

Overview

- Soil Type: Mahtomedi Sandy Loam - Group 1 soil - 59 lb./cu. ft.
- Design Pattern: Building Science Corporation Insight 020 (BSI-020)
- Preforated drain Pipe: Prinsco ProForm HD / Sump
- Concrete footings 24" w x 16" h - Logix Premium Pro ICF with extender.
- 12 1/2" gravel (no fines).
- Fully adhered membrane: ProtectoWrap
- Dimple Mat below grade - to reduce hydrostatic pressure.
- Cellular PVC above grade/below siding - to protect foundation insulation.
- Frost Protected Shallow Foundation (Walk-Out) $R_v = 14$, $R_h = 21$
- Permanent Wood Foundation (PNF) panels - 2x8 12" O.C.
- Wood slab - in lower level
- Garage: Logix-ICF: 8" concrete core thickness with R-28 Neopor insulation.
- Simpson Strong-Tie 5/8" washer head anchor bolts every 41"
- Simpson Strong-Tie SSTB-16 and HTT5KT at all corners.
- 5% grade (6" every 10') away from building.

Sourcing

- Panels: Glenbrook Lumber / EdgeBuilderWallPanels.com

Lower-Level Wood Slab

Mahtomedi Sandy Loam - well drained.

- 2" pea rock to level
- 10 1/2" gravel - capillary break.
- 2" Logix Sub-Terra Plus - **taped** (water, vapor, and radon barrier)
- 2x4 sleeper / RimBoard - Logix-ICF to fill in air gaps.
- 3/4" PT Plywood
- Warmboard-R (3/4") with 1/2" PEX-AL-PEX



SCALE:

1/8"

SHEET TITLE:
Foundation Overview

SHEET TITLE:

