

**« Collision of two tramways in Paris »  
11<sup>th</sup> February 2019  
On-going investigation**

**Laetitia FONTAINE**



- ① What happened?
- ② First observations
- ③ The collision step by step
- ④ First leads and hypothesis to be checked

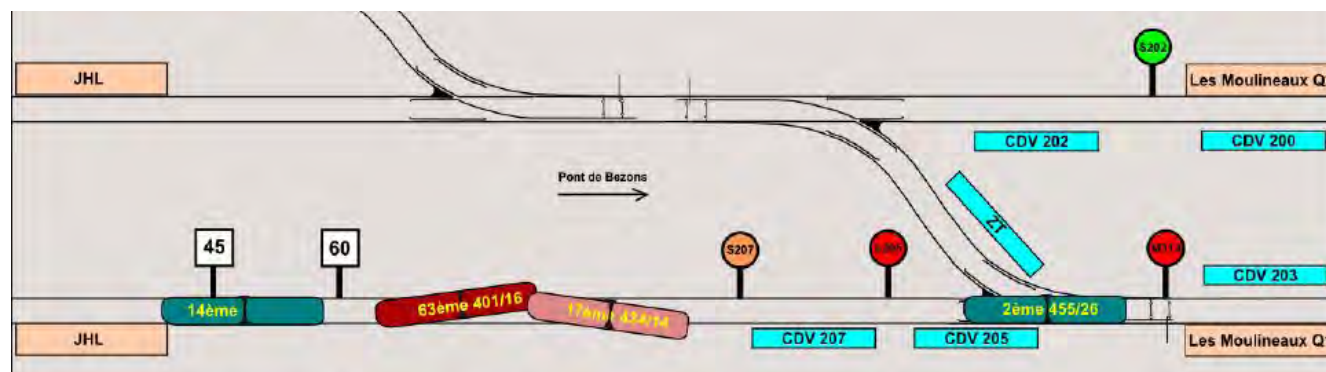


1

What happened?

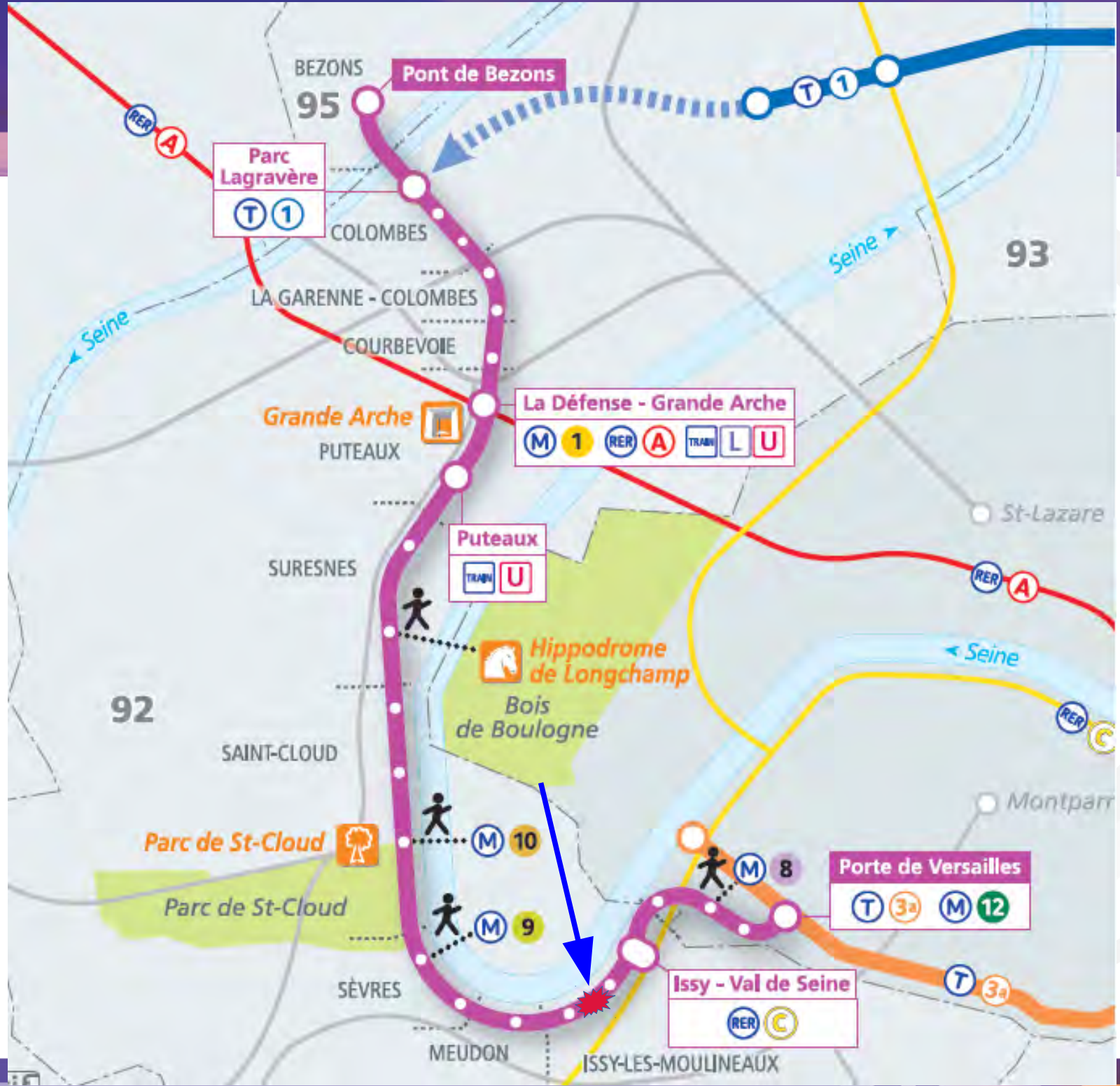
## Facts

- On Monday the 11th of February 2019 around 21:00
- On line T2 at Issy-les-Moulineaux, next to Paris
- Between stations Jacques-Henri Lartigue and Les-Moulineaux, in direction of Pont de Bezons
- Collision between two double-rolling stocks, one stopped in front of a signal, waited there and the other (401/16) hit it to the rear



