

OPERATIONS 101

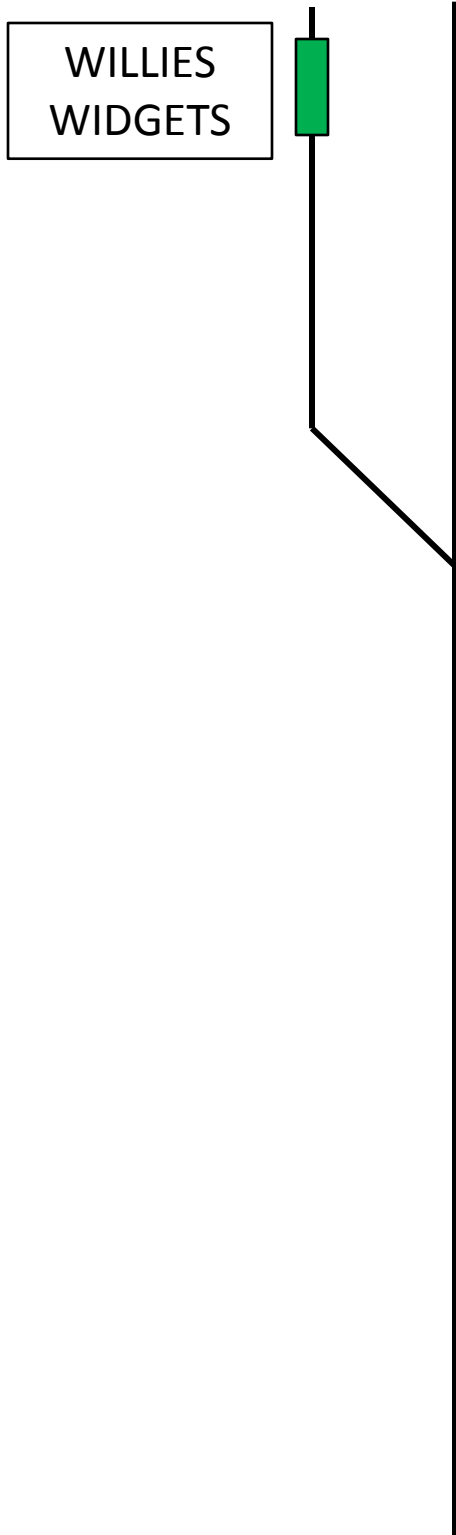
Operations 101

- What is 'Operations'
- Basic Operations Maneuvers
 - Single Track with a Siding
 - Single Track with a Siding & a Runaround Track
 - Multiple Sidings at a Large Industry
