The “get your hands dirty” problem

You are given the following information about a dry-batch paving operation. See the attached diagram.

- You are going to use one mixer that has a service rate of 30 services per hour.
- The dry-batch trucks that you use to bring concrete to the paver have an arrival rate of 7.5 arrivals per hour.
- Each truck carries 6 CY of concrete.
- You have a total amount of 13,500 CY of concrete to pour.
- You rent a truck at $15 per hour and the paver at $60\(^1\) per hour.
- If the job takes more than 80 hours you pay a penalty of $140 per hour owing to delays in completion.

Based on the above information answer the following questions.

As a project manager how would you design this operation to deliver most efficient production so that the job gets done in the least time and least cost.

\(^1\) A relatively more accurate price is between $100 - $200 per hour
Contains Concrete

Mover Concrete to Mixer

Capacity = 6CY
Arrival rate = 7.5 CY/hr.

Total concrete to be placed = 13,500 CY