



RETAINING WALL

Submittal/Permitting Guidelines

Permits are required for all retaining walls greater than 48 inches in height measured from the bottom of the footing to the top of the wall. Retaining walls require compliance with the 2022 CBC, CRC, CEC, CGBS and the 2022 California Energy Code.

Submittal Requirements

Retaining walls are subject to the standard plan review procedures of approximately 10 business days. Plan check submittals for the initial plan check requires one (1) electronic pdf set of scaled drawings with the following information included.

1. **Site Plan** – Show surface drainage, lot dimensions, setbacks to property lines, building dimensions, easements, existing structures.
2. **Details** – Indicate footing sizes, drainage, reinforcing steel, wall height, etc.
3. **Design Professional's Stamp** – Every page of each set of plans must be wet stamped and signed by the Design Professional prior to permit issuance. (Business and Professions Code Section 6735(a) - to view this code see: <http://www.leginfo.ca.gov/calaw.html> and check Business and Professions Code and click "Search").
4. **Engineer's Structural Calculations** – One (1) pdf electronic set attached to the plan set may be required to justify lateral analysis, horizontal torsional moments, stability against overturning, anchorage, distribution of uniform loads and concentrated loads.
5. **Soils Report** – One (1) pdf electronic set may be required. See the matrix below to determine if a soils report and/or a field memo is required.

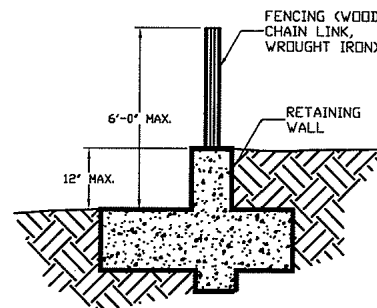
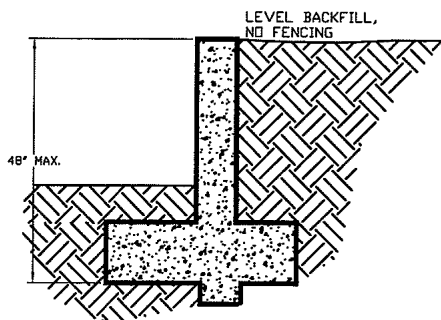
Project Type	Project Size	Design Soil Bearing Pressure ≤ 1500 psf for continuous and /or pad footing only	Foundation Clearance from Top of Slope per CBC 2022 Figure 1808.7.1	Both Soils Report & Field Memo Required	Field Memo Required Prior to Foundation Inspection	Neither Soils Report or Field Memo Required
New Building or Addition including attached Misc. Structures	≥ 1000 sqft	N/A	N/A	✓		
	from 401 to 1000 sqft	✓	✓		✓	
	≤ 400 sqft	✓	✓			✓
Detached Misc. Structures (Includes Patio Covers, decks, etc.)	> 400 sqft	>1,500 psf	✓	✓		
		✓	✓		✓	
		N/A	Closer than minimum required	✓		
	≤ 400 sqft	✓	✓			✓
Retaining Walls	≤ 6 ft	✓	✓		✓ (*)	
	> 6 ft	N/A	N/A	✓		
Two Story Additions	Any size			✓		

(*) Back fill 30 degree triangle with crushed rock; Perforated drain pipe provided at bottom of crushed rock fill; back fill is level and does not support any structures.

Variance or exceptions to these requirements will be reviewed and approved on a case by case basis by the Building Official.

