



SUBJECT	EFFECTIVE DATE	CODE SECTION(S)
Permit Requirement for Retaining Walls	June 12, 2024	CBC 105.2 & Novato Municipal Code Chapter IV Section 106.2 <i>Work Exempt from Permits</i>

Purpose: The purpose of this policy is to clarify when a building permit is required for the installation of a retaining wall.

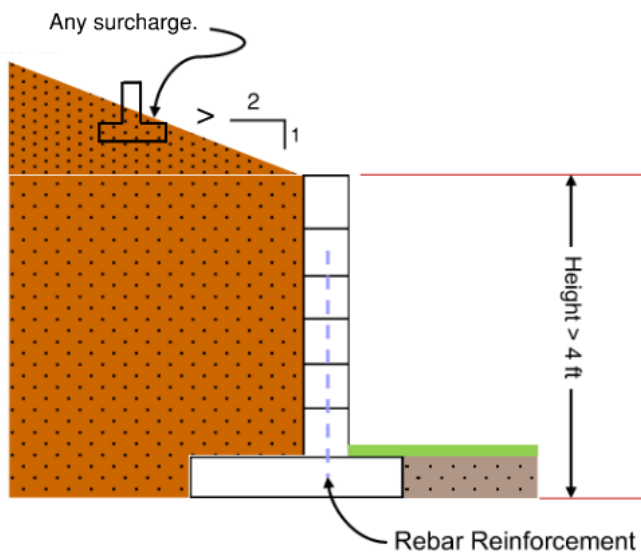
DEFINITIONS

Retraining Wall: A wall designed to resist earth and/or fluid pressure, including any surcharge in accordance with acceptable engineering practices.

Surcharge: The vertical load imposed on retained soil that may impose a lateral force in addition to lateral earth pressure of retained soil. For example: Sloping retained soil; structure footings supported by the retained soil; adjacent vehicle loads supported by retained soil. (Patios, swimming pools and driveways are other common residential surcharges).

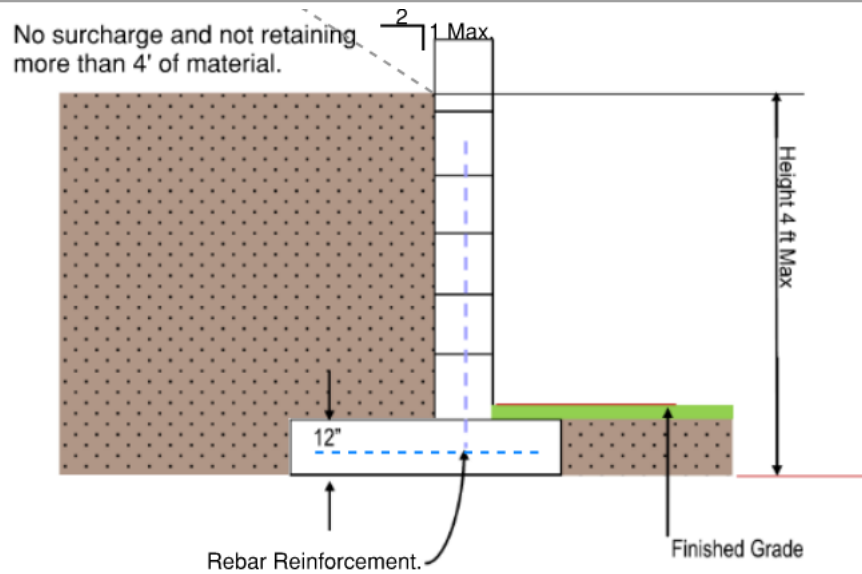
Retaining Wall Height: The vertical distance measured from the bottom of the footing to the finish grade at the top of the wall (i.e. retained soil height). This is the height reflected in CBC Sec. 105.2 item 4 and it includes the wall and depth of the footing below grade.

WHEN IS A PERMIT REQUIRED?