 - Junctions/Interchange
- Staging Yards
 - Purpose
 - Basic Ideas
- Car Forwarding Methods
 - Car Cards/Waybills
 - Switchlists

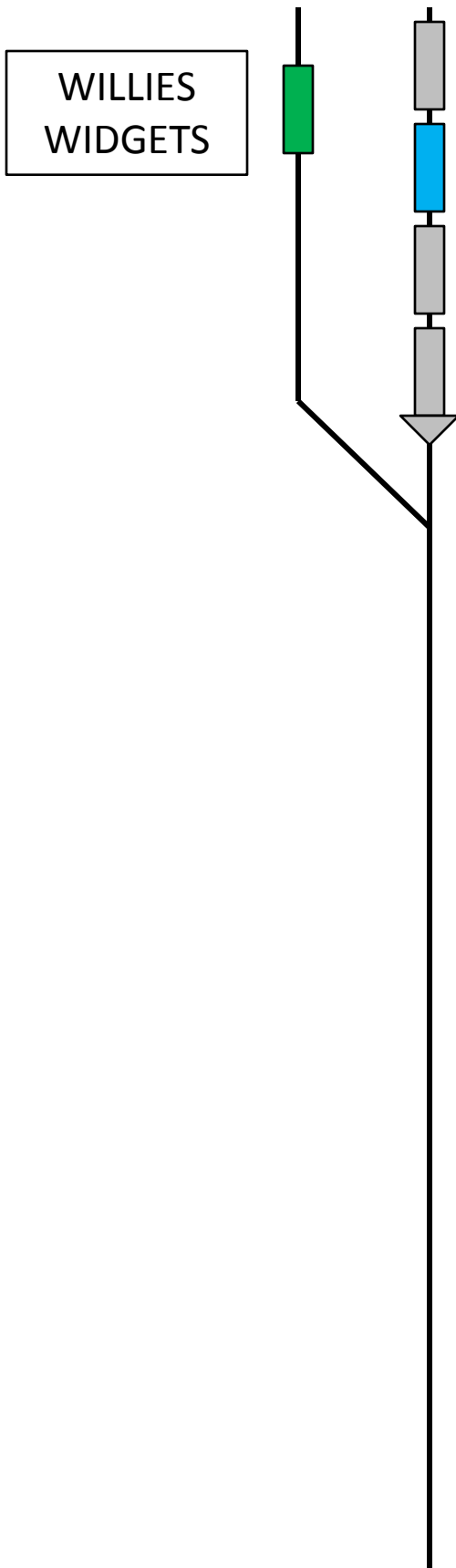
WHAT IS 'OPERATIONS'

- Operations is the Purposeful Movement