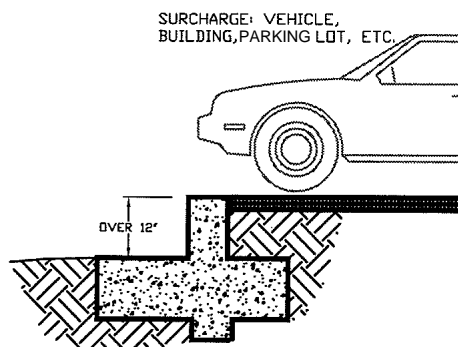
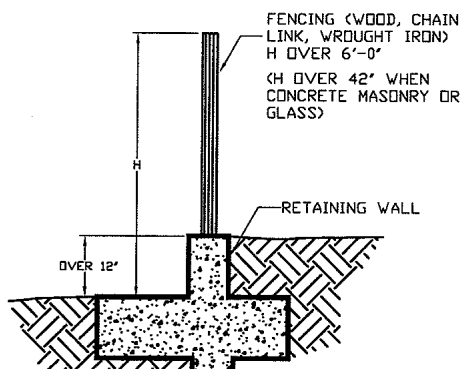
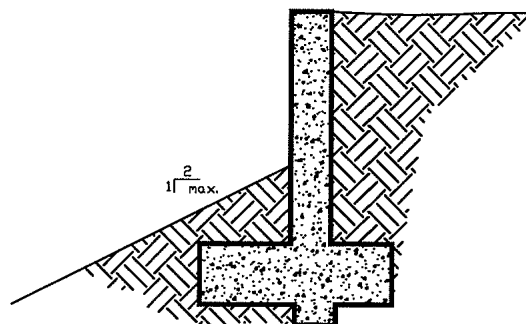
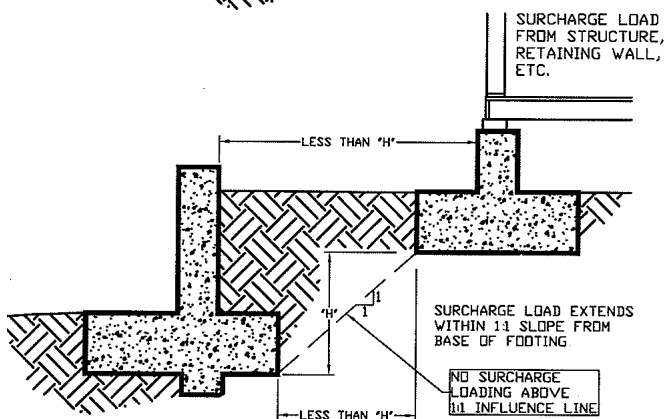
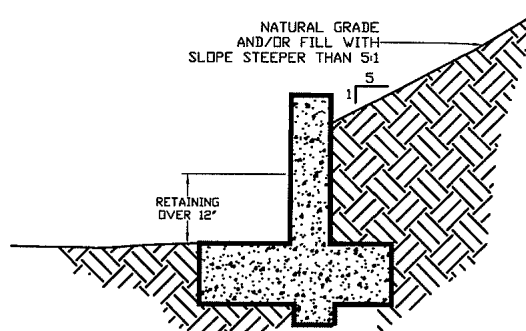
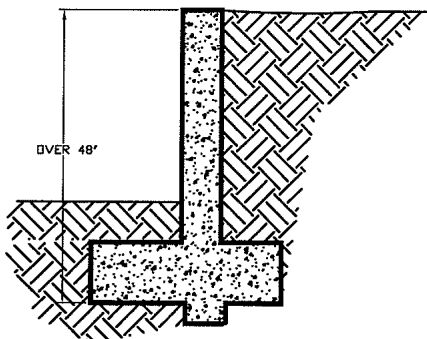
PERMITS ARE NOT REQUIRED FOR THE FOLLOWING CONDITIONS:

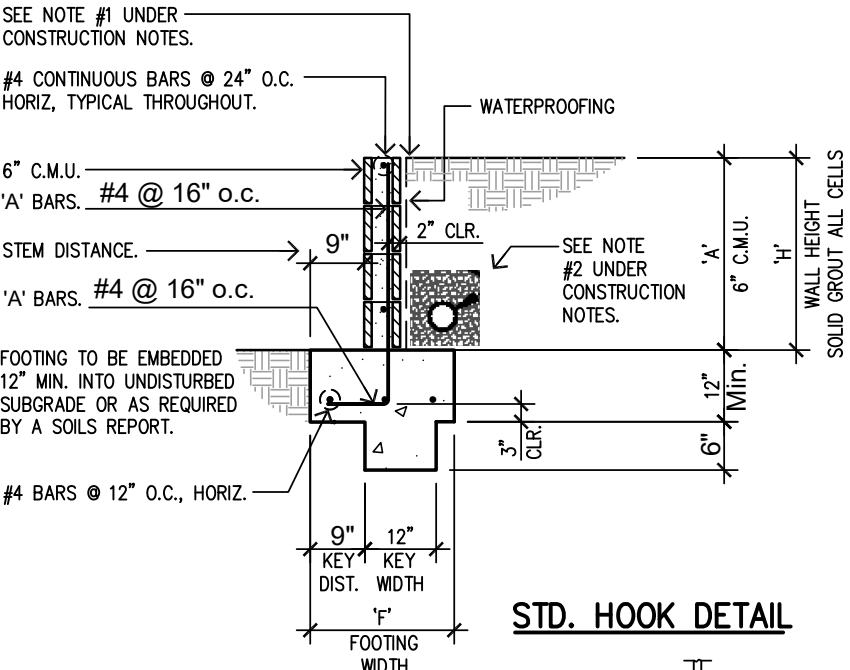
But-check with the Planning and Engineering Division prior to construction of any retaining wall to ensure that wall will not be built in a required setback or right-of-way.



