



RETAINING WALL

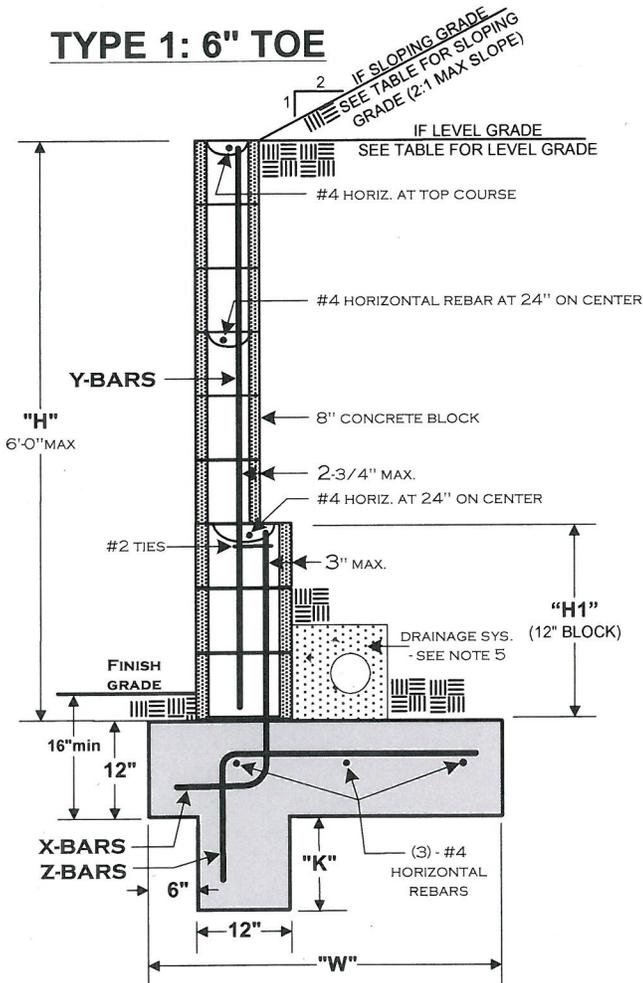
(STANDARD CONCRETE MASONRY UNITS)

