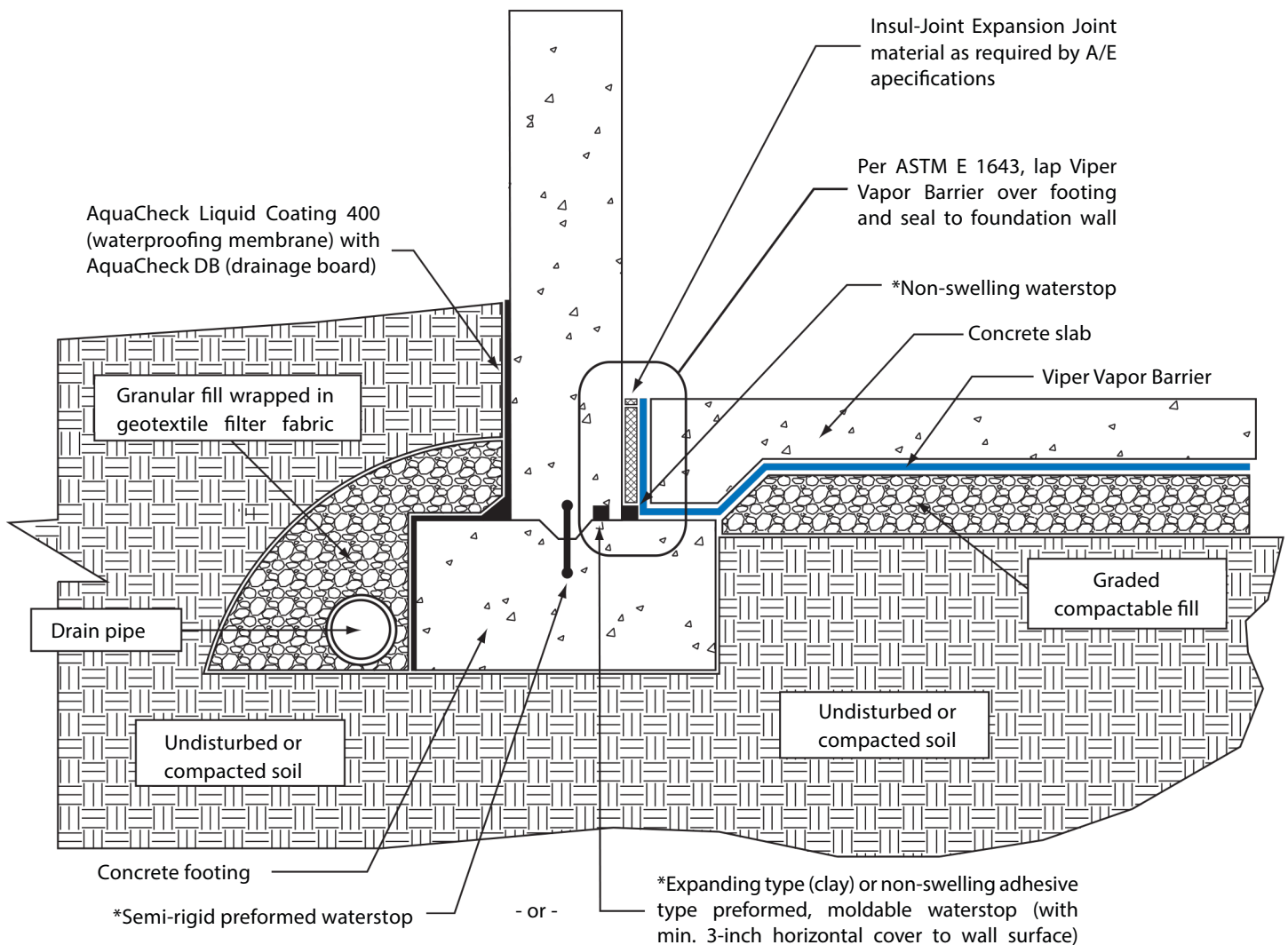


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Note: The following installation instructions are based off of ASTM E 1643 (Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs).

1. Install Viper Vapor Barrier over compacted base material. Viper Vapor Barriers are designed to withstand rugged construction environments; therefore, it is not necessary to have a perfectly smooth subsurface.
2. Unroll Viper Vapor Barrier with the longest dimension parallel with the direction of the concrete pour. The Viper Vapor Barrier should completely cover the entire pour area.
3. Extend Viper Vapor Barrier over footings and seal to foundation wall, grade beam, or slab at an elevation consistent with the top of the slab or terminate at impediments, such as water stops or dowels. (Refer to Slab-on-Grade detail.)
4. All joints and seams should be overlapped a minimum 6 inches and sealed with 4-inch Viper Vapor Tape and/or 2-inch Viper Double Bond Tape. (Note: The area of adhesion should be free from dust, dirt and moisture to allow for maximum adhesion of the tape.)
5. All penetrations, such as utilities and columns, should be sealed using Viper Vapor Barrier, Viper VaporPatch and/or VaporCheck Mastic. Doing so creates a monolithic membrane between the surface of the slab and moisture sources below the slab. (Refer to pipe penetration details.)
6. Extend and terminate Viper Vapor Barrier over the tops of pile caps and grade beams to a distance acceptable to the structural engineer.
7. If Viper Vapor Barrier becomes damaged during installation, repairs must be made. Methods of repair include:
 - A. Create patch using roll of Viper VaporPatch. Peel off release backing and adhere over damaged area. (Refer to pipe penetration details.)
 - B. Cut a piece of Viper Vapor Barrier large enough to extend 6 inches beyond damaged area on all sides. Secure patch with either 4-inch Viper Vapor Tape and/or 2-inch Viper Double Bond Tape. (Note: The area of adhesion should be free from dust, dirt and moisture to allow for maximum adhesion of the tape.)
8. A secondary protective layer, such as fine washed gravel or sand, is not necessary. If used, do so in accordance with American Concrete Institute's ACI 302 guidelines.

Slab-on-Grade



*This detail shows multiple waterstop options. Check with A/E specifications for requirement and/or placement.