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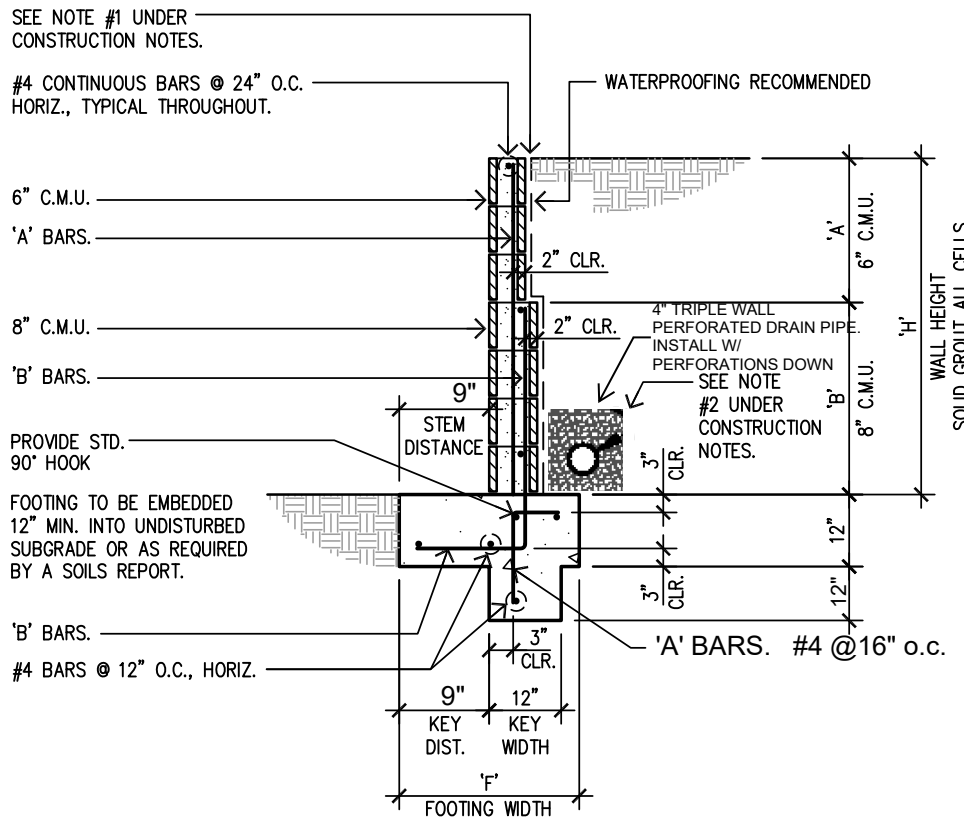
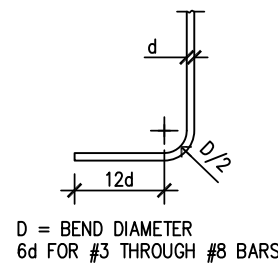
ALL RETAINING WALL PLANS AND STRUCTURAL CALCULATIONS SUBMITTED FOR PERMITTING AND REVIEW SHALL BE SIGNED AND SEALED BY A CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER AND A SOILS REPORT MUST BE PROVIDED OR WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY STANDARD DETAILS.



