PLANNING AND DEVELOPMENT DEPT.
BUILDING SAFETY DIVISION

Culver CITY

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www.culvercity.org

9770 CULVER BOULEVARD, CULVER CITY, CALIFORNIA 90232-0507

CORRECTION SHEET

For the Mandatory Retrofit Program Wood Frame Buildings with Soft, Weak or Open-Front Wall Lines (SWOF)

Plan Check No.: B23-

Job Address:

Project Description: Soft Story retrofit per Culver City Ordinance No.: 2021-013

Occupancy Group: R-2/S-2?

Construction Type: V-B?

Checked by:

1st Review Date: 2nd Review Date: N/A 3rd Review Date: N/A

Code: 2022 CBC, CEC, CPC, CRC, CMC, CGBSC and Culver City Amendments

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YOUR APPLICATION FOR A PERMIT, TOGETHER WITH PLANS AND SPECIFICATIONS, HAS BEEN EXAMINED AND YOU ARE ADVISED THAT THE ISSUANCE OF A PERMIT IS WITHHELD FOR THE REASONS HEREINAFTER SET FORTH. THE APPROVAL OF PLANS AND SPECIFICATIONS DOES NOT PERMIT THE VIOLATION OF ANY SECTION OF THE BUILDING CODE, OR OTHER CITY ORDINANCE OR LAW.

INSTRUCTIONS:

- A complete itemized response sheet for each correction item shall be provided.
- An application for a permit shall expires 12 months after submittal.105.3.2
- Return the following items:
    1. Itemized Correction Response list.
    2. Correction List.
    3. Original marked set of plans & structural calculations.
    4. One (1) set of corrected structural calculations (if applicable).
    5. A new plan set for each department with pending corrections but in no case less than 2 sets.

HOUSING DIVISION CLEARANCE 310.253.5780

The following information shall be submitted by the applicant and clearance obtained through the Housing department 310.253.5790. Pls include the information in the resubmittal.

A. *Notification to tenants and occupants.* The owner shall notify in writing all current and prospective residential and non-residential tenants, subtenants, lessees, sublessees, or any other person(s) entitled to the use and/or occupancy of the building (collectively, "tenants") of a proposed project submitted pursuant to this Subchapter. The notice shall include the information for the project, as determined by the City, including the scope of work, expected duration, and contact information for a representative of the contractor. The form of notice shall be supplied by the Community Development Department and Building and Safety Division.

B. *Tenant protections.* The property owner must mitigate untenantable conditions resulting from the project either through actions to ensure that tenants can safely remain in the building during the project or through the temporary relocation of tenants, in compliance with all applicable provisions of § 15.09.330.

C. *Tenant Impact Mitigation Plan.* If required, the property owner shall submit a Tenant Impact Mitigation Plan.

GENERAL REQUIREMENTS:

1. Please be advised in accordance with the Cities minimum established construction costs the permit valuation has been revised to _____. ($45,000 min per frame bay)

2. Plan scope of work to include the following: "Soft Story retrofit per Culver City Ordinance No.: 2021-013."

3. Specify occupancy group on the cover sheet.

4. Specify construction type on the cover sheet.

5. Provide clear scope of work on the cover sheet.

6. Revise the first sheet of the plans must: Contain the name and address of the owner and designer, site address, and list all consultants (engineer, energy, soils, etc.), associated with the project [CBC 106 Appendix, 105.3 Appendix].

7. Revise the first sheet of the plans must: Show applicable building data including floor area, classification of each occupancy group, type of construction, area of each story, area of addition, number of stories, building height, and applicable codes. Indicate if sprinklered. Provide assessor's parcel number (APN) if new area is proposed.

8. Construction documents and supporting calculations shall be stamped by a California licensed Civil or Structural engineer. (CA B&P code).

9. The project is designed per soils/geology report's recommendation, provide soils engineer or geologist's review stamp on foundation plans and details.

10. Structural observation is required for this project. Note on plans and list all required stages of observation. Verify structural observation **forms are signed** prior to final submittal. CCMC 15.02

11. Identify current code years on the first sheet of the plans. 2022 CBC/CRC with Culver City amendments, CMC, CPC, CEC, CGBC, along with the 2016 T-24 Energy Standards.