- Consequence = derailment of both involved tramways
- Maintenance worker alerts the PCL
- Operation and energy are stopped







1



## The zone

- No road or pedestrian intersection
- Slight curve
- Speed limit is 60 km/h (max of the T2 line is 70)
- Ballast + protected by fences and bushes

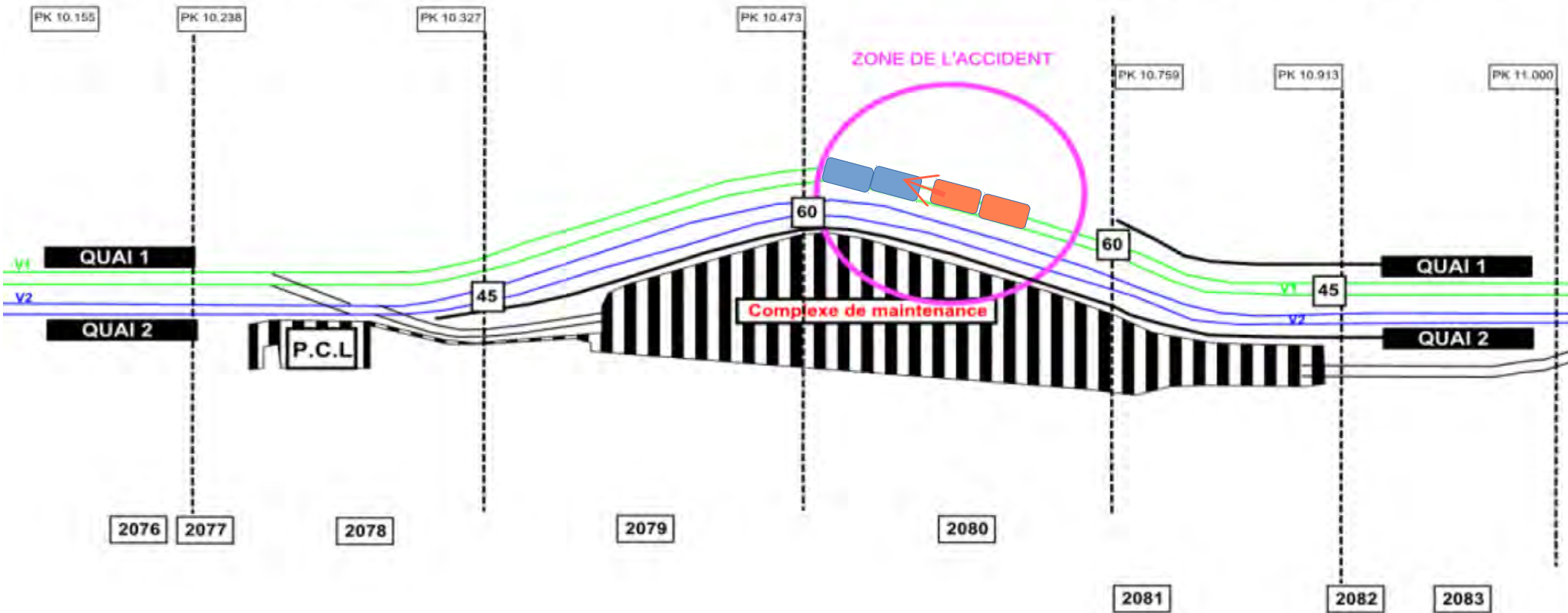
## The time

- It was the night, no rain
- 21h = end of the evening peak hours + beginning of the trams driving back to the maintenance site