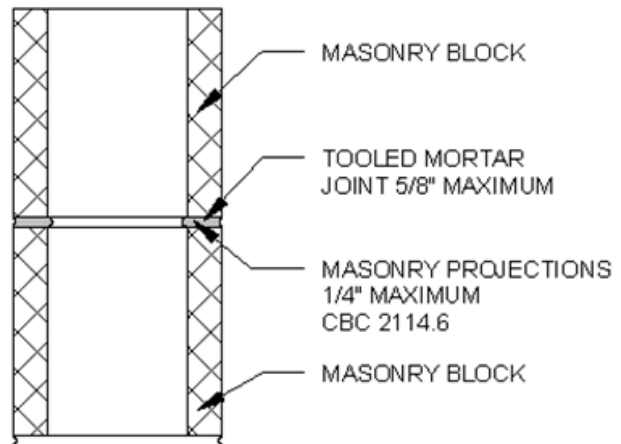


WALL HEIGHT: 1'-4" to 2'-8"

STD. HOOK DETAIL



WALL HEIGHT: 2'-8" to 3'-0"



PRIOR TO GROUTING, THE GROUT SPACE SHALL BE CLEAN SO THAT ALL SPACES TO BE FILLED DO NOT CONTAIN MORTAR PROJECTIONS, MORTAR DROPPINGS, AND/OR OTHER FOREIGN MATERIALS, WALLS WITH EXCESS MORTAR DROPPINGS OR DEBRI WILL REQUIRE CLEANOUTS

MORTAR JOINT DETAIL

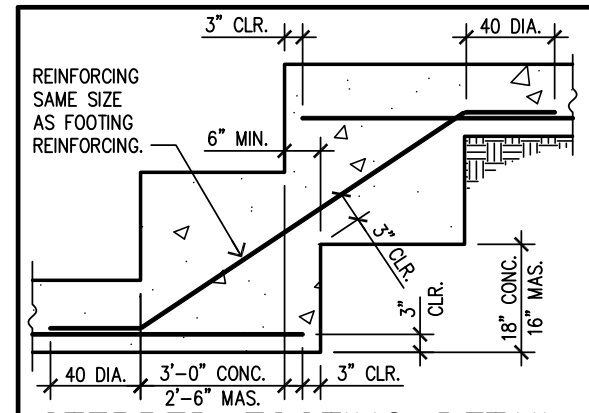
1 1/2" = 1'-0"

MATERIAL NOTES:

- 1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE IN CONFORMANCE WITH THE LATEST ADOPTED EDITION OF THE CBC/IBC.
- 2. CONCRETE BLOCK SHALL BE NORMAL WEIGHT UNITS (135 PCF), CONFORMING TO CBC/IBC SEC. 2103, AND ASTM C 90. ALL CONCRETE BLOCK SHALL HAVE A DESIGN STRENGTH OF $f_m = 2,000$ psi.
- 3. GROUT SHALL CONFORM TO CBC/IBC SEC. 2103 & ASTM C 476 WITH $f_c = 2,000$ PSI.
- 4. MORTAR SHALL BE TYPE M WITH $f_c = 2,500$ psi AND SHALL CONFORM TO CBC/IBC SEC. 2103 & ASTM C 270.
- 5. CONCRETE TO BE IN CONFORMANCE WITH CBC/IBC CHAPTER 19 & SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,500 PSI AT 28 DAYS.
- 6. IF PROVISIONS FOR CONCRETE SULFATE EXPOSURE ARE REQUIRED BY THE PERMITTING AGENCY, CONCRETE IN CONTACT WITH SOIL SHALL BE IN ACCORDANCE WITH ACI 318, TABLE 19.3.1.1.
- 7. CEMENT SHALL CONFORM TO ACI 318, CHAPTER 19, ASTM C 150.
- 8. WATER USED IN GROUT, MORTAR, AND CONCRETE SHALL BE CLEAN AND FREE FROM DELETERIOUS SUBSTANCES.
- 9. KEEP CONCRETE DAMP CONTINUOUSLY FOR 14 DAYS.
- 10. NO ADMIXTURES OF ANY KIND ARE ALLOWED WITHOUT APPROVAL FROM THIS OFFICE PRIOR TO CONSTRUCTION.
- 11. MORTAR BED JOINTS USED IN CONSTRUCTION SHALL NOT EXCEED 5/8" THICKNESS.
- 12. ALL REINFORCING BARS SHALL BE COMPLETELY EMBEDDED IN MORTAR OR GROUT AND SHALL HAVE A COVER OF NOT LESS THAN 2 INCHES.
- 13. ALL REINFORCING STEEL SHALL BE DEFORMED BARS & CONFORM TO ASTM A615 GRADE 40 FOR #4 BARS AND SMALLER, AND GRADE 60 FOR #5 BARS AND LARGER.
- 14. LAP SPLICES TO BE 24" MINIMUM OR AS SPECIFIED.
- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND PROVIDING BRACING DURING CONSTRUCTION AND/OR ERECTION TO SUPPORT ALL LOADS TO WHICH THE STRUCTURES AND SUPPORTING SOIL MAY BE SUBJECTED.