PROJECT DESCRIPTION:
Birchwood PGH - PWF

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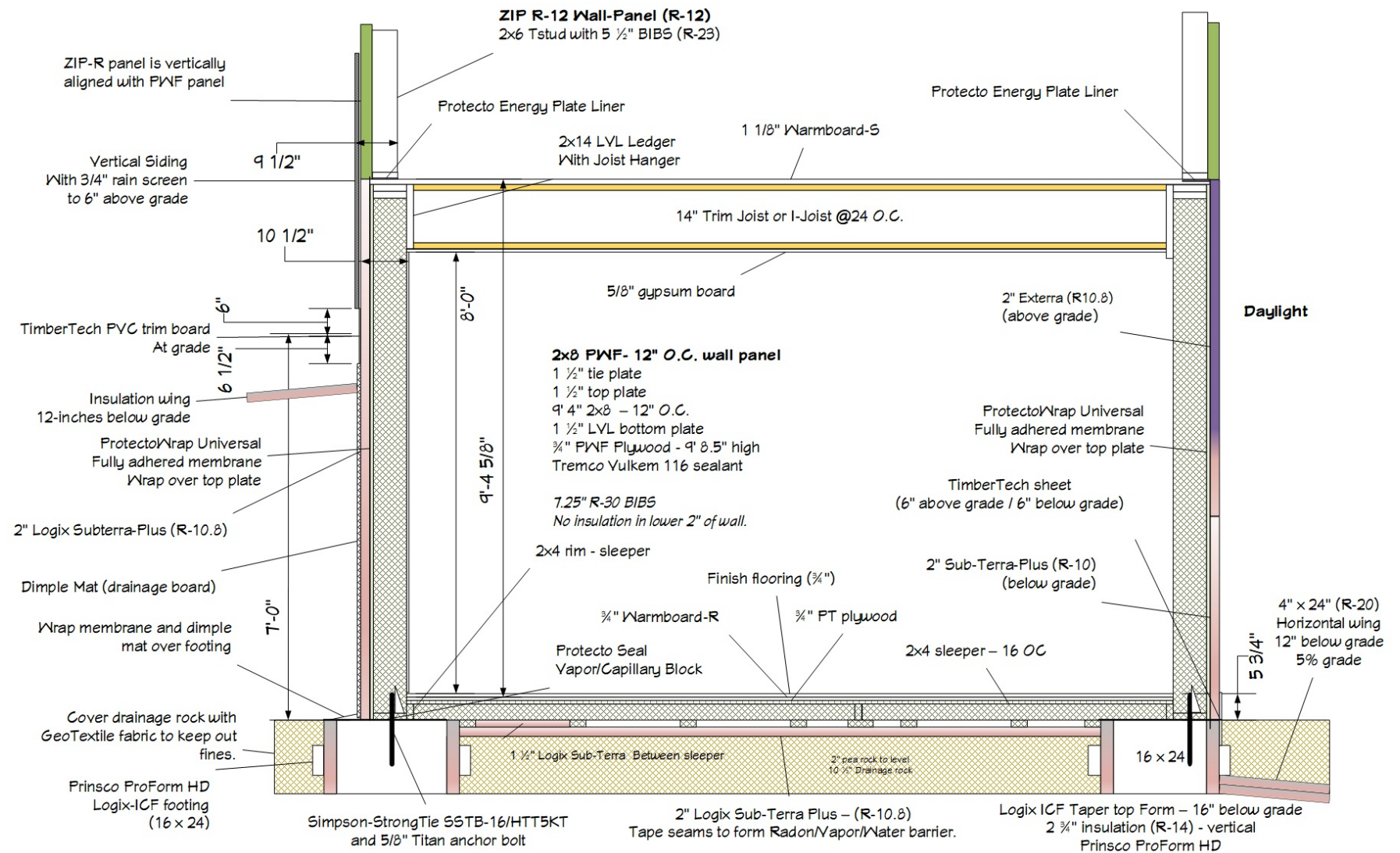
