where $<x.y>$ is the line containing x & y.

$\Rightarrow \dim(<x,y> \cap M) = 1$ or 0.

(i) $\dim(H \cap M)_s = 0$.

$\Rightarrow (H \cap M)_s$ is a set of finite points. i.e

$\Rightarrow (H \cap M)_s = \{a_1, a_2 \cdots a_l\}$.

For the generic hyperplane $H_i \ni x.y$,

$T_{a_i}M + T_{a_i}H_i = T_{a_i}\mathbb{P}^N$.

$\Rightarrow \{H\} \cap \{H_1\} \cap \cdots \cap \{H_n\}$ are the set of generic hyperplanes s. t the intersection with M is smooth.

(ii) $\dim(H \cap M)_s = 1$.

$\Rightarrow \dim(<x.y> \cap M) = 1 \Rightarrow <x.y> \subset M \Rightarrow <x,y> \cap M = \mathbb{P}^1$. $\Rightarrow (H \cap M)_s = \mathbb{P}^1$ since $\mathbb{P}^1$ is irreducible (see P?? Thick Whitney)

$\Rightarrow$ For each point $a \in <x.y>$, $\exists$ generic hyperplanes $\{H_a\}$ s. t $T_aH_a + T_aM = T_a\mathbb{P}^N$.

$\Rightarrow$ For a fixed $a \in <x.y>$, the generic hyplanes $\{H_a\} \cap \{H\} = \{H'\}$ have $(H' \cap M)_s \neq \mathbb{P}^1$.

$\Rightarrow \dim(H' \cap M)_s = 0 \Rightarrow$ We can apply the arguments as (i) again.

Here we used the facts that the generic hyperplanes form an open dense subset of $G(N-1, N)$, and a finite intersection of open dense subsets is again open dense.