CONSTRUCTION NOTES:

- 1. APPROVED DRAINAGE CONVEYANCE SHALL BE PROVIDED WHENEVER THE SURFACE FLOW BEHIND THE WALL WILL NOT READILY DISCHARGE OR IF THE DISCHARGE IS UNDESIRABLE.
- 2. PROVIDE 1 CU. FT PER FT OF GRAVEL 1/4" TO 1 1/2" WRAPPED IN FILTER FABRIC MIRAFI 140N OR EQUAL. PROVIDE DRAINAGE BEHIND WALL BY EITHER:
 - A) OMITTING THE VERTICAL MORTAR JOINTS (HEAD JOINTS) OF THE FIRST COURSE ABOVE FINISH GRADE AT 32" ON CENTER & 2" DIAMETER WEEPHOLES AT 6' ON CENTER MAXIMUM, 3" ABOVE FINISH GRADE. THIS IS NOT PERMITTED ON DOWNSLOPE CONDITIONS.
 - B) 4" DIA. SCHEDULE 40 PERFORATED PIPE. PLACE PERFORATIONS DOWN WITH OUTLET @ END OF WALL.
- 3. NO SURCHARGE ALLOWED
- 4. VERTICAL EXPANSION JOINTS IN THE WALL ARE REQUIRED AT 25' ON CENTER MAXIMUM AND AT RE-ENTRANT OR 90° CORNERS.

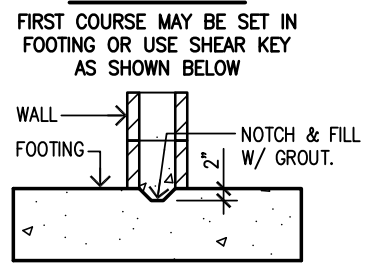


STEPPED FOOTING DETAIL

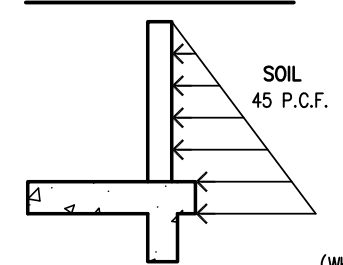
NOTES:

- ALL FOOTING STEEL TO BE 3" CLR. FROM EARTH.
- LAP ALL STEEL 24" MIN.

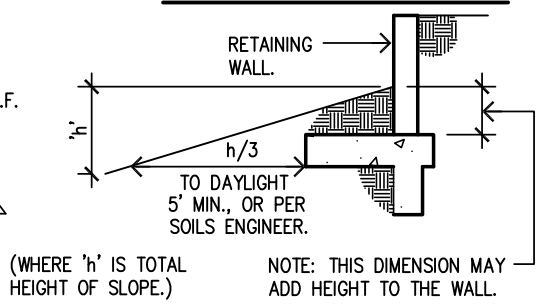
SHEAR KEY



LOADING DIAGRAM



DOWNSLOPE CONDITION



WALL HEIGHT 'H'	WALL SCHEDULE				
	FOOTING INFORMATION FOOTING WIDTH 'F'	WALL INFORMATION			
		6" C.M.U. 'A'	'A' BARS	8" C.M.U. 'B'	'B' BARS
1' - 4"	1' - 6"	1' - 4"	#4 @ 16"	-	-
2' - 0"	2' - 0"	2' - 0"	#4 @ 16"	-	-
2' - 8"	2' - 0"	2' - 8"	#4 @ 16"	-	-
3' - 0"	2' - 0"	1' - 0"	#4 @ 16"	2' - 0"	#4 @ 16"



CITY OF LAGUNA HILLS
BUILDING DEPARTMENT

Retaining Wall Standard
2022 CBC