

CROSS SECTION  
(NO SCALE)

ELEVATION  
(NO SCALE)

PLACE A 6" LAYER OF 3/4" CRUSHED ROCK OR COMPACTED CLASS 2 AGGREGATE BASE UNDER FOOTING WHERE SOFT GROUND IS ENCOUNTERED.

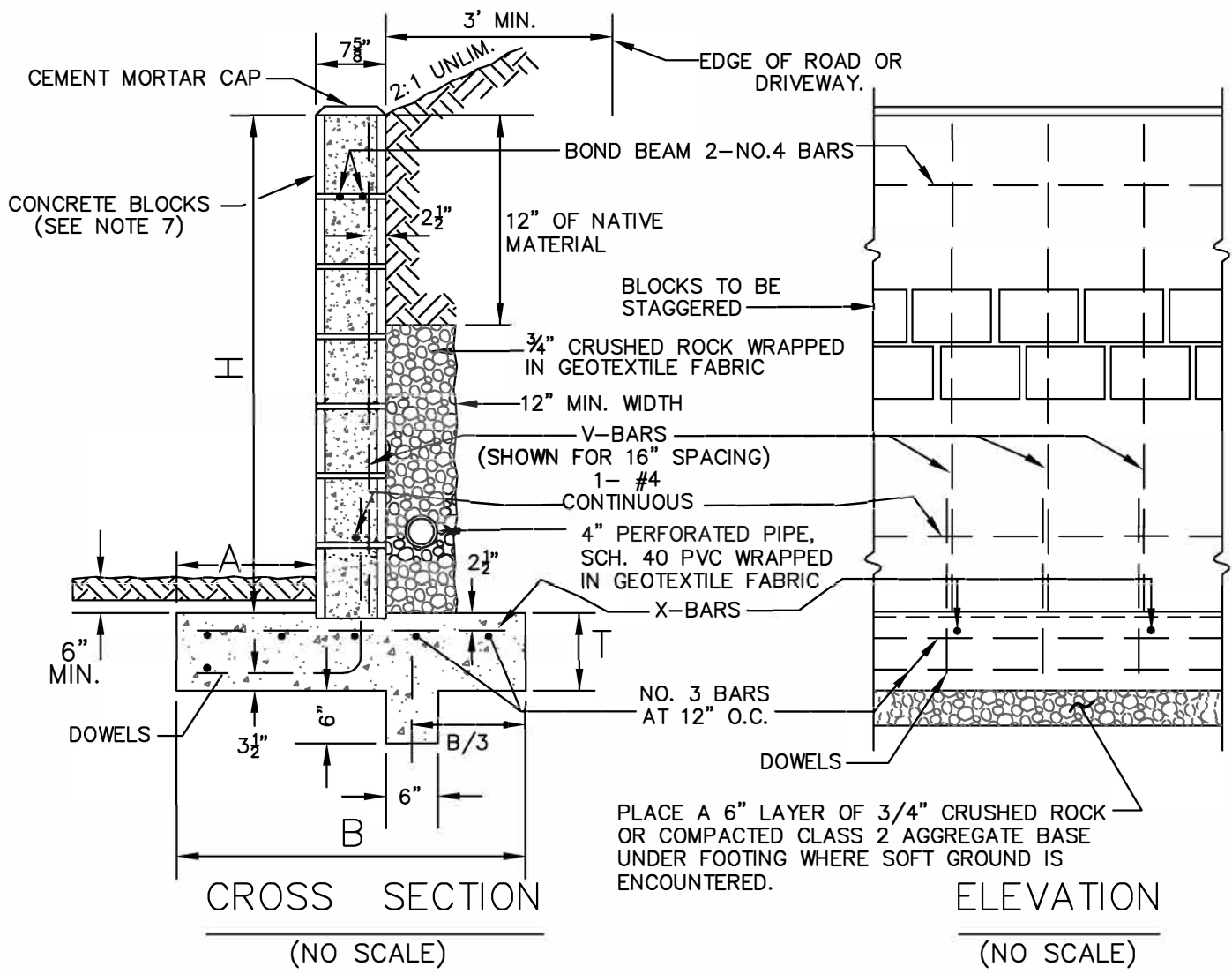
H	A	B	T	V-BARS	X-BARS
FT.-IN.	IN.	FT.-IN.	IN.		
3'-4"	8"	2'-4"	9"	NO. 3 AT 32"	NO. 3 AT 24"
4'-0"	10"	2'-9"	9"	NO. 4 AT 32"	NO. 3 AT 24"