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Pipe Penetration Using Viper VaporPatch

Figure: 1

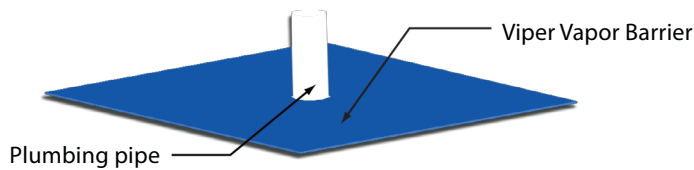


Figure: 2

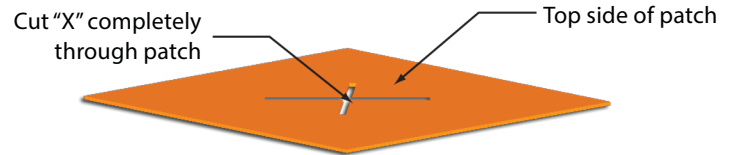


Figure: 3

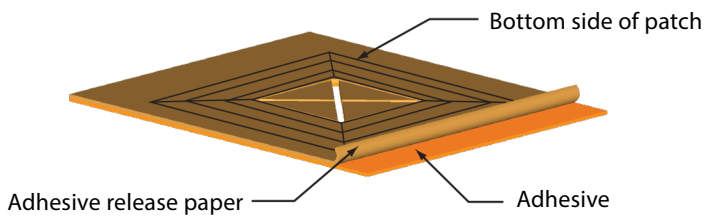


Figure: 4

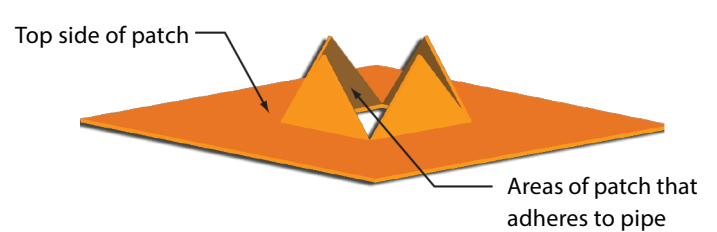


Figure: 5

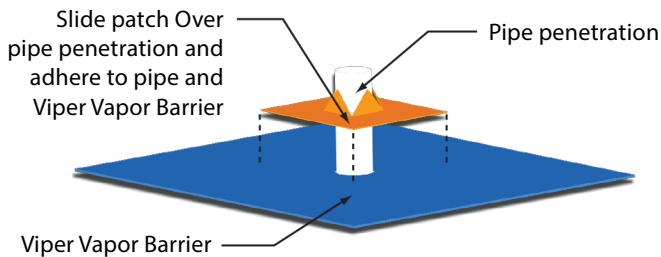
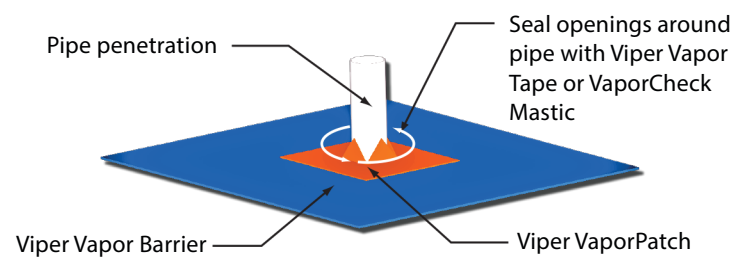


Figure: 6



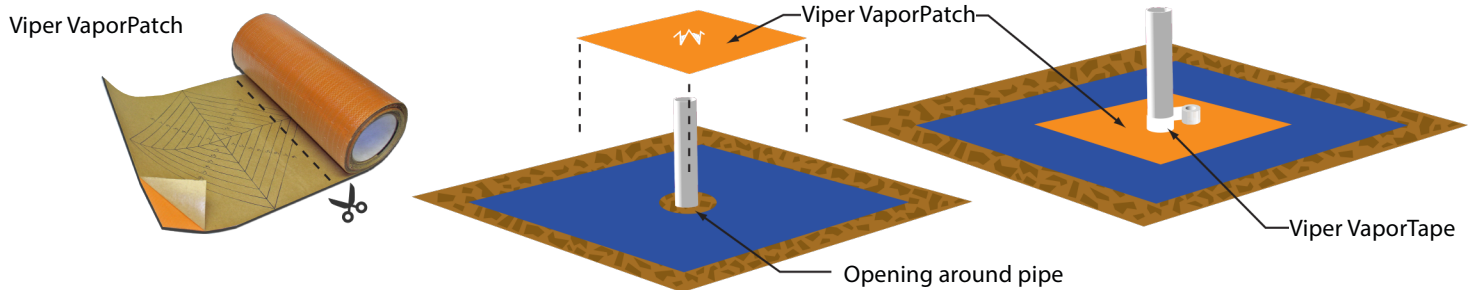
Pipe Boot Instructions (using Viper VaporPatch)

1. Cut boot from 11.5" x 50' roll. Each roll contains approximately 50 pipe boots. Note: There is a pipe grid template every 12 inches.
2. Cut an "X" through the Viper VaporPatch using the pipe grid template. Note: The grid ranges from 1 inch to 8 inches in diameter.
3. Slide patch over pipe penetration.
4. Peel off the adhesive release paper and firmly apply to the pipe penetration and Viper Vapor Barrier.
5. Seal off any exposed area with Viper Vapor Tape or VaporCheck Mastic.

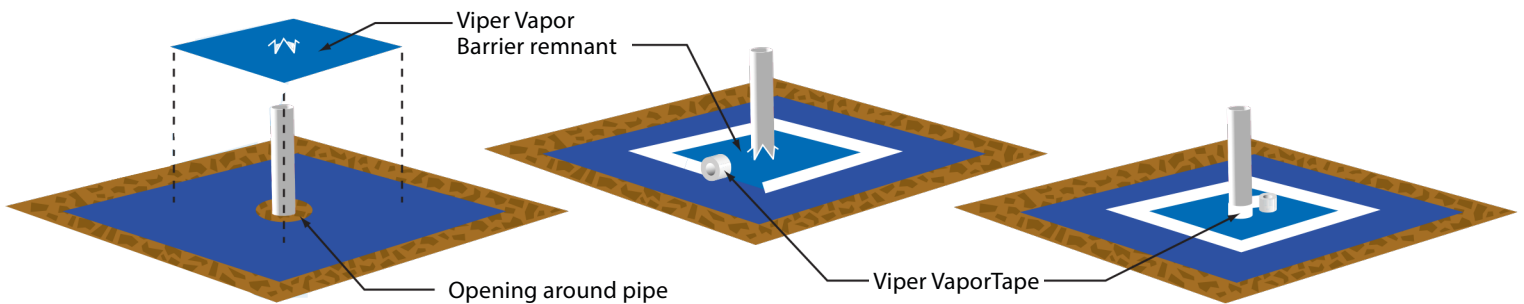
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Pipe Penetrations