12. Provide an index of drawings on the cover sheet of the plans.

13. Please reference all applicable details on the plans and omit those that do not apply.

14. Provide a complete plot plan showing: Lot dimensions / yard setbacks / street name(s) / north arrow / existing building(s) to remain / distance between buildings / location of private sewage disposal system including expansion areas / utilities / easements / _____. (106)

15. Walls and ceiling shall be repaired with a minimum 1-hour fire rating such as stucco or a layer of 5/8" type x gypsum.

16. Provide 5/8-in. Type X on garage/carports walls and ceilings. (T-R302.6)

17. Note on plan SMOKE ALARM and carbon monoxide alarms shall be verified by the contractor in all unit sleeping rooms/floors/hallways as applicable. (R314 & R315)

18. Garage floor surfaces shall be concrete and sloped to a drain or toward the main vehicle entry. (R309.1)

19. Provide exterior wall construction details for each wall finish type. Show moisture protection.

ADD THE FOLLOWING NOTES TO THE PLAN TO THE COVER SHEET:

20. I _____(Engineer of Record) am responsible for designing this building's seismic strengthening in compliance with the minimum regulations of the Mandatory Earthquake Hazard Reduction. In Existing Wood-Frame Buildings with Soft, Weak, or Open-Front Walls (Subchapter 15.02.500).

21. Contractor is responsible for temporary shoring design by registered design engineer. The design shall specify at what stage in the construction the foundation can support the gravity loads and may be removed. The stamp and signed shoring documents are to be on site and available to the inspector."

22. I_____ (the owner) understand the seismic evaluation and strengthening performed under this project is limited to that specified in the Mandatory Seismic Strengthening Provisions For Existing Wood Frame Buildings With Soft, Weak or Open-Front Walls (Subchapter 15.02.500) which is intended to reduce the risk under a seismic event. I understand the full building has not been evaluated nor strengthen for other potential structural deficiencies that may cause a life safety concern, injury, or property damage risk under a seismic event.

23. Soft Story retrofit per Culver City Ordinance No.: 2021-013.

24. Structural observation is required for this project. Note on plans and list all required stages of observation. Verify structural observation **forms are signed** prior to final submittal. CCMC 15.02

25. Note on plan SMOKE ALARM and carbon monoxide alarms shall be verified by the contractor in all unit sleeping rooms/floors/hallways as applicable. (R314 & R315)

26. Garage floor surfaces shall be concrete and sloped maintained to a drain or toward the main vehicle entry. (R309.1)

27. A seismic gas shutoff valve is required if not already installed. 1208.13.1, CCMC 15.02.130]

28. Structures over 2 stories require a minimum 3000 psi concrete.

29. Existing Post beam connections along a SWOF shall be positively anchored by hardware, toe nailing, and block nailing connection need to be updated.

SWOF IDENTIFICATION ANALYSIS

30. Provide elevations along each side of each structure.

31. Justify that the wall-line along gridline _____ or (N, S, E, W) elevation is/are not weak, soft, or open-front wall lines.

32. Provide pier/wall lengths and weak story calculations on the plans for each building elevation for field verification. Include type of wall construction material for verification.

33. In evaluating a SWOF line wall segments 2 feet or less shall be permitted to be disregarded.

34. Wall Line evaluation provided they are disregarded on both story levels and the cumulative 2' wall or less wall segment is less than 25% of the total wall strength for each story.

35. Revise expected strengths of _____ existing material to ____ per Table 4 of these guidelines when performing relative strength checks.

36. Expected strength wall capacities of gyp/stucco shall be considered additive when sheathed on both sides of a wall. Where plywood sheathing is used on one side and gyp/stucco on the other, the capacity of the gyp/stucco shall be reduced to 50%. Per Guidelines.

37. Provide calculations and detailing for complete load path.

38. Structural plans, details, and calculations are required for the construction of moment frames.

39. Specify material specifications, quality assurance plan, and any special inspections on the plan.

40. Structure is over 2 stories and requires a minimum 3000 psi concrete.

41. Provide standard detail sheets and specify third party approval numbers on plan for prefabricated walls, frames etc. Newer methodology without Los Angeles Research Reports may require separate review and approval for equivalency.