NOTES:

1. CONCRETE FOR FOOTING TO BE CLASS "A" (6 SACK 3000 PSI) WITH 3/4" AGGREGATE AND 4 INCH MAX. SLUMP.
2. FILL ALL CELLS WITH 7 SACK CONCRETE WITH 3/8" AGGREGATE OR 3:1 MORTAR.
3. DOWELS SHALL BE SAME IN SIZE AND SPACING AS V-BARS. THEY SHALL PROJECT 40 BAR DIAMETERS, 24 INCH MIN. INTO THE CELLS AND EXTEND TO THE TOE OF FOOTING. LAPPING BARS SHALL BE TIED.
4. WALLS SHALL NOT BE BACKFILLED UNTIL 7 DAYS AFTER CELLS ARE FILLED.
5. WALLS OVER 100' LONG SHALL HAVE VERTICAL EXPANSION JOINTS. WALLS OVER 50' LONG SHALL HAVE VERTICAL CONTRACTION JOINTS. SEE AGENCY ENGINEER FOR DETAILS.
6. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND STEEL HAVE BEEN INSPECTED AND APPROVED BY THE AGENCY ENGINEER.
7. BLOCKS SHALL BE GRADE N OR BETTER (f'c=1,500 PSI).
8. NO FRONT FACE WEEP HOLES ALLOWED IF SIDEWALK OR PAVEMENT SLOPES AWAY FROM WALL.
9. SUBJECT TO THE APPROVAL OF AGENCY ENGINEER, DESIGN FOR DRAINAGE CONVEYANCE BEHIND WALL MAY BE MODIFIED TO UTILIZE PREFABRICATED DRAINAGE DEVICES.

M: \Standards\County Standards (UCS)\2008 Updated County Standards

UNIFORM STANDARDS ALL CITIES AND COUNTY OF MARIN	RETAINING WALL TYPE "A" LEVEL BACKFILL			MAY 2008
				DWG. NO.
				150
	REV.	DATE	BY	



CROSS SECTION  
(NO SCALE)

ELEVATION  
(NO SCALE)