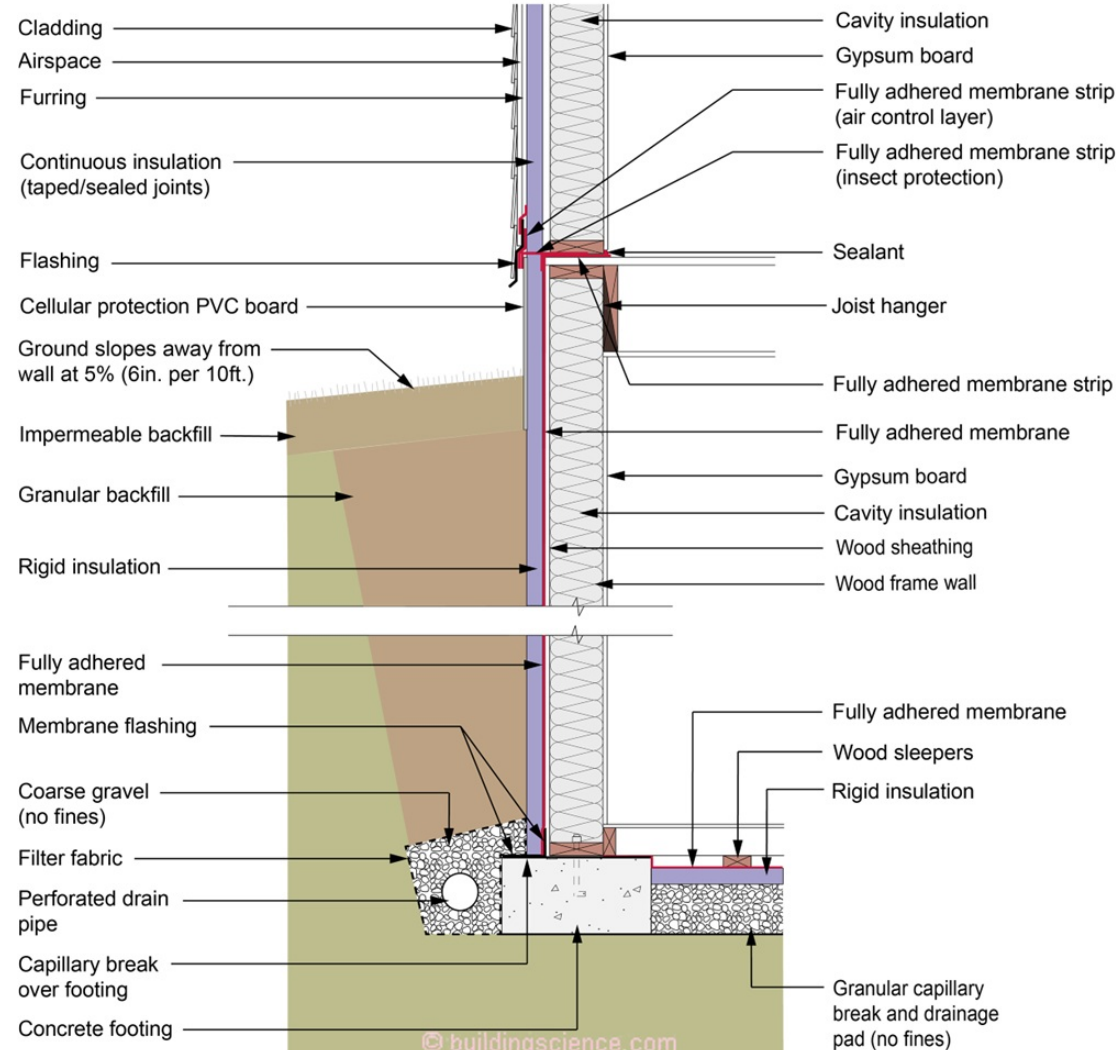
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PWF-1