LES MOULINEAUX

JACQUES HENRI LARTIGUE





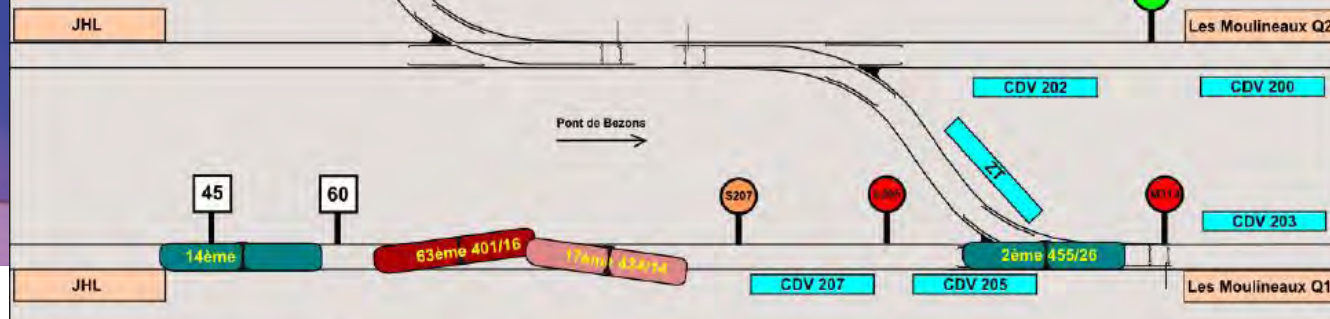




2

## First observations

2



## First observations

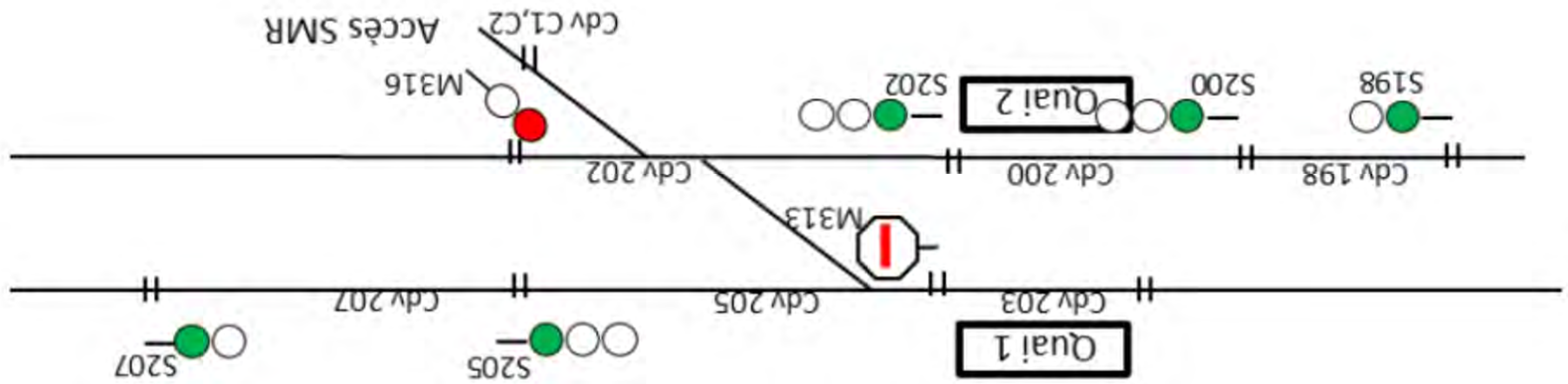
- A tramway (434/14) was stopped on the line, in front of a internal traffic light + with its flashing orange lights in function
- Stopped there to make possible for the tram 455/26 to drive back to the maintenance site
- An other tramway (401/16) saw 434/16 late, made an Emergency Break at 57 km/h
- Hit him by the back at 39 km/h
- After the collision, 14 persons were injured including the 2 tram drivers
- Alcohol and drug tests were negative for both drivers
- Tram driver is a good one + he is a trainer
- PCL has sent oral messages through the radio but the involved driver claims he has never received it



