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Guidelines for **Building (BLD)** Permit Applications that require Geotechnical (Soils) Reports

Introduction

The following guidelines are provided by the County Geotechnical Section of the Planning and Building Department to inform the applicant of the types of projects for which the County will require the submission of a Geotechnical Investigation Report subject to the requirements of the California Building Code Section 1803.2 – Geotechnical Investigations, and San Mateo County Guidelines for Geotechnical Reports.

Please note that the Planning and Building Department reserves the right to require geotechnical reports for projects that are not listed below. **The County Geotechnical Reviewer or Building Official will make the final determination whether a geotechnical investigation report or a geologic hazard report is required for a project.**

Basic report requirements are included in California Building Code Section 1803.3-1803.7. An excerpt from Building Code Section 1803.6 is presented in Appendix A, which outlines basic report content requirements. Detailed guidelines for geotechnical and geology report contents for each project type are discussed in the San Mateo County Guidelines for Geotechnical Reports. For reference, Geotechnical Report Requirements for Planning Applications is presented in Appendix B.

As discussed below, there are separate requirements for projects located within “Designated Geologic Hazard Zones” from those which are not. Hazard zones are delineated in the County Planning GIS linked here: [Planning GIS](#). Hazard zone designations are further discussed in San Mateo County Guidelines for Geotechnical Reports.

It should also be noted that projects located within the Seal Cove, Los Trancos Woods, San Mateo Highlands, and La Honda communities may be subject to further requirements as discussed in the San Mateo County Guidelines for Geotechnical Reports and the San Mateo County Building Ordinance.

Geotechnical Report Waiver Request

For applicants seeking a waiver from the requirements of the 2025 California Building Code Section 1803.2 – Geotechnical Investigations, they shall submit a **written request** to the Planning and Building Department’s Geotechnical Reviewer via their Building Permit Application. The permit holder accepts full and absolute responsibility for any adverse consequences of waiving the requirement for a Geotechnical/Soils report.

The request for a Geotechnical/Soils Report Waiver shall include:

- a. A description of the project scope in detail with an emphasis on the geotechnical elements,
- b. A site plan showing the location(s) of the proposed improvement(s),
- c. Documentation that the design guidelines outlined in the section below in addition to other minimum design requirements in the California Building Code have been followed, and
- d. A statement accepting full and absolute responsibility for any adverse consequences of waiving the requirement for a Geotechnical/Soils report.

The submission of a waiver request does not guarantee that the waiver will be granted. The review of a waiver will incur a review fee equal to the according to The Department’s fee schedule for geotechnical report reviews for small projects. The fee schedule can be found here: [Fee Schedule](#). Applicants should note that waivers are only available for certain project types and conditions. Those conditions are denoted in the project specific requirements with a bold **Waivers Accepted**.

Minimum Geotechnical Design Guidelines

For projects that do not require geotechnical reports, or projects seeking a waiver from performing a geotechnical report, or project for which an exemption is granted, the following design guidelines shall be followed:

1. Maximum bearing capacity shall be 1500 psf for all foundations,
2. Footings shall be a minimum of 24” in depth below undisturbed natural grade, and a minimum of 15” in width. “Natural Grade” shall be interpreted by the plan reviewer as the lowest adjacent grade to the foundation in question. Foundations located on or near a slope steeper than 4H:1V or a 25% grade shall conform to the standards of California Building Code Section 1808.7 Foundations on or Adjacent to Slopes.
3. All concrete shall have a compressive strength of 2500 psf minimum,
4. Active Earth Pressure for Retaining Walls shall be a minimum equivalent fluid pressure of 60 pcf,
5. Passive Earth Pressure shall be a maximum equivalent fluid pressure of 200 pcf.
6. Seismic Site Classification shall be based on “Default” site class as defined in ASCE 7-22

Building Permit Specific Requirements by Project Type

A geotechnical report shall be submitted to the Building Department with the building permit application when any of the following conditions are met, as listed under each project category. It should be noted that the terms “horizontal” and “vertical” are used to describe any increases in occupied space in either the horizontal or vertical direction.