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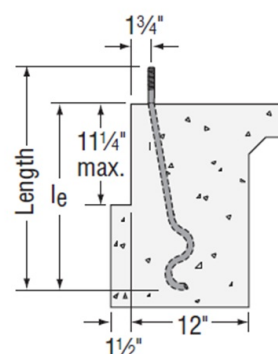


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- Wood slab - in lower level
- Garage: Logix-ICF: 8" concrete core thickness with R-28 Neopor insulation.
- Simpson Strong-Tie 5/8" anchor bolts with 0.229" x 3" x 3" square plate washer.
- 5% grade (6" every 10') away from building.

Simpson-StrongTie SSTB-16

- Hold down at corners.
- Embed into footing



Lower-Level Wood Slab

Soil is well drained sand.

- 2" pea rock to level
- 10" gravel - capillary break.
- 2" Logix Sub-Terra Plus - taped (water, vapor, and radon barrier)
- 1 1/2" Logix Sub-Terra-Plus and 2x4 sleepers
- 3/4" Advantech floor sheathing
- Warmboard-R (3/4")

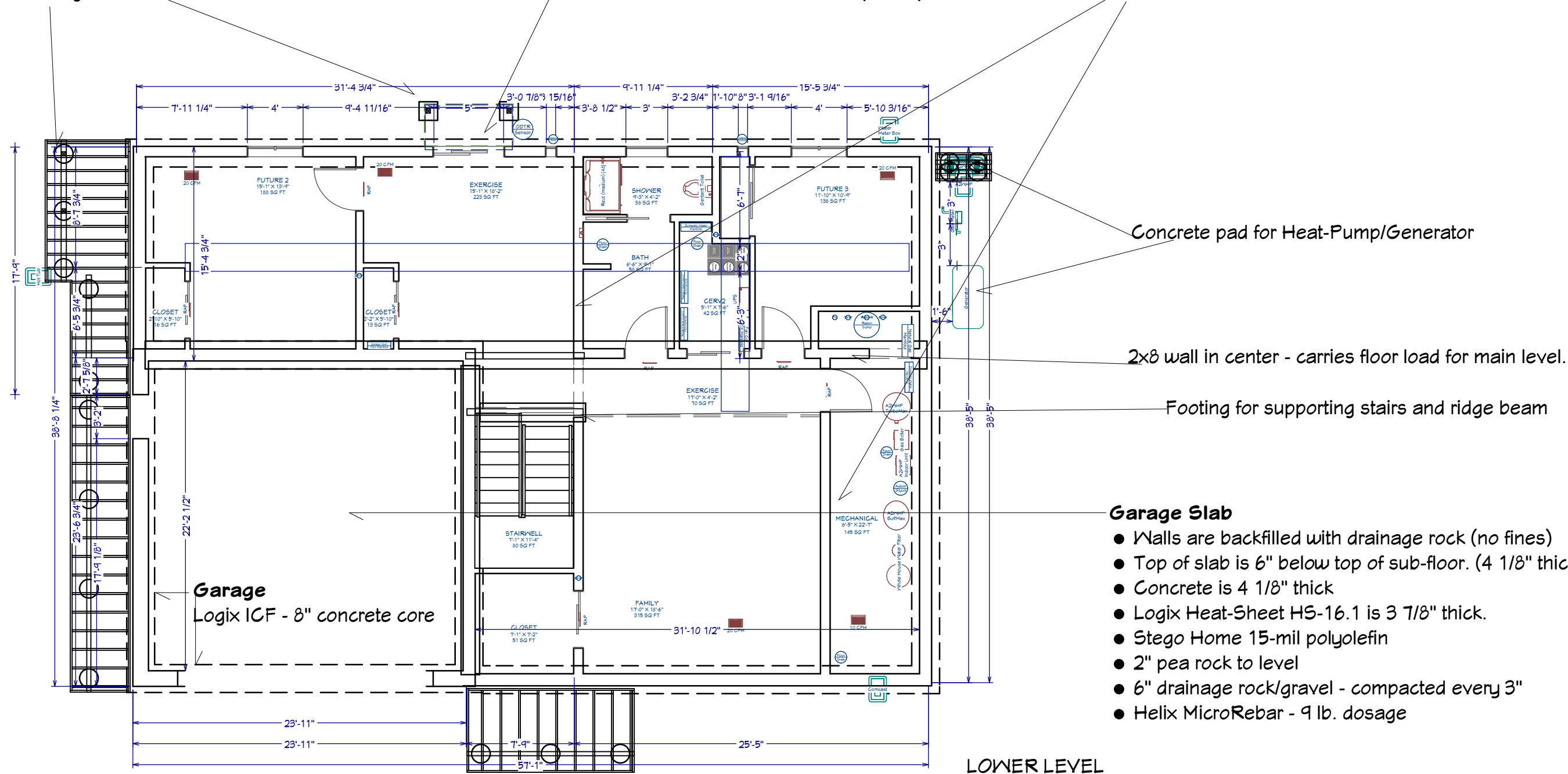
Exterior structures

- BigFoot forms

Walk-Out

Frost Protected Shallow Foundation (FPSF)

Interior 2x8 shear wall (wall panels)



Concrete pad for Heat-Pump/Generator

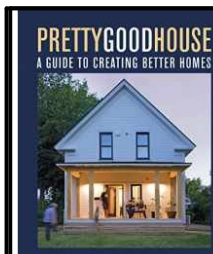
2x8 wall in center - carries floor load for main level.

Footing for supporting stairs and ridge beam

Garage Slab

- Walls are backfilled with drainage rock (no fines)
- Top of slab is 6" below top of sub-floor. (4 1/8" thick)
- Concrete is 4 1/8" thick
- Logix Heat-Sheet HS-16.1 is 3 7/8" thick.
- Stego Home 15-mil polyolefin
- 2" pea rock to level
- 6" drainage rock/gravel - compacted every 3"
- Helix MicroRebar - 9 lb. dosage

LOWER LEVEL



SCALE:

1/8"

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ICF Footings

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Create 24" x 48" ICF taper top forms