BUILDING & SAFETY DIVISION

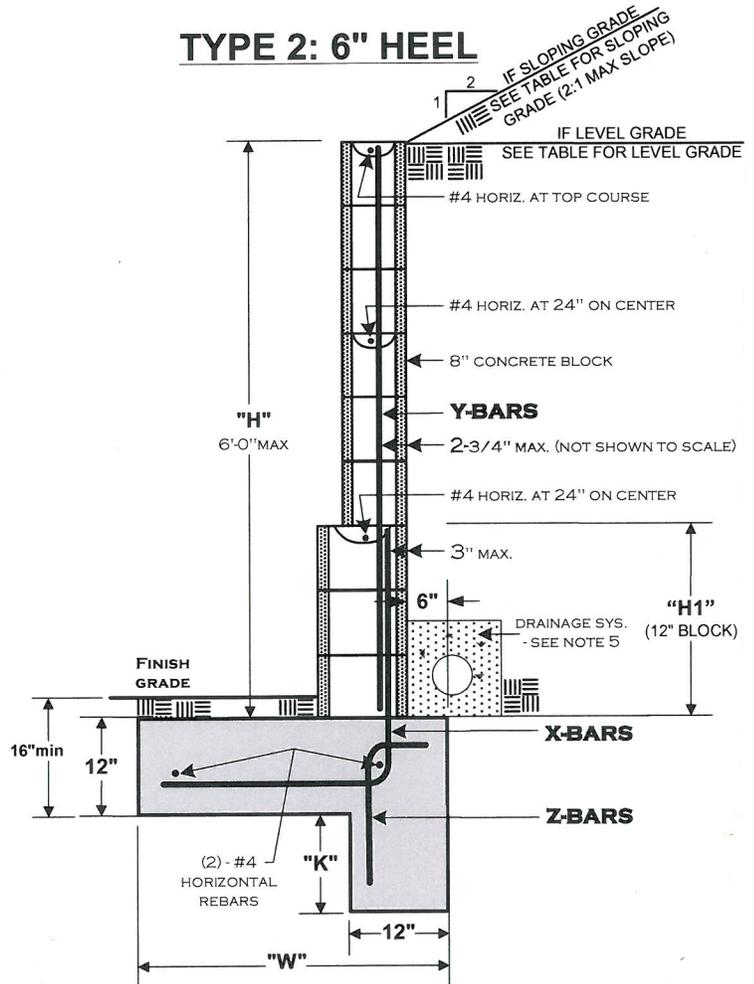
8353 SIERRA AVE, FONTANA, CA 92335

(909) 350-7640 FAX: (909) 350-7676

TYPE 1: 6" TOE



TYPE 2: 6" HEEL



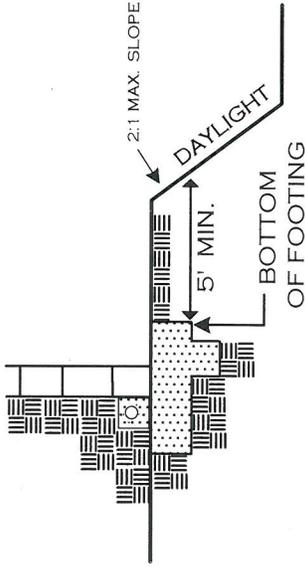
Inspections Required:

- 1st – **Footings, Forms & Setbacks** (Foundation trench with reinforcing steel securely in place.)
- 2nd – **Bond Beam** (Block wall with all reinforcing steel in place, BEFORE GROUTING.)
- 3rd – **Miscellaneous** (Wall is fully grouted and drainage system is in place, BEFORE BACKFILLING.)
- 4th – **Final** (After earth is properly backfilled, cap is in place, and site is clean.)

(No concrete or grout shall be placed prior to inspection and approval. All cells shall be fully grouted.)

(STANDARD RETAINING WALL)

SETBACK FROM TOP OF SLOPE:
 ALL FOOTINGS ADJACENT TO SLOPES SHALL BE AT LEAST 5 FEET TO DAYLIGHT AS SHOWN BELOW:



DISCLAIMER:
 Alternate retaining wall designs may be possible when provided with an engineered analysis. Use of this standard design is at the user's risk and carries no implied or inferred guarantee against failure or defects.

DESIGN PARAMETERS:

- Active Soil Pressure:
 - Level Backfill 30 psf
 - Sloping (2:1 MAX) 43 psf
 - Passive Soil Bearing 150 psf
 - Coefficient of Friction 0.25
 - Allowable Soil Bearing Pressure 1,500 psf
- (No increases taken for depth or width of footing.)

TYPE 1: 6" TOE

GRADE CONDITION	"H" (WALL HEIGHT)	"H1" (12" BLOCK)	"W" (FOOTING WIDTH)	X BARS	Y BARS	ZBARS	"K" (KEY DEPTH)
SLOPING GRADE AT TOP OF WALL (2:1 MAX)	5'-1" to 6'-0"	24"	69"	#4 @ 16"	#4 @ 32"	#4 @ 11"	30"
	4'-1" to 5'-0"	N/R	48"	#4 @ 16"	#4 @ 16"	#4 @ 12"	25"
	3'-1" to 4'-0"	N/R	30"	#4 @ 32"	#4 @ 32"	#4 @ 32"	16"
LEVEL GRADE AT TOP OF WALL	Up to 3'-0"	N/R	18"	#4 @ 32"	#4 @ 32"	#4 @ 32"	8"
	5'-1" to 6'-0"	24"	45"	#4 @ 24"	#4 @ 32"	#4 @ 24"	8"
	4'-1" to 5'-0"	N/R	36"	#4 @ 24"	#4 @ 24"	#4 @ 24"	7"
AT TOP OF WALL	3'-1" to 4'-0"	N/R	24"	#4 @ 32"	#4 @ 32"	#4 @ 32"	5"
	Up to 3'-0"	N/R	21"	#4 @ 32"	#4 @ 32"	#4 @ 32"	N/R