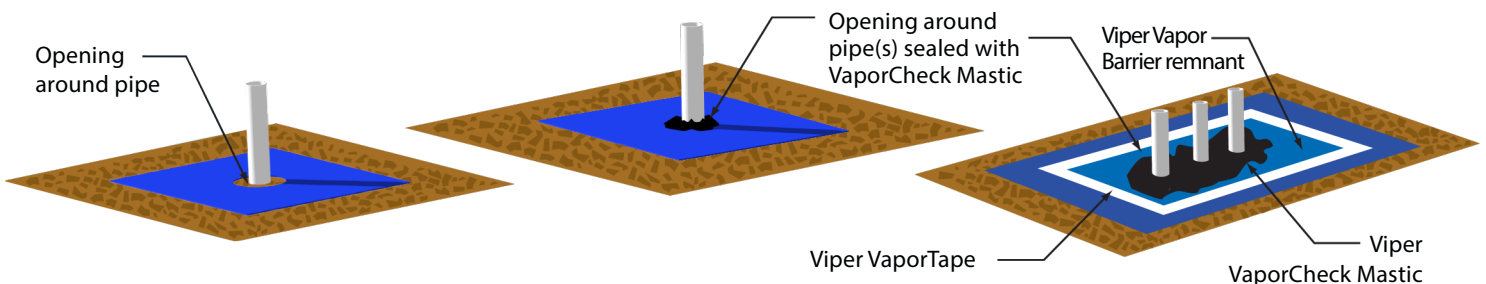
Option 1: Pipe penetration below is sealed using Viper VaporPatch. Cut square patch approximately 12" x 12" from roll. Cut "X" in square patch using pipe diameter template. Slide Viper VaporPatch over pipe, peel off release liner and adhere to both Viper Vapor Barrier and pipe. Seal any remaining openings with Viper Vapor Tape or VaporCheck Mastic.



Option 2: Pipe penetration below is sealed using a piece of Viper Vapor Barrier and Viper Vapor Tape. Cut "X" in Viper Vapor Barrier remnant, slide over pipe and seal to both Viper Vapor Barrier and pipe with Viper Vapor Tape.



Option 3: Pipe penetration below is sealed using Viper VaporCheck Mastic. For multiple pipe penetrations, cut "X's" in Viper Vapor Barrier remnant, slide over pipes and seal with Viper Vapor Tape. All remaining openings around pipes are sealed using Viper VaporCheck Mastic.



Note: Viper VaporCheck Mastic is available in 5-gallon pails and 28-ounce caulking tubes.

