CTE-OPEN

x = branch constraints

x = node constraints

$$\exists_{\mathbf{A}\in\mathbf{O}} \mathbf{A}_2 \,.\, \exists_{\mathbf{f}\in\mathbf{F}} open_{\mathbf{f},2} \,.\, \forall b_2 \,.\, \exists_{\mathbf{A}\in\mathbf{O}} \mathbf{A}_1 \,.\, \exists_{\mathbf{f}\in\mathbf{F}} open_{\mathbf{f},1} \,.\, \forall b_1 \,.\, \exists_{\mathbf{A}\in\mathbf{O}} \mathbf{A}_0 \,.\, \exists_{\mathbf{f}\in\mathbf{F}} open_{\mathbf{f},0} \,.$$

$$\bigwedge_{\mathbf{i}\in[0..\mathbf{depth}]} \bigwedge_{\mathbf{A}\in\mathbf{O}} \left(\mathbf{A_i} \Rightarrow \bigwedge_{\mathbf{f}\in\mathbf{Cond_A}} open_{\mathbf{f},\mathbf{i}} \right) \qquad 1$$

$$\wedge \left(\left(\bigwedge_{\mathbf{i}\in[1..\mathbf{depth}]} b_{\mathbf{i}} \right) \Rightarrow \bigwedge_{\mathbf{f}\in\mathbf{G}} \left(open_{\mathbf{f},0} \vee \bigvee_{\substack{\mathbf{A}\in\mathbf{O} \\ \mathbf{f}\in\mathbf{Add_A}}} \mathbf{A}_0 \right) \right) \qquad 2$$

$$\wedge \left(\left(\bigwedge_{\mathbf{i}\in[1..\mathbf{depth}]} \neg b_{\mathbf{i}} \right) \Rightarrow \bigwedge_{\mathbf{f}\in\mathbf{F}\setminus\mathbf{I}} \neg open_{\mathbf{f},0} \right) \qquad 3$$

$$\wedge \bigwedge_{\mathbf{i}\in[1..\mathbf{depth}]} \bigwedge_{\mathbf{f}\in\mathbf{F}} \left(\left(open_{\mathbf{f},\mathbf{i}} \wedge \neg b_{\mathbf{i}} \wedge \bigwedge_{\mathbf{j}\in[1..\mathbf{i}-1]} b_{\mathbf{j}} \right) \Rightarrow \left(open_{\mathbf{f},0} \vee \bigvee_{\substack{\mathbf{A}\in\mathbf{O} \\ \mathbf{f}\in\mathbf{Add_A}}} \mathbf{A}_0 \right) \right) \qquad 4$$

$$\wedge \bigwedge_{\mathbf{i}\in[1..\mathbf{depth}]} \bigwedge_{\mathbf{f}\in\mathbf{F}} \left(\left(open_{\mathbf{f},0} \wedge b_{\mathbf{i}} \wedge \bigwedge_{\mathbf{j}\in[1..\mathbf{i}-1]} \neg b_{\mathbf{j}} \right) \Rightarrow \left(open_{\mathbf{f},\mathbf{i}} \vee \bigvee_{\substack{\mathbf{A}\in\mathbf{O} \\ \mathbf{f}\in\mathbf{Add_A}}} \mathbf{A}_{\mathbf{i}} \right) \right) \qquad 5$$

$$\wedge \bigwedge_{\mathbf{i}\in[1..\mathbf{depth}]} \bigwedge_{\mathbf{f}\in\mathbf{F}} \left(\left(open_{\mathbf{f},\mathbf{i}} \wedge \neg b_{\mathbf{i}} \wedge \bigwedge_{\mathbf{j}\in[1..\mathbf{i}-1]} b_{\mathbf{j}} \right) \Rightarrow \bigwedge_{\substack{\mathbf{A}\in\mathbf{O} \\ \mathbf{f}\in\mathbf{Del_A}}} \neg \mathbf{A}_0 \right) \qquad 6$$

$$\wedge \bigwedge_{\mathbf{i}\in[1..\mathbf{depth}]} \bigwedge_{\mathbf{f}\in\mathbf{F}} \left(\left(open_{\mathbf{f},0} \wedge b_{\mathbf{i}} \wedge \bigwedge_{\mathbf{j}\in[1..\mathbf{i}-1]} \neg b_{\mathbf{j}} \right) \Rightarrow \bigwedge_{\substack{\mathbf{A}\in\mathbf{O} \\ \mathbf{f}\in\mathbf{Del_A}}} \neg \mathbf{A}_{\mathbf{i}} \right) \qquad 6$$

$$\wedge \bigwedge_{\mathbf{i}\in[0..\mathbf{depth}]} \bigwedge_{\mathbf{A}\in\mathbf{O}} \bigwedge_{\mathbf{f}\in(\mathbf{Add_A}\cup\mathbf{Cond_A})} \bigwedge_{\substack{\mathbf{B}\in\mathbf{O} \\ \mathbf{A}\neq\mathbf{B}\wedge\mathbf{f}\in\mathbf{Del_B}}} (\neg \mathbf{A}_{\mathbf{i}} \vee \neg \mathbf{B}_{\mathbf{i}}) \qquad 6$$