- If total retained soil height is greater than 4 feet measured from the bottom of the footing to the top of the retaining retained soil height.
- Any back slope—in excess of 2:1, adjacent to the retaining wall of any height.
- Any surcharge load conditions exist as defined regardless of retaining wall height (buildings, roads, vehicle loads or sloped conditions in excess of 2:1, etc.).
- Solid fences are attached or directly adjacent to the proposed retaining wall.

WHEN IS A PERMIT NOT REQUIRED?

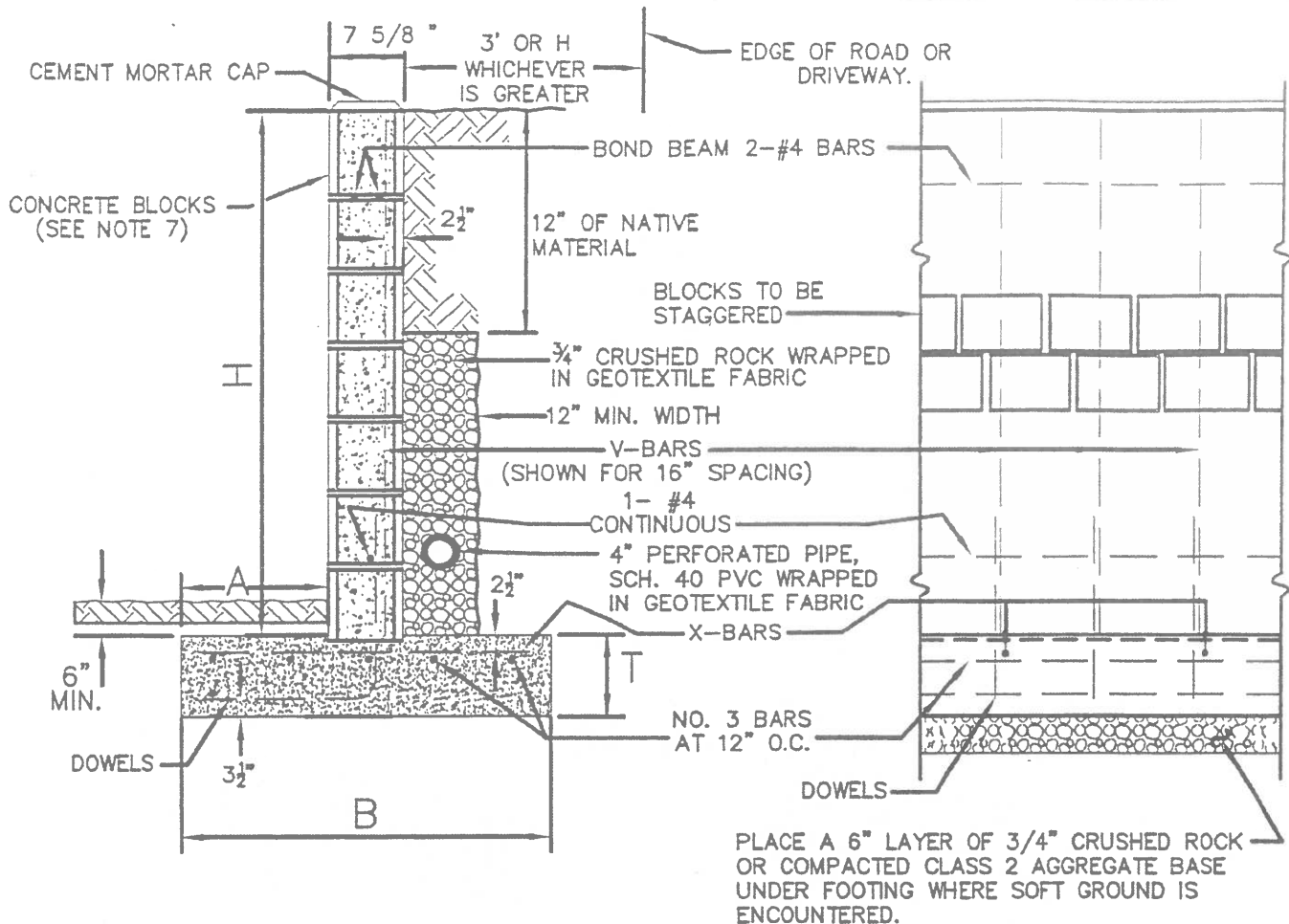


- Retaining walls that not over 4' feet in height, measured from the bottom of the footing.
- Wall is constructed per one of the four Uniform Standard Details (Typical Soldier Pile Wall, Retaining Wall Type A Level Backfill, Retaining Wall Type B Sloping Backfill, Retaining Wall Type C).
- Wall is constructed of pre-cast block (Keystone, Redi-Rock, etc.) or other system installed per the manufacturer's listing and instructions and is less than 4' high with level back slope.
- Total retained soil height is 4' or less and soil slope behind wall is 2:1 maximum.
- Are constructed of reinforced concrete or reinforced masonry and do not retain more than 4' of material.