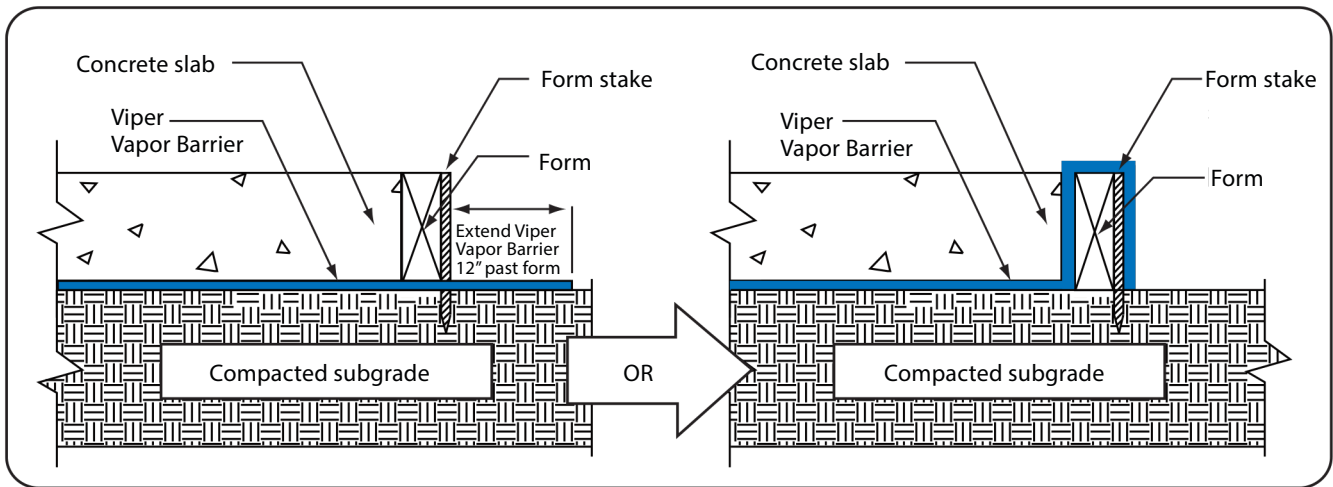


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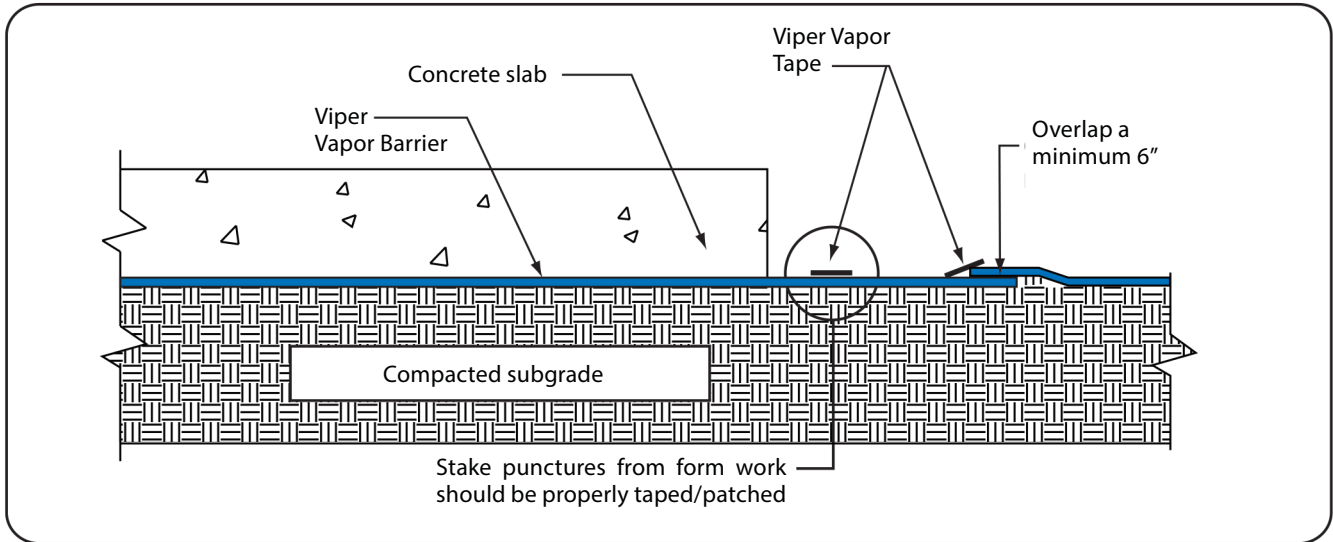
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Concrete Slab Construction Joint

STEP ONE:



STEP TWO:



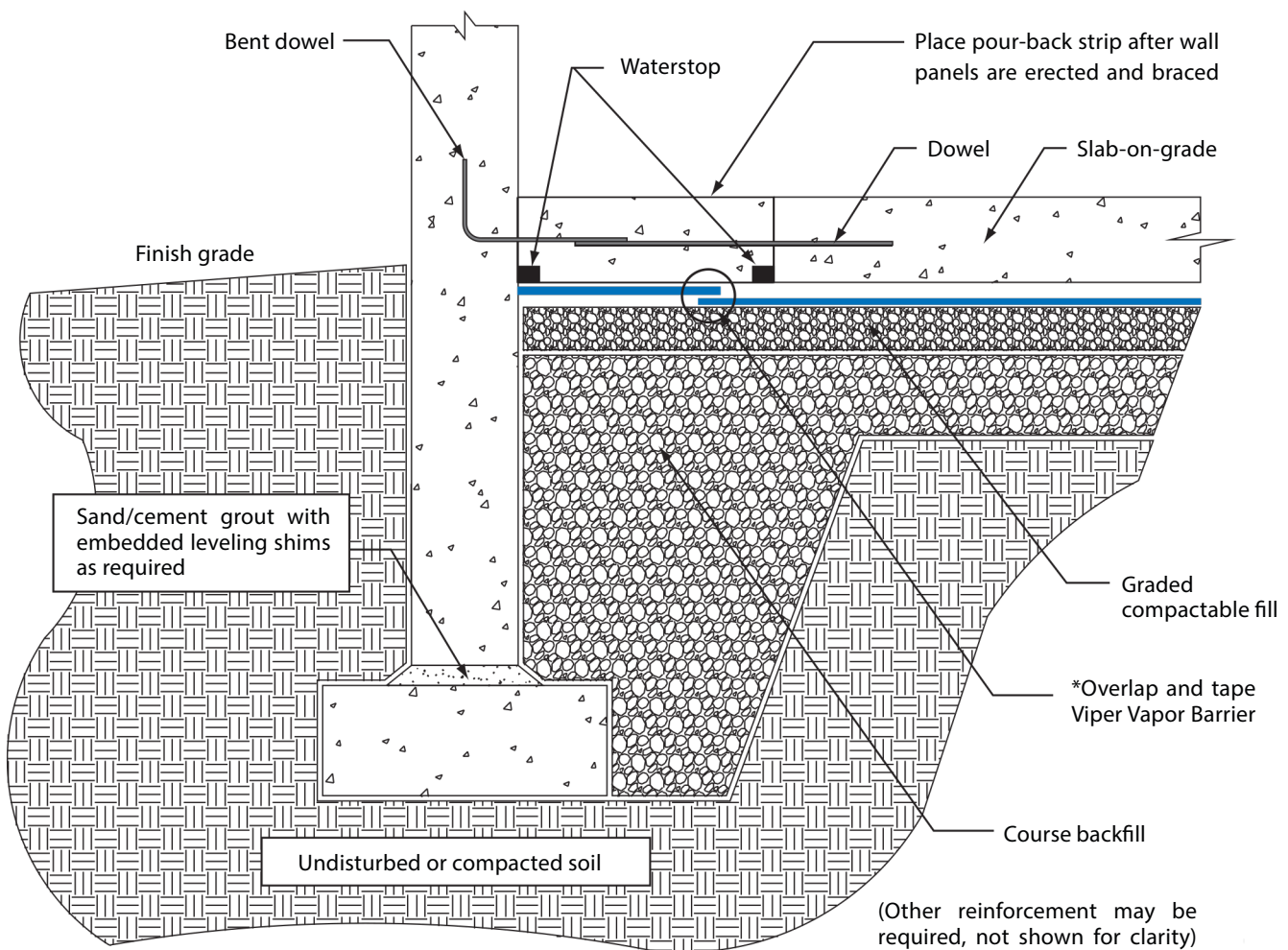
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Tilt-Up Wall with Pour Strip



*Viper Vapor Barrier Placement: Extend the initial placement of Viper Vapor Barrier at least 6-inch to 12-inch into the pour-back strip area. The pour-back strip is usually a 3-foot to 5-foot wide strip around the perimeter. Prior to filling the pour-back strip, install, overlap and tape Viper Vapor Barrier to existing piece.

