

3 15 2026 draft Primitive Hut System Specifications by Pi-Des

General notes: Components have a zero plastics goal, and are to hand assemble without special tools. All 3d printed components to be porous when practical, with approx 50% voids within a self-reinforcing structure to reduce system weight.

1. Surface Interface (footing). Screw leveling, fire-resistant, non-friable (N1) component, or welded steel component, rubber boot, see model for geometry (SMFG) Quantity: 3
2. Surface Interface Float. Quantity 3.
3. Primary vertical tube (column), 4" diameter, 0.216"+ wall thickness, 7.5' long, N1 component, or 4" diameter, 7.5' long solid wood member (species, density). Quantity: 3.
4. 1/4" diameter woven SS Cable Bracing for primary structure level 1, approx 90 linear feet (confirm with model).
5. Porous N1 Floor Rails. 0.216" wall thickness, 1.5" wide, 6" tall, 11'-9" long. Quantity: 3.
6. Porous N1 floor rated 1/3 Deck component. 8'-7" plan radius edge one side, SMFG. Quantity: 3.
7. Perimeter N1 flexible profiled Bumper component. 2" tall, X' long SMFG. Quantity: 3.
8. Level 2, Tension Membrane porous surface, floor rated, 12" maximum deflection under human load, (assume 7 humans max at 150lbs each) X sf, SFMG. Quantity: 1.
9. N1 Ladder, 10'-9" tall, 18" wide, 1-1/4" diameter tubes, SMFG 0.216" wall thickness. Quantity 1.
10. Triage Field Porch component assembly. Porous N1 skin, N1 legs, Kevlar floats, water capture, water filter system, water tanks, valve, drain plug. Quantity: 1.
11. Electric Heat Element Mount, with thermal break mounting hardware, SMFG. Quantity: 1.
12. Electric Heat Element, PV with battery system, by-pass AC connection, alternate manual bicycle crank drive/charge. Quantity: 1
13. Stove, camping type, steel, wood burning, high efficiency, and insulated vent pipe, terminates 24" above exterior surface of PH1. Thermal break mounting hardware. Fire resistant pad, 3' radius.
14. Perimeter Sprinkler System, N1 tubing, N1 T shape (two way) emitters. System flush drain. SMFG.
15. Support Arms, N1, fire resistant coating, for sprinkler system. SMFG. Quantity: 6
16. Water Capture Membrane, food grade, washable, woven fabric.

SMFG.

17. Water Filtration System, gravity based R.O.
18. N1 Collapsible Water Tank initial, 4 gal.
19. N1 Collapsible Water Tank, post filtration. 4 gal.
20. N1 Collapsible Overflow Tank. 4 gal.
21. N1 Collapsible Shower Tank, black, 4 gal, spherical w/ tether mount, rubber hose, wand emitter.
22. On demand WH, PV element w/ battery storage.
23. N1 Shower Screen Rail. Circular in plan. Radius 2'-6"
24. Shower Privacy Screen, woven Kevlar fabric.
25. N1 Collapsible Sink Water Tank, 4 gallon. Quantity: 2
26. N1 Enclosure Screen Tracks, curving, SMFG, X LF.
27. Security Screen, SS mesh, 7' tall SMFG, openings less than 3" in dia.
28. Thermal Kevlar Screen, 7' tall SMFG.
29. Privacy Screen, dark gray Kevlar fabric, X weight, 7' tall, SMFG.
30. Gear Suspension Sacks. Qty: 8
31. 3 Person Tent, rated to -5dF.
32. Composting Toilet.
33. Kitchen Module, N1 cabinet, food grade prep surface, SMFG.
34. Catwalk, porous N1, SMFG.
35. Lightning Rod 25' tall, and hardware.
36. N1 Roof Access Ring and hardware.
37. Triage Field Spherical Water System for earth based use. Tanks, (3) 5 gallon, emitter, manual control, thermal switch. Water supply hookup to external water source.
38. Triage Field System (future tech, not included).
39. SS Eye Screw Anchors, 18" length, x 3/8" diameter. Qty: 3
40. Fiberglass woven Tether, 3/8" diameter cables, and (spec) hardware.
41. Portable PV System, 2K watt array, 12V battery.
42. Wind Harvest Screen, X SF.
43. Grounding Rod and Cables.
44. Backup Power Generator, x hp, and docking charging station.
45. System Storage Bags. Kevlar, Number and size tbd. Color: Bright Orange.
46. Rechargeable/hand crank LED Lighting Pucks with clips, quantity 6-
47. Misc Clips/Clamps, N1. 49.1/2" diameter Rubber Hose 20' long with SS spray head, ADA lever control.
48. Non toxic UV Coating in SS 1 quart spray bottles.
49. Alum Repair Tape for membrane tears. 1 roll, 50'.
50. First Aid Kit in red backpack with work gloves. By others.
51. Assembly Sequence Diagram on titanium metal plate, rounded

- edges. Approx 4" x 8" X gauge, with dog chain.
- 52. Roof-top emergency Red Flasher Light, PV powered. Qty: 1.
 - 53. Level 2 Primary Support Tubes. 1.5" diameter x 4' x 0.216" wall thickness. Qty: 3.
 - 54. Level 2 Lateral Bracing. 3/8" diameter, Tubular N1 or fiberglass woven cable bracing for primary structure level 1, 90 linear feet (confirm with model).
 - 55. Roof Level Perimeter Tension Ring. N1, 3/8" dia. SMFG.
 - 56. Tether Point Clips, qty: 12
 - 57. Water Valves, qty: 6
 - 58. Gear Storage Compartment, 18" x 18" x 3'. Qty: 4.
 - 59. Food grade storage cabinet. SMFG. Qty: 1.
 - 60. Siren/Horn. Qty: 2.
 - 61. Grey Water Tanks (Qty: 2) and vent tubes, overflows, SMFG,
 - 62. Signal Lantern, Hand crank, Qty: 1
 - 63. Smoke Signal Device. Qty: 1
 - 64. Optional Level 1 Thermal Kevlar Screen, Not included.
 - 65. Optional Level 1 Track & Hardware, Not included.

© 2026 David Curtis, Portland Institute of Design