1. Single Family Dwelling
 - a. All new Single-Family Dwellings, regardless of size.

2. Residential Addition
 - a. Additions over **500** total square feet vertically or horizontally in a **mapped geologic hazard zone. Waivers Accepted**
 - b. Additions over **1000** total square feet vertically or horizontally outside of a mapped geologic hazard zone. **Waivers Accepted**
 - c. The addition of habitable space to any building, where the addition increases the habitable space by more than 50% of the total square footage. **Waivers Accepted**
 - d. Any addition over 2 stories or 24 vertical feet, regardless of square footage.
 - e. Any addition on parcel with “L” designation (Brabb and Pampeyan 1978) or is steeper than 2H:1V, regardless of square footage.
 - f. Any addition that includes a basement excavation. **Waivers Accepted**
 - g. Any addition with a proposed deep foundation such as drilled piers, regardless of square footage.

3. Accessory Dwelling Unit (ADU) – Attached and Detached
 - a. ADUs over **500** total square feet vertically or horizontally in a **mapped geologic hazard zone. Waivers Accepted**
 - b. ADUs over **1000** total square feet vertically or horizontally outside of a mapped geologic hazard zone. **Waivers Accepted**
 - c. Any ADU structure over 2 stories or 24 vertical feet, regardless of square footage.
 - d. Any ADU on parcel with “L” designation¹ (Brabb and Pampeyan 1978) or is steeper than 2H:1V, regardless of square footage.
 - e. Any ADU including a basement excavation. **Waivers Accepted**
 - f. Any ADU with a proposed deep foundation such as drilled piers.

4. Non-Habitable Structures
 - a. Non-habitable (non-critical²) buildings over **2,000** square feet regardless of location. **Waivers Accepted**
 - b. Non-habitable (non-critical) buildings over **1,000** square feet with a second story or mezzanine. **Waivers Accepted**
 - c. Any non-habitable structure over 2 stories or 24 vertical feet regardless of square footage.

¹ Details on the “L” designation can be found within the USGS MF 360 publication cited and linked in the References section

² “Non-critical” facilities are those that do not pose a substantial hazard to the community.

- d. Any non-habitable building on parcel with “L” designation (Brabb and Pampeyan 1978) or is steeper than 2H:1V, regardless of square footage.
 - e. Any non-habitable structure including a basement excavation. **Waivers Accepted**
 - f. Any non-habitable structure with a proposed deep foundation such as drilled piers.
5. Commercial Buildings
- a. All new commercial buildings, industrial buildings, or critical facilities.
 - b. Additions over **500** total square feet vertically or horizontally in a **mapped geologic hazard zone. Waivers Accepted**
 - c. Additions over **1000** total square feet vertically or horizontally outside of a mapped geologic hazard zone. **Waivers Accepted**
 - d. The addition of habitable space to any building, where the addition increases the habitable space by more than 50% of the total square footage. **Waivers Accepted**
 - e. Any addition over 2 stories or 24 vertical feet regardless of square footage.
 - f. Any addition on parcel with “L” designation (Brabb and Pampeyan 1978) or is steeper than 2H:1V, regardless of square footage.¹
 - g. Any commercial construction including a basement excavation. **Waivers Accepted**
 - h. Any addition with a proposed deep foundation such as drilled piers, regardless of square footage.
6. Remodels (this is subject to interpretation and exemption depending on the nature of the work performed)
- a. Any substantial alteration, which includes modification, reconstruction or replacement of **50%** or more of the major structural components of an existing critical structure or facility, as defined by ASCE/SEI Standards. **Waivers Accepted**
 - b. Any remodel including a basement excavation not already addressed in another category. **Waivers Accepted**
7. Retaining Walls
- a. Any retaining wall that retains over **5 feet** of material. See **Figure 1** below for an illustration of this requirement.
 - b. Any retaining wall with a backslope steeper than 2H:1V or carrying a significant surcharge. See **Figure 1** below for an illustration of this requirement.
 - c. Any retaining wall or grading effort to repair or stabilize a landslide or provide slope stabilization.
 - d. Any retaining wall designed for a project already requiring a grading permit.
8. Decks
- a. Any deck over **2000 sf** raised more than **30 inches** above the ground. **Waivers Accepted**
 - b. Any deck over **1000 sf** raised more than **12 feet** above the ground.
 - c. Any deck with a proposed deep foundation³ such as drilled piers, regardless of square footage

³ It is understood that in deck construction there is some nuance as to the use of shallow “drilled piers” that function more like typical footings. A deck foundation’s designation as either “shallow” or “deep” will be made based on how the foundation element functions structurally.