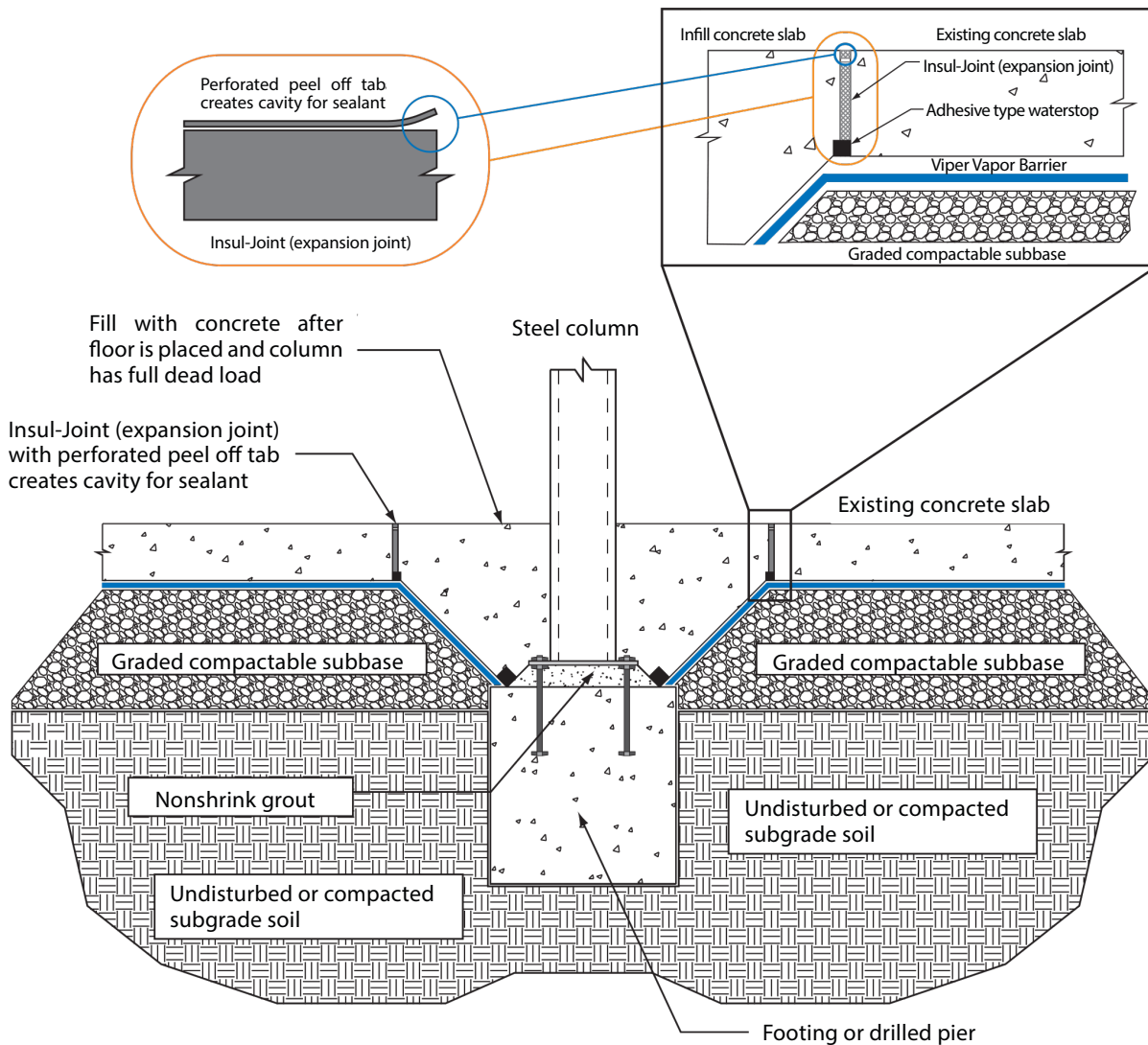
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Steel Column on Shallow Footing



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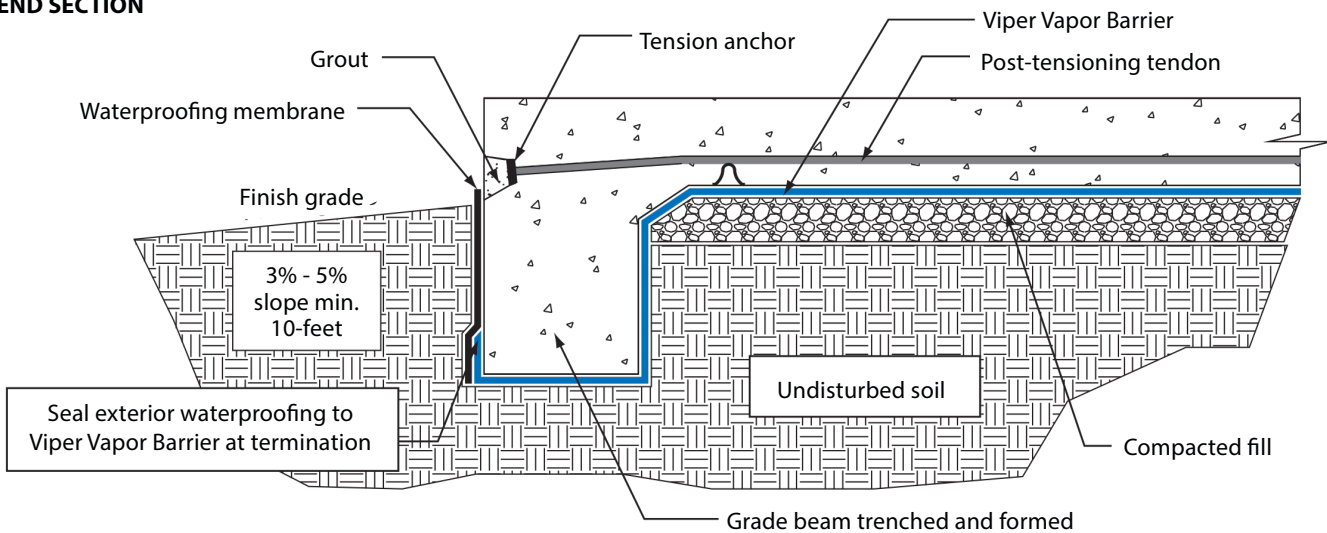


