	84,980
Replace suspended ceiling tiles	7,284	SF	10.00	72,840
Miscellaneous				
Make good adjacent finishes, allowances	1	LS	25,000.00	25,000
TOTAL FINISHES				**413,370**
10 SPECIALTIES				
Not Applicable				
TOTAL SPECIALTIES				
11 EQUIPMENT				
Not Applicable				
TOTAL EQUIPMENT				
12 FURNISHINGS				
Not Applicable				
TOTAL FURNISHINGS				
13 SPECIAL CONSTRUCTION				
Not Applicable				
TOTAL SPECIAL CONSTRUCTION				
14 CONVEYING EQUIPMENT				
Not Applicable				
TOTAL CONVEYING EQUIPMENT				
21 FIRE SUPPRESSION				
Not Applicable				
TOTAL FIRE SUPPRESSION				

DETAILED ESTIMATE - B1

	Description	Qty	Unit	Rate	Total
22	**PLUMBING**				
	Not Applicable				
	TOTAL PLUMBING				
23	**HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)**				
	Allowances for diffuser removal and relocation etc	1	LS	5,000.00	5,000
	TOTAL HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)				**5,000**
25	**INTEGRATED AUTOMATION**				
	Not Applicable				
	TOTAL INTEGRATED AUTOMATION				
26	**ELECTRICAL**				
	Allowances for light fixture removal and relocation etc	1	LS	10,000.00	10,000
	TOTAL ELECTRICAL				**10,000**
27	**COMMUNICATIONS**				
	Not Applicable				
	TOTAL COMMUNICATIONS				
28	**ELECTRONICS SAFETY AND SECURITY**				
	Not Applicable				
	TOTAL ELECTRONICS SAFETY AND SECURITY				
31	**EARTHWORK**				
	Not Applicable				
	TOTAL EARTHWORK				
32	**EXTERIOR IMPROVEMENTS**				
	Not Applicable				
	TOTAL EXTERIOR IMPROVEMENTS				
33	**UTILITIES**				
	Not Applicable				
	TOTAL UTILITIES				

Appendix 4

ASCE 41 Tier 1 Checklists

APPENDIX C
SUMMARY DATA SHEET

BUILDING DATA

Building Name: Campbell Library Date: 7/31/17

Building Address: 77 Harrison Ave, Campbell, CA

Latitude: 37.288 N Longitude: 121.943 W By:

Year Built: 1975 Year(s) Remodeled: 1987 Original Design Code: UBC 1973

Area (sf): 27,0000 Length (ft): 150 Width (ft): 90

No. of Stories: 2 Story Height: 12 Total Height: 24

USE ☐ Industrial ☒ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other:

CONSTRUCTION DATA

Gravity Load Structural System: Plywood roof on glu-lam beams over steel columns

Exterior Transverse Walls: Wood framed / Masonry Openings?

Exterior Longitudinal Walls: Wood framed / Masonry Openings?

Roof Materials/Framing: Plywood / 2x wood joists / Glu-lam beams

Intermediate Floors/Framing: Plywood / 2x wood joists / Glu-lam beams

Ground Floor: Slab on grade

Columns: Steel tubes Foundation: Spread footings

General Condition of Structure: Good

Levels Below Grade? 0

Special Features and Comments:

LATERAL-FORCE-RESISTING SYSTEM

	First Story -~~Longitudinal~~-	Second Story -~~Transverse~~-
System:	Concrete-masonry shear walls	Wood shear walls
Vertical Elements:	CMU Walls / Steel Columns	Stud walls / Steel Columns
Diaphragms:	5/8" Plywood	1/2" Plywood
Connections:	Sill plate and anchor bolts	Wood Blkg and nails

