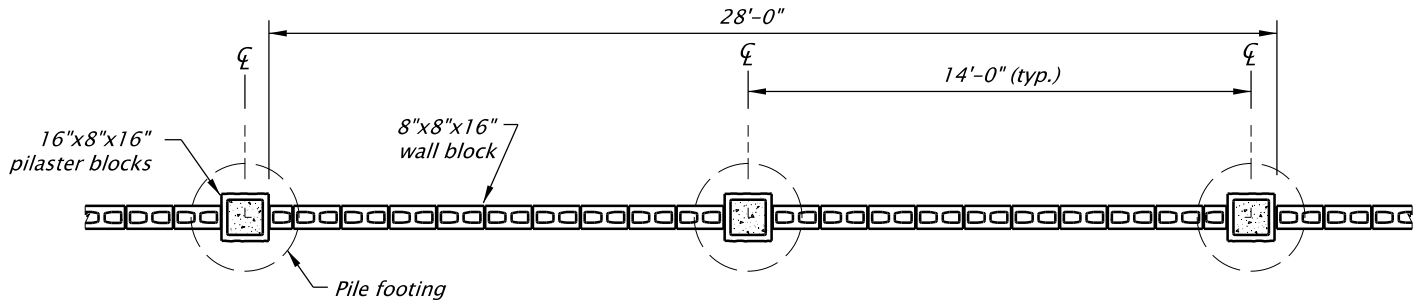




TYPICAL MASONRY SOUND WALL PLAN
NONE

NOTE:
Level ground is: 1V:10H maximum, good soil

SOIL TYPES :

GOOD SOIL:

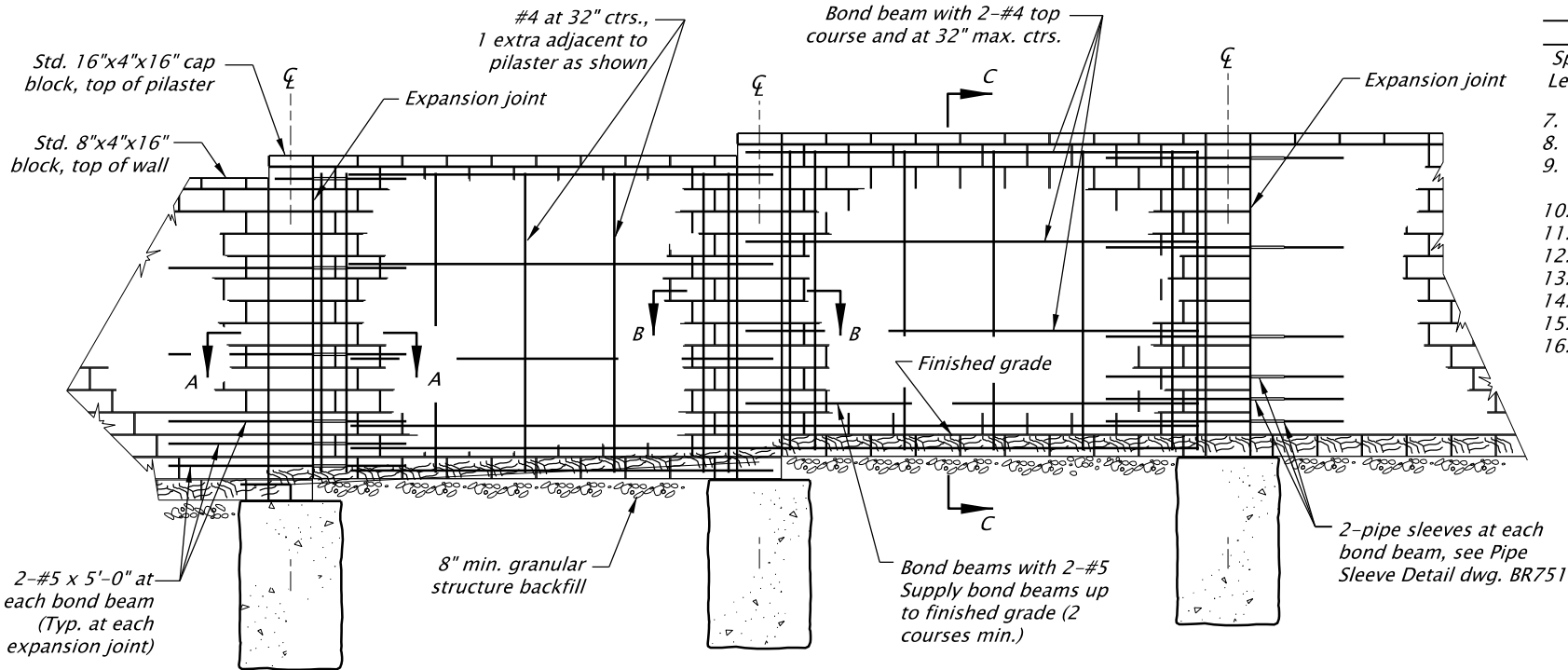
Compact, well graded sand or sand and gravel. Design $\phi = 35^\circ$, design density 120 pcf, well drained and not located where water will stand.