VAPOR RETARDERS

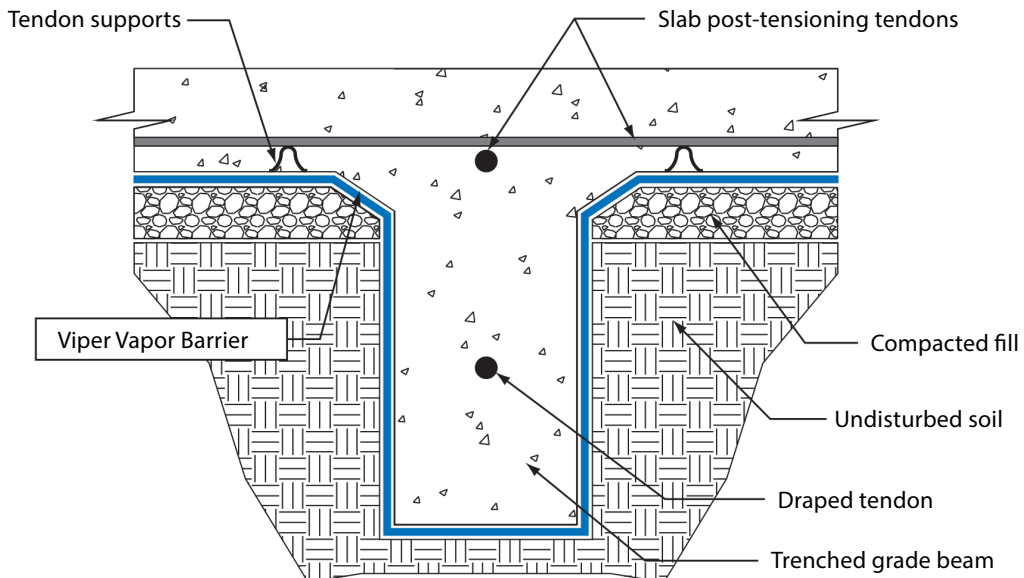
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Post-Tensioned Slab-on-Grade

1. END SECTION



2. INTERIOR SECTION



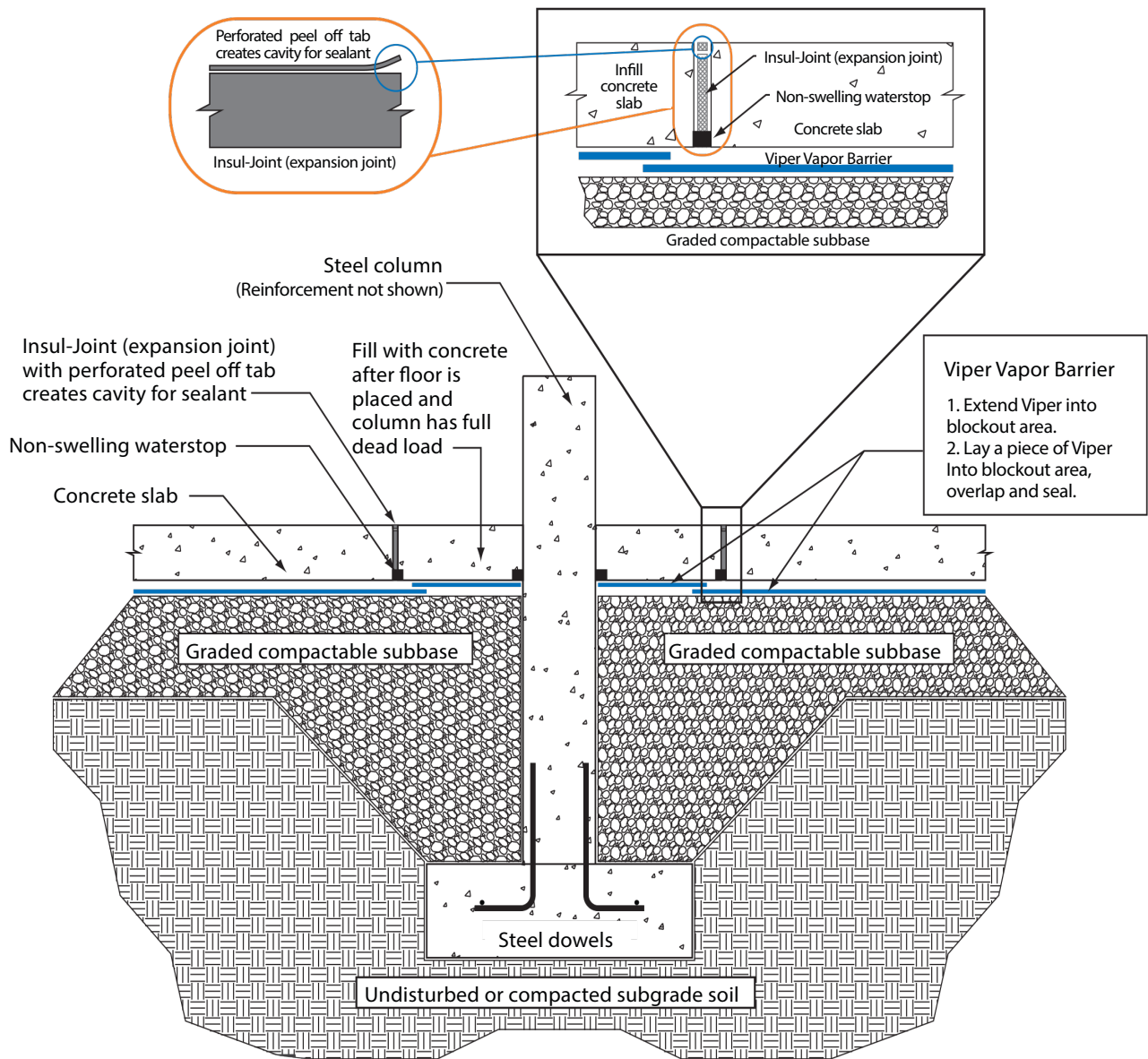
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Concrete Column on Deep Footing

