Now we will describe the geometry of $\tilde{M}_x$ near E in more detail. First, we give local coordinates near E on $\tilde{M}_x$: let $z = (z_1, z_2, \cdots z_n)$ be local coordinates on $U \ni x$ with center x. Then

$$\tilde{U} = \pi^{-1}(U) = \{ (z, l) \in U \times \mathbb{P}^{n-1} ; z_i l_j = z_j l_i \};$$

and we set

$$\tilde{U}_i = (l_i \neq 0) \subset \tilde{U}.$$

In this way we obtain an open cover of the nbd $\tilde{U}$ of E, and in each open set $\tilde{U}_i$ we have local coordinates $Z(i)_j$:

$$Z(i)_j = \frac{l_j}{l_i} = \frac{z_j}{z_i}, \quad j \neq i,$$

and $\quad Z(i)_i = z_i$.

The map $\pi : \tilde{M}_x \longrightarrow M$ is given in $\tilde{U}_i$ by

$$(Z(i)_1, \cdots \underset{\|}{Z(i)_i}, \cdots Z(i)_n) \longmapsto (z_1, z_2 \cdots z_n)$$

$$\left(\frac{z_1}{z_i}, \frac{z_2}{z_i}, \cdots z_i, \cdots \frac{z_n}{z_i} \right) \qquad \Big(\overset{Z(i)_i}{\overset{\|}{(z_i)_i}} \cdot \overset{Z(i)_1}{\overset{\|}{(z_i)_1}}, \ (z_i)_i \cdot (z_i)_2, \cdots \overset{Z(i)_i}{\overset{\|}{(z_i)_i}}, \cdots \overset{(z_i)_i}{\overset{\|}{(z_i)_i}} \cdot \overset{Z(i)_n}{\overset{\|}{(z_i)_n}} \Big)$$

and the divisor E is given by

$$E = (Z(i)_i = 0) \quad \text{in } \tilde{U}_i .$$

「 If $Z(i)_i = z_i = 0$, since $z \in l$ $\Rightarrow$ all z_j's must be zero. $\Rightarrow$ $E = (Z(i)_i = 0)$ in $\tilde{U}_i$. 」

In $\tilde{U}_i \cap \tilde{U}_j$,

$$Z(i)_k = Z(j)_i^{-1} \cdot Z(j)_k,$$
$$Z(i)_j = Z(j)_i^{-1},$$
$$Z_i = Z(j)_i \cdot Z_j .$$