TYPE 2: 6" HEEL

GRADE CONDITION	"H" (WALL HEIGHT)	"H1" (12" BLOCK)	"W" (FOOTING WIDTH)	X BARS	Y BARS	ZBARS	"K" (KEY DEPTH)
SLOPING GRADE AT TOP OF WALL (2:1 MAX)	5'-1" to 6'-0"	24"	39"	#4 @ 16"	#4 @ 32"	#4 @ 12"	28"
	4'-1" to 5'-0"	N/R	29"	#4 @ 16"	#4 @ 16"	#4 @ 12"	22"
	3'-1" to 4'-0"	N/R	24"	#4 @ 32"	#4 @ 32"	#4 @ 32"	15"
LEVEL GRADE AT TOP OF WALL	Up to 3'-0"	N/R	18"	#4 @ 32"	#4 @ 32"	#4 @ 32"	8"
	5'-1" to 6'-0"	24"	33"	#4 @ 24"	#4 @ 32"	#4 @ 24"	18"
	4'-1" to 5'-0"	N/R	26"	#4 @ 24"	#4 @ 24"	#4 @ 24"	13"
AT TOP OF WALL	3'-1" to 4'-0"	N/R	20"	#4 @ 32"	#4 @ 32"	#4 @ 32"	7"
	Up to 3'-0"	N/R	20"	#4 @ 32"	#4 @ 32"	#4 @ 32"	N/R

N/R = NOT REQUIRED

(STANDARD RETAINING WALL)

GENERAL NOTES:

- 1) All work shall conform to the City's adopted codes and zoning regulations.
- 2) Concrete block masonry shall comply with the following:
 - A. Concrete masonry shall conform to ASTM C-90, Grade N.
 - B. Mortar shall be Type M or S.
 - C. Grout all cells with 2,000 psi Portland cement grout.
- 3) Reinforcement shall be placed prior to inspection and grouting. All reinforcement shall be free from loose rust and other coatings that would inhibit reinforcing bond, and shall be secured against displacement prior to the placement of concrete or grouting. Reinforcing steel shall, be intermediate grade ASTM A615-40 and overlap splices shall be 40 bar diameters minimum. All rebar hooks shall be a minimum of 12 times the rebar diameter (12bd) in length.
- 4) All reinforcing steel shall be a minimum of three (3) inches from earth/soil/dirt in order to provide a minimum of three (3) inches of concrete cover.
- 5) Provide retaining wall drainage system consisting of 1 CF/FT of clean course gravel with 4" diameter perforated PVC drainage pipe with 1% gradient to drain. (Optional: Instead of drainage piping, the head joints in the 1st course may be omitted. 1 CF/FT of clean course gravel is still required.)
- 6) Footings shall be level. All excavations shall be clean and contain no loose earth or other foreign materials. Concrete used in the footings shall, as a minimum, have a compressive strength of 2,500 psi at 28 days.
- 7) The initial bed joint thickness shall not be less than 1/4 inch nor more than 1 inch; subsequent bed joints shall be not less than 1/4 inch nor more than 5/8 inch in thickness. All head and bed joints shall be filled solidly with mortar for a distance in from the face of the unit not less than the thickness of the shell. (If required, head joints may be omitted in the first course for weep holes.)
- 8) Prior to grouting, the grout space shall have vertical continuity and shall be clean so that all spaces to be filled with grout do not contain mortar projections greater than 1/2 inch, mortar droppings or other foreign material. Cleanouts shall be provided for all grout pours over 5 feet in height. Where required, cleanouts shall be provided in the bottom course at every vertical bar and shall be sealed after inspection and before grouting.
- 9) Optional: Installation of a moisture barrier on the fill side of the wall will help to prevent moisture from penetrating the visible side of the wall, resulting in discoloration.
- 10) This standard retaining wall is **NOT** designed to support surcharge loads from motor vehicles or any other structure(s) nor can it be used on, or adjacent to, a property line.
- 11) Type & color of block and/or finish shall match and/or be compatible with the surrounding properties.
- 12) All materials shall be stored in a manner such that deterioration or intrusion of foreign materials is prevented and that the material will be capable of meeting applicable requirements at the time of mixing or placement. Masonry materials shall be stored so that at the time of use the materials are clean and structurally suitable for the intended use. Concrete masonry units shall not be wetted unless otherwise approved.
- 13) **Inspections Required:**
 - 1st – **Footings, Forms & Setbacks** (Foundation trench with reinforcing steel securely in place.)
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(No concrete or grout shall be placed prior to inspection and approval. All cells shall be fully grouted.)