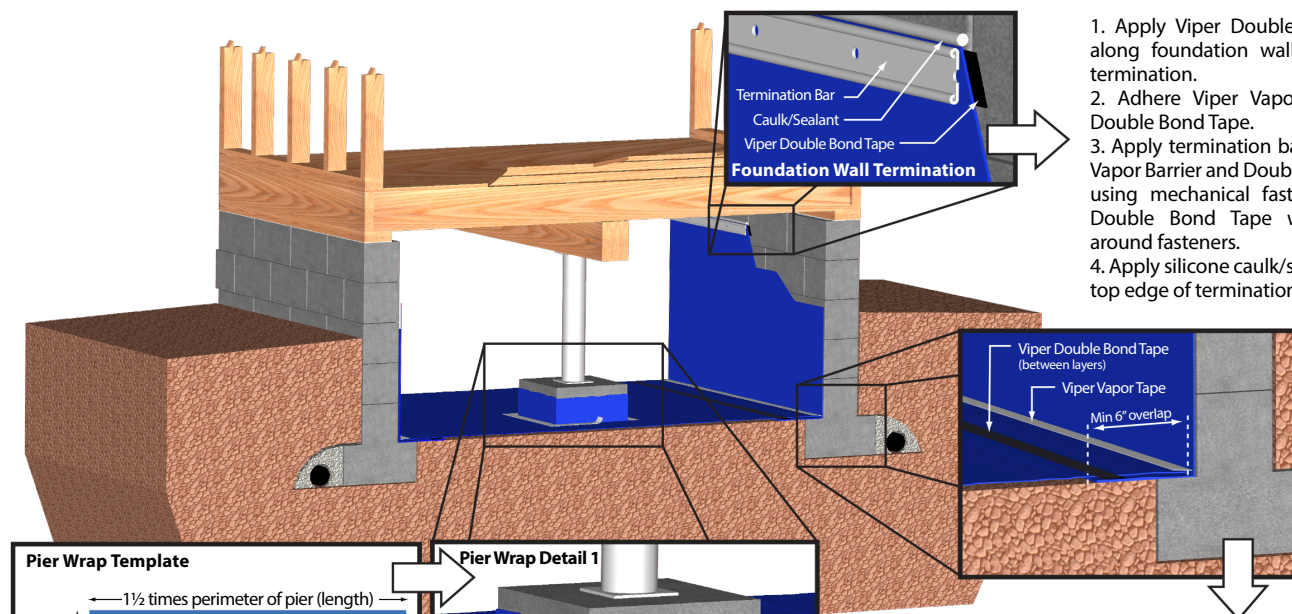


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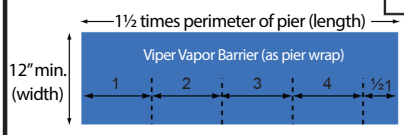
Residential Crawlspace

Foundation Wall Termination

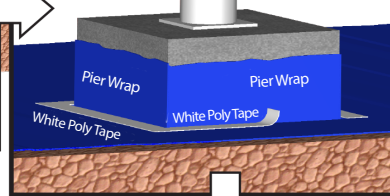
1. Apply Viper Double Bond Tape along foundation wall at area of termination.
2. Adhere Viper Vapor Barrier to Double Bond Tape.
3. Apply termination bar over Viper Vapor Barrier and Double Bond Tape using mechanical fasteners. Viper Double Bond Tape will self-seal around fasteners.
4. Apply silicone caulk/sealant along top edge of termination.



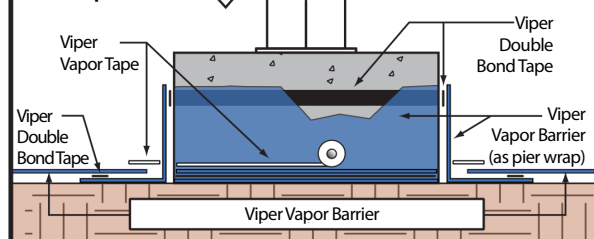
Pier Wrap Template



Pier Wrap Detail 1



Pier Wrap Detail 2



Seal to Foundation

1. Install Viper Vapor Barrier down the foundation wall, over footing and extend onto sub-grade at least 6 inches.
2. Install Viper Vapor Barrier over crawlspace floor and up to foundation wall. All overlaps should be a minimum 6 inches and sealed using Viper Vapor Tape and/or Viper Double Bond Tape. (Note: To prevent "tenting" along the foundation wall, additional fastening may be required at the floor and wall intersection.)

Pier Wrap Instructions

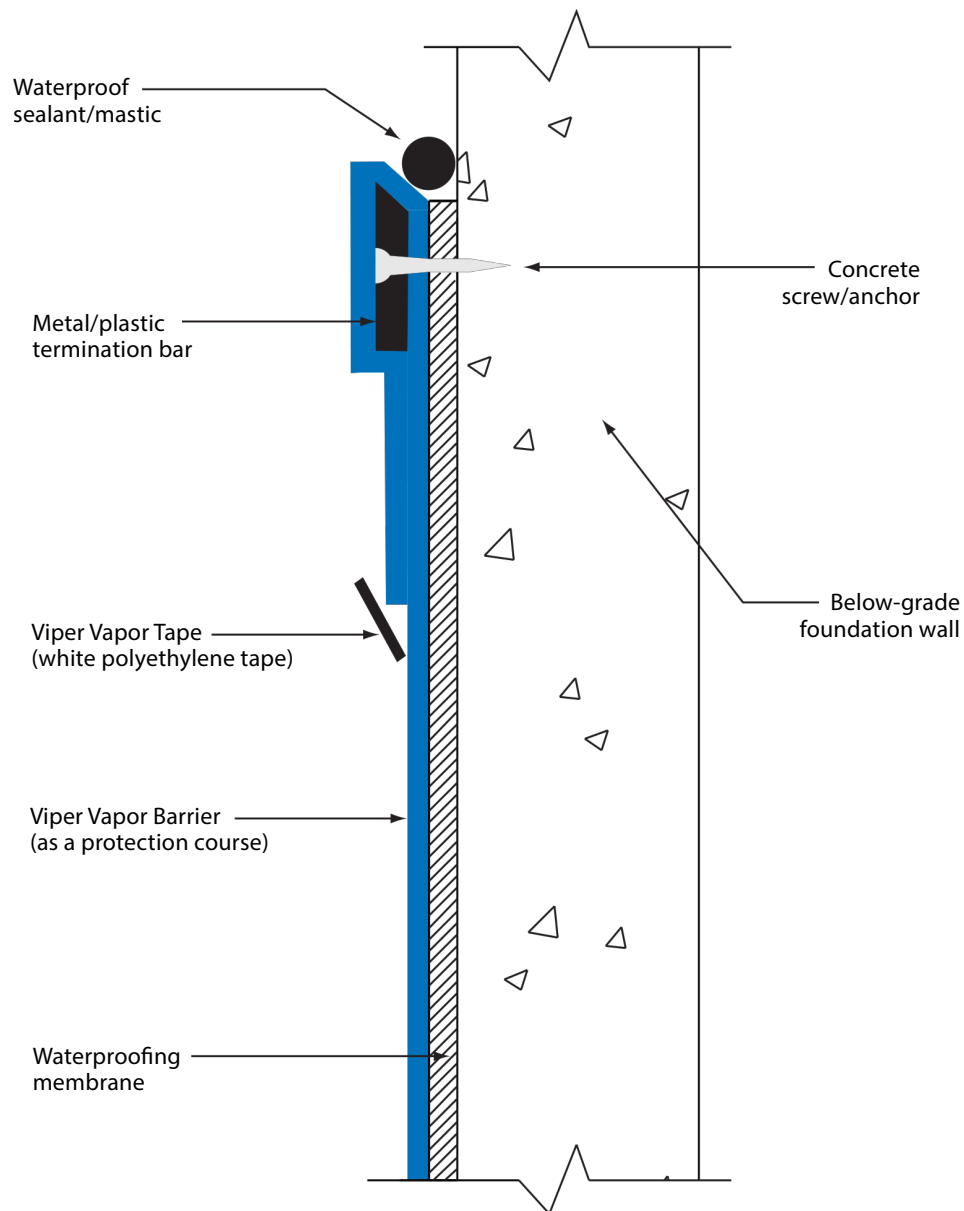
1. Unroll and cut Viper Vapor Barrier, in length, 1 1/2 times the perimeter of the crawlspace pier.
2. Use scissors or sharp utility knife and cut flaps 1/2 the width of Viper Vapor Barrier (see above detail).
3. Adhere Pier Wrap (Viper Vapor Barrier) to pier using Viper Double Bond Tape, approved spray adhesive and/or Viper Vapor Tape.
4. Overlap and seal Viper Vapor Barrier to Pier Wrap using Viper Double Bond Tape and Viper Vapor Tape.