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{Ds} = 1.056 S_{D1} = 0.601

Soil Factors: Class = D F_a = 1.0 F_v = 1.5

BSE-1E Spectral Response Accelerations: S_{XS} = 1.010 S_{X1} = 0.548

Level of Seismicity: High Performance Level: Immediate Occupancy

Building Period: T = 0.91 sec

Spectral Acceleration: S_a = 1.01

Modification Factor: $C_mC_1C_2$ = 1.1 Building Weight: W = 936 kips

Pseudo Lateral Force: V= 1.11 W

$C_mC_1C_2S_aW$= 1039 kips

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS	**Yes**	**No**
Basic Configuration Checklist	☒	☐
Building Type _____ **Structural Checklist** W2 / RM1	☒	☐
Nonstructural Component Checklist	☐	☒

FURTHER EVALUATION REQUIREMENT:

Project: Campbell Library Location: Campbell, CA

Completed by: GJT Date: 7/17/17

16.1.2IO IMMEDIATE OCCUPANCY BASIC CONFIGURATION CHECKLIST

Very Low Seismicity

Building System

General

(C) NC N/A U LOAD PATH: The structure shall contain a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1)

(C) NC N/A U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement need not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

C NC (N/A) U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

(C) NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction shall not be less than 80% of the strength in the adjacent story above. (Commentary: Sec. A.2.2.2. Tier 2: Sec. 5.4.2.1)

(C) NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story shall not be less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffnessof the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

(C) NC N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

(C) NC N/A U TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Low Seismicity: Complete the Following Items in Additionto the Items for Very Low Seismicity.

Geologic Site Hazards

(C) NC N/A U LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

(C) NC N/A U SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1)

(C) NC N/A U SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

Moderate and High Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Foundation Configuration

(C) NC N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

Project: Campbell Library Location: Campbell, CA

Completed by: GJT Date: 7/17/17

16.3IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPE W2: WOOD FRAMES, COMMERCIAL AND INDUSTRIAL

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

C (NC) N/A U SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than the following values (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1):

Structural panel sheathing	1,000 lb/ft
Diagonal sheathing	700 lb/ft
Straight sheathing	100 lb/ft
All other conditions	100 lb/ft

(C) NC N/A U STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used as shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

(C) NC N/A U WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec. 5.5.3.6.2)

C NC (N/A) U HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-2. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec. 5.5.3.6.3)

C NC (N/A) U CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4)

C NC (N/A) U OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5)

(C) NC N/A U HOLD-DOWN ANCHORS: All shear walls have hold-down anchors, constructed per acceptable construction practices, attached to the end studs. (Commentary: Sec. A.3.2.7.9. Tier 2: Sec. 5.5.3.6.6)

Connections

(C) NC N/A U WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3)

(C) NC N/A U GIRDER/COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3.)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

(C) NC N/A U NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1)

Diaphragms

(C) NC N/A U DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1)

C (NC) N/A U ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1)

C NC (N/A) U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. Wood commercial and industrial buildings may have rod-braced systems. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less, with proper edge and end distance provided for wood and concrete. (Commentary: Sec. A.5.3.7. Tier 2: Sec. 5.7.3.3)

Project: Campbell Library Location: Campbell, CA

Completed by: GJT Date: 7/17/17

16.15IO IMMEDIATE OCCUPANCY STRUCTURAL CHECKLIST FOR BUILDING TYPES RM1: REINFORCED MASONRY BEARING WALLS AND RM1A: REINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Very Low Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

(C) NC N/A U SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 70 lb/in.^{2}. (Commentary: Sec. A.3.2.4.1. Tier 2: Sec. 5.5.3.1.1)

(C) NC N/A U REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls. (Commentary: Sec. A.3.2.4.2. Tier 2: Sec. 5.5.3.1.3)

Connections

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

C (NC) N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2)

(C) NC N/A U FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation. (Commentary: Sec. A.5.3.5. Tier 2: Sec. 5.7.3.4)

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

C (NC) N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1)

Stiff Diaphragms

C NC (N/A) U TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab. (Commentary: Sec. A.4.5.1. Tier 2: Sec. 5.6.4)

C NC (N/A) U TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements. (Commentary: Sec. A.5.2.3. Tier 2: Sec. 5.7.2)

Foundation System

C NC (N/A) U DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil. (Commentary: Sec. A.6.2.3)

C NC (N/A) U SLOPING SITES: The difference in foundation embedment depth from one side of the building to another shall not exceed one story high. (Commentary: Sec. A.6.2.4)

Low, Moderate, and High Seismicity: Complete the Following Items in Addition to the Items for Very Low Seismicity.