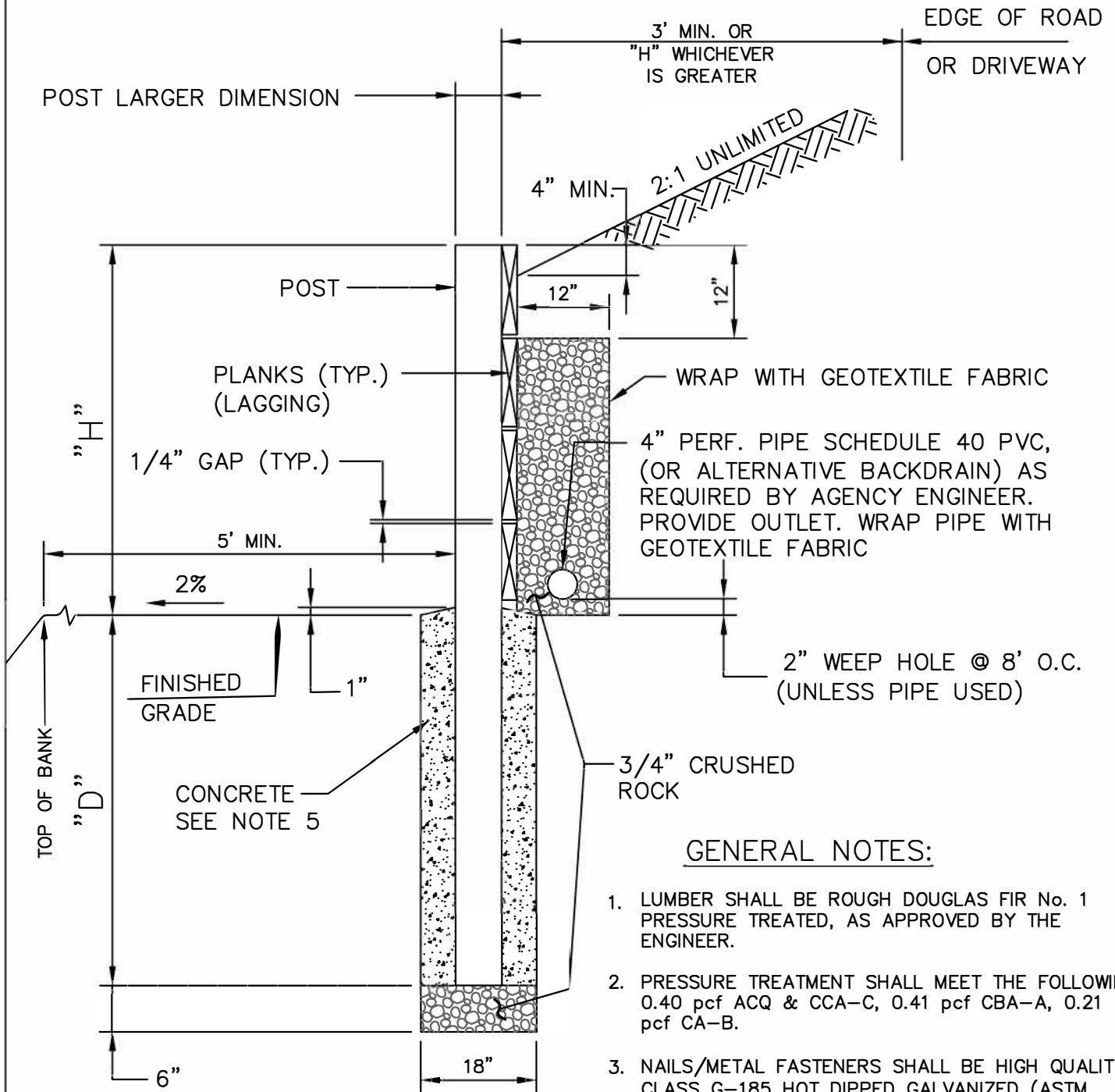
H	A	B	T	V-BARS	X-BARS
FT.-IN.	IN.	FT.-IN.	IN.		
3'-4"	8"	2'-4"	9"	NO. 3 AT 32"	NO. 3 AT 24"
4'-0"	10"	2'-9"	9"	NO. 4 AT 32"	NO. 3 AT 24"

NOTES:

1. CONCRETE FOR FOOTING TO BE CLASS "A" (6 SACK 3000 PSI) WITH 3/4" AGGREGATE AND 4 INCH MAX. SLUMP.
2. FILL ALL CELLS WITH 7 SACK CONCRETE WITH 3/8" AGGREGATE OR 3:1 MORTAR.
3. DOWELS SHALL BE SAME IN SIZE AND SPACING AS V-BARS. THEY SHALL PROJECT 40 BAR DIAMETERS, 24" MIN., INTO THE CELLS AND EXTEND TO THE TOE OF FOOTING.
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5. WALLS OVER 100' LONG SHALL HAVE VERTICAL EXPANSION JOINTS. WALLS OVER 50' LONG SHALL HAVE VERTICAL CONTRACTION JOINTS. SEE AGENCY ENGINEER FOR DETAILS.
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M:\Standards\County Standards (UCS)\2008 Updated County Standards