42. Check the existing diaphragms ratios. Those in excess of 3:1, the existing diaphragm should be verified as adequate, strengthened if needed, or new lateral force resisting lines should be added.

43. SWOF Retrofit Requirements for Building Configuration(s) F & G as identified in the Screening Report: Design should verify the following:

    a. Cripple or full height walls in the perimeter of the open floor space in the targeted floor.
    b. Retrofit may be limited to wood framed wall and connections to the floor diaphragm directly above the open ground floor space and connections to the supporting concrete foundation or concrete or CMU wall below.
    c. Existing foundations supporting these wood framed walls shall be considered satisfactory and need not be analyzed/strengthened unless significant deterioration exist.
    d. Where existing diaphragms ratios exceed 3:1 (1 ½ : 1 for cantilevered diaphragm), the existing diaphragm should be shown to be adequate, strengthened if needed, or new lateral force resisting lines should be added.

DESIGN ANALYSIS:

44. The minimum design base shear for buildings, including Historical Buildings, shall be 75 percent of the value specified in ASCE 7-16 Section 12.8.1.

45. R need not be less than 3.5, provided the lateral force resisting system R Value as listed in ASCE 7-16, Table 12.2-1 are not less than 3.5.

46. R value has been designed as greater than 3.5. The design professional shall perform additional investigation on the walls above the new system to prove the existing materials and details meet the requirements of ASCE 7-16, Table 12.2-1 for the proposed R value.

47. Revise the seismic weight determination to use a minimum:
    - 10 psf for partition loads per ASCE 7-16 chapter 12
    - 15 psf minimum roof dead load or provide detailed dead load calculation
    - 15 psf (+8 psf for stucco soffit cover in parking area as applicable) minimum floor dead load or provide detailed dead load calculation
    - 15 psf exterior wall weight, per sf of wall, or provide detailed exterior wall dead load calculations
    - 15 psf for floor dead load due to existing concrete topping, if applicable
    - 5 psf for existing solar panels on the roof as applicable

48. ρ shall be 1.3 unless the criteria in ASCE 7-16 Section 12.3.4.2 is met for the line being strengthen. For drift calculation, members, and connection design loads using overstrength factor, ρ shall be 1.0.

49. Maximum story drift shall be checked at 0.025 times the story height for both wind and seismic.

50. For Lateral Force Resisting Systems using an R value equal to 3.5 revise the Cd and overstrength to be, 3.0 and 3.0, respectively.

51. For Lateral Force Resisting Systems using an R value greater than 3.5 Cd and overstrength value shall be as listed in ASCE 7-16, Table 12.2-1. A value of _____.

52. Existing Post beam connections along a SWOF shall be positively anchored by hardware, toe nailing and block nailing connection need to be updated.

53. Existing materials values for _____ shall be limited to Culver City Seismic Design Guidelines. Revise

54. Special Steel Moment Frames (SMF) shall be designed per AISC 341 E3 using a prequalified connection per AISC 358.

55. Intermediate Steel Moment Frames (IMF) shall be designed per AISC 341 E2 using a prequalified connection per AISC 358.

56. The top of the moment frame (SMF/IMF/OMF) columns shall be braced per AISC 360 Appendix 6 unless a more detailed analysis is provided in accordance with AISC 360 Chapter C.

57. Ordinary Steel Moment Frames (OMF) connections shall be designed per AISC 341 E1 and either a Fully restrained moment connections designed per AISC 341 E1-6b (a), (b), or (c) OR Partially restrained moment connections per AISC E1-6c.

58. Ordinary Cantilevered Column Systems (OCCS) are not permitted provide alternate retrofit solution.

59. A minimum of two Special Cantilevered Columns are required per strengthened line spaced 8' o.c. minimum (1 existing car bay).

60. Special Cantilevered Column Systems SCCS columns shall comply with AISC 341 E6 and shall be designed using the load combinations including the amplified seismic load with overstrength factor. The design of SCCS shall consider soil interaction.

61. Special Cantilevered Column Systems sections with eccentric loads (causing torsion in the column) shall consists of closed shapes that can resist torsion or additional bracing shall be provided at the top of the column to resolve the eccentricity.

