Within this work we have been interested in the frame approach to analysis of the field equations in the context of theories of gravity, in particular, the Einstein General Relativity and Quadratic theory of gravity. As the starting point we have summarised the least action principle formulation of the General Relativity and introduced the Quadratic gravity extending the classic Einstein–Hilbert action by adding quadratic curvature terms. The Quadratic gravity field equation have been rewritten into the form separating the Ricci tensor contribution. As a next step we have reviewed the Newman–Penrose formalism on a purely geometrical level and discussed employing the field equations constraints. While in the case of General Relativity it is quite trivial, in the Quadratic gravity it becomes much more involved, however, the General Relativity procedure can be followed even here. As an illustration, we have formulated the constraints on the gravitational field in the cases of the spherically symmetric spacetimes and so-called *pp*-waves both in the GR as well as Quadratic gravity.