DESIGN CONDITIONS:

Walls are to be used for the loading conditions shown for each type wall. Design H shall not be exceeded. Footing key is required except as shown otherwise or when found unnecessary by the Engineer. Special footing design is required where foundation material is incapable of supporting toe pressure listed in table.

DESIGN DATA:

Reinforced Concrete:
F'c = 2,500 psi
Fy = 60,000 psi

Reinforced Masonry:
F'm = 1,500 psi
Fs = 24,000 psi

Earth = 110 pcf and Equivalent Fluid Pressure = 35 psf per foot of height. Walls shown for 1½ : 1 unlimited sloping surcharge are designed in accordance with E.F.P. " Equivalent Fluid Pressure " .

Allowable Soils Bearing = 1000 psf

REINFORCEMENT:

Intermediate grade, hard grade, or rail steel deformation shall conform ASTM A615, A616, A617. Bars shall lap 40 diameters, where spliced, unless otherwise shown on the plans. Bends shall conform to the Manual of Standard Practice, A.C.1.
Backing for hooks is four diameters. All bar embedments are clear distances to outside of bar.
Spacing for parallel bars is center to center bars.

MASONRY:

All reinforced masonry retaining walls be constructed of normal weight standard units conforming to the " Standard Specifications for Public Works Construction."

JOINTS:

Vertical control joints shall be placed at 32 foot intervals maximum. Joints shall be designed to resist shear and other lateral forces while permitting longitudinal movement. Vertical expansion joints shall be placed at 96 foot intervals maximum.

CONCRETE:

Footing concrete shall be 560-C-3250, using B aggregate when placing conditions permit.

BACKFILL:

No backfill material shall be placed against masonry retaining walls until grout has reached design strength or until grout has cured for a minimum of 28 days. Compaction of backfill material by jetting or ponding with water will not be permitted. Each layer of backfill shall be moistened as directed by the Engineer and thoroughly tamped, rolled or otherwise compacted until the relative compacting is not less than 90%.

FENCING:

Safety fencing shall be installed at the top of the wall as required by the agency.

INSPECTIONS:

Call for inspections as follows:

A. When the footing has been formed, with the steel tied securely in final position, and is ready for the concrete to be placed.

B. Where cleanout holes are not provided:

(1) After the blocks have been laid up to a height of 4' , or full height for walls up to 5' , with steel in place but before the grout is poured, and.....
(2) After the first lift is properly grouted, the blocks have been laid up to the top of the wall with the steel tied securely in place but before the upper lift is grouted.

Where cleanout holes are provided:

After the blocks have been laid up to the top of the wall, with the steel tied securely in place, but before grouting.

C. After grouting is complete and after rock or rubble wall drains are in place but before earth backfill is placed.

D. Final inspection when all work has been completed.

CONCRETE GROUT AND MORTAR MIXES:

Concrete grout shall attain a minimum compressive strength of 2,000 psi in 28 days and mortar shall attain 1,800 psi in 28 days. All cells shall be filled with grout. Rod or vibrate grout within 10 minutes of pouring to insure consolidation. Bring grout to a point 2" from the top of masonry units when grouting of second lift is to be continued at another time.

MORTAR KEY:

To insure proper bonding between the footing and the first course of block, a mortar key shall be formed by embedding a flat 2 x 4 flush with and at the top of the freshly poured footing. The 2 x 4 should be removed after the concrete has started to harden (approximately 1 hour).
A mortar key may be omitted if the first course of block is set into the fresh concrete when the footing is poured, and a good bond is obtained.

WALL DRAINS:

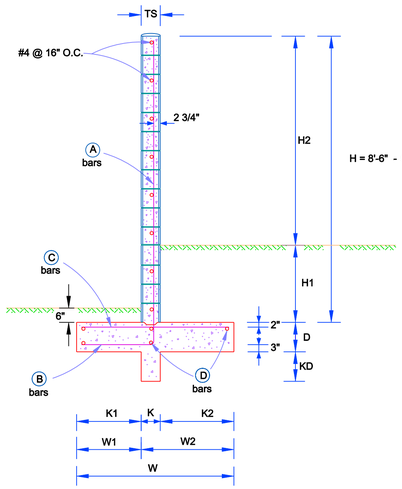
Wall drains shall be provided in accordance with San Diego Regional Standard Drawing C-8, " see detail A ".

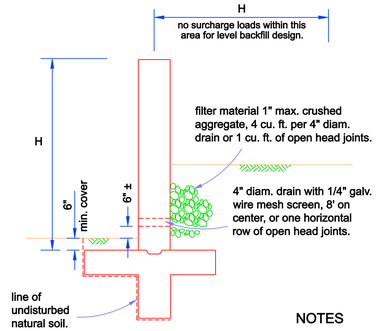
SOIL:

All footings shall extend at least 12 inches into undisturbed natural soil or approved compacted fill.
Soil should be dampened prior to placing concrete in footings.