9. Pools

- a. All Pools larger than **2000 sf** or deeper than **6 feet** below adjacent grade. **Waivers Accepted**
- b. Any pool located on or adjacent to a slope greater than 4H:1V or a 25% grade shall require a geotechnical report or be setback according to the provisions of California Building Code Section 1808.7 Foundations on or Adjacent to Slopes.
- c. Any pool on parcel with “L” designation (Brabb and Pampeyan 1978) or is steeper than 2H:1V, regardless of square footage.

10. Pool Demolition Guidelines

- a. Demolished pools where the area is intended for future structural use. In addition, the demolition shall follow San Mateo County Pool Demolition Guidelines.

11. Onsite Water Treatment Facilities (Leach Fields)

- a. The proposed leach field is located on slopes steeper than **20%** (5H:1V) as required in the San Mateo County Public Health Onsite Systems Manual. An evaluation of the slope stability is also required.

12. Water Tanks

- a. Water tanks greater than **10,000 gallons**. **Waivers Accepted**

13. Voluntary Foundation Upgrades

- a. Voluntary Foundation Upgrades that do not otherwise entail any other addition or structural modification to the home typically **do not** require geotechnical reports. Notable exceptions to where a geotechnical report **is required** are the following:
 - i. The structure is in a designated **landslide hazard zone** as shown in the County GIS (linked above). **Waivers Accepted**
 - ii. The structure is located on a gradient of **25%** (4H:1V) or steeper.
 - iii. The structure is in the Seal Cove, Los Trancos Woods, or La Honda community.

14. Cell Phone Towers

- a. A new cell phone tower of any size or foundation type.
- b. New deep foundations such as drilled piers or driven piles.
- c. Any alteration or replacement that includes the addition of new foundation elements. **Waivers Accepted**

References

1. *2025 California Building Code: California Code of Regulations, Title 24, Part 2*, International Code Council, 2022.
2. Brabb, Earl E.; Pampeyan, Earl H. *Landslide Suseptibility in San Mateo County, California*, MF 360, United States Geological Survey, 1978 (Link to report can be found here [MF 360](#))
3. Parrish, John G. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, special publication 117a, California Dept. of Conservation, California Geological Survey, 2008.
4. Parrish, John G. *Earthquake Fault Zones A Guide for Governments Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*, special publication 42, California Dept. of Conservation, California Geological Survey, 2018.
5. San Mateo County Environmental Health Division. *Onsite Systems Manual*, San Mateo County, 2016
6. San Mateo County Planning and Building. *Ordinance No. 4873*, San Mateo County, 2023. (County Building Ordinance)
7. San Mateo County Planning and Building. *Zoning Regulations*, San Mateo County, 2023.
8. San Mateo County Planning and Building. *Local Coastal Program Policies*, San Mateo County, 2021

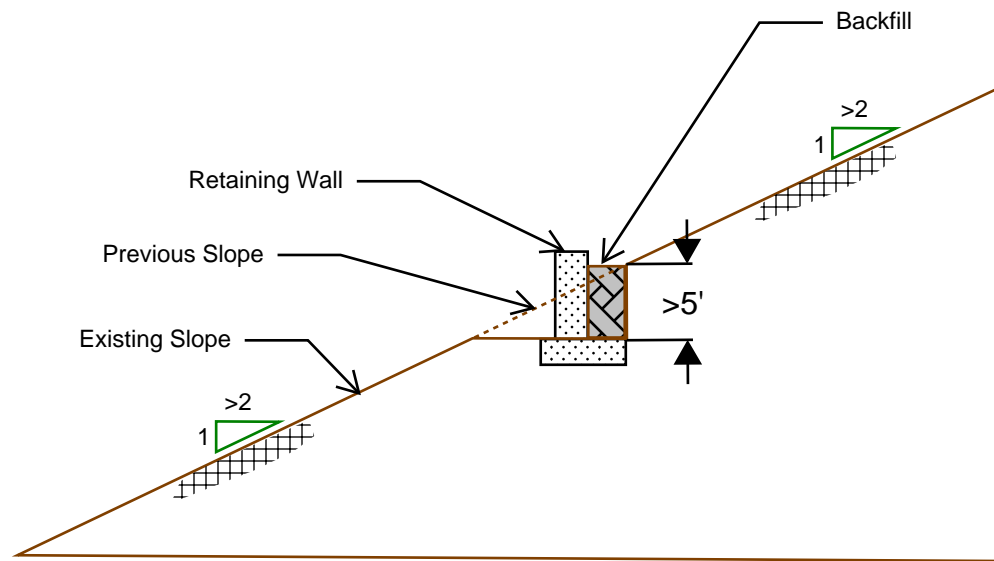


Figure 1a: Retaining wall retaining more than 5' on a slope that is less than 2:1