of Cars & Trains on a Model Railroad that Simulate the Purpose of a Real Railroad.
- Each Move has a Specific Purpose
- Increases the Overall Realism of the Layout
 - The Model Railroad has a Specific Purpose

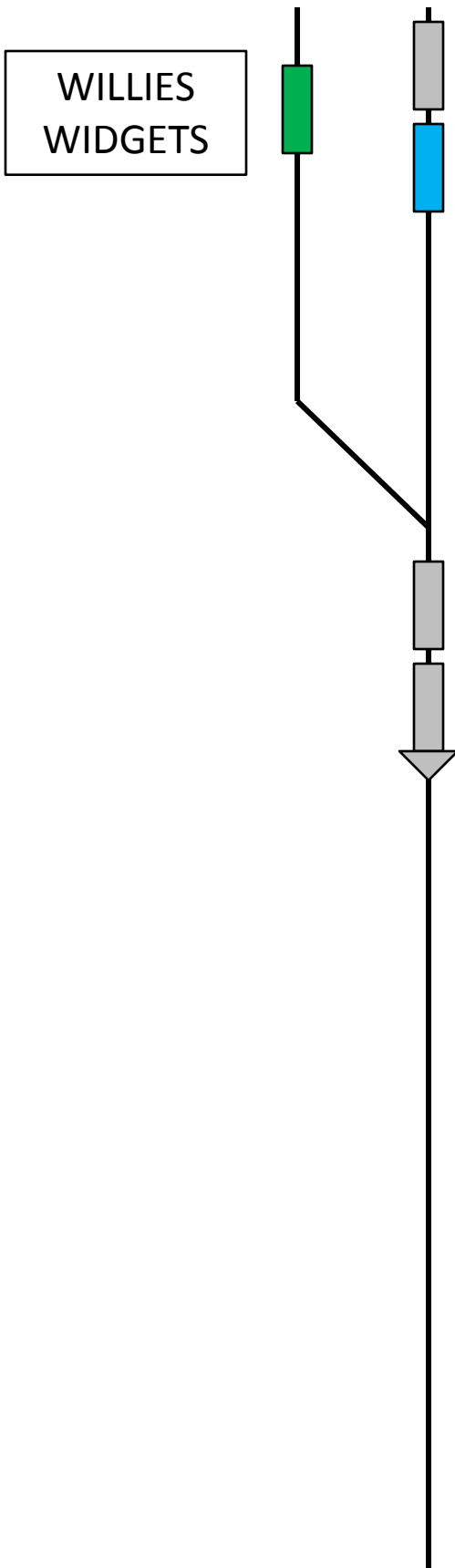