Seismic-Force-Resisting System

(C) NC N/A U REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides. (Commentary: Sec. A.3.2.4.3. Tier 2: Sec. 5.5.3.1.5)

(C) NC N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30. (Commentary: Sec. A.3.2.4.4. Tier 2: Sec. 5.5.3.1.2)

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

C NC (N/A) U PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities. (Commentary: Sec. A.4.1.7. Tier 2: Sec. 5.6.1.4)

C NC (N/A) U DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension. (Commentary: Sec. A.4.1.8. Tier 2: Sec. 5.6.1.5)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2)

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 12 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft and aspect ratios less than or equal to 3-to-1. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2)

C NC (N/A) U NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft and have aspect ratios less than 4-to-1. (Commentary: Sec. A.4.3.1. Tier 2: Sec. 5.6.3)

(C) NC N/A U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

(C) NC N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

MEMORANDUM

City of Campbell

City Clerk's Office

To: Honorable Mayor and City Council **Date:** September 5, 2017

From: Wendy Wood, City Clerk

Via: Brian Loventhal, City Manager

Subject: **Desk Item 00A – Correct Attachment 1**

It was brought to my attention that the Study Session report contained the incorrect memo for attachment 1. The correct memo dated August 18, 2017 is attached for your reference.

MEMORANDUM

Public Works Department

To: Honorable Mayor and City Council **Date:** August 18, 2017

From: Todd Capurso, Public Works Director

Margarita Mendoza, Administrative Analyst

Via: Brian Loventhal, City Manager

Subject Information Memorandum – Civic Center Master Plan

PURPOSE

In preparation of the Council Study Session scheduled for September, this information memorandum provides the City Council with a review of the work completed to date related to the Civic Center Master Plan (CCMP).

BACKGROUND

The CCMP project was identified as a Council priority for FY 2013-14. In December 2013, Anderson Brulé Architects (ABA) was awarded the contract to conduct work related to master planning services for the Civic Center campus, defined as the city block bounded by North First Street, Civic Center Drive, Harrison Street, and Grant Street. At that time, a project Core Team was formed and consisted of one Councilmember (appointed by the Mayor), one Planning Commissioner, one Civic Improvement Commissioner, Campbell Community Librarian, City Manager, City Clerk, and Department Directors from Community Development, Public Works, Recreation and Community Services, and the Police Chief. ABA conducted several meetings and workshops which led to the development of three design options and related cost model information. In 2015, the City retained the services of NHA Advisors to provide analysis and options regarding financing tools to fund implementation of the CCMP.

The City Council has received presentations and updates from City staff and its design and financial consultants on:

- May 6, 2014
- July 1, 2014
- February 3, 2015
- March 25, 2015
- December 23, 2015
- March 1, 2016
- June 7, 2016
- July 19, 2016

A complete listing of previous Council reports, meeting notes and related documents may be accessed at: http://www.cityofcampbell.com/574/Civic-Center-Master-Plan-Project-14QQ.

Design Options and Project Scale

At the March 2016 Study Session, Council was presented with three design options created by ABA, cost model information, and options to finance construction of the selected design option. The scope of all three design options envisioned a major rebuild of our civic center campus. The proposed design options included new facilities for the Library, City Hall, Police Department, and the Historical Museum; new surface and structured parking, (including a parking allocation for downtown patrons); and improvements to the Orchard City Green. ABA's cost model estimates at that time showed a $151 - $164 million cost for full build-out of the various design options.