- Are constructed of decay resistant material or treated wood and do not retain more than 4' of material.
- Do not impound Class I, II or III liquids.
- Do not support surcharge loads as defined.

WHAT IS REQUIRED FOR A RETAINING WALL PERMIT SUBMITTAL?

- Site plan showing: the proposed retaining wall extent and location, property lines, north arrow, project address and owner information, existing structures, driveways, roadways, public-rights-of-way, and easements.
- For retaining walls 4-6' in height a geotechnical investigation and structural design and details is required.
- For retaining walls greater than 6' in height a geotechnical investigation and structural design and details incorporating seismic lateral earth pressure is required.
- Wall drainage design and details.

Mark Setterland, Chief Building Official



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:

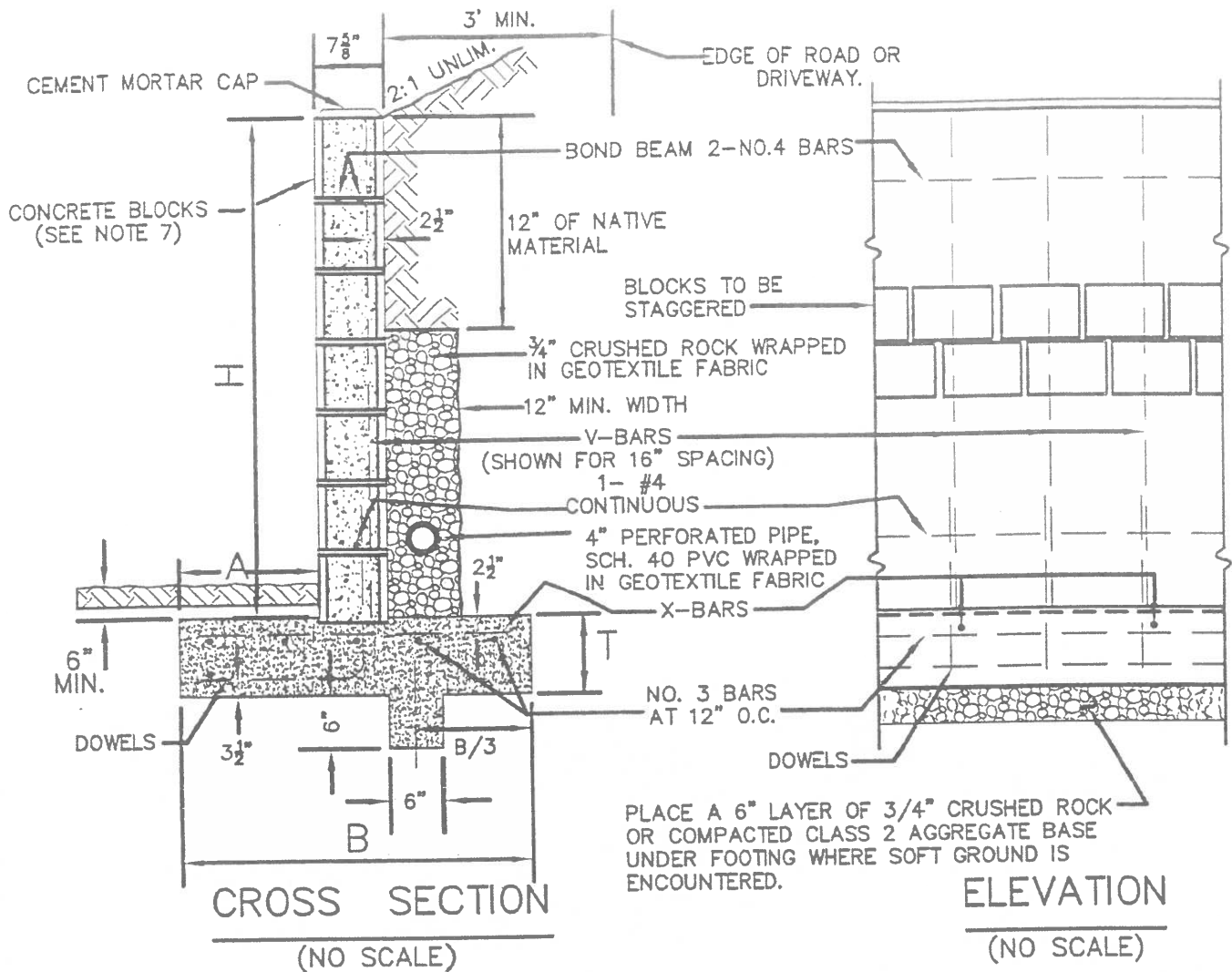
1. CONCRETE FOR FOOTING TO BE CLASS "A" (6 SACK 3000 PSI) WITH 3/4" AGGREGATE AND 4 INCH MAX. SLUMP.
2. FILL ALL CELLS WITH 7 SACK CONCRETE WITH 3/8" AGGREGATE OR 3:1 MORTAR.
3. DOWELS SHALL BE SAME IN SIZE AND SPACING AS V-BARS. THEY SHALL PROJECT 40 BAR DIAMETERS, 24 INCH MIN. INTO THE CELLS AND EXTEND 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	