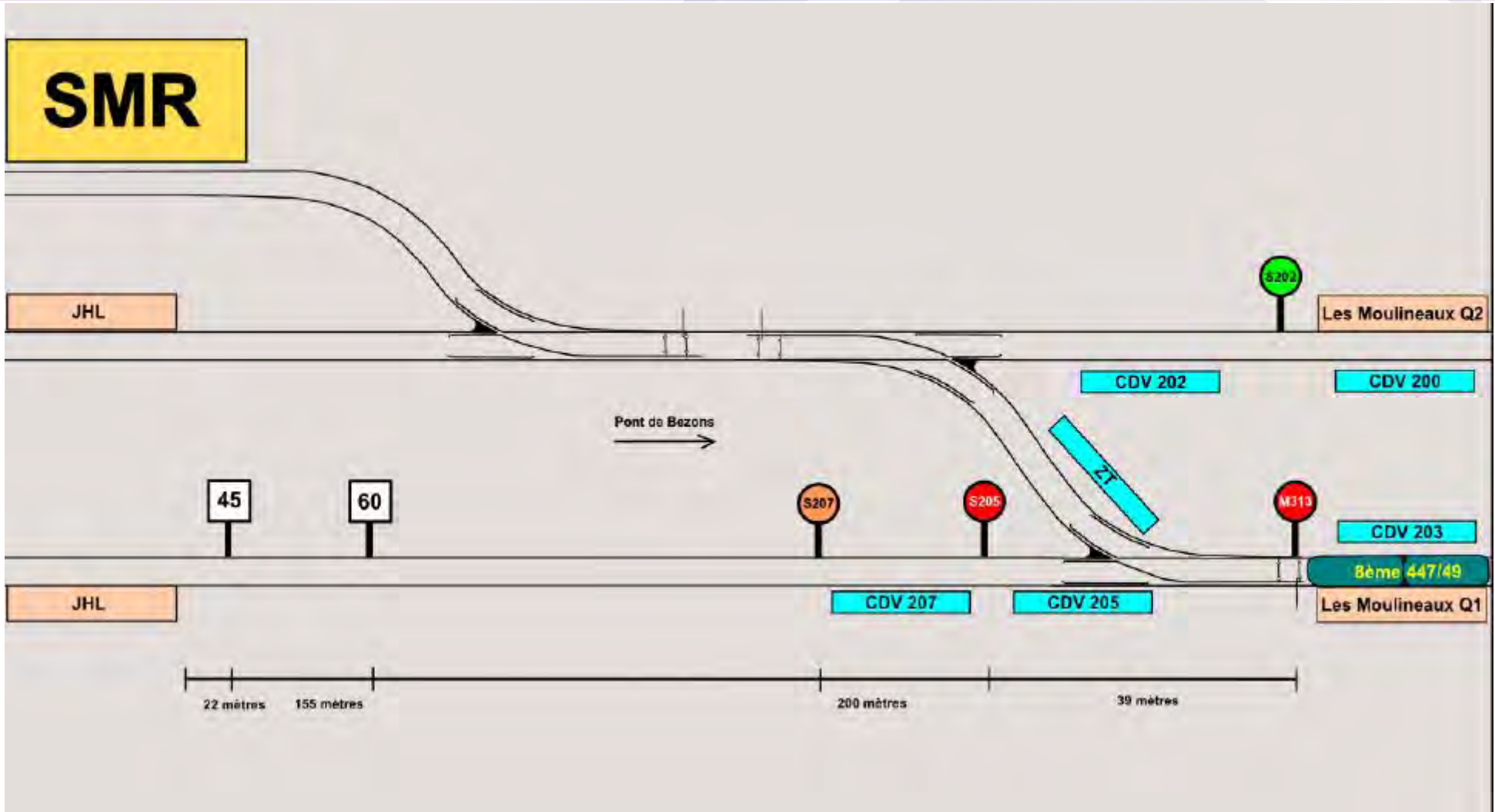
**3**

The collision step by step

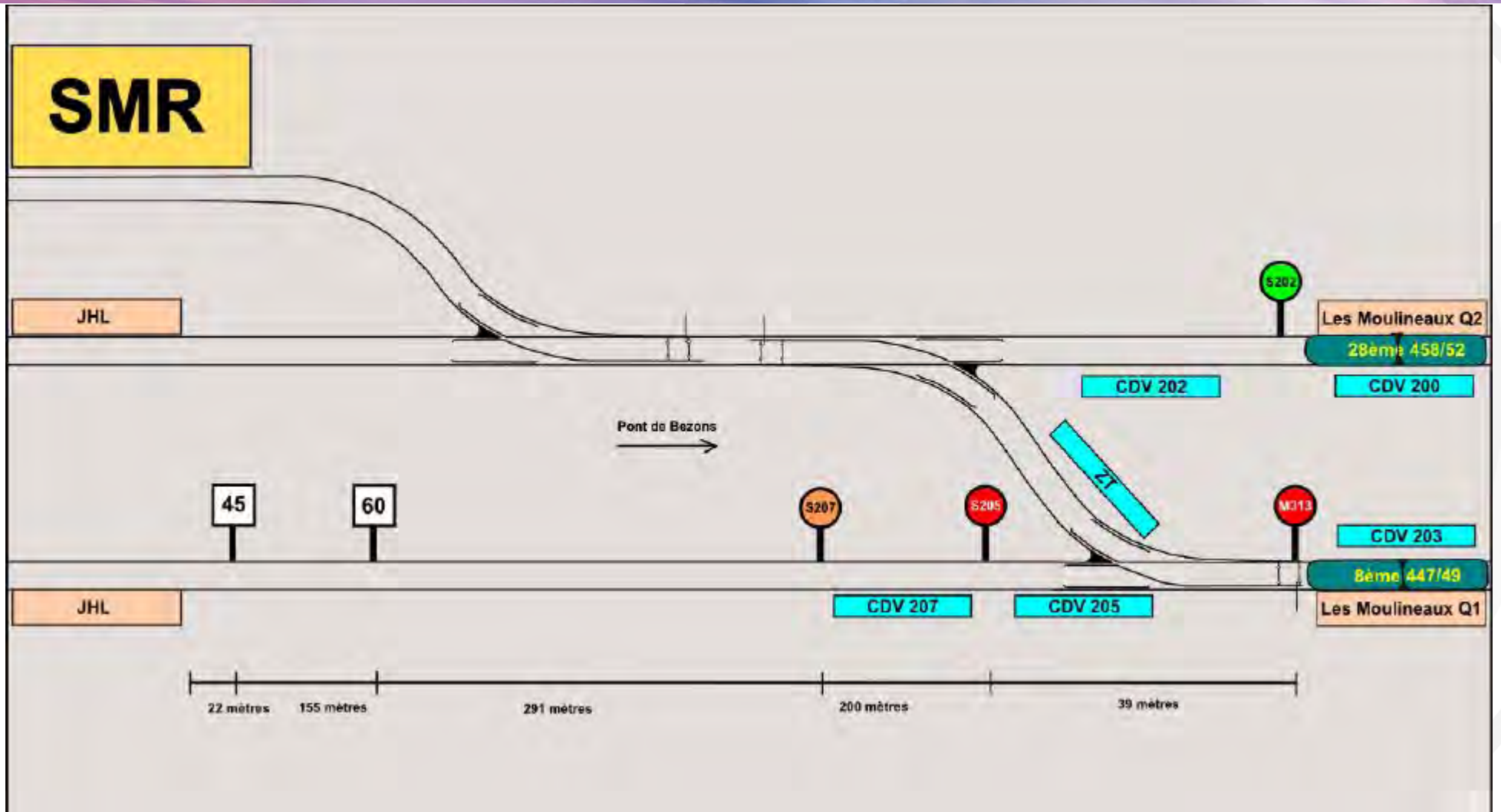
## The zone and lights when there is no tram