ABA also identified potential construction phases for each of the three design options, which would allow the incremental implementation and funding of the plan. These phase estimates showed that a Phase I project would cost between $49 - $62 million dollars (base year – no escalation). Phase I of the preferred design would have resulted in a new library building, new museum and storage, Orchard City Green improvements, and new parking and site improvements. However, the Core Team wanted to ensure that a Phase I project also included improvements that would address the operational needs of the Police Department.

Due to the overall financial magnitude of the various design options, and in order to fund improvements to both the Library and Police Department within a Phase I construction project, the Core Team discussed reducing the proposed square footage (sq. ft.) of the proposed facilities as follows:

- 15% reduction to the Library (50,808 sq. ft. to 43,187 sq. ft.)
- 25% reduction to the Police facility (23,692 sq. ft. to 17,769 sq. ft.)

Both the Library District and Police Department confirm that a reduction of these amounts may be feasible even though these have not yet been reconciled with the space needs that were initially identified during the programming phase of the project.

Using the reduced square footage amounts, ABA developed seven combinations of design variables (Attachment 1). The estimated project costs (base year), ranged from

$58-90 million dollars. Even at those reduced amounts, the City could not identify a financing mechanism to raise the revenue to pay for a project of this scope.

Financing Feasibility

To identify funding alternatives and provide an analysis related to potential voter-approved measures the City retained NHA Advisors. A memorandum calculating project bonding capacity based on a potential sales tax measure and issuance of General Obligation (GO) bonds or parcel tax was provided to the City Council in December 2015 (Attachment 2), and at this time, are the most current estimates available to the City. NHA has been asked to provide revised revenue estimates based on recent data. The revised revenue estimates will be provided to the Council as soon as they are available. A brief description of the voter approved measures that may be used to generate funding for a Phase I project is provided below.

i. Sales tax is the second largest component of the City's budget, making up about 25% of the City's operating revenues. The City's current sales tax rate is 9.25%. The last increase to the City's sales tax rate was on April 1, 2017, as a result of a ½ of a cent increase to sales tax in Santa Clara County (2016 VTA Measure B). The City does not have revenue estimates for the 2016 VTA Measure B sales tax measure, but the City does anticipate that Measure O funds (¼ of a cent) are expected to generate approximately $2.7 million dollars in FY 2017. The State-allowed cap on sales tax is 2%. With the recent passage of Measure B, the City is at the 2% limit and would require a legislative exception to implement further sales tax.

   A general sales tax increase requires a simple majority. Utilizing current revenue estimates, a ¼ cent sales tax measure is estimated to generate between $2.7 and $3 million annually. NHA Advisors prepared two separate tables outlining estimated project funds resulting from the generation of either $2.7 or $3 million in new annual sales tax revenue. Using the conservative end of the estimated sales tax revenue, the 30-year project bonding capacity (depending on the term and interest rates) results in project funding in the amount of $41-52 million.

   It should also be noted that an increase in sales tax for a specific purpose would require a 2/3 majority for passage – as was the case with the VTA-sponsored Measure B.

ii. The Utility User Tax (UUT). The City of Campbell does not currently impose a UUT. This type of tax may be imposed on the consumption of utility services, such as (but not limited to) electricity, gas, water, sewer, telephone (including cell phone and long distance), sanitation and cable television. The Mobile Telecommunications Sourcing Act of 2000 (MTSA) expanded the tax to all cellular telephone charges for accounts with a primary place of use in the jurisdiction. However, Proposition 218 requires voter approval of any change in the methodology by which a tax is administered. Therefore, many agencies that rely on UUT's have successfully achieved voter approval of an updated ordinance to reflect the current modern telecommunications industry. As of January 2017, 161 cities in and counties in California imposed a UUT. According to the California Local Government Finance Almanac, City UUT rates range from 1 – 11%, where 5% is the most common rate.

iii. Transit Occupancy Tax (TOT). The City's current TOT rate is 12%, which was last increased in 2010 (from 10%). In Santa Clara County, only the City of Palo Alto has a higher TOT, which is 14%. The City estimates that FY 2017 TOT is expected to raise $4.6 million. A 1% increase in TOT is estimated to generate an additional $383,000 in revenue for the City annually.

iv. *A GO bond requires a 2/3 voter-approval which would then authorize an ad valorem property tax to be levied on property owners based on the Assessed Valuation (AV) of each property. The amount levied is based on the AV of the property and is typically referred to in increments of $100,000.

