$$2. \ \vdash \neg \Big[\neg \Big(\{Q \supset [(R \land T) \lor (S \lor L)]\} \supset \{ [(T \land M) \supset (R \supset M)] \lor [(Q \land Q) \supset (Q \land S)] \} \Big) \land \neg \{ [(Z \lor R) \lor (Y \land P)] \lor \neg W \} \Big]$$

 $1. \ \vdash \Big(\{Q\supset [(R\land T)\lor (S\lor L)]\}\supset \{[(T\land M)\supset (R\supset M)]\lor [(Q\land Q)\supset (Q\land S)]\}\Big)\lor \{[(Z\lor R)\lor (Y\land P)]\lor \neg W\}$

$$3. \neg \Big(\{Q \supset [(R \land T) \lor (S \lor L)] \} \supset \{ [(T \land M) \supset (R \supset M)] \lor [(Q \land Q) \supset (Q \land S)] \} \Big) \land \neg \{ [(Z \lor R) \lor (Y \land P)] \lor \neg W \} \vdash Q \\ \neg \Big(\{Q \supset [(R \land T) \lor (S \lor L)] \} \supset \{ [(T \land M) \supset (R \supset M)] \lor [(Q \land Q) \supset (Q \land S)] \} \Big) \land \neg \{ [(Z \lor R) \lor (Y \land P)] \lor \neg W \} \vdash \neg Q \Big\}$$

 $\neg \Big(\{Q \supset [(R \land T) \lor (S \lor L)] \} \supset \{ [(T \land M) \supset (R \supset M)] \lor [(Q \land Q) \supset (Q \land S)] \} \Big), \neg \{ [(Z \lor R) \lor (Y \land P)] \lor \neg W \} \vdash \neg Q = \{ (Q \land C) \land (Q \land C) \}$

 $4. \neg \Big(\{Q\supset [(R\wedge T)\vee (S\vee L)]\}\supset \{[(T\wedge M)\supset (R\supset M)]\vee [(Q\wedge Q)\supset (Q\wedge S)]\}\Big), \neg \{[(Z\vee R)\vee (Y\wedge P)]\vee \neg W\}\vdash Q$

- $5. \ \ Q\supset [(R\land T)\lor (S\lor L)], \neg\{[(T\land M)\supset (R\supset M)]\lor [(Q\land Q)\supset (Q\land S)]\}, \neg\{[(Z\lor R)\lor (Y\land P)]\lor \neg W\}\vdash Q$ $Q\supset [(R\land T)\lor (S\lor L)], \neg\{[(T\land M)\supset (R\supset M)]\lor [(Q\land Q)\supset (Q\land S)]\}, \neg\{[(Z\lor R)\lor (Y\land P)]\lor \neg W\}\vdash \neg Q$ $6. \ \ Q\supset [(R\land T)\lor (S\lor L)], \neg[(T\land M)\supset (R\supset M)], \neg[(Q\land Q)\supset (Q\land S)], \neg\{[(Z\lor R)\lor (Y\land P)]\lor \neg W\}\vdash Q$
- 7. $Q \supset [(R \land T) \lor (S \lor L)], T \land M, \neg(R \supset M), \neg[(Q \land Q) \supset (Q \land S)], \neg\{[(Z \lor R) \lor (Y \land P)] \lor \neg W\} \vdash Q$ $Q \supset [(R \land T) \lor (S \lor L)], T \land M, \neg(R \supset M), \neg[(Q \land Q) \supset (Q \land S)], \neg\{[(Z \lor R) \lor (Y \land P)] \lor \neg W\} \vdash \neg Q$

 $Q\supset [(R\land T)\lor (S\lor L)], \neg [(T\land M)\supset (R\supset M)], \neg [(Q\land Q)\supset (Q\land S)], \neg \{[(Z\lor R)\lor (Y\land P)]\lor \neg W\}\vdash \neg Q$

 $Q\supset [(R\wedge T)\vee (S\vee L)], T, M, \neg (R\supset M), \neg [(Q\wedge Q)\supset (Q\wedge S)], \neg \{[(Z\vee R)\vee (Y\wedge P)]\vee \neg W\}\vdash \neg Q$ $9. \ \ Q\supset [(R\wedge T)\vee (S\vee L)], T, M, R, \neg M, \neg [(Q\wedge Q)\supset (Q\wedge S)], \neg \{[(Z\vee R)\vee (Y\wedge P)]\vee \neg W\}\vdash Q$

8. $Q \supset [(R \land T) \lor (S \lor L)], T, M, \neg (R \supset M), \neg [(Q \land Q) \supset (Q \land S)], \neg \{[(Z \lor R) \lor (Y \land P)] \lor \neg W\} \vdash Q$

- 9. $Q \supset [(R \land T) \lor (S \lor L)], T, M, R, \neg M, \neg [(Q \land Q) \supset (Q \land S)], \neg \{[(Z \lor R) \lor (Y \land P)] \lor \neg W\} \vdash Q$ $Q \supset [(R \land T) \lor (S \lor L)], T, M, R, \neg M, \neg [(Q \land Q) \supset (Q \land S)], \neg \{[(Z \lor R) \lor (Y \land P)] \lor \neg W\} \vdash \neg Q$
- 10. $M \vdash M$ $\neg M \vdash \neg M$