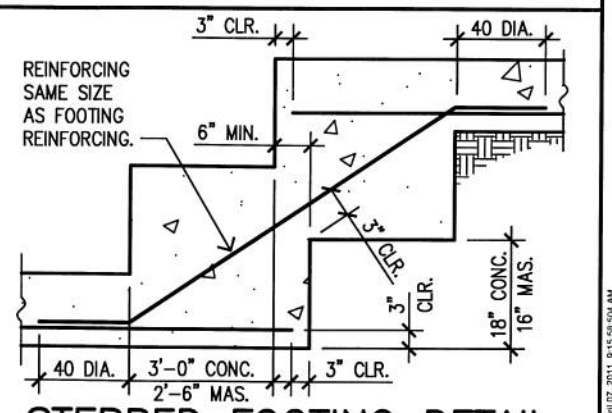
MATERIAL NOTES:

1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE IN CONFORMANCE WITH THE LATEST ADOPTED EDITION OF THE CBC/IBC.
2. CONCRETE BLOCK SHALL BE GRADE N (EXPOSED TO WEATHER), TYPE II (NON-MOISTURE CONTROLLED), 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 = 1500 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 = 1800 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 2,500 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 4.3.1
7. CEMENT SHALL CONFORM TO ACI 318, SECTION 3.2, 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. ALL REINFORCING BARS SHALL BE COMPLETELY EMBEDDED IN MORTAR OR GROUT AND SHALL HAVE A COVER OF NOT LESS THAN 2 INCHES.
12. 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.
13. LAP SPLICES TO BE 24" MINIMUM OR AS SPECIFIED.
14. 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.

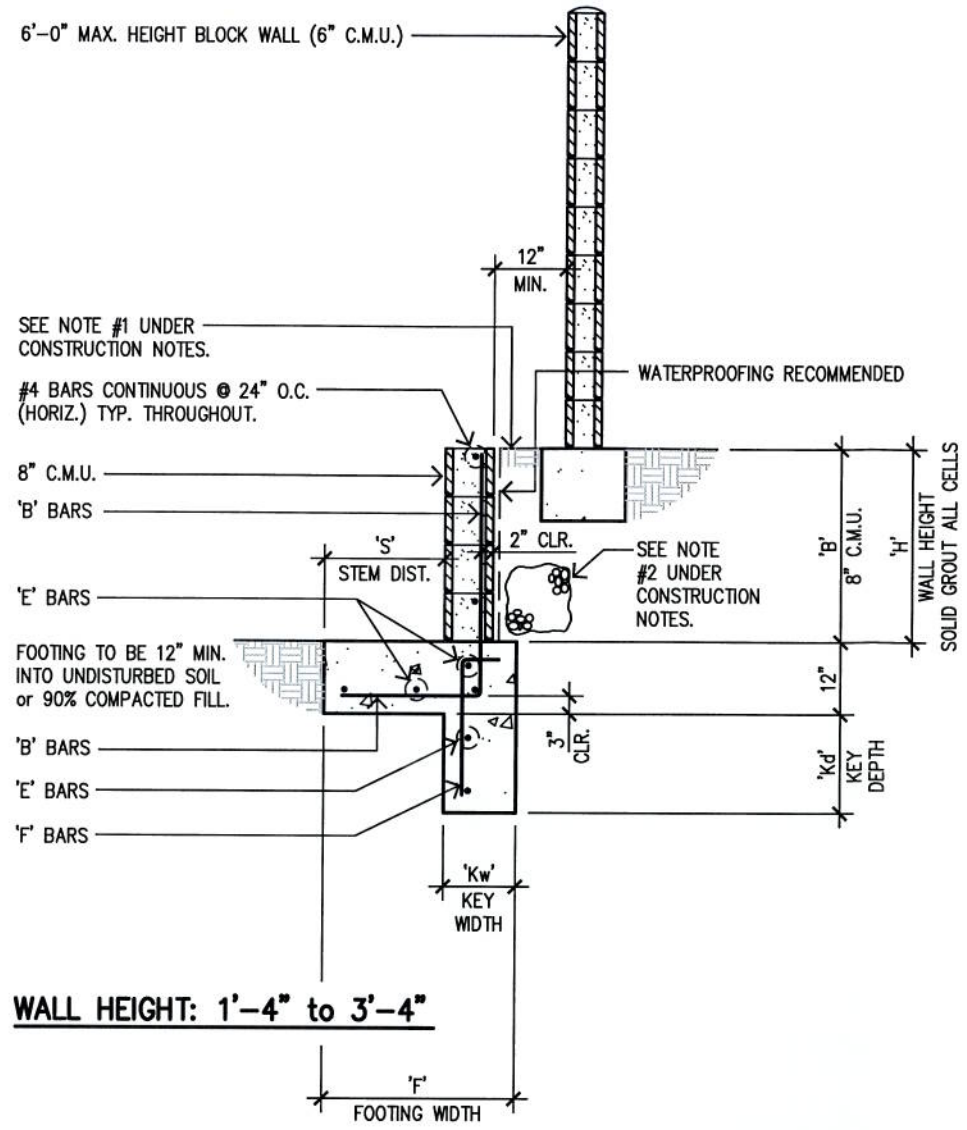
CONSTRUCTION NOTES:

1. AN APPROVED DRAINAGE CONVEYANCE DEVICE (V-GUTTER) SHALL BE PROVIDED WHENEVER THE SURFACE FLOW BEHIND THE WALL WILL NOT READILY DISCHARGE OVER THE TOP OF THE WALL 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 140H 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.
4. LAY CONCRETE MASONRY UNITS IN A RUNNING BOND.
5. VERTICAL EXPANSION JOINTS IN THE WALL ARE REQUIRED AT 30' ON CENTER MAXIMUM AND AT RE-ENTRANT OR 90° CORNERS.
6. THIS PLAN DEPICTS THE RETAINING WALL IN A COMPLETED STATE ONLY. THE RETAINING WALL INSTALLER IS RESPONSIBLE FOR JOB SITE CONDITIONS AND THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE COURSE OF CONSTRUCTION.

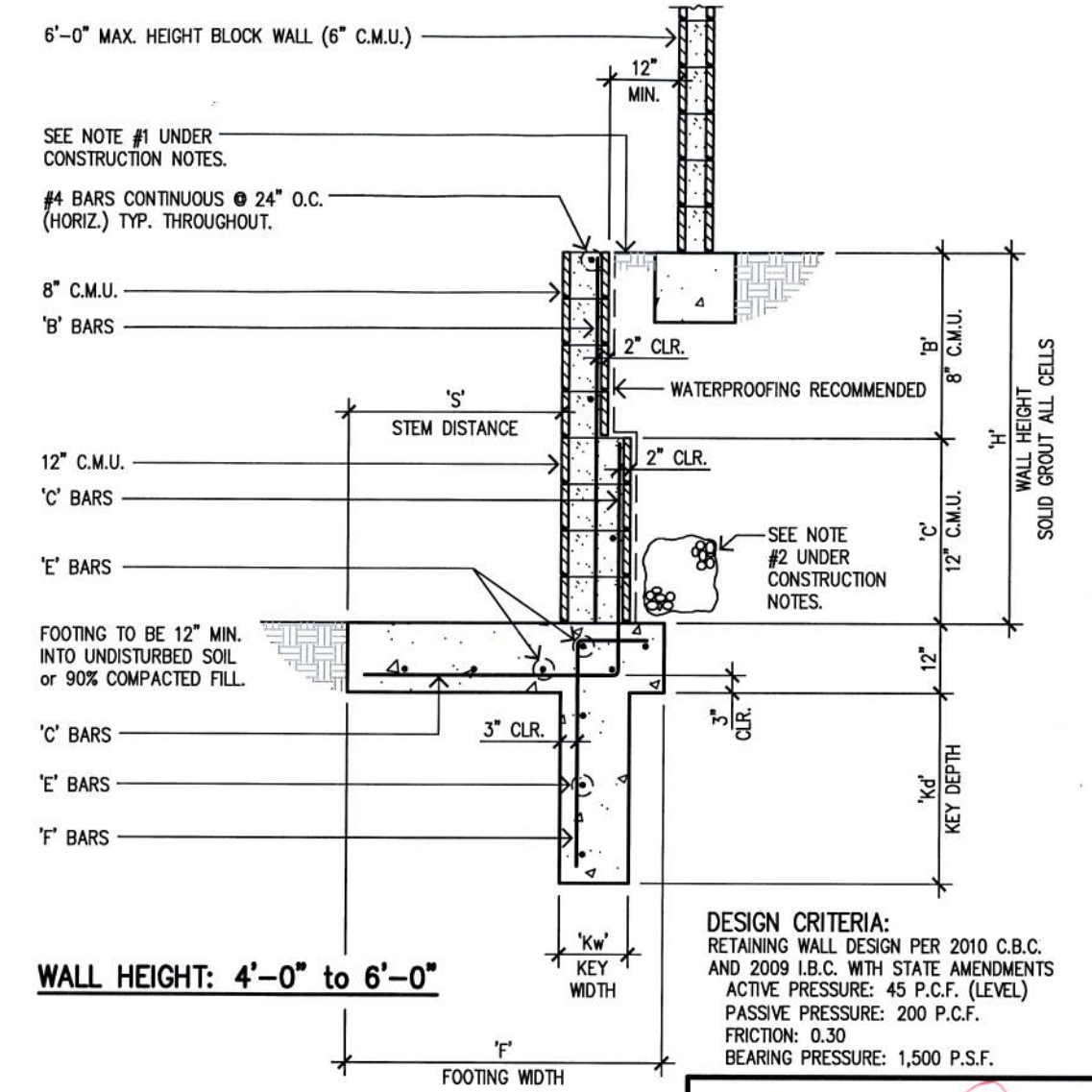


STEPPED FOOTING DETAIL

v1.4 April 07, 2011 8:15:58 AM



WALL HEIGHT: 1'-4" to 3'-4"