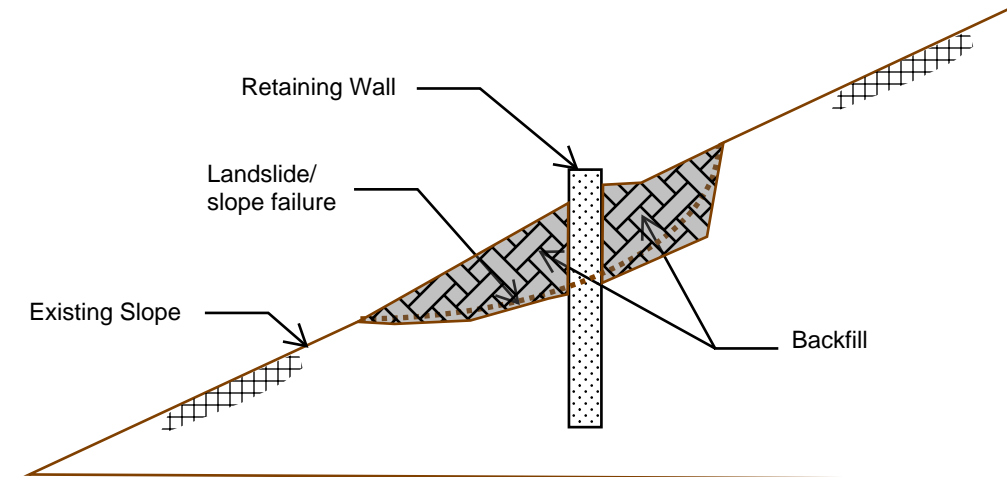


Figure 1c: Any retaining wall supporting or remediation of a slope failure

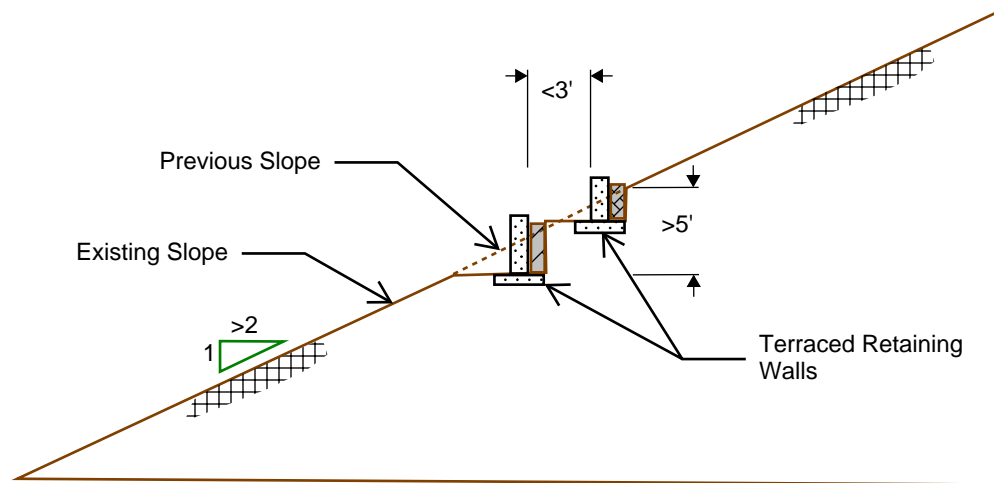


Figure 1b: Terraced retaining walls that are spaced less than 3 feet apart and have a total retention larger than 5' on a slope less than 2:1