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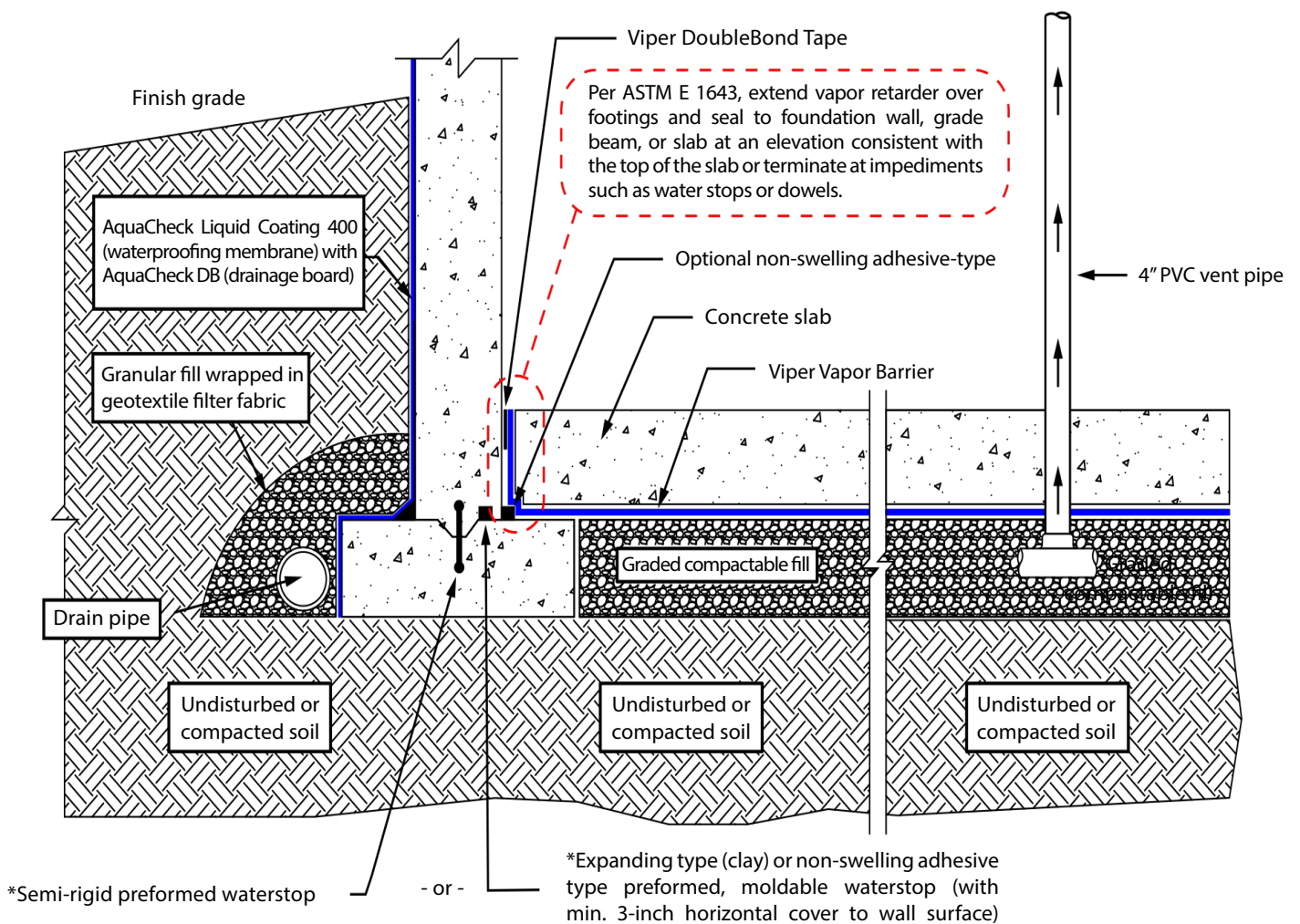
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Below-Grade Exterior Waterproofing Termination



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Sealed to Foundation Wall with Optional Vent Pipe



*This detail shows multiple waterstop options. Check with A/E specifications for requirement and/or placement.