WALL HEIGHT: 4'-0" to 6'-0"

DESIGN CRITERIA:

RETAINING WALL DESIGN PER 2010 C.B.C. AND 2009 I.B.C. WITH STATE AMENDMENTS
ACTIVE PRESSURE: 45 P.C.F. (LEVEL)
PASSIVE PRESSURE: 200 P.C.F.
FRICTION: 0.30
BEARING PRESSURE: 1,500 P.S.F.

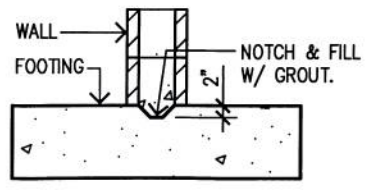
NOTES:
ALL FOOTING STEEL TO BE 3" CLR. FROM EARTH.
LAP ALL STEEL 24" MIN.

WALL SCHEDULE

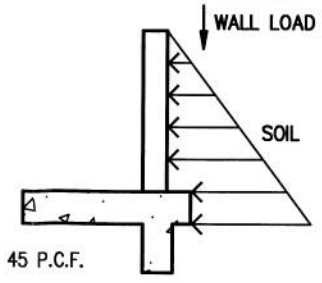
	FOOTING INFORMATION						WALL INFORMATION					
WALL HEIGHT 'H'	FOOTING WIDTH 'F'	'F' BARS	'E' BARS	KEY WIDTH 'Kw'	KEY DEPTH 'Kd'	STEM DISTANCE 'S'	6" C.M.U. 'A'	'A' BARS	8" C.M.U. 'B'	'B' BARS	12" C.M.U. 'C'	'C' BARS
1'-4"	1'-4"	–	–	–	–	4"	–	–	1'-4"	#4 @ 24"	–	–
2'-0"	1'-8"	#4 @ 12"	#4 @ 12"	12"	3"	6"	–	–	2'-0"	#4 @ 24"	–	–
2'-8"	2'-0"	#4 @ 12"	#4 @ 12"	12"	8"	1'-0"	–	–	2'-8"	#4 @ 24"	–	–
3'-4"	2'-3"	#4 @ 12"	#4 @ 12"	12"	11"	1'-0"	–	–	3'-4"	#4 @ 24"	–	–
4'-0"	2'-6"	#4 @ 12"	#4 @ 12"	12"	14"	1'-0"	–	–	4'-0"	#4 @ 16"	–	–
4'-8"	3'-0"	#4 @ 12"	#4 @ 12"	12"	1'-7"	1'-6"	–	–	2'-8"	#4 @ 24"	2'-0"	#4 @ 16"
5'-4"	3'-4"	#4 @ 12"	#4 @ 12"	12"	1'-11"	1'-10"	–	–	3'-4"	#4 @ 16"	2'-0"	#4 @ 8"
6'-0"	3'-9"	#4 @ 12"	#4 @ 12"	12"	2'-4"	2'-3"	–	–	4'-0"	#4 @ 16"	2'-0"	#4 @ 8"

SHEAR KEY

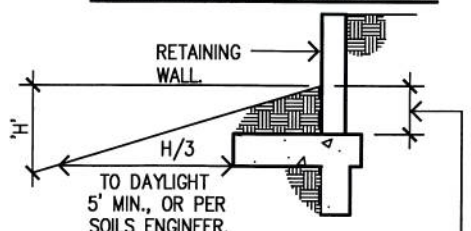
FIRST COURSE MAY BE SET IN FOOTING OR USE SHEAR KEY AS SHOWN BELOW



LOADING DIAGRAM



DOWNSLOPE CONDITION



Ron Lacher, R.C.E.
1201 N. Tustin Ave.
Anaheim, California 92807
Fax: (714) 630-6114
Phone: (714) 630-6100

pool engineering inc.

REGISTERED PROFESSIONAL ENGINEER TODD L. LACHER C 67656 EXP. 6/30/2015 CIVIL STATE OF CALIFORNIA

PLAN VALID ONLY WITH ENGINEER'S SIGNATURE IN RED INK ON PLAN.

DATE:	04/07/11
CALCS BY:	T.L.L.
DRAWN BY:	T.L.L.
CHECKED BY:	A.J.C.

T-SHAPE RETAINING WALL
SURCHARGED BY 6'-0" BLOCK WALL
LEVEL BACKFILL (6'-0" MAX.)
EQUIVALENT FLUID PRESSURE = 45 P.C.F.

DETAIL #850