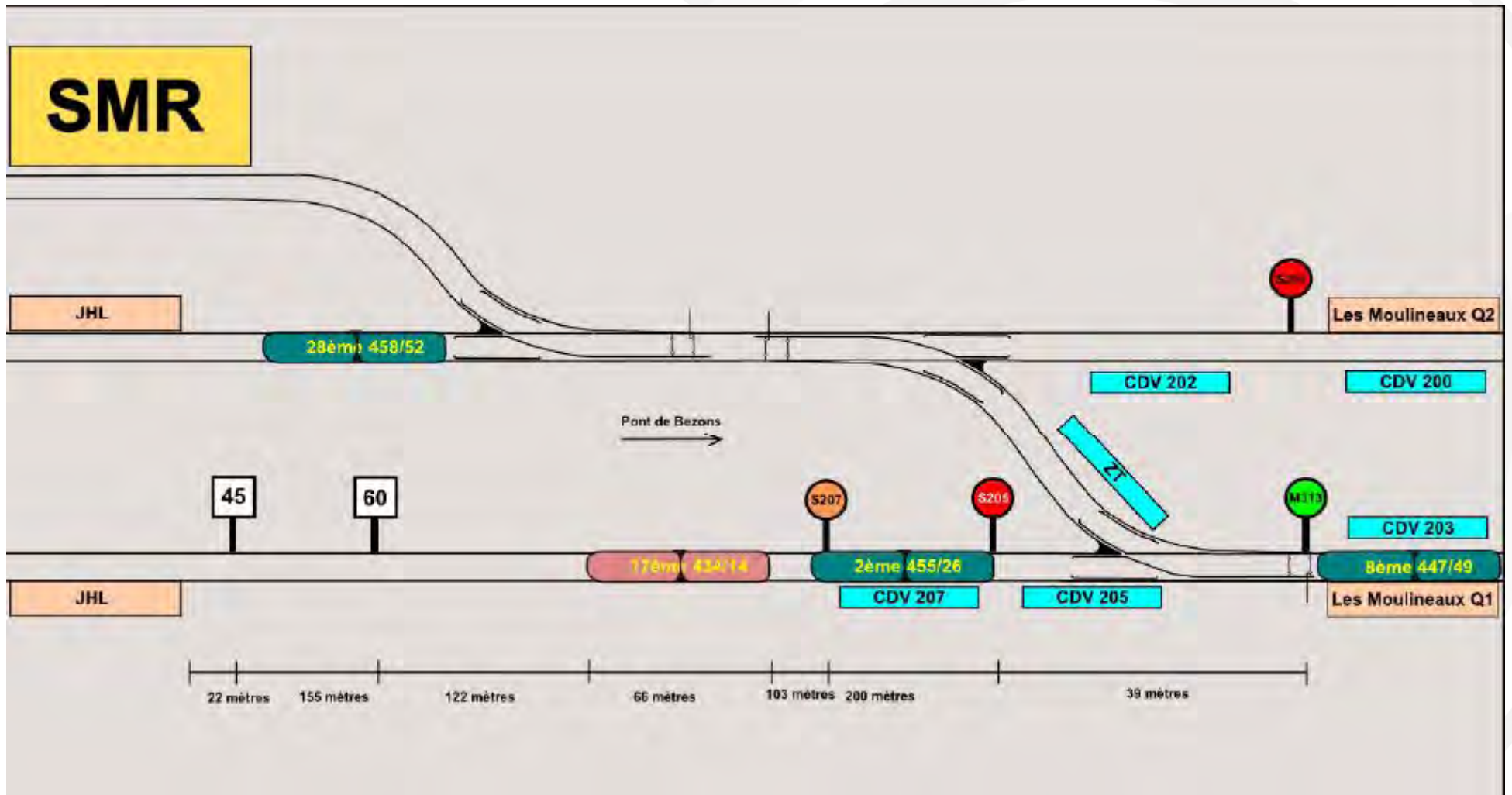


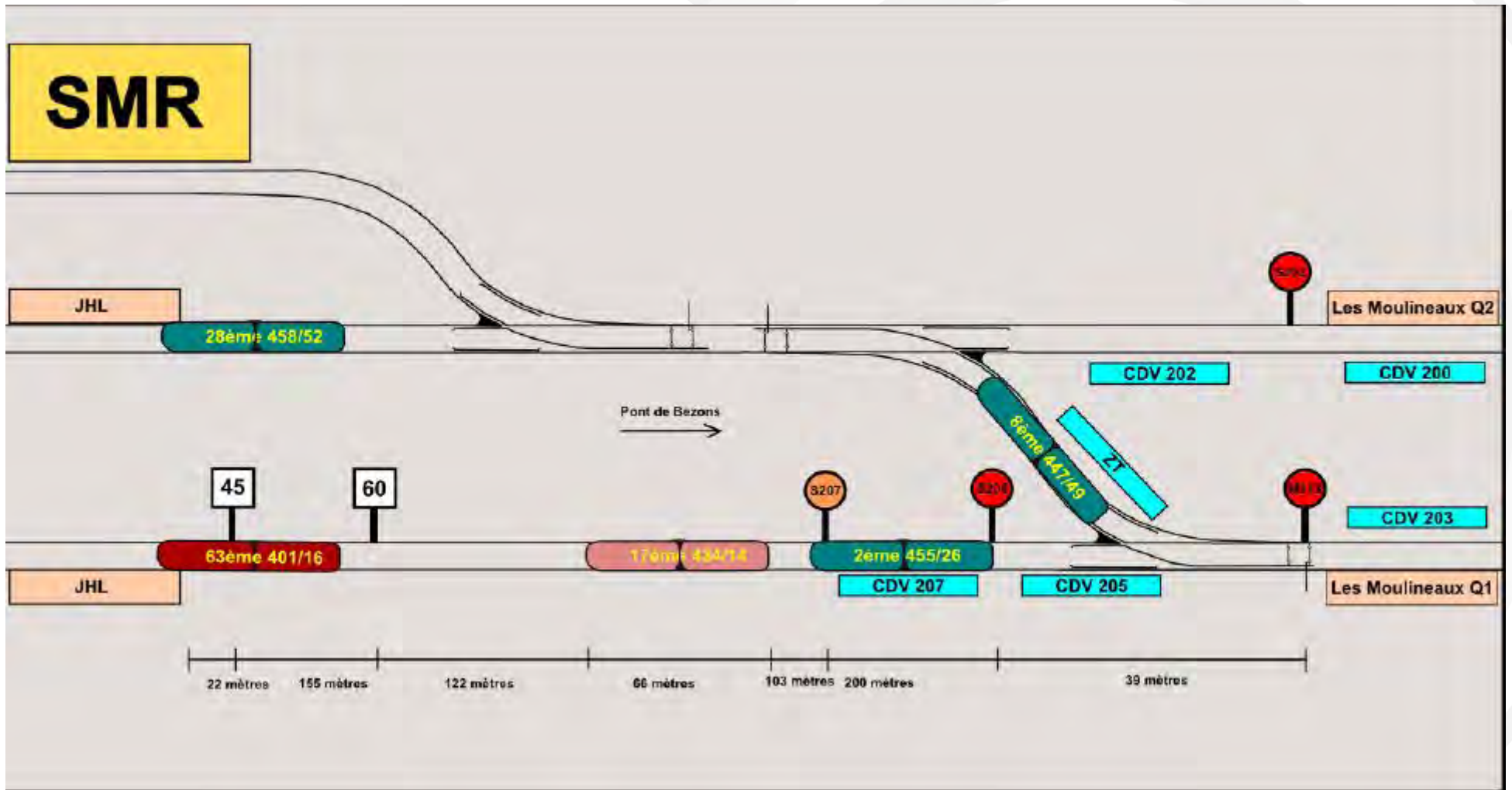
Les Moulineaux station



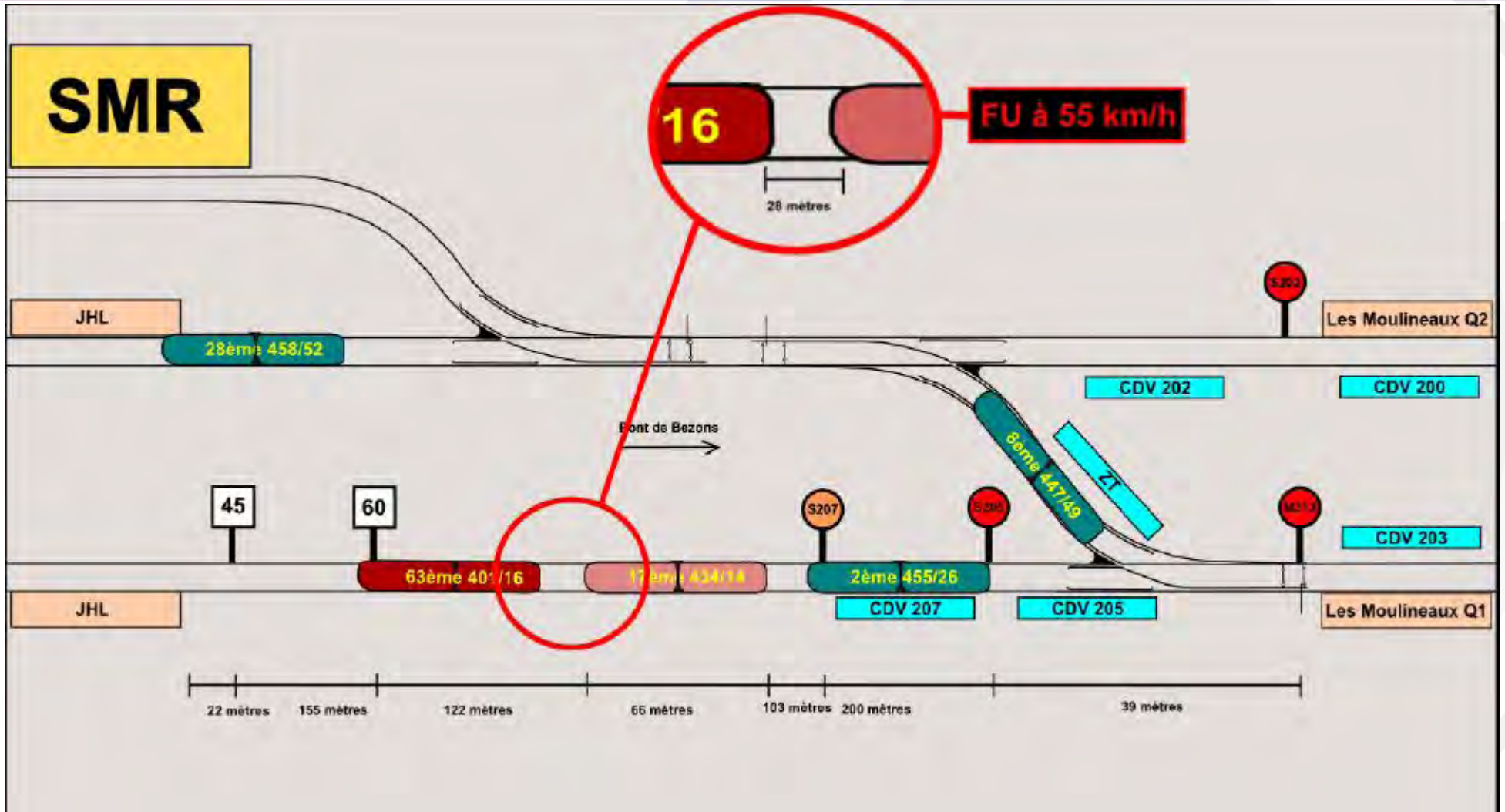


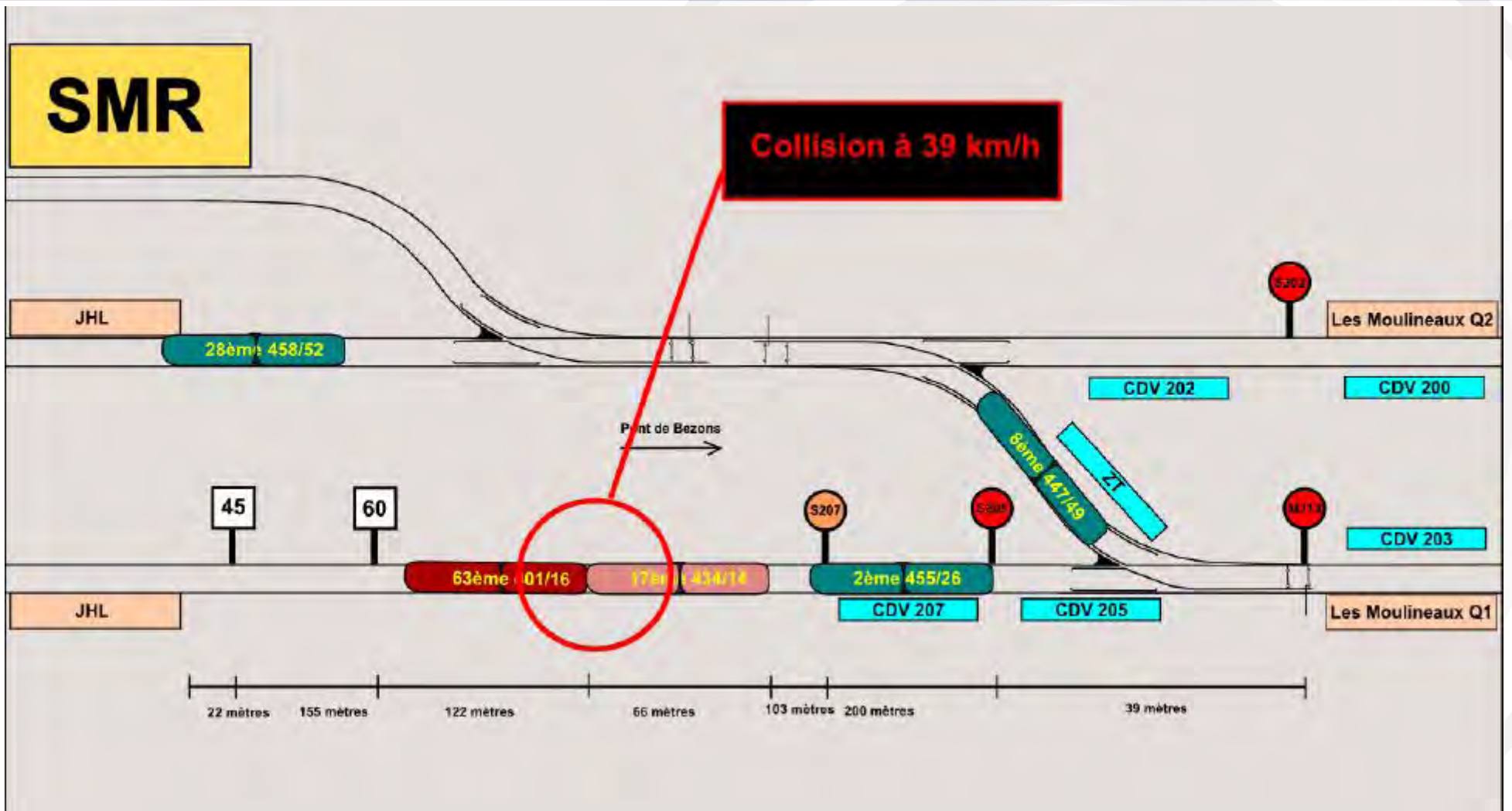


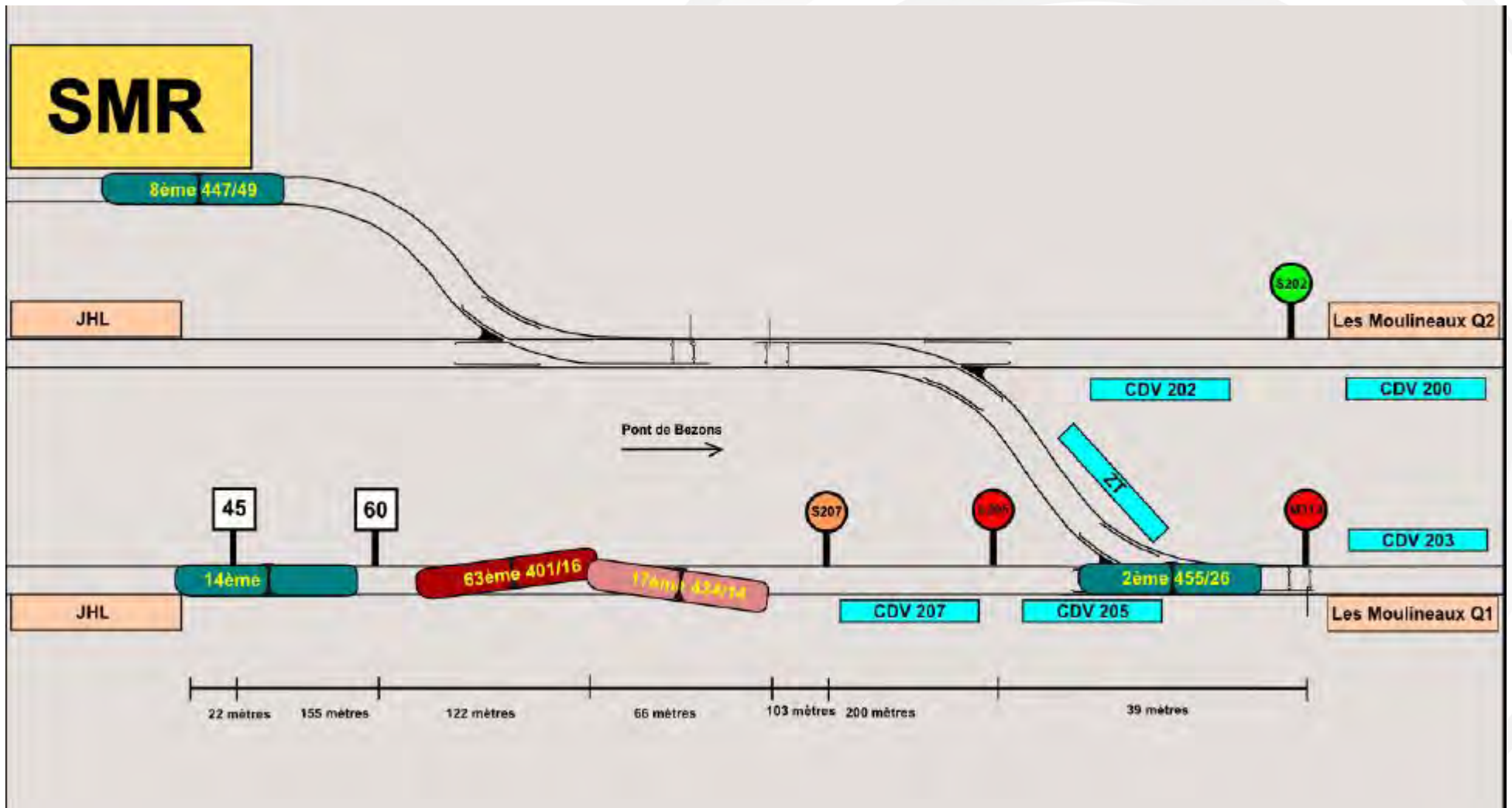




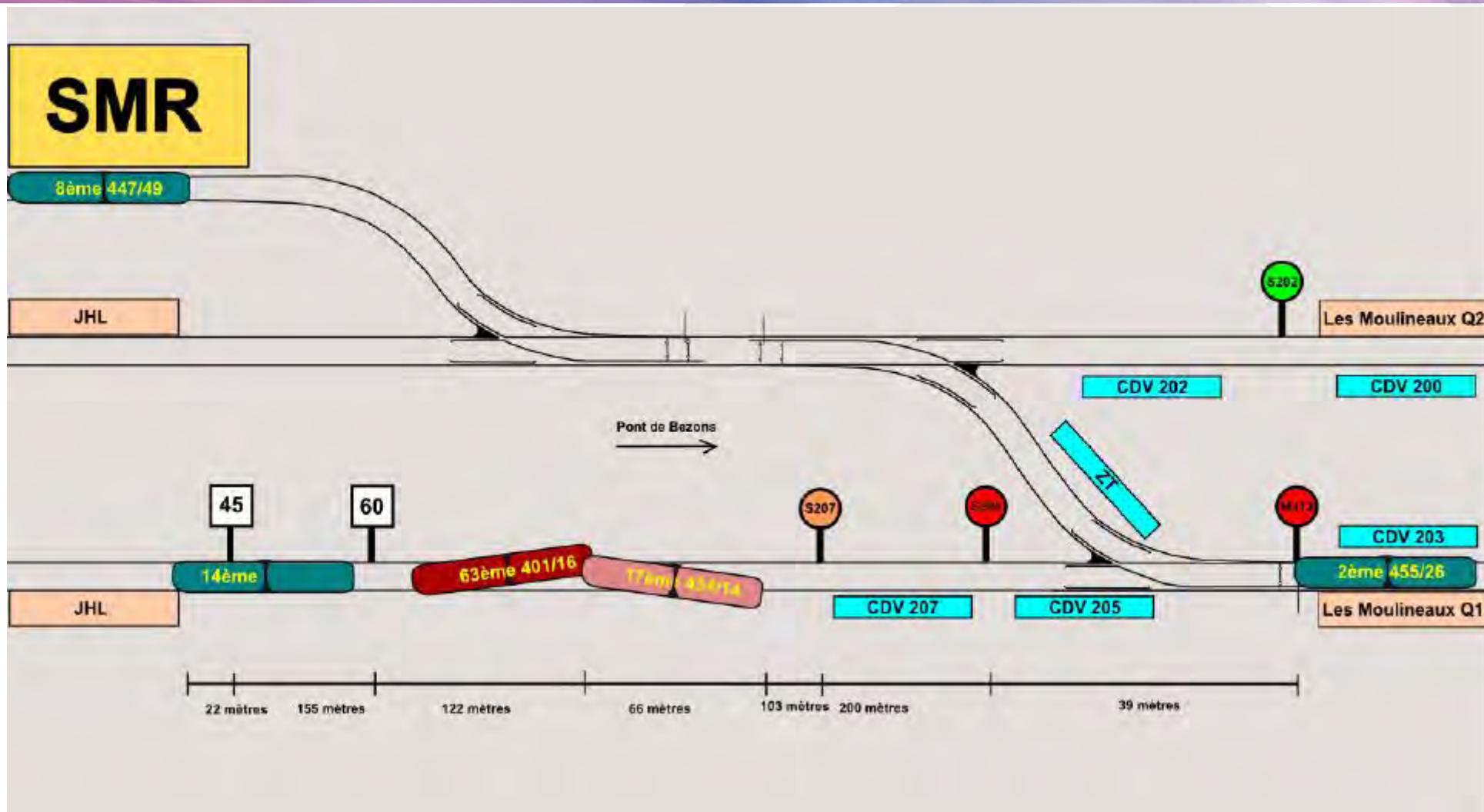












4

First leads on the cause(s), hypothesis to be checked

## First leads, hypothesis to be checked

- Timetable and dense line
