



May 26, 2022

SB 326 Summary and Report

Northview Condominiums HOA | 2501 Temple Avenue | Signal Hill, California 90755

PROJECT:
Northview Condominiums
SB 326 Assessment and Report
2501 Temple Avenue
Signal Hill, California 90755

May 26, 2022

Re: Northview Condominiums HOA – SB 326 Engineer inspection and Summary of findings

Northview Condominiums HOA
2501 Temple Avenue
Signal Hill, California 90755

Dear Northview Condominiums HOA ,

Bergeman Group's sub-consultant, ENGtegrity Engineering, has provided a final report of their findings based on the inspection of a composite number of 114 Exterior Elevated Elements (EEE) calculated and proposed by the structural engineer for completion of the SB 326 inspection at Northview Condominiums HOA. From the 114 eligible EEE's, all 114 samples were inspected at the property by the structural engineer. **The final report indicates that no life safety issues were identified during the structural engineer's SB 326 property inspection.** Per SB 326 guidelines, if no life safety issues were found at the time of the engineer's inspection, the engineer's report does not need to be reported to local governing authorities. Per California SB 326 Section #5551(i), all written reports shall be maintained for two inspection cycles as records of the Homeowner's Association (HOA). If you have any questions about the report or the engineer's findings, please contact Bergeman Group.

Engineers Final Inspection Report/ Determination:

SB 326 Final Inspection Result Rating: Pass

- Based on the engineer's review of the 114 EEE's and their resulting findings, no further action is required by the HOA per the California SB 326 guidelines at this time. The next inspection, as stipulated by SB 326 guidelines, shall be performed and recorded by the Northview Condominiums HOA in the calendar year of 2031. In addition, the HOA shall file and retain a copy of the final SB 326 Structural Engineering report for calendar year of 2022. The report shall also be saved in HOA records for a period of 2 inspection cycles, for a total of 9 years each. The engineer's SB 326 findings and final report for 2022 shall be kept in the HOA records until 2040, for a total of 18 years, to meet the current requirement of the California SB 326 guidelines.

ENGtegrity Engineering Report Summary - (Non-SB 326) Optional Future Repair Considerations for Northview Condominiums HOA (not required to repair at this time per SB 326 code):

- Page 2, ENGtegrity Engineering Report: refer to "8 Bullet Points"
 - #1 – One hundred and fourteen (114) EEE were inspected.
 - #2 – The EEE inspected consist of private balconies, stair landings, elevated walkways (open on one side), and elevated bridges (open on both sides).

- #3 – No immediate life safety issues were identified (0% hit rate).
- #5 – Fifty-six (56) EEE were found to have other signs of deterioration such as potential termites, corrosion, or rot which need to be addressed or monitored as determined appropriate by the HOA and residents.
- #6 – Based on the large number of locations with wood discoloration along with observed openings in the flashings, it is deduced that the flashing and/or decking on the EEE is at the end of its useful life and should be considered for systematic replacement. Please note that some of the locations of discoloration may be from previous leaks or periods of saturation and may or may not be ongoing.
- #7 – Large portions of the wood handrail systems are deteriorated with observed termite, water, and sun damage. The protective coating is peeling or cracked revealing the underlying wood structure allowing deterioration to accelerate. The handrail system should be systematically repaired and then a new protective coating such as paint should be reapplied.

The structural engineer's SB 326 inspection and reporting of the findings has now been completed. No additional structural or design professional services are required at this time to satisfy the HOA's State of California SB 326 inspection requirements.

As previously mentioned within our summary report, the HOA shall maintain a copy of these findings within their records for a period of 2 inspection cycles, for a total of 9 years each. The engineers SB 326 findings and final report for 2022, shall be kept in the HOA records until 2040, for a total of 18 years, to meet the current requirement of the California SB 326 guidelines.

If there are questions or concerns related to these findings, please do not hesitate to contact Bergeman Group for further explanation and assistance.

