Conjunction Introduction
(∧ Intro)

$$P_1$$
$$\Downarrow$$
$$P_n$$
$$\vdots$$
$$\triangleright \quad P_1 \wedge \ldots \wedge P_n$$

Conjunction Elimination
(∧ Elim)

$$P_1 \wedge \ldots \wedge P_i \wedge \ldots \wedge P_n$$
$$\vdots$$
$$\triangleright \quad P_i$$

⊥ Introduction
(⊥ Intro)

$$P$$
$$\vdots$$
$$\neg P$$
$$\vdots$$
$$\triangleright \quad \bot$$

⊥ Elimination
(⊥ Elim)

$$\bot$$
$$\vdots$$
$$\triangleright \quad P$$

Identity Introduction
(= Intro)

$$\triangleright \quad n = n$$

Identity Elimination
(= Elim)

$$P(n)$$
$$\vdots$$
$$n = m$$
$$\vdots$$
$$\triangleright \quad P(m)$$

Disjunction Introduction
(∨ Intro)

$$P_i$$
$$\vdots$$
$$\triangleright \quad P_1 \vee \ldots \vee P_i \vee \ldots \vee P_n$$

Disjunction Elimination
(∨ Elim)

$$P_1 \vee \ldots \vee P_n$$
$$\vdots$$
$$P_1$$
$$\vdots$$
$$S$$
$$\Downarrow$$
$$P_n$$
$$\vdots$$
$$S$$
$$\vdots$$
$$\triangleright \quad S$$

Conditional Introduction
(→ Intro)

$$P$$
$$\vdots$$
$$Q$$
$$\triangleright \quad P \rightarrow Q$$

Conditional Elimination
(→ Elim)

$$P \rightarrow Q$$
$$P$$
$$\vdots$$
$$\triangleright \quad Q$$

Biconditional Introduction
(↔ Intro)

$$P$$
$$\vdots$$
$$Q$$
$$Q$$
$$\vdots$$
$$P$$
$$\triangleright \quad P \leftrightarrow Q$$

Biconditional Elimination
(↔ Elim)

$$P \leftrightarrow Q \ (\text{or } Q \leftrightarrow P)$$
$$\vdots$$
$$P$$
$$\vdots$$
$$\triangleright \quad Q$$

Universal Elimination
(∀ Elim)

$$\forall x\, S(x)$$
$$\vdots$$
$$\triangleright \quad S(c)$$

Universal Introduction
(∀ Intro)

$$\boxed{c}$$
$$\vdots$$
$$P(c)$$
$$\triangleright \quad \forall x\, P(x)$$

where c does not occur outside the subproof where it is introduced.

Negation Introduction
(¬ Intro)

$$P$$
$$\vdots$$
$$\bot$$
$$\triangleright \quad \neg P$$

Negation Elimination
(¬ Elim)

$$\neg\neg P$$
$$\vdots$$
$$\triangleright \quad P$$

Reiteration
(Reit)

$$P$$
$$\vdots$$
$$\triangleright \quad P$$

Existential Introduction
(∃ Intro)

$$S(c)$$
$$\vdots$$
$$\triangleright \quad \exists x\, S(x)$$

Existential Elimination
(∃ Elim)

$$\exists x\, S(x)$$
$$\vdots$$
$$\boxed{c} \quad S(c)$$
$$\vdots$$
$$Q$$
$$\triangleright \quad Q$$

where c does not occur outside the subproof where it is introduced.