- Driver watching his tachometer and checking/planning in his mind what his next task is
- Tram's radio was out (reliability?) + recollection method
- Interface Man-Machine
- Two parts on the T2 line :
  - historical, very protected from the urban environment
  - extensions, with more interactions, demanding more attention
- Entering in the maintenance site on the West side, is long + needs the tram to drive backward. Originally, entrance was made by the East side



## To be checked

- Hypothesis of a mask to the visibility (barrier and/or bushes), making his seeing the next tram and his decision to brake late has been excluded by the operator  
Where is the complete view on the tram stopped possible?
- How many seconds had he to react ?



## Next investigation's steps

- 1) Make further analyses
- 2) Identify all the collision's cause(s)
- 3) Determine recommendations
- 4) Publish the report (aim = February 2020)
- 5) Receive official answers from the recommendations' addressees

# Thank you for your attention! Any question?



Bureau d'Enquêtes sur les Accidents de Transport Terrestre



Tour Pascal B

92055 La Défense cedex

Téléphone : 01 40 81 21 83

Télécopie : 01 40 81 21 50

[bea-tt@developpement-durable.gouv.fr](mailto:bea-tt@developpement-durable.gouv.fr)

[www.bea-tt.developpement-durable.gouv.fr](http://www.bea-tt.developpement-durable.gouv.fr)