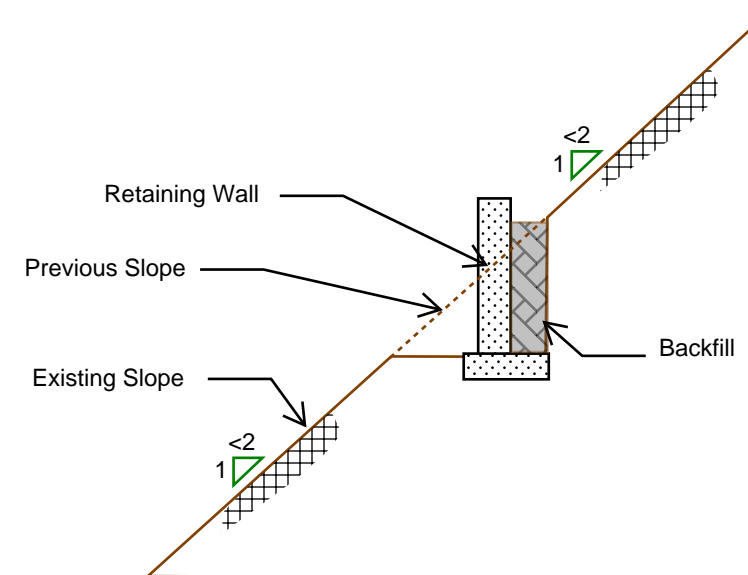


Figure 1d: Any retaining wall on a slope steeper than 2:1

Figure 1: Situations where a geotechnical report is required (not to scale)

1e (not shown). Retaining wall supporting a surcharge such as a road or a structure requires a geotechnical report.

Appendix A – Basic Report Requirements from California Building Code Section 1803

1803.6 Reporting

Where geotechnical investigations are required, a written report of the investigations shall be submitted to the building official by the permit applicant at the time of permit application. This geotechnical report shall include, but need not be limited to, the following information:

1. A plot showing the location of the soil investigations.
2. A complete record of the soil boring and penetration test logs and soil samples.
3. A record of the soil profile.
4. Elevation of the water table, if encountered.
5. Recommendations for foundation type and design criteria, including but not limited to: bearing capacity of natural or compacted soil; provisions to mitigate the effects of expansive soils; mitigation of the effects of liquefaction, differential settlement and varying soil strength; and the effects of adjacent loads.
6. Expected total and differential settlement.
7. Deep foundation information in accordance with Section 1803.5.5.
8. Special design and construction provisions for foundations of structures founded on expansive soils, as necessary.
9. Compacted fill material properties and testing in accordance with Section 1803.5.8.
10. Controlled low-strength material properties and testing in accordance with Section 1803.5.9.

Appendix B – Geotechnical Report Requirements for Planning Applications

Geotechnical requirements for Planning applications are based on the San Mateo County Building Ordinance, Subdivision Regulations, Local Coastal Program, and San Mateo County Guidelines for Geotechnical Reports. Applicants should refer to those documents for more information regarding those permitting requirements. The Geotechnical Section’s decision to require a geotechnical report is made on a case-by-case basis to account for site specific requirements and conditions.

1. Grading Permits – all projects that require a grading permit shall also be required to submit a geotechnical report as discussed in the San Mateo County Building Ordinance Section 9285. Notable projects **when** a geotechnical report is required for grading include:
 - a. 150 cubic yards or more of cut outside of a building footprint.
 - b. 150 cubic yards or more of fill outside of a building footprint.
 - c. 2 vertical feet of fill or more is a part of the grading operation.
 - d. 2 vertical feet of cut or excavation is a part of the grading operation.
2. Subdivision Permits – The County Subdivision regulations state that all subdivision permit applications require a geotechnical report. In general, subdivision geotechnical and geologic reports should provide the results of geotechnical investigation that substantiates that the land is safe to build upon, with provided recommendations to mitigate any site geologic hazards in a geotechnical feasibility report. New subdivisions typically require a heightened sense of scrutiny, especially when it comes to subdivisions in geologic hazard zones. Reports in designated hazard zones should generally follow the guidelines set forth in California Geologic Survey Special Publication 117a. For further information on Geotechnical Reports for Subdivisions, see the San Mateo County Guidelines for Geotechnical Reports.

The Geotechnical Reviewer may waive the requirement for a geotechnical feasibility report if the proposed subdivision is outside of an area of mapped geologic hazards. This determination is highly dependent on the proposed use of the lot(s) to be created by the subdivision and will be dealt with on a case-by-case basis. If an applicant has questions, they should contact the County Geotechnical Reviewer.

3. Coastal Development Permits – The County Local Coastal Program requires most projects within the coastal zone to submit a Coastal Development Permit Application prior to obtaining a Building Permit. If the proposed project does not also require a grading permit or subdivision, then the requirements for a geotechnical report should follow the same guidance as for a building permit. If an applicant wishes to waive or postpone the geotechnical report until the Building Permit stage, they should send a waiver request letter with the information discussed above in the *Guidelines for **Building (BLD) Permit Applications that require Geotechnical (Soils) Reports***. The Department recommends not postponing a required geotechnical report since the report may determine the need for project revisions and require an amendment to the CDP.