UNIFORM STANDARDS ALL CITIES AND COUNTY OF MARIN	RETAINING WALL TYPE "B" SLOPING BACKFILL			MAY 2008
				DWG. NO.
				155
	REV.	DATE	BY	



GENERAL NOTES:

1. LUMBER SHALL BE ROUGH DOUGLAS FIR No. 1 PRESSURE TREATED, AS APPROVED BY THE ENGINEER.
2. PRESSURE TREATMENT SHALL MEET THE FOLLOWING: 0.40 pcf ACQ & CCA-C, 0.41 pcf CBA-A, 0.21 pcf CA-B.
3. NAILS/METAL FASTENERS SHALL BE HIGH QUALITY CLASS G-185 HOT DIPPED GALVANIZED (ASTM A153 OR A653), 304 OR 316 STAINLESS STEEL, OR OTHER ACCEPTABLE CORROSION RESISTANT MATERIAL.
4. ALL CUTS, HOLES AND INJURIES (SUCH AS ABRASIONS AND NAIL HOLES) SHALL BE FIELD TREATED WITH APPLICATIONS OF PRESERVATIVES IN ACCORDANCE WITH AWPAS STANDARD M4.
5. CONCRETE FOR POST SUPPORT SHALL BE CLASS C (4 SACK MIX) WITH 1" MAX. AGGREGATE.

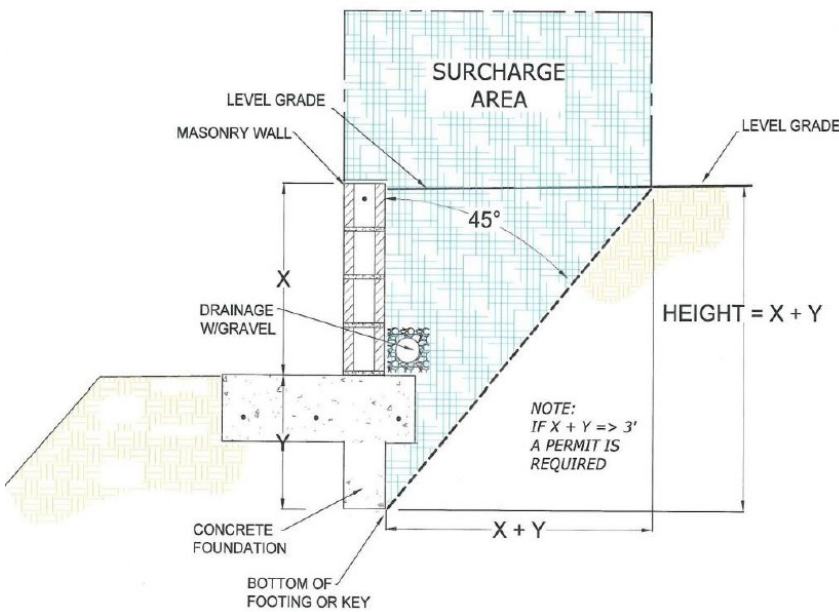
H	D	POST SPACING	POST SIZE
2'	3.5'	4'	4"x4"
3'	5'	4'	4"x6"
4'	6'	4'	4"x6"

UNIFORM STANDARDS ALL CITIES AND COUNTY OF MARIN	RETAINING WALL TYPE "C"			MAY 2008			
				REV.	DATE	BY	
							DWG. NO. 160

## Is There a Surcharge?

A surcharge is any slope, structure or object that could impose a lateral force on the wall. Any surcharge on the wall will require evaluation by an engineer. This includes vehicles, swimming pool, equipment (such as an air handler or pool pump), footings from a structure (such as your house or porch), or simply a fence on top of the wall. A fence imposes wind load on the wall, even if it is not attached to the wall itself. Trees will also create a surcharge behind the wall as they grow and increase in weight, the roots will push the face of the wall out, and the height of the tree will impose wind loads on the wall. Small shrubs and plants are acceptable behind the wall.