Per the analysis provided by NHA, the average residential property in Campbell has an AV of $462,568 (2015 data). Assuming a comparable GO bond to the annual sales tax revenue target of $2.7 million, the City could authorize a GO bond to finance a project in the same range of $41-52 million. This would result in the following estimated property tax impacts (Attachment 3):

General Obligation Bond – Ad Valorem (AV) Property Tax		
Average Campbell Residential Property Assessment - $462,568*		
	Average Residential Property	Amount per $100,000 AV
Average Property Tax	$101	$22
Maximum Annual Property Tax	$144	$31

* Based on 2015 data

v. *A parcel tax, which also requires 2/3 voter approval, can be formulated in a variety of ways. One based on square footage on all building area, and by using a flat special tax regardless of parcel or building size. Applying a flat rate to all parcels in the City, a parcel tax of approximately $243* would be required to generate sufficient funds to support a project as defined in the range of $41-52 million (Attachment 3).

At the March 1, 2016 Study Session, the Council directed staff to conduct public opinion polling to gauge resident support for either a General Obligation (GO) bond or parcel tax measure (each requiring 2/3 voter approval) to fund the implementation of the CCMP. Godbe Research and Analysis conducted an opinion survey from May 4-18, 2016. Results found that likely voters surveyed did not strongly support either a GO bond or parcel tax measure (Attachment 4). Support for a GO bond was slightly higher, but the consultant cautioned that an extensive information and outreach campaign would be required and would need to occur before the election. The City Council was presented with these results at a Study Session on June 7, 2016. After considering and discussing the polling results, design, and construction phasing options, the City Council directed staff to return with information regarding how much funding could be generated and what type of CCMP improvements could be made with these funds. Below is a staff-prepared estimate based on per square foot figures from the ABA 2015 for renovation of City Hall and Library building, a new building for the Police Department.

	Square Footage	Const. Cost/per sq. ft.	Est. Const. Cost
Renovated City Hall	21,808	$275	$5,997,200
Renovated Library	24,000	$275	$6,600,000
New Library Annex (Admin./Shipping Functions)	5,000	$450	$2,250,000
New Police Building	16,000	$600	$9,600,000
TOTAL ESTIMATED CONSTRUCTION COSTS			$24,447,200
Construction Contingency (5%)			$1,222,360
Soft Costs Allowance (35%)			$8,556,520
Project Contingency (10%)			$2,444,720
Site Work - Site Prep., Development & Utilities			$1,633,978
TOTAL ESTIMATED PROJECT COSTS**			**$38,304,778**

**Does not include Parking costs and FF&E

The total estimated project costs do not include allowances for parking improvements or for fixtures, furnishings and equipment (FF&E). In prior discussions, the Santa Clara

* Based on 2015 data

County Library District has indicated a willingness to bear the FF&E costs which have been previously estimated at $1.5 million.

Given the results of the public opinion polling, and the tight timeline to place a measure on the ballot, the City Council voted to postpone further consideration of a revenue measure for placement on the November 2016 ballot. Staff was asked to bring the issue of a potential revenue measure to fund CCMP implementation back to the City Council to consider as part of the 2018 General Election ballot.

DISCUSSION

Items to consider going forward

The significant investments required to build new facilities for all of the Civic Center buildings has triggered an interest in re-evaluating the structural condition of the existing City Hall and Library buildings, with a focus on identifying the required elements needed to extend the useful life of the buildings.