END OF SUMMARY



Randy Beery
Bergeman Group
Los Angeles, CA
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May 12, 2022

**RE: SB326 - Structural Engineering Inspection Report
Northview Condominium HOA
2501 Temple Avenue
Signal Hill, CA 90755
PRP Berge-272**

ENGtegrity, Inc. (Engtegrity) is pleased to present this inspection report for structural engineering services for the SB326 “balcony bill” inspections. This project consists of the visual inspection by a Structural Engineer of a representative sampling of the wood framed Exterior Elevated Elements (EEE) including projected balconies, entries, walkways and handrails that are over 6’ above grade at the above property. This scope of service is for the inspection per SB 326 only, any structural or waterproofing repairs will be under a separate contract, if implemented.

Before the commencement of the inspections by a structural engineer, the following was requested:

- Copies of any past relevant structural reports, original structural drawings and any subsequent work such as seismic retrofit
- All EEE must be cleared and all areas below the EEE must be cleared
- The construction manager and contractor properly prepare the areas for inspection.

This report only addresses the current physical condition of the reviewed items. Items not reviewed, such as elements not selected in the sample set, have unknown conditions. Items reviewed are for the current moment only and can deteriorate in the future as part of the natural aging process, termite damage, dryrot, excessive loading, impact or other detrimental experiences. The ordinance only requires items to be visually inspected meaning that there is only a possibility of detecting surficial damage in the observable areas. Therefore, hidden damage would not be visually detected. Other methodologies such as load testing, tactile inspection, probing with a sharp object, moisture measurement, etc. is not required by the SB326, though some of these methods may have been selectively implemented in some areas on this project to obtain additional supplemental data that is not ordinance mandated.

This report also does not address the adequacy of the current condition, original construction or any future modification to the elements reviewed. This report does not address code compliance or operability of the elements reviewed or any other part of the development. It should be noted that the building code usually changes every three years and typically becomes progressively more complicated and restrictive rendering previous construction and designs no longer current code compliant.

The project, as described when the proposal was prepared, consists of the following:

- Constructed circa (age not given, but between 1972-1987 based on historical aerial photographs)
- 48-units, 3-buildings, 3-stories of residential over podium
- 169 -Exterior Elevated Elements that are candidates for inspection: 38 balconies + 2 sections of wood stairs + 10 wood framed landings + a long, elevated walkway (107 = ~1070’ long / 10’ segments) + an elevated bridge walkway (12 = ~120’ long / 10’ segments)

- 101 -Initial Sample Size. Sample size may be adjusted as the project commences depending on results from the previous inspections. (Assumes 20% Proportion)

The objective of the inspection is to determine whether the EEE and associated waterproofing are in a generally safe condition and performing in accordance with applicable standards. The Initial Sample Size is the number of EEE that require inspection as determined based on statistical calculations that are dictated by the SB326 criteria of a 95% confidence that the results from the sampling are reflective of the project as a whole with a margin of error of no greater than 5%. This yields a varying percent of elements that need to be inspected (sample size) which is a function of population size (how many EEE there are) and population proportion (percent of EEE that is found to be not in a generally safe condition). A further explanation of the numerical methodology is attached as an appendix. Depending on the results of the population proportion, the required sample size can increase or decrease through the course of a project. The anticipated initial sample size is given above for this project.

In preparation for the structural inspection, the contractor prepared access for the subject elements consisting of slot cutting the bottom side of the stucco. The inspection slot cuts are typically biased towards the outer edges of the elements due to the exposed nature of this area, the difficulty of proper flashing at the deck edge, handrail posts and transitions to pony walls and precedent from past projects in having damage in these areas.

Drawings Reviewed

No applicable drawings were available for review.

Documents Reviewed

No calculations or previous reports were available for review.

Site Observations

A visual inspection of structural elements of the EEE was performed by Mr. Michael O'Brien, SE on May 4, 2022. The weather was sunny. During the visits he was accompanied by a crew from Professional Services Construction, Inc. who facilitated access.

Deterioration consisting of corrosion, discoloration, termite damage, dry rot, etc. was noted on some EEE as noted in the table attached. The finishes (if any) in these areas should be removed, any deteriorated structural members should be replaced in kind and all waterproofing should be replaced.

