```mathematica
Bed[K_, ω_] :=
  Module[{t, r, XingsByArmpits, bends, faces, p, A, is},

   t = 1 - ω; r = t + t*;
   XingsByArmpits =
    List @@ PD[K] /. x : X[i_, j_, k_, l_] :>
       If[PositiveQ[x], X₊[-i, j, k, -l], X₋[-j, k, l, -i]];
   bends = Times @@ XingsByArmpits /.
     _[X][a_, b_, c_, d_] :> p_{a,-d} p_{b,-a} p_{c,-b} p_{d,-c};
   faces = bends //. p_{x__,y_} p_{y_,z__} :> p_{x,y,z};
   A = Table[0, Length@faces, Length@faces];
   Do[is = Position[faces, #][[1, 1]] & /@ List @@ x;

    A[[is, is]] += If[Head[x] === X₊,

       ({
        {-r, -t, 2t, t*},
        {-t*, 0, t*, 0},
        {2t*, t, -r, -t*},
        {t, 0, -t, 0}
       }), ({
        {r, -t, -2t*, t*},
        {-t*, 0, t*, 0},
        {-2t, t, r, -t*},
        {t, 0, -t, 0}
       })],

    {x, XingsByArmpits}];

   MatrixSignature[A]]
```