in Σ are all smooth rational curves, having by adjunction self-intersection -2 on Σ, we see from our discussion of isolated singularities of surfaces that the points of R are all ordinary double points of S.

Γ Let C be a smooth irreducible curve on Σ.
$\Rightarrow$ By the argument on P471,

$$g(C) = \frac{K_\Sigma \cdot C + C \cdot C}{2} + 1 .$$

Thus if $C \cong \mathbb{P}^1$ & $C \cdot C = -1$, i.e., Σ is minimal,

$$g(C) = 0 = \frac{0-1}{2} + 1 ,$$ which is impossible.

$\Rightarrow$ Σ is minimal.

$\pi : \Sigma \longrightarrow S$ is one to one and onto $S - R$, which is the set of smooth points of S. It remains to show that π is holomorphic. Given $x \in \Sigma \subset \mathbb{P}^5$, $x = [X_0, X_1, \cdots X_5]$, l_x is given by, for example,

$$l_x = \begin{pmatrix} 1, & 0 & Z_1(x) & Z_2(x) \\ 0, & 1 & Z_3(x), & Z_4(x) \end{pmatrix},$$ where

Z_i's are holomorphic in x. Any point p in l_x is represented by $v_\alpha = (1, 0, Z_1(x), Z_2) + \alpha(0, 1, Z_3, Z_4)$, $\alpha \in \mathbb{P}^1$.

$\Rightarrow$ $\sigma(p) = \{\tilde{\phi}(\overline{y v_\alpha})\}$, $y \neq v_\alpha$, $y \in \mathbb{P}^3$.

$\Rightarrow$ $\tilde{\phi}(\overline{y v_\alpha}) = (y_0 e_1 + y_1 e_2 + y_2 e_3 + y_3 e_4) \wedge (e_1 + \alpha e_2 + (Z_1 + \alpha Z_3) e_3 + (Z_2 + \alpha Z_4) e_4)$