As a general rule, the edge of any surcharge object must be at least 2 times the total wall height away from the back of the retaining wall. This means if you have a total wall height of 4-ft (buried height plus exposed height), the edge of any surcharge should be at least 8-ft away from the back of your wall.



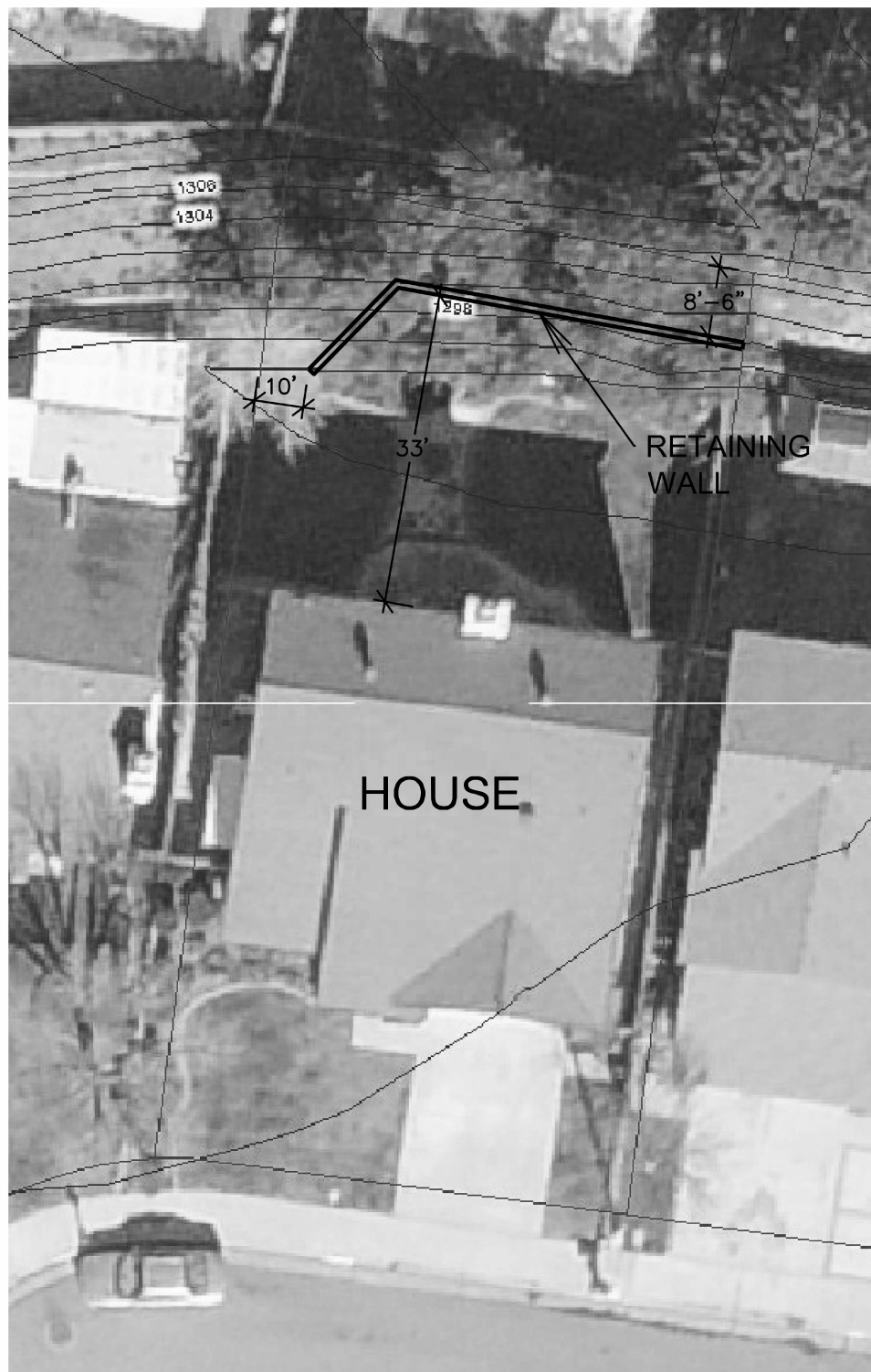
Surcharge Area =  
Wall Height(X) + Footing Depth (Y)