Overall, the condition of the EEE appeared to be in fair condition with some exceptions.

- One hundred and fourteen (114) EEE were inspected.
- The EEE consists of private balconies, stair landings, elevated walkways (open on one side) and elevated bridges (open on both sides).
- No immediate life safety issues were identified (0% hit rate).
- As a reminder, the ultimate responsibility for the safety of the structure including the EEE remains with the HOA and each owner and resident. As such, ongoing diligence is always required.
- Fifty-six (56) EEE were found to have other signs of deterioration such as potential termites, corrosion or rot which need to be addressed or monitored as determined appropriate by the HOA and residents. Please see the table below for the findings.
- Based on the large number of locations with wood discoloration along with observed openings in the flashings, it is deduced that the flashing and/or decking on the EEE is at the end of its useful

life and should be considered for systematic replacement. Please note that some of the locations of discoloration may be from previous leaks or periods of saturation and may or may not be ongoing.

- Large portions of the wood handrail systems are deteriorated with observed termite, water and sun damage. The protective coating is peeling or cracked revealing the underlying wood structure allowing deterioration to accelerate. The handrail system should be systematically repaired and then a new protective coating such as paint should be reapplied.
- With a population of 165, the 114 performed samples (inspection points) meet the minimum required minimum number of samples. The life-safety occurrence proportion was 0%. Confidence level mathematically achieved.

The balance of the reviewed EEE was found to be currently in a structurally satisfactory condition. The present condition of any element or system is no guarantee of what the future condition of the element or system will be. It remains the responsibility of the HOA and the individual owners and residents to remain vigilant as time passes for potential deterioration or change of conditions.

Structural elements such as joists and handrails should have an expected useful life of at least nine years (when the next SB326 inspection is required) provided that the elements are not already compromised and they are maintained in a protected state free of termites, properly protected from the elements, and utilized within their original design criteria except for members that are already deteriorated or in compromising conditions such as the members delineated in the Table of Findings. As noted above, having remaining useful life is not an indication that the elements or systems are code compliant or will remain viable for that period of time.

SB-326 only requires visual inspections. It should be emphasized that wood members like the metallic connections can corrode or wood rot in areas that are not visible. Deterioration in these areas frequently cannot be detected. The association, tenants and owners need to remain vigilant for signs of potential deterioration besides visual corrosion or rot such as loose, wobbly or deflection prone elements.

This report has been prepared using the same degree of care and skill ordinarily exercised for this type of service by reputable engineers practicing in this structural field in this locality at this time under similar circumstances. No other warranty, expressed or implied, is made as to the professional advice in this report. The report has been prepared for the use of the client and their assignees exclusively for SB326 compliance and has not been prepared to meet the needs of other parties.

ENGtegrity, Inc.:



Michael O'Brien, S.E.

President, CA #S4468

Appendix A –

Statistical Methods

Engtegrity and its affiliates inspect exterior elevated elements, hereinafter referred to as ‘EEEs’, in accordance with California Senate Bill No. 326. In order to establish a representative sample with 95% confidence and a 5% margin of error, the number of ‘safe’ (not an immediate life/safety concern) EEEs at this property was represented as a binomial random variable¹ with parameters ‘N’ equal to the total number of EEEs and ‘p’ determined by past precedent and the accumulation of prior data. ‘P’, hereinafter referred to as ‘ \hat{p} ’ or the ‘population proportion’, is the probability that an arbitrary EEE of a particular type is safe and is estimated by accumulated previous data points coupled with engineering judgement. The Central Limit Theorem² is then employed to justify the assumption that the distribution of safe EEEs is approximately Normal³. Using Normal approximation, the **number of EEEs inspected (n)** is determined as follows:

$$n = \frac{n'}{1 + \frac{z^2 \times \hat{p}(1-\hat{p})}{\epsilon^2 N}} \text{ where } n' = \frac{z^2 \times \hat{p}(1-\hat{p})}{\epsilon^2} \text{ and}$$

n is the number of EEEs inspected

n' is a scaling factor based on an unlimited population

Z is the 95% confidence “z-score” value from the standard normal distribution

N is the total number of EEEs at the property

ϵ is the margin of error (5% as per SB - 326)

\hat{p} is the population proportion as described above

Note that as the value of N increases, the ratio n/N reduces as the larger population (N) provides greater certainty. For complexes with multiple buildings that were inspected individually in phases, the value N increases throughout the course of the entire project. That is to say that the first building’s value of N is simply the number of EEEs within it. Each subsequent building’s EEEs are added on so that N grows linearly as the aggregate sum of all buildings’ EEEs.

