Total Synthesis of the Glycosylated Macrolide Antibiotic Fidaxomicin

Please name all named reactions/conditions and explain the stereochemical outcome of all reactions.

What sugar is the starting material of step 9 derived from?

Provide a name for sugars with the substitution pattern of B?

Fidaxomicin
16) LDA, propionylimidazole, then Et$_3$N
17) SO$_2$Cl$_2$, CH$_2$Cl$_2$, reflux
18) K$_2$CO$_3$, allyl-Br
19) C, NaH
20) K$_2$CO$_3$, allyl-Br
21) NBS, acetone/H$_2$O, $\alpha$:$\beta$ = 5:1
22) ClC(NPh)CF$_3$

How would you synthesize the intermediates of E from the given starting materials?

Fidaxomicin

Hint: the product of step 16 is aromatic