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"

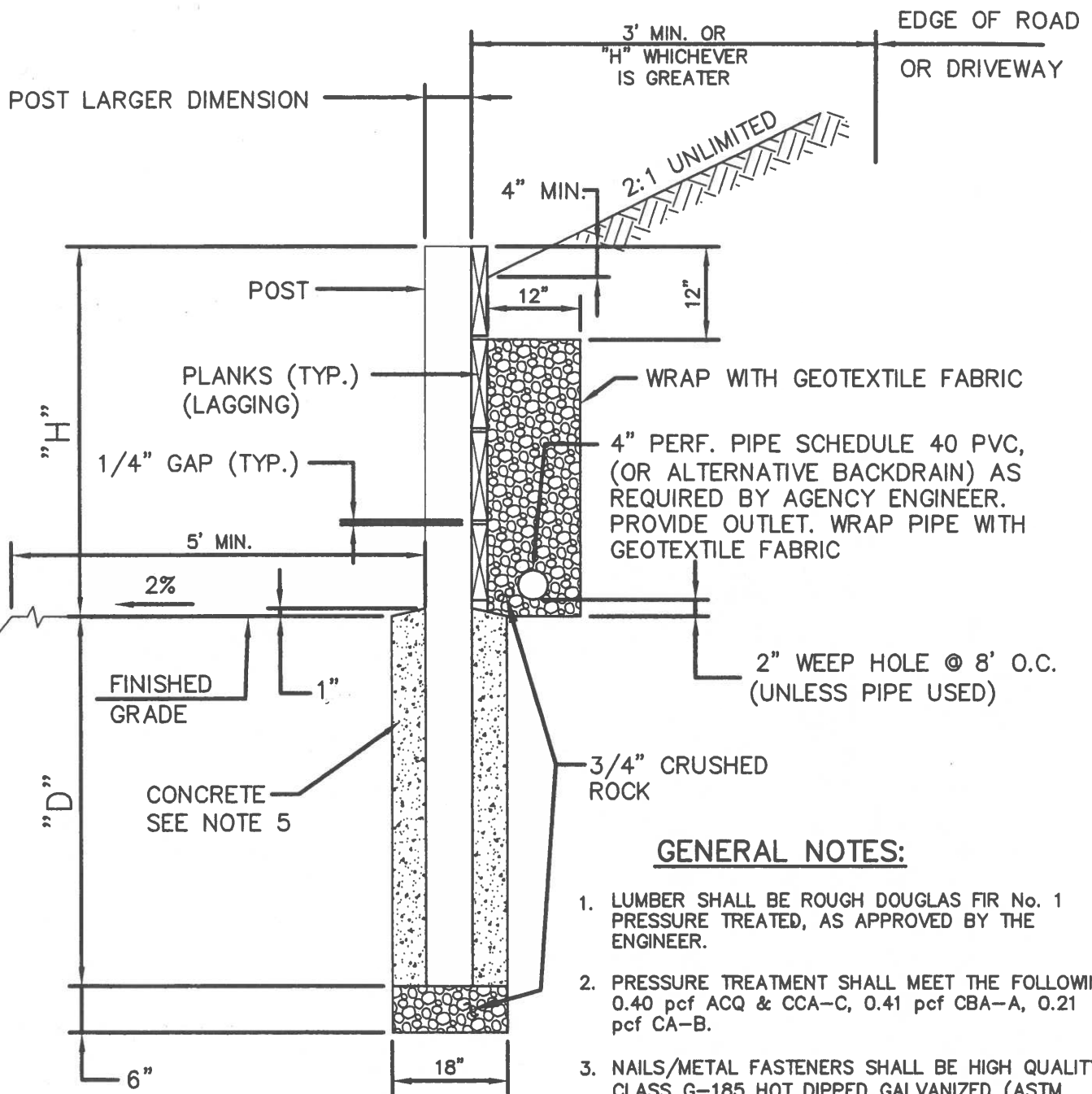
NOTES:

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 TO THE TOE OF FOOTING INTO THE CELLS AND EXTEND TO THE TOE OF FOOTING.
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.
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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.

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN

RETAINING WALL
TYPE "B"
SLOPING
BACKFILL

				MAY 2008
				DWG. NO.
				155
REV.	DATE	BY		



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

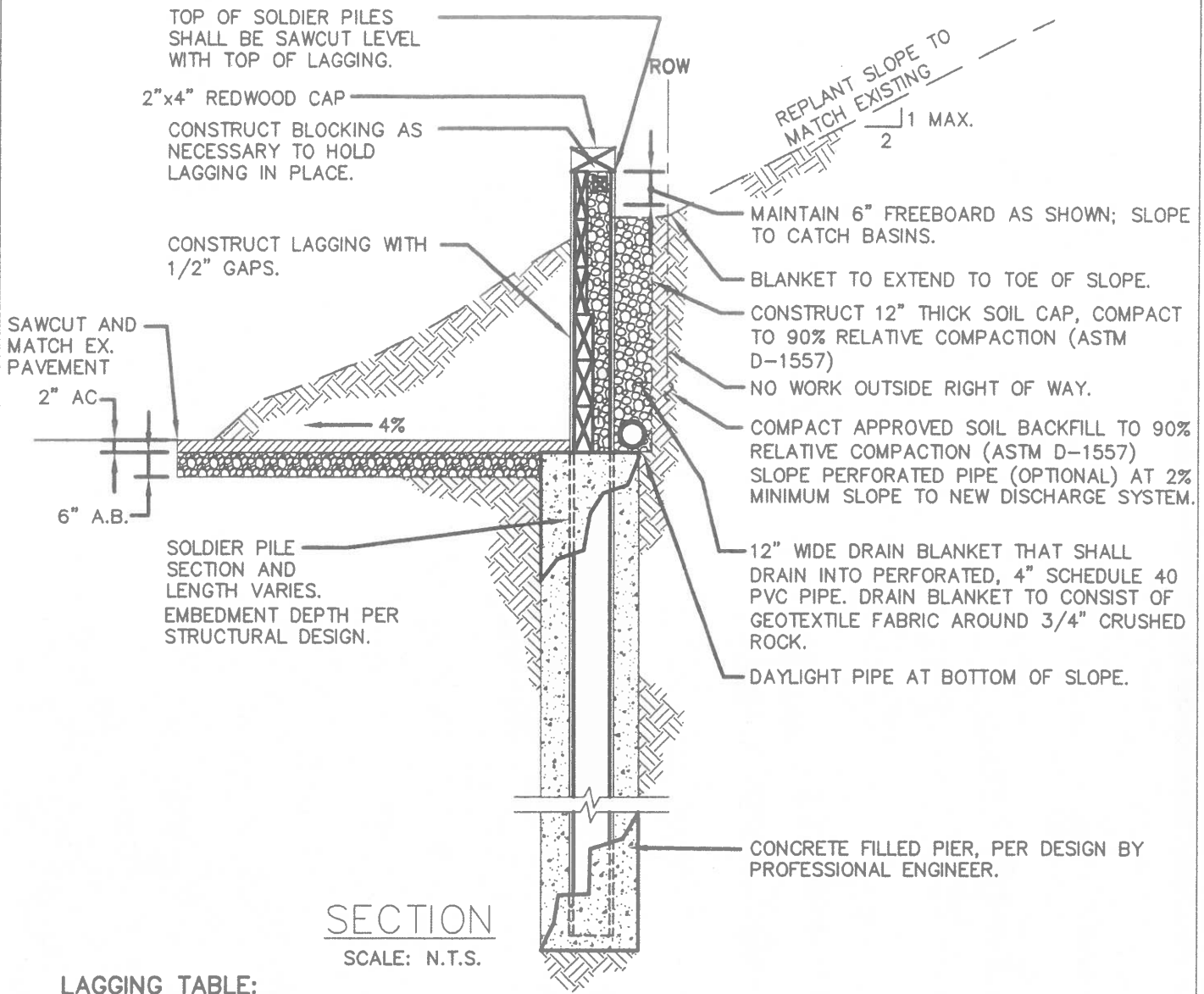
GENERAL NOTES:

- LUMBER SHALL BE ROUGH DOUGLAS FIR No. 1 PRESSURE TREATED, AS APPROVED BY THE ENGINEER.
- PRESSURE TREATMENT SHALL MEET THE FOLLOWING: 0.40 pcf ACQ & CCA-C, 0.41 pcf CBA-A, 0.21 pcf CA-B.
- 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.
- ALL CUTS, HOLES AND INJURIES (SUCH AS ABRASIONS AND NAIL HOLES) SHALL BE FIELD TREATED WITH APPLICATIONS OF PRESERVATIVES IN ACCORDANCE WITH AWPFA STANDARD M4.
- CONCRETE FOR POST SUPPORT SHALL BE CLASS C (4 SACK MIX) WITH 1" MAX. AGGREGATE.

UNIFORM STANDARDS
ALL CITIES AND
COUNTY OF MARIN

RETAINING WALL
TYPE "C"

			MAY 2008
			DWG. NO.
			160
REV.	DATE	BY	



LAGGING TABLE:

FOR 3' DEPTH & LESS USE 2"x12" PRESSURE TREATED DOUGLAS FIR (PTDF).
 FOR 3' TO 4' DEPTH USE 3"x12" PRESSURE TREATED DOUGLAS FIR (PTDF).
 PRESSURE TREATMENT SHALL MEET THE FOLLOWING: 0.40 pcf ACQ & CCA-C,
 0.41 pcf CBA-A, 0.21 pcf CA-B.

CORROSION PROTECTION:
 ALL I-BEAMS SHALL BE COATED WITH COAL TAR EPOXY OR APPROVED EQUAL PER MFG. SPECIFICATIONS.

WALL HT.	PIER DEPTH (EMBEDMENT)	I-BEAM (GRADE 50)	LAGGING
4'	5'	W5 x 16	3" x 12"

NOTE:
 THE AGENCY ENGINEER MAY MODIFY THE ABOVE SCHEDULE.

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UNIFORM STANDARDS ALL CITIES AND COUNTY OF MARIN	TYPICAL SOLDIER PILE WALL				MAY 2008
					DWG. NO.
					165
		REV.	DATE	BY	