The value \hat{p} is instrumental in producing the desired sample size (n). Note that the ‘worst case’ assumption (that which requires the largest sample size) is the rather unrealistic scenario in which an arbitrary EEE has a 50% probability of being an immediate life/safety concern. As this probability tends towards 0 or 1, 95% confidence with a 5% margin of error can be achieved with a comparatively smaller n . Note that in this context \hat{p} is assumed to tend towards 1. \hat{p} tending towards 0 would produce a similar value for n , but under the extremely unrealistic assumption that an arbitrary EEE is nearly guaranteed to be an immediate life/safety concern.

Large EEEs, such as a 500 linear foot elevated walkway encircling a courtyard, are broken into a series of smaller components. In order to combat the limitations of this modelling technique (namely the relatively small size of ‘N’ as a parameter to a binomial random variable) the number of EEEs inspected (n) was *recomputed* if the proportion of unsafe EEEs exceeded $1-p$. In such a scenario this surveyed proportion of safe EEEs is substituted into the equations above yielding a higher n -- i.e. requiring more EEEs to be inspected and providing for an adequately precise 95% confidence interval.

1: A Binomial Random Variable models the number of ‘successes’ in an experiment with N independent trials and a probability p of success

https://en.wikipedia.org/wiki/Binomial_distribution

2: The Central Limit Theorem contends that the sum of a large number of independent and identically distributed random variables is approximately normal

https://en.wikipedia.org/wiki/Central_limit_theorem

3: A Normal Distribution is a continuous probability distribution with the familiar “bell curve” density function