The Library and City Hall buildings were both constructed in the early 1970's. The facilities have become prone to structural and system failures and are in need of various repairs and improvements. Additionally, there are ADA issues that would be required as part of any significant renovation project. Staff has performed a variety of short-term fixes to provide aesthetic improvements; however, these do not adequately address the longer term space requirements of the City nor have they addressed infrastructure deficiencies associated with the current structure.

Structural Evaluations

In May and November 2015, Biggs Cardoza Associates conducted Tier 1 (life safety) seismic assessments and conceptual seismic retrofit recommendations for both the Campbell Library and City Hall. The findings of these assessments presented helpful information regarding the structural condition and seismic vulnerabilities of the building. The life safety performance level is suitable for most buildings, including office buildings. However, if a building houses a facility such as a police station, fire station, hospital, Emergency Operations Center (EOC), etc. the building is classified as an essential facility and is required to remain operational in an extreme event such as an earthquake. In order to remain operational under earthquake loads, a more stringent performance criterion is required.

The Library life safety assessment found that the building may be vulnerable to seismic damage but is likely to maintain its gravity load-carrying system. The preliminary cost estimate for the required seismic retrofit work identified through the Tier 1 life safety evaluation is $320,950, including a small allowance for waterproofing of the masonry walls. Further assessment of drainage / waterproofing issues by a specialist firm is recommended. Not included in the estimate were the costs of upgrading or replacing building systems, bringing the building into ADA compliance, or other access issues (these costs have yet to be determined). It must be noted that if the EOC is to remain at its current location, the Library building would then be required to follow the Essential Facility requirements.

The City Hall assessment indicated that while the building has a complete lateral load resisting system, it may have deficiencies in the required continuity and/or strength for some of its structural elements that are necessary for satisfactory seismic behavior. The building may be vulnerable to seismic damage but is likely to maintain its gravity load carrying system after the design level earthquake. The existing Campbell City Hall, however, does not fully meet the requirements for the Life Safety performance level. The conceptual cost estimate for the required seismic retrofit work identified through this Tier 1 life safety evaluation to meet the life safety performance level is $393,575.

In May 2017, the City Council approved funding for an Essential Facility Study of both the City Hall and Library Buildings. This study is necessary to determine if City Hall is a viable long-term home for the Police Department, and similarly, if the Library building can continue to house the City's Emergency Operations Center (EOC). The findings from this study will be presented to Council at the September Study Session to assist with further discussions of the CCMP.

<u>September 2017 Study Session</u>

A Study Session to discuss the CCMP is scheduled to be held in September, 2017. At that Study Session, the Council will be asked to provide feedback on a variety of items that will help staff analyze and refine potential revenue measures and community outreach related to the implementation of the CCMP. There are some areas which need more research and will be discussed in the September staff report, including:

- What services are envisioned to remain on site? (should any functions move off-site?)

- Should the project include additional parking to accommodate civic center and downtown patrons
- Is there an opportunity for collaborative financing with the library district
- Library construction bond (55% approval threshold) – is this viable?
- Caltrain 1/8-cent sales tax (SB 797)
- Further facility/design considerations and corresponding timelines
- Project cost and type of financing measure
- Budget and staffing for work going forward

2018 General Election Measure

In particular, staff would like to discuss with Council at the September Study Session, the anticipated timeline to place a revenue measure on the November 2018 general election ballot. At this time, based on known information, below is a suggested timeline for basic next steps:

- Monthly Council Updates to the Council (November 2017 – May 2018)
- November 2017 – April 2018 Community Engagement
- June 5, 2018 – Council resolution placing revenue measure on the ballot.
- June 19, 2018 – For and Against Arguments Due
- June 29, 2018 – Rebuttal Arguments Due

Attachments:

1. ABA – Civic Center Design Option 2 - Phase I Cost Models (7 scenarios)
2. NHA Financing Memo
3. NHA - $41-52 Million Project Amount Bond/Parcel Tax Scenario
4. Godbe Public Opinion Poll – May 2016