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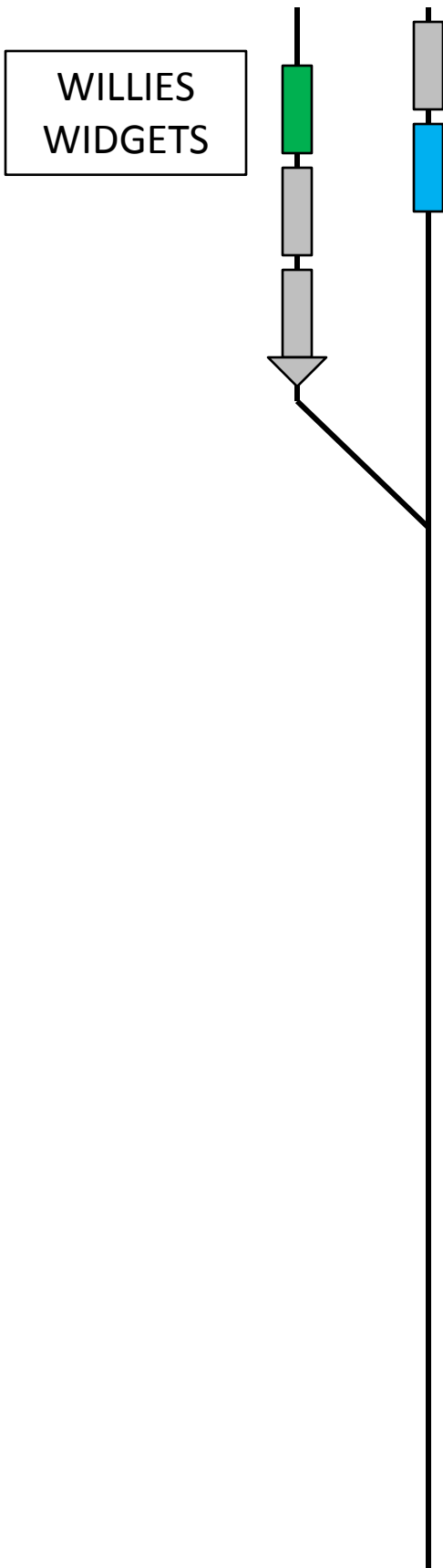
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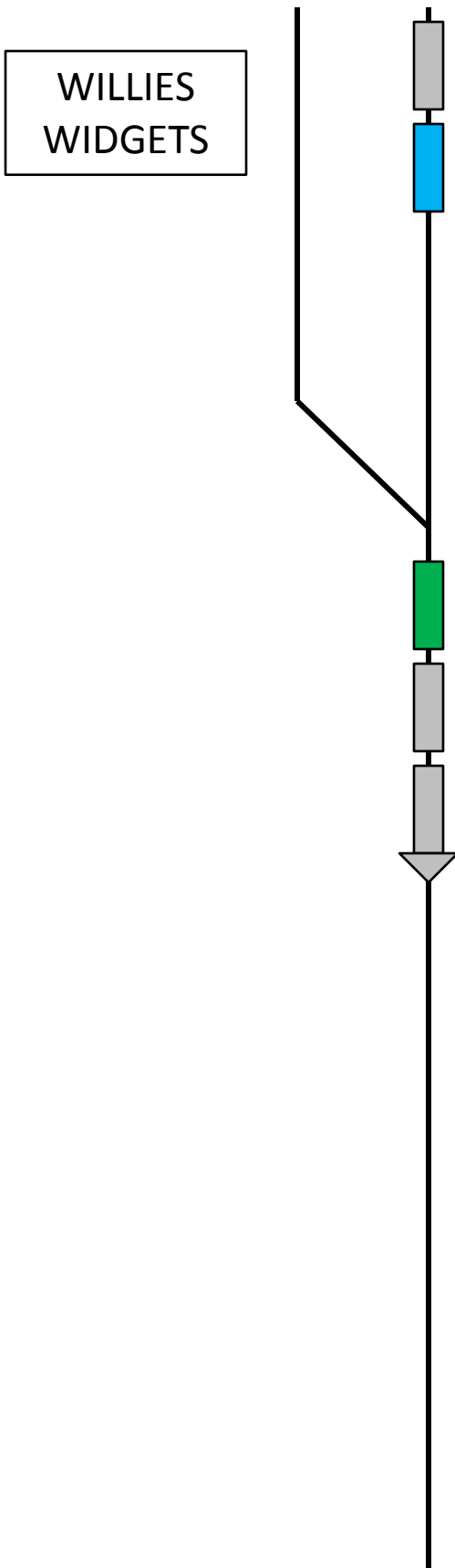
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