AVERAGE SOIL:

Compact fine sand, well drained sandy loam, loose coarse sand and gravel, hard or medium clay. Design $\phi = 25^\circ$, design density = 100 pcf. Soil should drain sufficiently so that water will not stand on the surface.

POOR SOIL:

(Soil investigation required) Soft clay, loams, poorly compacted sands. Contains large amounts of silt or organic material. Usually found in low lying areas that are subject to standing water.



TYPICAL MASONRY SOUND WALL ELEVATION
NONE

NOTE:
For Sections A-A, B-B and C-C, see dwg. BR751.

TABLE 1				
EXPOSURE "B1", 80 MPH				
WALL HEIGHT "H"	PILASTER BARS "A"	PILE FOOTING BARS "B"	FOOTING LENGTH FOR LEVEL GROUND "T"	
			SOIL TYPE	
			GOOD R=1200 psf/ft.	AVERAGE R=525 psf/ft.
8'-0"	4-#4	6-#4	4'-9"	5'-9"
10'-0"	4-#4	6-#4	5'-0"	6'-0"
12'-0"	4-#4	6-#4	5'-6"	6'-6"
14'-0"	4-#5	6-#5	5'-9"	6'-9"
16'-0"	4-#6	6-#5	6'-0"	7'-3"
EXPOSURE "B1", 90 MPH				
8'-0"	4-#4	6-#4	5'-0"	6'-0"
10'-0"	4-#4	6-#4	5'-6"	6'-6"
12'-0"	4-#5	6-#5	5'-9"	7'-0"
14'-0"	4-#6	6-#5	6'-3"	7'-3"
16'-0"	4-#6	6-#5	6'-6"	7'-9"
EXPOSURE "B1", 100 MPH				
8'-0"	4-#4	6-#4	5'-3"	6'-3"
10'-0"	4-#5	6-#4	5'-9"	6'-9"
12'-0"	4-#5	6-#5	6'-0"	7'-3"
14'-0"	4-#6	6-#5	6'-6"	7'-9"
16'-0"	4-#7	6-#6	7'-0"	8'-3"

GENERAL NOTES :

- Sound Walls are designed in accordance with the AASHTO Guide Specifications for Structural Design of Sound Barriers (1989).
- Heights 14' or under designed for 12 psf (B1 80 mph), 16 psf (B1 90 mph) and 20 psf (B1 100 mph). Heights over 14' are designed for 17 psf (B1 80 mph), 21 psf (B1 90 mph) and 26 psf (B1 100 mph). This meets the requirements for the B1 wind exposure, 50 year recurrence interval.
- Masonry walls designed by Working Stress Design Method and pilasters and pile footings are designed by Load Factor Design Method.
- Footing embedment lengths designed by AASHTO and Rutledge Equation where $S_1 = RL/3$. R = Ultimate Lateral Soil capacity obtained by Log-Spiral Method increased by 1.5 isolation factor and includes soil strength reduction factors. (S_1 = Allowable Ultimate Lateral Soil capacity).
- All reinforcing steel shall conform to ASTM Specification A706 or AASHTO M31 (ASTM A615) Grade 60. ($f_s = 24,000$ psi).
- The following splice lengths shall be used unless shown otherwise.

Bar Size	3	4	5	6	7	8	9	10	11	
	Uncoated	1'-0"	1'-4"	1'-8"	2'-0"	2'-8"	3'-6"	4'-4"	5'-7"	6'-9"
Splice Length	Epoxy Coated	1'-5"	1'-10"	2'-4"	2'-10"	3'-9"	4'-11"	6'-1"	7'-10"	9'-6"

- All bars shall have a minimum cover of 2" including the masonry unit, unless shown otherwise.
- Concrete in footing shall be "Commercial Grade Concrete".
- All concrete masonry units shall be ASTM C-90 lightweight or medium weight classification. The compressive strength on the net area of a standard and split-face hollow block shall be 1,800 psi for individual units; 2000 psi average of 3 units.
- Design strength of the masonry wall (f'm) shall be 1,500psi.
- Masonry requires special inspection in accordance with Oregon Structural Specialty Code (OSSC).
- Design strength of the mortar shall be 1,800 psi at 28 days (ASTM C-270, Type S).
- Design strength of the concrete grout shall be 2,000 psi at 28 days (ASTM C-476).
- Install per OSSC for reinforced hollow unit masonry. All masonry to be installed at running bond.
- Sound Walls located on bridges, retaining walls, poor soils or in B2 wind exposure require special design.
- All exposed 8"x8"x16" block faces shall be split-face, and all exposed 16"x8"x16" pilaster blocks shall be smooth finish, unless shown otherwise.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.		
OREGON STANDARD DRAWINGS		
STANDARD MASONRY SOUND WALL ON PILE FOOTING		
2024		
DATE	REVISION DESCRIPTION	
01-2021	Revised note 16	
CALC. BOOK NO.	6403, 6404, 6405	SDR DATE_ 06-JAN-2021_
		BR750