<p>SLOPE &gt;10H:1V FLAT ENGINEER REQUIRED</p>	<p>FLAT SLOPE &gt;10H:1V ENGINEER MAY NOT BE NECESSARY</p>	<p>&lt;2H H CONTACT AN ENGINEER</p>
<p>SLOPE &gt;10H:1V FLAT ENGINEER REQUIRED</p>	<p>FLAT SLOPE &lt;2H:1V ENGINEER MAY NOT BE NECESSARY</p>	<p>&gt;2H H ENGINEER MAY NOT BE NECESSARY</p>
<p>FLAT SLOPE &gt;10H:1V ENGINEER REQUIRED</p>	<p>FLAT SLOPE &lt;2H:1V &gt;2H ENGINEER MAY NOT BE NECESSARY</p>	

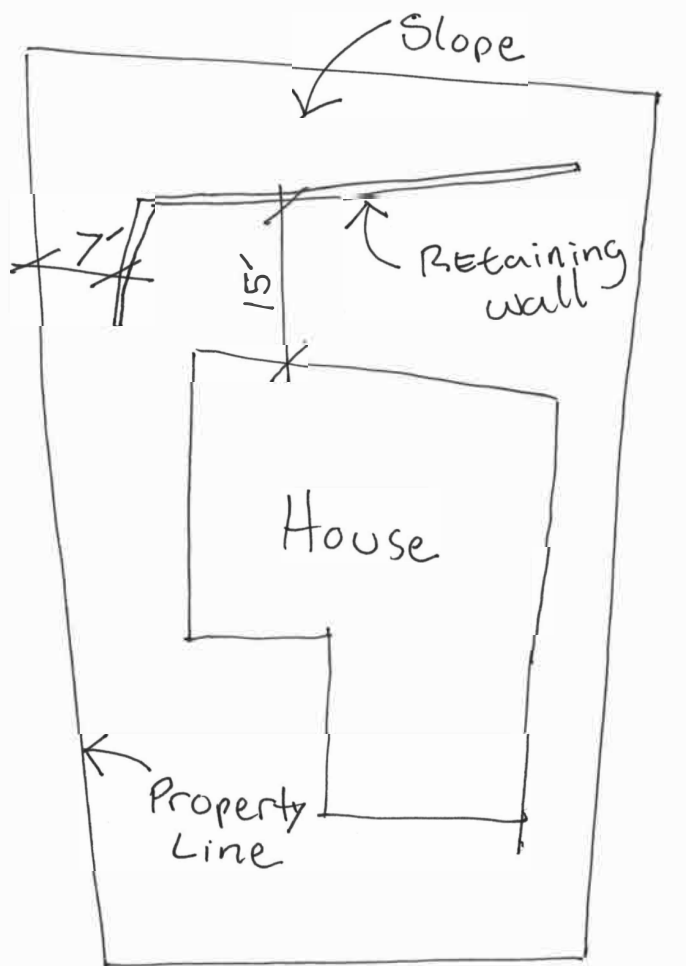
# SITE PLAN EXAMPLE

(SMALL RESIDENTIAL PROJECTS)

THIS PLAN IS AN EXAMPLE ONLY. DEPENDING ON THE NATURE OF YOUR PROJECT, BUILDING & SAFETY MAY REQUIRE ADDITIONAL PLANS AND/OR CALCULATIONS TO DEMONSTRATE CODE COMPLIANCE.

