$$\cancel{\frac{1}{z^6}} + \cancel{\frac{c}{z^2}} + [-1] + \cancel{\frac{c'}{z^3}} + [1] - \cancel{\frac{1}{z^6}} + \left(-\cancel{\frac{c'}{z^3}}\right) - \cancel{\frac{c''}{z^2}} - [-1]$$
$$+ (c'' - \cancel{c})\left(\cancel{\frac{1}{z^2}} + [1]\right)$$

$= [-1]$. $\Rightarrow$ holomorphic away from p with at most a single pole at p. $\Rightarrow$ By the argumnt for genus 0 above, $F'(z)^2 + c'F'(z) - F(z)^3 + (c''-c)F(z)$ must be constant, see p222. ⏎

The image of S under the embedding ι_L is accordingly the locus of the polynomial
$$y^2 = x^3 + ax + b - c'y,$$
where $x = Z_1/Z_0$, $y = Z_2/Z_0$ are Euclidean coordinates on $\mathbb{P}^2$.

Γ $y^2 + c'y - x^3 + (c'' - c)x = b$ (constat)
if we let $F' = y$, $F = x$.
$\Rightarrow$ $y^2 + c'y = x^3 + ax + b$. $a = c - c''$. ⏎

After a linear change of the coordinate y, we may take this polynomial of the form
$$(*) \qquad y^2 = x^3 + ax + b,$$
and finally, after a linear change in the x-coordinate, taking two of the roots of the polynomial $x^3 + ax + b$ to 0 and 1, we see that any curve of genus 1 is the zero locus in $\mathbb{P}^2$ of a cubic polynomial
$$y^2 = x(x-1)\cdot(x-\lambda) \quad \text{for some } \lambda \in \mathbb{C}.$$