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Specially, $T_{p_1}W' \cap W$ is in $\mathbb{P}^2$.
Recall that if $l \in \tau(W) \cap \sigma_{n-2,n-3}$, & l passes p_1,
$l \subset T_{p_1}W' \cap W$. $\Rightarrow$ $T_{p_1}W' \cap W = \{$ two lines $\}$
for, l is an irreducible component of $T_{p_1}W' \cap W$
so to have deg 2. the rest should be deg 1
subvariety of $\mathbb{P}^2$ which is isomorphic to $\mathbb{P}^1$, see
p174. $\Rightarrow$ $T_{p_1}W' \cap W = \{$ two lines $\}$.
Suppose $l \not\subset T_{p_1}W' \cap W$ $l \in \tau(W) \cap \sigma_{n-2,n-3}$
Suppose $T_{p_1}W' \cap W$ is a curve of deg 2.
Let $\mathbb{C}$ be an irreducible nondegenerate curve of deg 2
$\Rightarrow$ $\mathbb{C}$ must be the rational normal curve.
which is smooth. (See p 178).
But because of p_1, $T_{p_1}W' \cap W$ is singular.

Proof of $T_{p_1}W' \cap W = \{$ two lines $\}$.
Let $T_{p_1}W' \cap W = V$. $V^* = V_1 \cup \cdots \cup V_e$ where V_i's are
connected components. $\Rightarrow$ Each $\overline{V_i}$ is analytic
subvariety in $S \cong \mathbb{P}^3$, in particular, in $\mathbb{P}^2 \cong T_{p_1}W'$.
If $\overline{V_1}$ is degenerate, $\overline{V_1} \subset \mathbb{P}^1$. $\Rightarrow$ $\overline{V_1} = \mathbb{P}^1$.
If $\overline{V_1}$ is nondegenerate, of deg 1, then $\overline{V_1} = \mathbb{P}^1$
by 174.
If $\overline{V_1}$ is nondegenerate, irreducible curve of deg 2,
then $\overline{V_1}$ is the rational normal curve by p179.
But this is impossible, since $V = \overline{V_1}$ and the
rational normal curve is smooth, while V is
singular because of p_1.
Thus each $\overline{V_i}$ must be $\mathbb{P}^1$, and so, because
of degree count, $V = \mathbb{P}^1 \cup_{p_1} \mathbb{P}^1$, since V must be
singular, $\mathbb{P}^1 \cap \mathbb{P}^1 \ni p_1$.