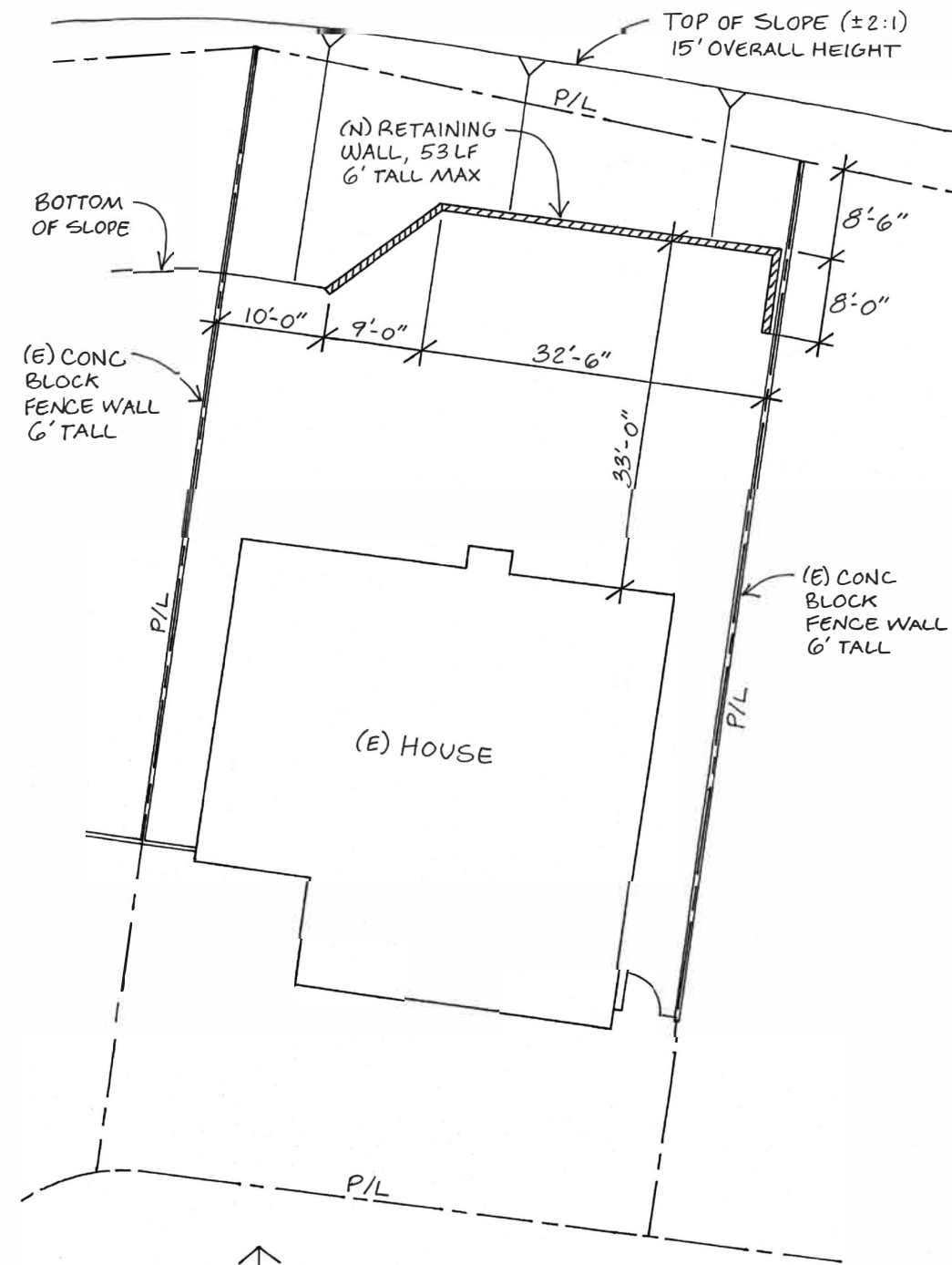


**UNACCEPTABLE**



Site Plan ↑ N

**UNACCEPTABLE**



NORTH ↑

SITE PLAN

**ACCEPTABLE**