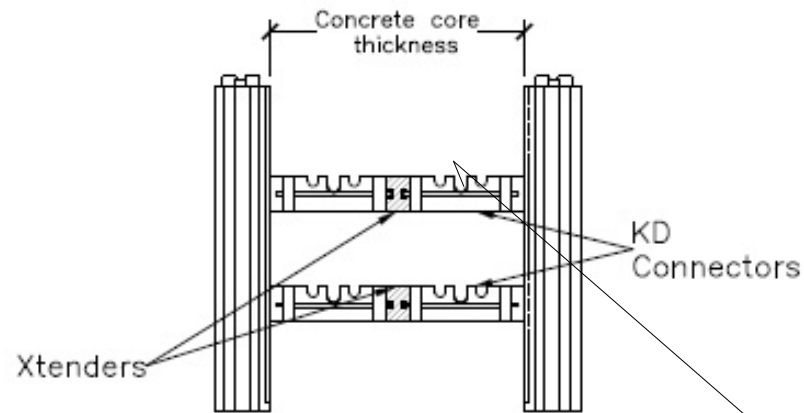
2 - 12" KD Connector Size

1 Xtender for the two KD connectors

CONCRETE CORE THICKNESS		KD Connector Size			
		6.25" (159mm)	8" (203mm)	10" (254mm)	12" (305mm)
KD Connector Size	4" (102mm)	10.25" (260mm)	12" (305mm)	14" (356mm)	16" (406mm)
	6.25" (159mm)	12.5" (318mm)	14.25" (362mm)	16.25" (413mm)	18.25" (464mm)
	8" (203mm)	14.25" (362mm)	16" (406mm)	18" (457mm)	20" (508mm)
	10" (254mm)	16.25" (413mm)	18" (457mm)	20" (508mm)	22" (559mm)
	12" (305mm)	18.25" (464mm)	20" (508mm)	22" (559mm)	24" (610mm)

NOTES:

- Table lists concrete core thickness using two KD Connectors with one Xtender.



**SIDE ELEVATION
(with Xtenders)**

Per Manufacturer
Place two horizontal #5 rebar in ICF form.
Lap all joints minimum 24-inches.

Form corners with Loctite PL-300
Prinsco HD Form for the outside.

Taper top has a smooth top for the footing.

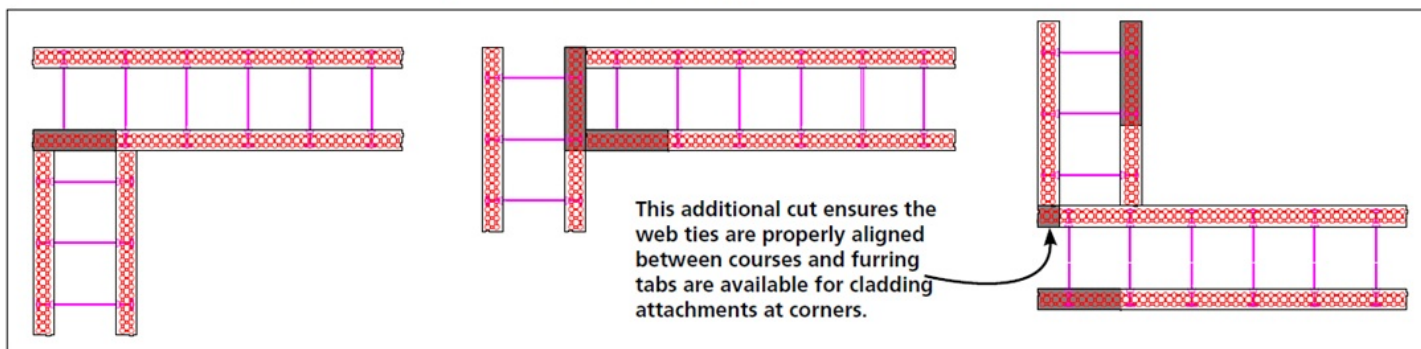
Face the taper inward.

Level forms +/- 1/4"

Place tape over the top of the ICF form - this allows easy removal of concrete.



Cut the shaded sections shown using the forms as a cutting guide.

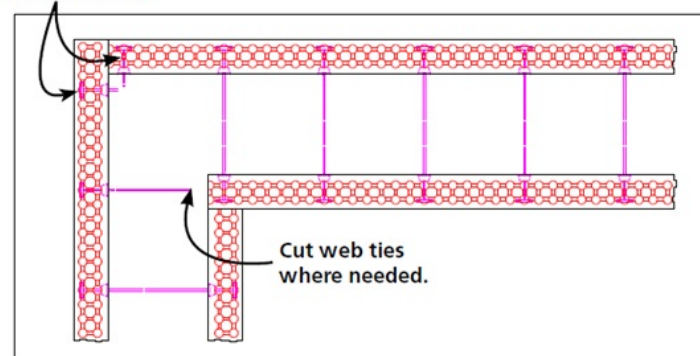


Install the cut forms. Temporarily secure the corner forms with construction tape.

Furring tabs at corners.

Right-hand Corner form created with Standard forms.