https://en.wikipedia.org/wiki/Normal_distribution

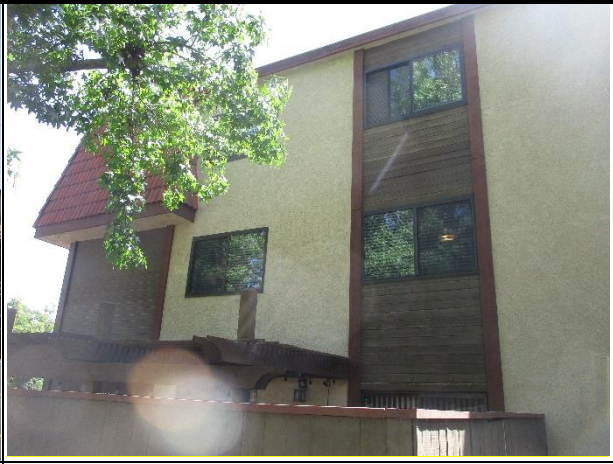
Appendix B – Representative Photographs



Aerial View



Typical Elevation



Typical End Elevation



Typical Elevation



Courtyard Overview



Typical Bridge Elevation



Typical Bridge Elevation



Typical Walkway Elevation



Typical Balcony View with Inspection Vents



Typical Handrail with Poor End Flashing



Handrail with Loss of Protective Coating and Termites



Typical Handrail Showing Deterioration



Handrail with Termite Damage



Balcony with Poor End Flashing



Balcony with Rotten Handrail



Picket and Fascia Deterioration



Typical Vent Opening



Inspection Vent at Stairs



Sample Discoloration



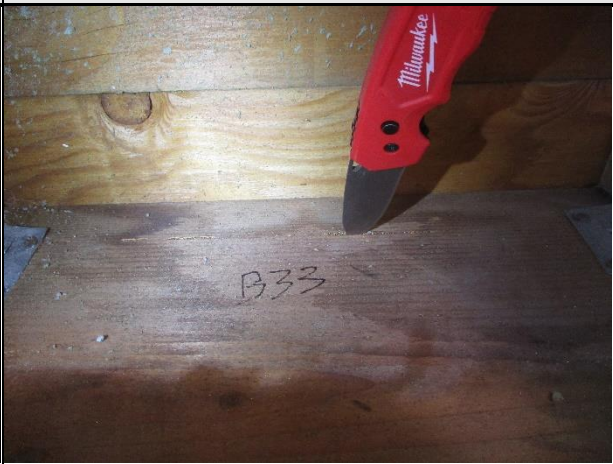
Plants Growing out of Flashing



Plants Growing out of Flashing



Corrosion on Bolts, Unbacked Fastener, Discoloration at Vent #34



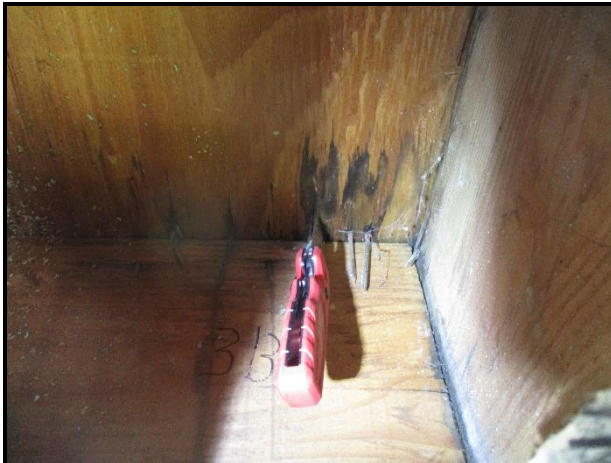
Vent B33, Discoloration and Potential Termites



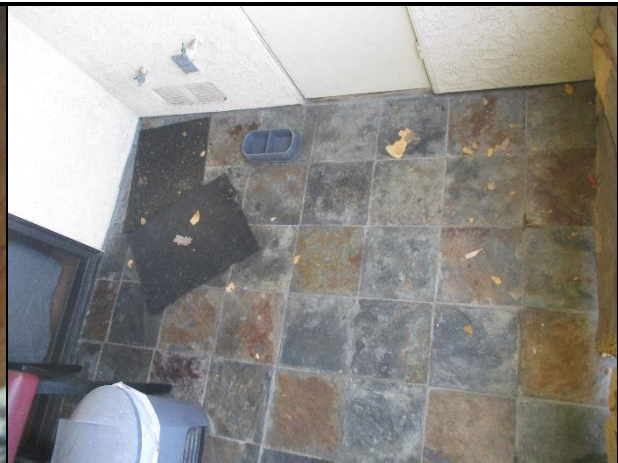
Deteriorated Flashing



Damaged Picket



Unit 313 Discoloration and Localized Rot



Tile on Balconies Void Deck Waterproofing Warranties



Unit 204 Urine Smell.



Termite Damage and Broken Picket



Sample Discoloration



Sample Discoloration

Northview Condominium HOA					
2501 Temple Ave. Signal Hill 90755					
SB326					
#	Inspected	Life Safety Concern	# of Vents	Concern	Comment
South Sky Bridge - Second Floor					
A21	Y	N	1		
A22	Y	N	1		
A23	Y	N	1		
A24	Y	N	1	D	
A25	Y	N	1		
A26	Y	N	1		
South Sky Bridge - Third Floor					
A31	Y	N	1		
A32	Y	N	1		
A33	Y	N	1		
A34	Y	N	1		
A35	Y	N	1		
A36	Y	N	1		
North Sky Bridge - Second Floor					
B21	Y	N	1		handrail typically deteriorated
B22	Y	N	1	D	
B23	Y	N	1	D	
B24	Y	N	1		
B25	Y	N	1		
B26	Y	N	1	D	
North Sky Bridge - Third Floor					
B31	Y	N	1		handrail typically deteriorated
B32	Y	N	1		
B33	Y	N	1	D, T	
B34	Y	N	1		
B35	Y	N	1		
B36	Y	N	1		
Stairs - Northwest					
L1	Y	N	1	D	
L2	Y	N	1		
Stairs - Southwest					
L3	Y	N	1		
L4	Y	N	1		

