



# RETAINING WALL

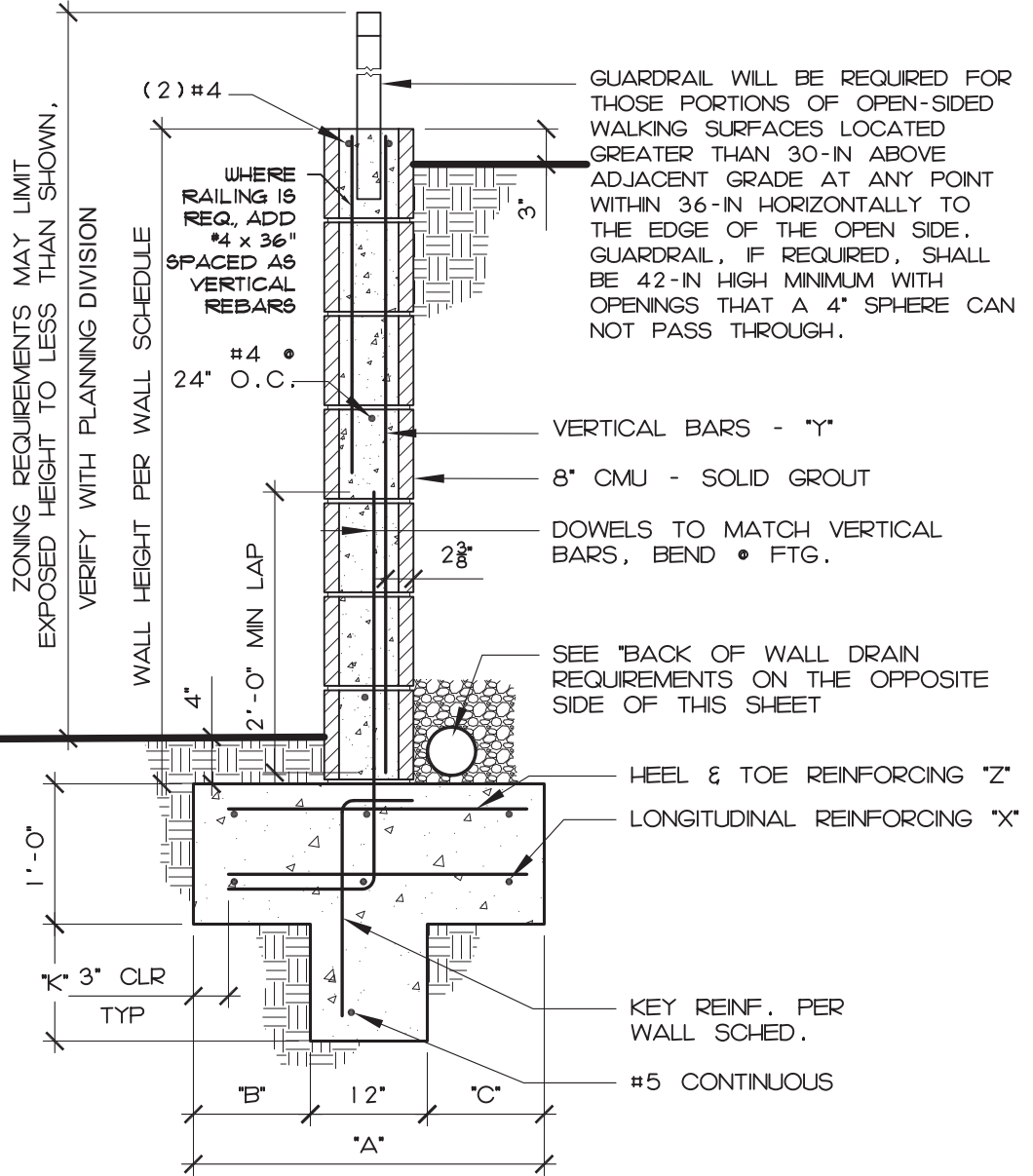
## LEVEL BACKFILL - NO SURCHARGE

### WALL AT CENTER OF FOOTING

Approved:  
1/29/25

**DISCLAIMER:**

ALTERNATE WALL DESIGN AND DEVIATION FROM THIS PLAN MAY BE POSSIBLE, WHEN ENGINEERING CALCULATIONS ARE PROVIDED BY A CALIFORNIA LICENSED ENGINEER AND APPROVED BY THE CITY OF EL MONTE. USE OF THIS STANDARD DESIGN PLAN IS AT THE USER'S RISK AND CARRIES NO IMPLIED OR INFERRED GUARANTEE AGAINST FAILURES OR DEFECTS.



SEE OPPOSITE SIDE OF THIS SHEET FOR INSPECTION AND CONSTRUCTION REQUIREMENTS, MATERIAL SPECIFICATIONS, AND DESIGN CRITERIA.