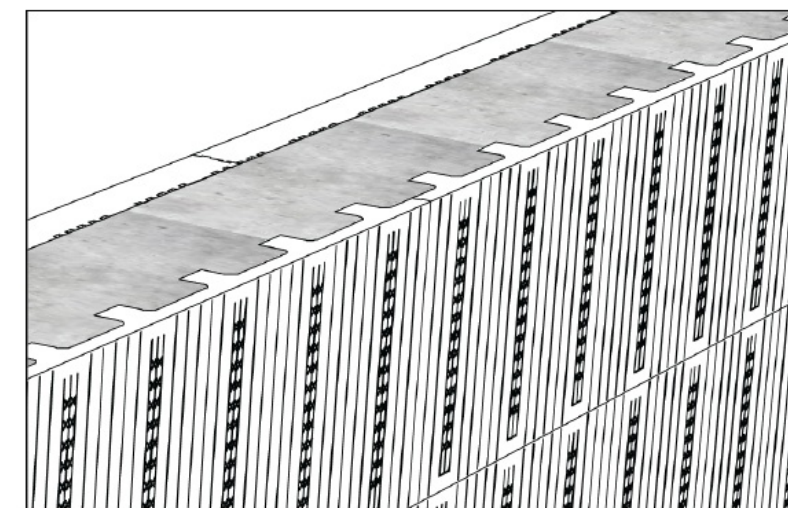
Use the cutting pattern above in mirror image to create a left-hand corner form.



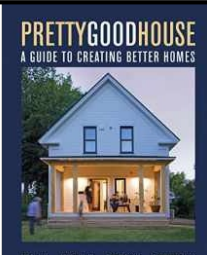
5000 PSI concrete

Concrete slump should 5-inch to 6-inches.

Use a vibrator - fast-in/slow-out to consolidate concrete.



STEP 2: Trowel concrete flush with top of forms, or inset as required. Be sure to check for level.



SCALE:
1/8"

SHEET TITLE:
Footing Design

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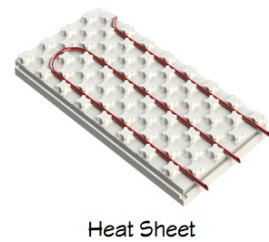
Prinsco ProForm HD Footing Form Drain Vent (with sock)

Design Intent: Drain tile and radon mitigation.

- Concrete footing is 24" wide x 12" deep
- Attach to Logix ICF forms (with extenders)
- Stays in place after footings are poured.
- Soil SM - 454C Mahtomedi Load Sand - 2000 PSF / 14 PSI
- Washington Count, Snow Load per MSBC rules 1303.1600 is 50 PSF
- Grade #60, #4 horizontal rebar - lap all joints minimum 30"
- Helix Micro-Rebar - Dosage of 26 lbs per cubic yard
- Level footings +/- 1/4"
- Protecto-Seal capillary break
- Place gravel prior to pouring concrete.

Garage Slab (Heated)

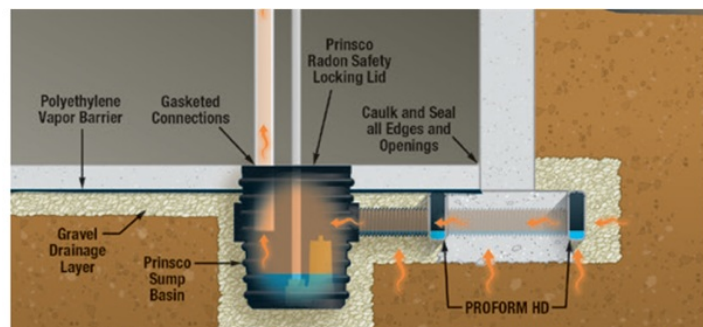
- 6" Gravel
- 2" Pea Rock
- Stego-Home 15-mil below slab vapor barrier
- Logix Heat-Sheet R-16 Type 9 with interlocking edges.
- Install PEX circuits per LoopCAD drawing.



Heat Sheet

ProForm HD Sump Basin

- Locate in mechanical room
- Vent through mechanical chase
- Subterra-Plus has vapor barrier.