62. New Concrete Walls, Masonry Walls, or Steel Braced Frames are permitted provided that a full building analysis considering diaphragm stiffness and torsional behavior is performed per ASCE 7-16 with design base shear requirements per the Seismic Guidelines.

63. Horizontal Structural Irregularities as defined in ASCE 7-16 for buildings with 3 or more stories including either type 2, 3, 4 or 5 shall meet the additional requirements of those sections referenced in the table for the SWOF lines being considered.

64. Horizontal and cantilever diaphragms shall be designed for shear transfer, with a max ratio of 3:1 by adding a new lateral resisting element.

65. Where existing horizontal and cantilever diaphragms are composed of diagonal sheathing, the wall or drag connections to the diaphragm shall use shear transfer clips on both sides of the sheathing board, or shear transfer clips that can transfer out-of-plane forces.

66. **Transfer Diaphragms** shall consider the following:

    Where a diaphragm is utilized to transfer shear load to the new or existing lateral force resisting system from an existing wall above, the diaphragm shall be evaluated. Omega need not be considered if the diaphragm can be shown to satisfy the max load that can be delivered to the diaphragm.

    A maximum horizontal cantilever diaphragm of 10ft shall be permitted without the addition of a new lateral force resisting element if the diaphragm is designed for the horizontal transfer shear load.

Transfer diaphragms composed of straight sheathing shall not be permitted where boards are oriented parallel to the lateral force resisting system. Strengthening shall be provided.

67. Ties and continuity. Provide backup calculations for the design of all the new elements in the lateral load resisting path to transfer seismic loads from the diaphragm to the foundation.

68. Collector elements. Provide backup calculations for the design of collectors and drag struts shall be per ASCE 7-16 Section 12.10.2.1.

69. Collectors shall not be longer than 60 ft between vertical lateral force resisting elements and 30 ft from ends.

70. Minimum shear transfer length (length of LFRS plus collector length) shall be equal to the vertical LFRS design force (ASD) divided by the allowable diaphragm capacity in Table 2.

71. Drag members, drag member connections to the steel moment frame, and drag splices shall be designed for the larger of $\Omega_0 F_x$, $\Omega_0 F_{px}$, and F_{px} min. Forces need not exceed F_{px} max.

72. Connections from drag member to diaphragm and frame to diaphragm shall be designed for the larger of Fx, Fpx, and Fpx min. Forces need not exceed Fpx max

73. At shear walls drag members, drag member connections to walls, drag splices and connections from drag member to diaphragm and frame to diaphragm shall be designed for the larger of F_x, F_{px}, and F_{px} min. Forces need not exceed F_{px} max.

74. Revise the foundation design to check for bearing, overturning, shear, flexure, and punching shear.

75. Tie new foundation to existing foundations per CBC Section 1809.13. New foundations may be tied to existing reinforced concrete slabs if the slab can be shown to be sufficient to transfer the forces to the existing building prescribed in CBC 1809.13. Unless it is shown that the site DOES NOT contains geological site hazards such as fault rupture, liquefaction, landslide, and flood based on published maps, literature, historical knowledge or by any other assessment.

76. Foundations and superstructure-to-foundation connections shall be designed per CBC 12.13.1.1. For cantilever columns systems utilizing pole footings or single spread footings, Ω_0 level forces shall be applied.

77. Provide a 2' thick footing or check for sliding.

78. For cantilever columns, systems utilizing pole footing or single spread footings the coefficient of sub-grade reaction shall be based on an approved geotechnical investigation.

79. Provide additional Anchorage Requirements for Buildings on Hillsides per Culver City Seismic Guidelines. A soils report may be required as determined by Building and Safety.

80. Where a building within the scope of the ordinance or any portion thereof is constructed on or into a slope steeper than a 33% slope, the lateral-force-resisting system, at and below the base level diaphragm, shall also be analyzed for the effects of concentrated lateral loads caused at the building base from the hillside conditions and comply with the provisions of the Building Code. Refer to LARUCP for the definition of concentrated lateral loads. Existing foundations are not required to satisfy this section.

RETURN THIS SHEET ANNOTATED WITH RESPONSES, ALL ORIGINAL AND REVISED PLANS AND SPECIFICATIONS WHEN CORRECTIONS HAVE BEEN MADE.