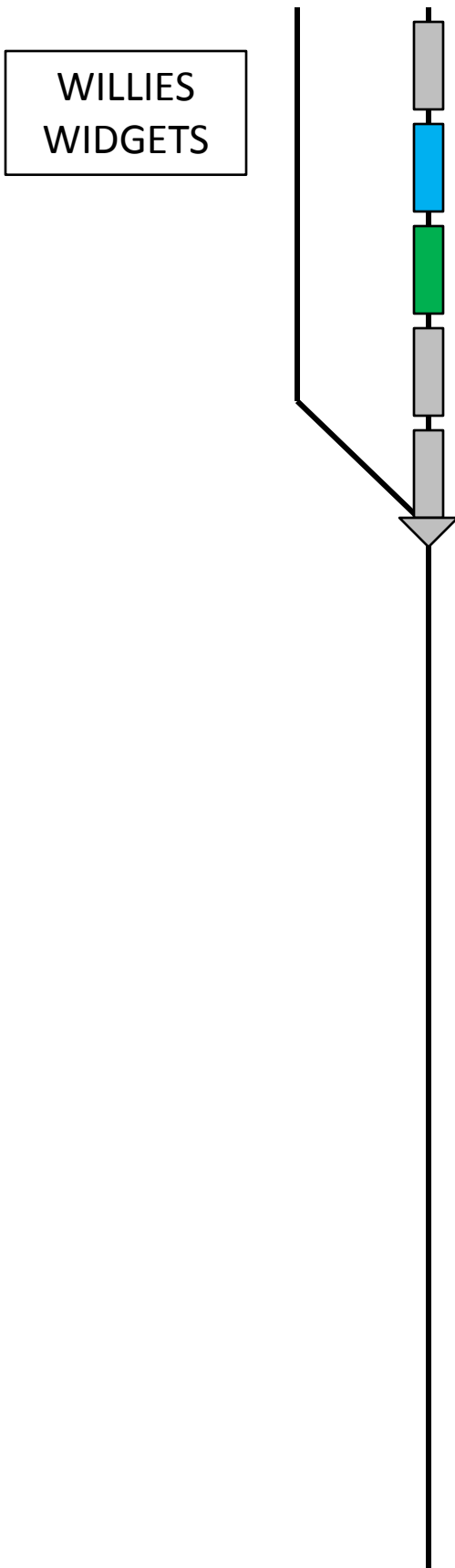
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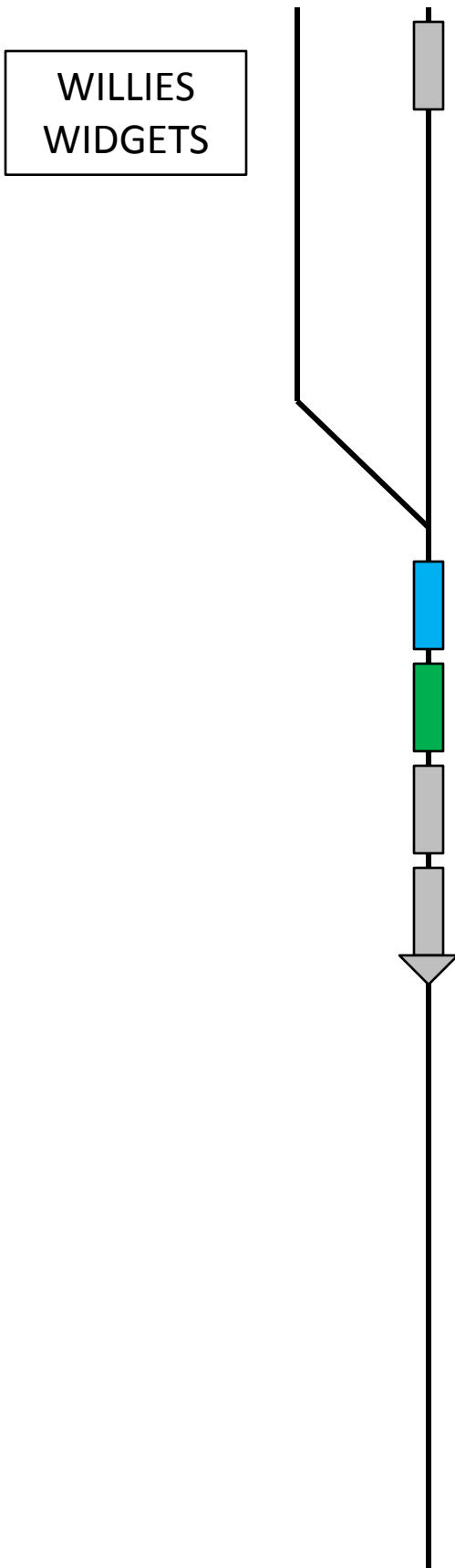
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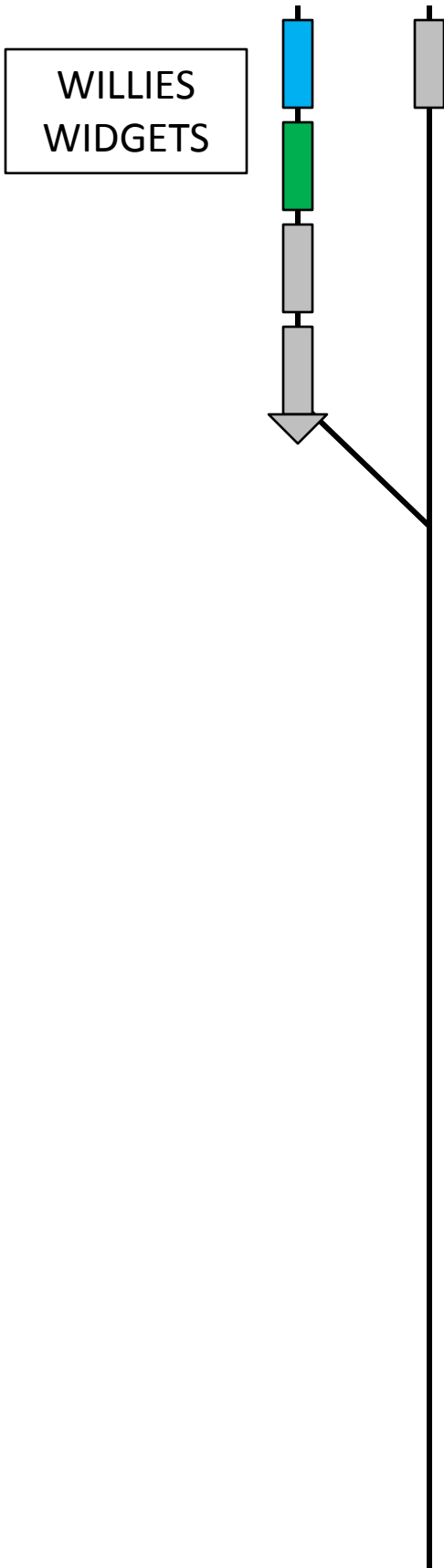
