$$F(x) = U(x) \wedge S(x) \wedge W(x) \wedge E(x)$$

$$U(x) = \left(\bigwedge_{\substack{0 \le i,j \le p(|x|) \\ \sigma \neq \sigma'}} (\bar{x}_{ij\sigma} \vee \bar{x}_{ij\sigma'}) \right) \wedge$$
$$\left(\bigwedge_{\substack{0 \le i \le p(|x|) \\ j \neq j' \text{ or } l \neq l'}} (\bar{y}_{ijl} \vee \bar{y}_{ij'l'}) \right) \wedge$$
$$\left(\bigwedge_{\substack{0 \le i \le p(|x|) \\ 1 \le l \le |\mathbb{A}|}} (\bar{y}_{i0l} \wedge \bar{y}_{i,p(|x|)+1,l}) \right) \wedge$$
$$\left(\bigwedge_{0 \le i \le p(|x|)} \left(\left(\bigwedge_{1 \le j \le p(|x|)} \bigvee_{\sigma \in \Sigma} x_{ij\sigma} \right) \wedge \bigvee_{\substack{1 \le j \le p(|x|) \\ 1 \le l \le |\mathbb{A}|}} y_{ijl} \right) \right)$$

$$F(x) = U(x) \wedge S(x) \wedge W(x) \wedge E(x)$$

$$S(x) = \left(\bigwedge_{j=1}^{|x|} x_{0jx(j)} \right) \wedge x_{0,|x|+1,\$} \wedge y_{011}$$

$$E(x) = \bigvee_{j=1}^{p(|x|)} y_{p(|x|),j,|\mathbb{A}|}$$

$$F(x) = U(x) \wedge S(x) \wedge W(x) \wedge E(x)$$

$$W(x) = W'(x) \bigwedge_{\substack{0 \le i < p(|x|) \\ 1 \le j \le p(|x|) \\ 1 \le l \le |\mathbb{A}|}} W_{ijl}$$

$l :$ if σ then $(\sigma'; o; l')$

$$\begin{aligned} W_{ijl} =& (\bar{x}_{ij\sigma} \vee \bar{y}_{ijl} \vee x_{i+1,j,\sigma'}) \wedge (\bar{x}_{ij\sigma} \vee \bar{y}_{ijl} \vee y_{i+1,j+o,l'}) \wedge \\ & \bigwedge_{\tau \neq \sigma} ((\bar{x}_{ij\tau} \vee \bar{y}_{ijl} \vee x_{i+1,j,\tau}) \wedge (\bar{x}_{ij\tau} \vee \bar{y}_{ijl} \vee y_{i+1,j,l+1})) \end{aligned}$$

$$W_{ij|\mathbb{A}|} = (\bar{y}_{ij|\mathbb{A}|} \vee y_{i+1,j,|\mathbb{A}|})$$

$$W'(x) = \bigwedge_{\substack{0 \le i \le p(|x|) \\ \sigma \in \Sigma \\ 1 \le l \le |\mathbb{A}| \\ j \neq j'}} (\bar{x}_{ij\sigma} \vee \bar{y}_{ij'l} \vee x_{i+1,j,\sigma})$$