Concerning the stereochemistry, the following transition state is proposed at the cyclization reaction (*)

As -OSm group is bulkier than -CH₃, -OSm group's conformation becomes pseudo-equatorial.
At the addition reaction in 3), due to the resonance, 1,3-dipolar addition or stepwise addition mechanism could be proposed. Yet the former cannot account for the following by-product.
Another mechanism from the intermediate A can be proposed:

Cyclopropylcarbonyl homoallyl rearrangement generally undergoes without hydroxyl group in A. Example:

The reactions proceed as follows:

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This reaction does NOT undergo without triphenylphosphine oxide.