**SCHEDULE FOR CMU WALL:**

WALL HEIGHT	FOOTING WIDTH "A"	WIDTH "B"	WIDTH "C"	LONGITUDINAL REINFORCING "X"	VERTICAL REINFORCING "Y"	HEEL & TOE REINFORCING "Z"	KEY DEPTH "K"	KEY REINFORCING
2'-0"	1'-6"	6"	0"	(2) #4 TOP & BOT.	#4 • 24" O.C.	#5 • 24" O.C. TOP & BOT.	10"	#4 • 24" O.C.
2'-8"	1'-9"	7"	3"	(2) #4 TOP & BOT.	#4 • 24" O.C.	#5 • 24" O.C. TOP & BOT.	16"	#5 • 14" O.C.
3'-4"	2'-0"	8"	4"	(2) #4 TOP & BOT.	#4 • 24" O.C.	#5 • 14" O.C. TOP & BOT.	23"	#5 • 14" O.C.
4'-0"	2'-3"	10"	6"	(3) #4 TOP & BOT.	#4 • 16" O.C.	#5 • 14" O.C. TOP & BOT.	30"	#5 • 14" O.C.
4'-8"	2'-7"	1'-0"	7"	(3) #4 TOP & BOT.	#4 • 16" O.C.	#5 • 14" O.C. TOP & BOT.	36"	#5 • 14" O.C.
5'-4"	3'-0"	1'-2"	10"	(4) #4 TOP & BOT.	#5 • 16" O.C.	#5 • 14" O.C. TOP & BOT.	42"	#5 • 14" O.C.



# RETAINING WALL

## LEVEL BACKFILL - NO SURCHARGE

### WALL AT CENTER OF FOOTING

Approved:  
1/29/25

**CONSTRUCTION REQUIREMENTS:**

1. All work shall conform to the current California Building Code (CBC) and City adopted ordinances.
2. Minimum reinforcing steel lap splice for # 4 rebar shall be 24" and # 5 shall be 25".
3. Expansion joints are required every 25 feet maximum. No minimum requirement.
4. All cells shall be solid grouted.
5. A minimum of 3-inches of concrete cover is required for all reinforcing steel in footings, with a minimum of 3-inch clearance to soil.
6. **All footings shall be placed on the permittee's (owner's) own property and shall not encroach onto any adjacent parcel unless documentation is provided to authorize such construction. This shall include public trails, parks, flood control channels, El Monte Water District Easements, all other dedicated easements, and similar areas, unless prior approval is obtained by the Public Works Department.**
7. Drainage discharge to adjoining property(s), public trails, flood control channels, dedicated easements, and similar areas, **is not permitted** unless prior approval is obtained by Public Works Department.
8. **Owner shall be responsible to obtain a survey for "all" property lines in question, or as required by this department, the Building Inspector or in a neighbor property line dispute.**

**REQUIRED INSPECTIONS:**

1. **Foundation:** Footings shall be excavated, free of soil and all debris, and all rebar in place with 3" dobies and wire tied.
2. **Pre-Grout:** All vertical and horizontal reinforcing shall be placed per detail and secured prior to the inspection.
3. Back of wall drain: Drain rock installed. Drain pipe installed (where used). Drain pipe cleanouts installed (where needed). For walls 2'-8" high or less and approved by Public Works Department, bottom course head joints open and clear (**See note 7 under "Construction Requirements"**).
4. Final Inspection: Wall/Fence construction completed and grouted. Final grade of soil installed and compacted adjacent to the fence.
5. No Deputy Inspector will be permitted to conduct this inspection, unless authorized by the City prior to the pour.

**BACK OF WALL DRAIN REQUIREMENTS:**

1. Walls 2'-8" high or less:
  - a. 12"x12"- 3/4" gravel wrapped in filter fabric (such as Mirafi 140N or equivalent) placed per detail for entire length of the retaining wall.
  - b. Head joints open and clear for all masonry units on the bottom course of the retaining wall. (**See note 7 under "Construction Requirements"**).
2. Walls higher than 2'-8":
  - a. Minimum 3" diameter perforated drain pipe wrapped in filter fabric sock in 12"x12" - 3/4" gravel wrapped in filter fabric (such as Mirafi 140N or equivalent) placed per detail for entire length of the retaining wall.
  - b. Drain pipe daylighted to grade for drainage.
  - c. Drain pipe sloped minimum of 1/8" per foot to an at-grade opening.
  - d. Provide cleanouts in the drain pipe at 50' O.C. maximum.

**MATERIAL SPECIFICATIONS:**

- Concrete masonry shall conform to ASTM C90, F'm = 1,500 psi.
- Mortar shall be type M, 2500 psi, or Type S, 1800 psi.
- Grout shall conform to ASTM C476, 2,000 psi.
- Concrete shall have a minimum of 4,000 psi, and Type V cement.
- Steel Reinforcing shall be Grade 60, ASTM A615.

**DESIGN CRITERIA:**

- Compliant with the current California Building Code
- No Seismic Load for Wall Less Than 6' in height.
- Soil Bearing Pressure: 1,500 psi.
- Active Soil Pressure: 60 psf/ft.
- Passive Soil Pressure: 100 psf/ft.
- Soil Density: 115 psf
- Soil Friction: 0.25
- Wind Load: 16.4 psf.