Northview Condominium HOA					
2501 Temple Ave. Signal Hill 90755					
SB326					
#	Inspected	Life Safety Concern	# of Vents	Concern	Comment
L5	Y	N	1		
Stairs - Southwest					
L6	Y	N	1	D	
L7	Y	N	1	D	
L8	Y	N	1		
Stairs - Southwest					
L9	Y	N	1	D	
L10	Y	N	1		
Stairs by Skybridge A					
S1	Y	N	1		
S2	Y	N	1		
Elevated Walkway - Second Floor					
1	Y	N	1		by unit 119, Proceed CCW
2	Y	N	1		
3	Y	N	1	D	
4	Y	N	1	D	
5	Y	N	1		
6	Y	N	1		
7	Y	N	1		
8	Y	N	1		
9	Y	N	1		
10	Y	N	1	D	by unit 117
11	Y	N	1	D	by unit 116
12	Y	N	1	D	
13	Y	N	1		
14	Y	N	1	D	
15	Y	N	1	D	
16	Y	N	1		
17	Y	N	1	D	
18	Y	N	1	D	
19	Y	N	1		handrail from #19-#49 typically deteriorated
20	Y	N	1	D	by unit 111
21	Y	N	1		by unit 110
22	Y	N	1		
23	Y	N	1		
24	Y	N	1	D	
25	Y	N	1	D	

Northview Condominium HOA					
2501 Temple Ave. Signal Hill 90755					
SB326					
#	Inspected	Life Safety Concern	# of Vents	Concern	Comment
26	Y	N	1	D	
27	Y	N	1		
28	Y	N	1	D	
29	Y	N	1	D	
30	Y	N	1	D	
31	Y	N	1	D	
32	Y	N	1	D	
33	Y	N	1	D	
34	Y	N	1	B,C,D	by unit 101
Elevated Walkway - Second Floor					
35	Y	N	1	D	by unit 101, proceed clockwise
36	Y	N	1	D	
37	Y	N	1	D	
38	Y	N	1		
39	Y	N	1	D	
40	Y	N	1	D	
41	Y	N	1	D	
42	Y	N	1	D	
43	Y	N	1		
44	Y	N	1		
45	Y	N	1	D	
46	Y	N	1	D	
47	Y	N	1		
48	Y	N	1		by unit 110
49	Y	N	1		by unit 111
50	Y	N	1		
51	Y	N	1		
52	Y	N	1		
53	Y	N	1		
54	Y	N	1		
55	Y	N	1		by unit 116
56	Y	N	1		by unit 117
57	Y	N	1		
58	Y	N	1		
59	Y	N	1	D	
60	Y	N	1	D	by unit 119

Northview Condominium HOA					
2501 Temple Ave. Signal Hill 90755					
SB326					
#	Inspected	Life Safety Concern	# of Vents	Concern	Comment
Balconies at Units					
201	Y	N	1	R	Handrail
301	Y	N	1	D	
204	Y	N	1	P,U	Urine smell
304	Y	N	1	D	
205	Y	N	1		
305	Y	N	1	D	
306	Y	N	1	D	
208	Y	N	1	D,H,P	
308	Y	N	1	F	
209	Y	N	1	D,F	
210	Y	N	1	D	
310	N	N	0	F	
211	Y	N	1		
311	Y	N	1		
213	Y	N	1	D	
313	Y	N	1	D,R	
214	Y	N	1		
314	Y	N	1	D,R	
215	Y	N	1	D	
	114	0	114	56	:Total Counts
Legend					
B	Bolts appear to be improperly installed				
C	Corrosion on hardware evident				
D	Evidence of water intrusion / discoloration of lumber				
F	Flashing				
H	Handrail				
N	Nails missing in hardware				
R	Deteriorated / rotten wood				
S	Splitting or Cracking of wood members				
T	Termites				
OK / (blank)	No matter detected that was concerning enough to note				



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