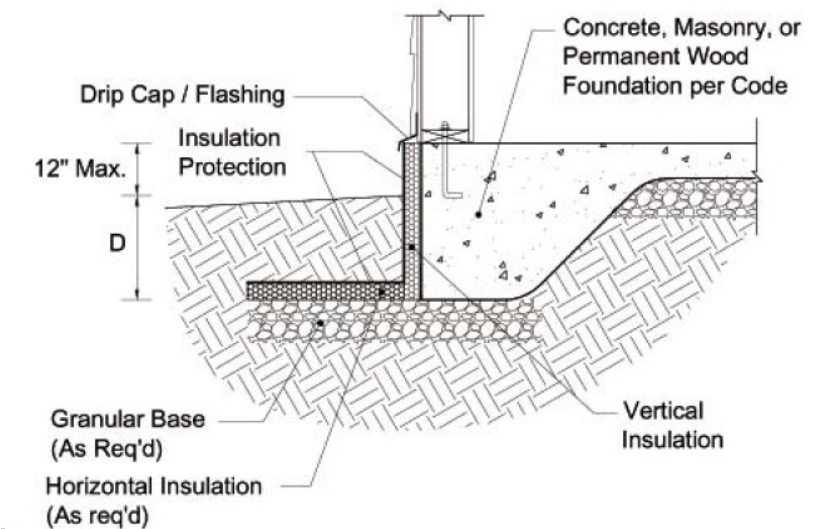
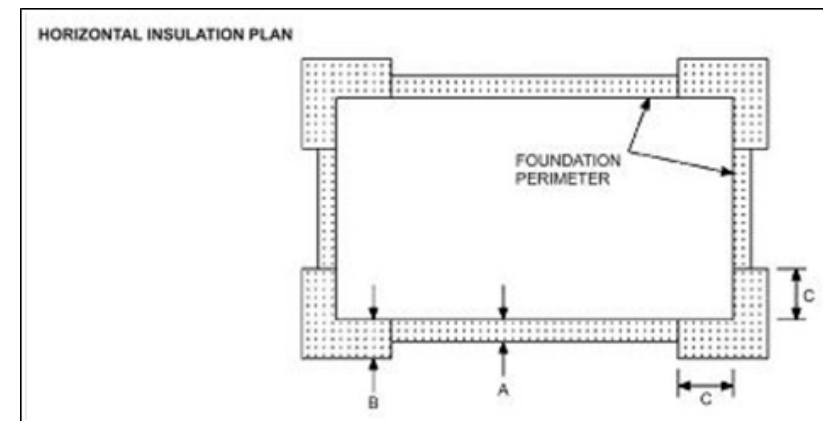
Frost Protected Shallow Foundation (FPSF) - Walkout (North side)

- Washington County, Frost depth per MSBC rules 1303.1600 is 3' 6"
- Washington Count, Snow Load per MSBC rules 1303.1600 is 50 PSF
- Air Freezing Index (AFI): 3000
- Mean Average Temperature: 40.8F

Subterra Plus (GPS/Neopor) is rated R5.4 at 25F.

It is covered with a polypropylene woven fabric and is air/vapor/radon barrier.

Physical Properties		Subterra® Plus 16" Type II (Type 2)	Subterra® Plus 20" Type XIII (Type 3)	Subterra® Plus 25" Type IX (Type 3)	Subterra® Plus 30" Type IX (Type 3)	Subterra® Plus 40" Type XIV (Type 3)
COMPLIANCE		ASTM C578 [®] (CAN/ULC S701 [®])				
THERMAL RESISTANCE ^a	75°F (24°C)	ASTM C518 CAN/ULC S701 R-5 (0.88 RSI)				
	40°F (4.4°C)	R-5.2 (RSI 0.92)	R-5.3 (RSI 0.93)			
PHYSICAL	Compressive Resistance at 10% def., Min.	ASTM D1621 16 psi (110 kPa)	20 psi (140 kPa)	25 psi (172 kPa)	30 psi (210 kPa)	40 psi (276 kPa)
	Flexural Resistance Min.	ASTM C203 70 psi (483 kPa)				
	Dimensional Stability Max.	ASTM D2126 2%				



Dimension	Code	Specific	Description
A	12.00	24.0	North walk-out side
B	24.00	24.0	North walk-out side
C	40.00	48.0	North walk-out side
D	16.00	16.0	Footing Depth is 16" below grade
R _v	7.80	14.0	Logix ICF block - 2.75 of Neopor
R _H	15.30	20.0	4" of Logix Subterra
R _f		18.0	2" and 1 1/2" Logix Subterra-Plus



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Grading requirements

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Finished grade is to be 7' above footer height to meet AWC PWF-2021 Design specification.



GRADING VIEW