$$\mathcal{S}'_{\mathrm{ds}}[\![\texttt{begin } D_V\ S\ \texttt{end}]\!]env_V\ sto = \mathcal{S}'_{\mathrm{ds}}[\![S]\!]env'_V\ sto'$$
$$\text{where } \mathcal{D}^{\mathrm{V}}_{\mathrm{ds}}[\![D_V]\!](env_V,\ sto) = (env'_V,\ sto')$$

$$\mathcal{S}'_{\mathrm{ds}}[\![x{:=}a]\!]env_V\ sto = sto[l \mapsto \mathcal{A}[\![a]\!](\text{lookup } env_V\ sto)]$$
$$\text{where } l = env_V\ x$$

$$\mathcal{S}'_{\mathrm{ds}}[\![\texttt{skip}]\!]env_V = \mathrm{id}$$

$$\mathcal{S}'_{\mathrm{ds}}[\![S_1\ ;\ S_2]\!]env_V = (\mathcal{S}'_{\mathrm{ds}}[\![S_2]\!]env_V) \circ (\mathcal{S}'_{\mathrm{ds}}[\![S_1]\!]env_V)$$

$$\mathcal{S}'_{\mathrm{ds}}[\![\texttt{if } b \texttt{ then } S_1 \texttt{ else } S_2]\!]env_V =$$
$$\mathrm{cond}(\mathcal{B}[\![b]\!] \circ (\text{lookup } env_V),\ \mathcal{S}'_{\mathrm{ds}}[\![S_1]\!]env_V,\ \mathcal{S}'_{\mathrm{ds}}[\![S_2]\!]env_V)$$

$$\mathcal{S}'_{\mathrm{ds}}[\![\texttt{while } b \texttt{ do } S]\!]env_V = \mathrm{FIX}\ F$$
$$\text{where } F\ g = \mathrm{cond}(\mathcal{B}[\![b]\!] \circ (\text{lookup } env_V),\ g \circ (\mathcal{S}'_{\mathrm{ds}}[\![S]\!]env_V),\ \mathrm{id})$$

$$\mathcal{D}^{\mathrm{V}}_{\mathrm{ds}}[\![\texttt{var } x := a;\ D_V]\!](env_V,\ sto) =$$
$$\mathcal{D}^{\mathrm{V}}_{\mathrm{ds}}[\![D_V]\!](env_V[x \mapsto l],\ sto[l \mapsto v][\mathrm{next} \mapsto \mathrm{new}\ l])$$
$$\text{where } l = sto\ \mathrm{next} \text{ and } v = \mathcal{A}[\![a]\!](\text{lookup } env_V\ sto)$$

$$\mathcal{D}^{\mathrm{V}}_{\mathrm{ds}}[\![\varepsilon]\!] = \mathrm{id}$$

$$\mathcal{D}^{\mathrm{P}}_{\mathrm{ds}}[\![\texttt{proc } p \texttt{ is } S;\ D_P]\!]env_V\ env_P = \mathcal{D}^{\mathrm{P}}_{\mathrm{ds}}[\![D_P]\!]env_V\ (env_P[p \mapsto g])$$

where $g = \mathcal{S}_{\mathrm{ds}}[\![S]\!]env_V\ env_P$

$$\mathcal{D}^{\mathrm{P}}_{\mathrm{ds}}[\![\varepsilon]\!]env_V = \mathrm{id}$$

$$\mathcal{S}_{\mathrm{ds}}[\![x{:=}a]\!]env_V\ env_P\ sto = sto[l \mapsto \mathcal{A}[\![a]\!](\mathrm{lookup}\ env_V\ sto)]$$

where $l = env_V\ x$

$$\mathcal{S}_{\mathrm{ds}}[\![\texttt{skip}]\!]env_V\ env_P = \mathrm{id}$$

$$\mathcal{S}_{\mathrm{ds}}[\![S_1\ ;\ S_2]\!]env_V\ env_P = (\mathcal{S}_{\mathrm{ds}}[\![S_2]\!]env_V\ env_P) \circ (\mathcal{S}_{\mathrm{ds}}[\![S_1]\!]env_V\ env_P)$$

$$\mathcal{S}_{\mathrm{ds}}[\![\texttt{if } b \texttt{ then } S_1 \texttt{ else } S_2]\!]env_V\ env_P =$$
$$\mathrm{cond}(\mathcal{B}[\![b]\!] \circ (\mathrm{lookup}\ env_V),\ \mathcal{S}_{\mathrm{ds}}[\![S_1]\!]env_V\ env_P,$$
$$\mathcal{S}_{\mathrm{ds}}[\![S_2]\!]env_V\ env_P)$$

$$\mathcal{S}_{\mathrm{ds}}[\![\texttt{while } b \texttt{ do } S]\!]env_V\ env_P = \mathrm{FIX}\ F$$

where $F\ g = \mathrm{cond}(\mathcal{B}[\![b]\!] \circ (\mathrm{lookup}\ env_V),$
$$g \circ (\mathcal{S}_{\mathrm{ds}}[\![S]\!]env_V\ env_P), \mathrm{id})$$

$$\mathcal{S}_{\mathrm{ds}}[\![\texttt{begin } D_V\ D_P\ S \texttt{ end}]\!]env_V\ env_P\ sto = \mathcal{S}_{\mathrm{ds}}[\![S]\!]env'_V\ env'_P\ sto'$$

where $\mathcal{D}^{\mathrm{V}}_{\mathrm{ds}}[\![D_V]\!](env_V, sto) = (env'_V, sto')$

and $\mathcal{D}^{\mathrm{P}}_{\mathrm{ds}}[\![D_P]\!]env'_V\ env_P = env'_P$

$$\mathcal{S}_{\mathrm{ds}}[\![\texttt{call } p]\!]env_V\ env_P = env_P\ p$$