DIMENSIONS AND REINFORCEMENT STEEL 8.5' MCU W/ PARTIAL ZERO SLOPE BACKFILL							
H	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"	8'-6"
H1	1'-0"	2'-0"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
H2	7'-6"	6'-6"	5'-6"	5'-0"	4'-6"	4'-0"	3'-6"
W	2'-6"	2'-6"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
W1	1'-6"	1'-6"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
W2	1'-0"	1'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
K	8"	8"	8"	8"	8"	8"	8"
K1	1'-6"	1'-6"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
K2	4"	4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"
TS	8"	8"	8"	8"	8"	8"	8"
D	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
KD	6"	6"	8"	8"	8"	1'-0"	1'-0"
A Bars	# 4 @ 16"	# 4 @ 16"	# 4 @ 8"	# 4 @ 8"	# 4 @ 8"	# 4 @ 8"	# 4 @ 8"
B Bars-Toe	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"
C Bars-Heel	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"
D Bars	#4 total 5	#4 total 5	#4 total 5	#4 total 5	#4 total 5	#4 total 5	#4 total 5
Soil @ Toe	6"	6"	6"	6"	6"	6"	6"
Max. Toe Pressure (psf)	1000	1000	1000	1000	1000	1000	1000

DIMENSIONS AND REINFORCEMENT STEEL 9.5' MCU W/ PARTIAL ZERO SLOPE BACKFILL							
H	9'-6"	9'-6"	9'-6"	9'-6"	9'-6"	9'-6"	9'-6"
H1	1'-0"	2'-0"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"
H2	8'-6"	7'-6"	6'-6"	6'-0"	5'-6"	5'-0"	4'-6"
W	2'-6"	2'-6"	4'-0"	4'-0"	4'-0"	4'-0"	4'-0"
W1	1'-6"	1'-6"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
W2	1'-0"	1'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
K	8"	8"	8"	8"	8"	8"	8"
K1	1'-6"	1'-6"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
K2	4"	4"	1'-4"	1'-4"	1'-4"	1'-4"	1'-4"
TS	8"	8"	8"	8"	8"	8"	8"
D	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"
KD	6"	6"	8"	8"	8"	1'-0"	1'-0"
A Bars	# 4 @ 16"	# 4 @ 16"	# 4 @ 8"	# 4 @ 8"	# 4 @ 8"	# 4 @ 8"	# 4 @ 8"
B Bars-Toe	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"
C Bars-Heel	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"	# 4 @ 16"
D Bars	#4 total 5	#4 total 5	#4 total 5	#4 total 5	#4 total 5	#4 total 5	#4 total 5
Soil @ Toe	6"	6"	6"	6"	6"	6"	6"
Max. Toe Pressure (psf)	1000	1000	1000	1000	1000	1000	1000

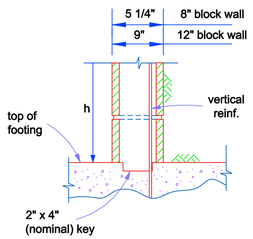




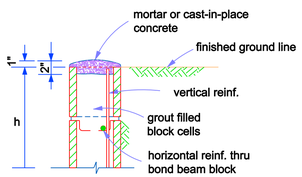
TYPICAL SECTION " A "

NOTES

1. all masonry retaining wall shall be constructed with cap, key and drainage details as shown hereon.
2. 4" diameter drain may be formed by placing a block on it's side.



KEY DETAIL



CAP DETAIL

LEGEND

H	HEIGHT
H1	RETAINED HEIGHT
H2	NON-RETAINED HEIGHT
W	FOOTING WIDTH
D	FOOTING DEPTH
W1	TOE WIDTH
W2	HEEL WIDTH
K	KEY WIDTH
KD	KEY DEPTH
K1	EDGE OF TOE TO EDGE OF KEY
K2	EDGE OF HEEL TO EDGE OF KEY
TS	TOP STEM
A Bars	REINFORCED BARS TOP STEM
B Bars	REINFORCED TOE BARS
C Bars	REINFORCED HEEL BARS
D Bars	REINFORCED HEEL/TOE BARS

REGISTERED PROFESSIONAL ENGINEER
MAHMOUD M ORIQAT
No. C-55970
Exp. 12/31/06
CIVIL
STATE OF CALIFORNIA

BUILDING DESIGN & ENGINEERING
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MAHMOUD ORIQAT R.C.E. 55970 DATE
MY REGISTRATION EXPIRES 12-31-06

PRIVATE CONTRACT

SHEET 1	COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS	1 SHEET

MASONRY WALL PLANS FOR :

NICKLAW RESIDENCE

2733 Alpine Blvd.
Alpine, CA., 91901

COUNTY APPROVED CHANGES			
No.	DESCRIPTION	APPROVED BY	DATE

APPROVED:
DOUGLAS M. ISBELL
COUNTY ENGINEER
BY DATE

ENGINEER OF WORK:
MAHMOUD ORIQAT RCE C-55970 DATE

ENGINEER'S NAME: BUILDING DESIGN & ENGINEERING
PHONE # : (619) 463-3002