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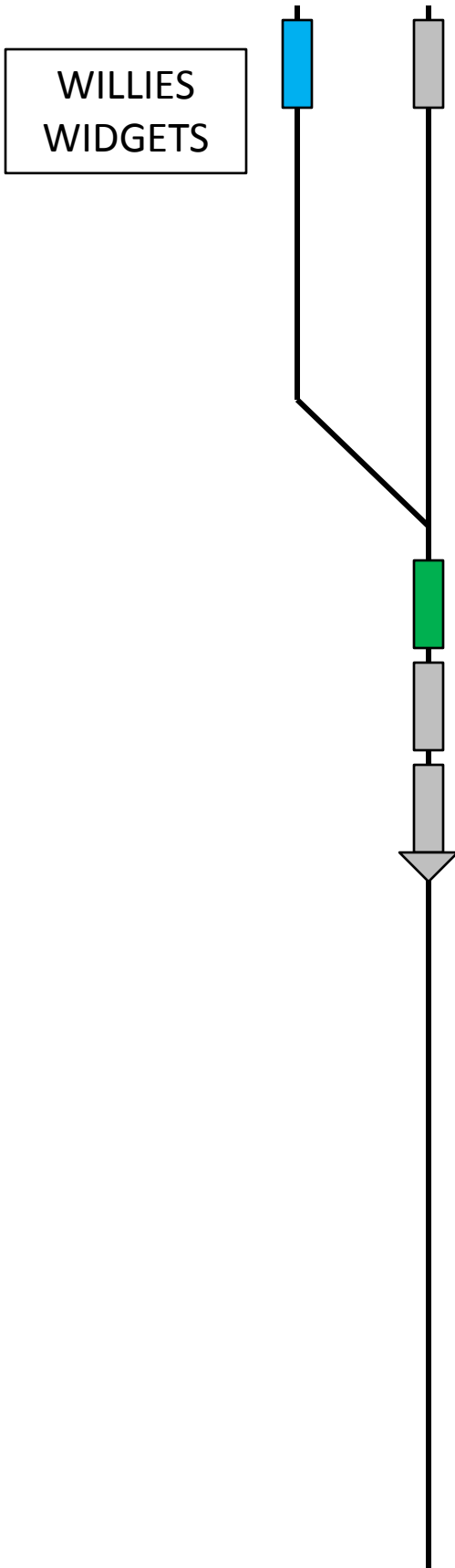
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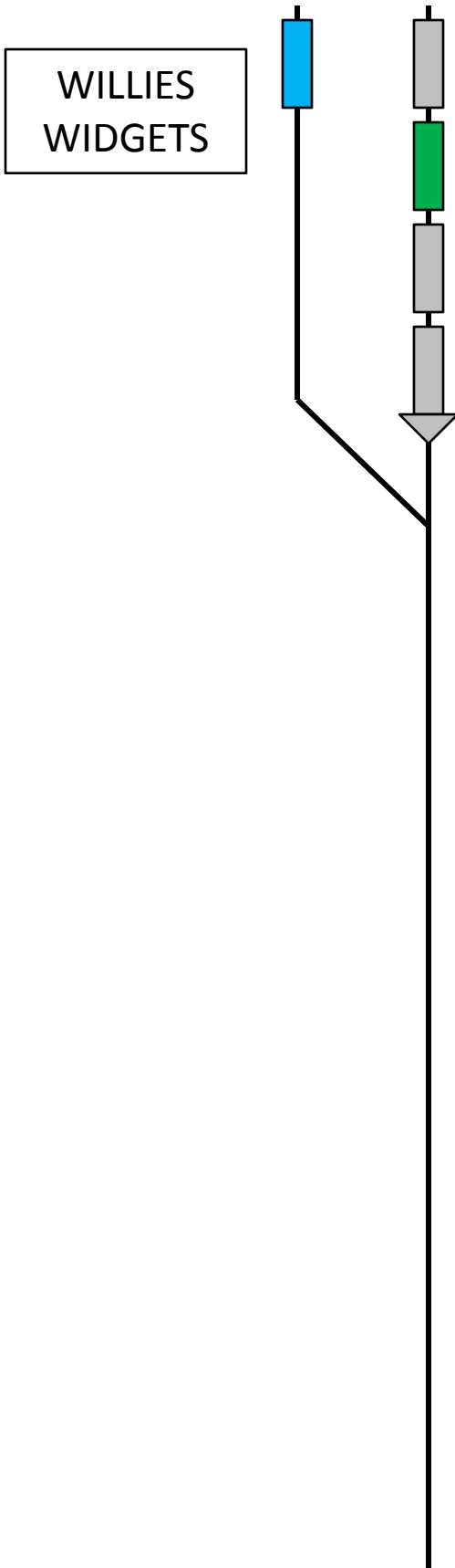
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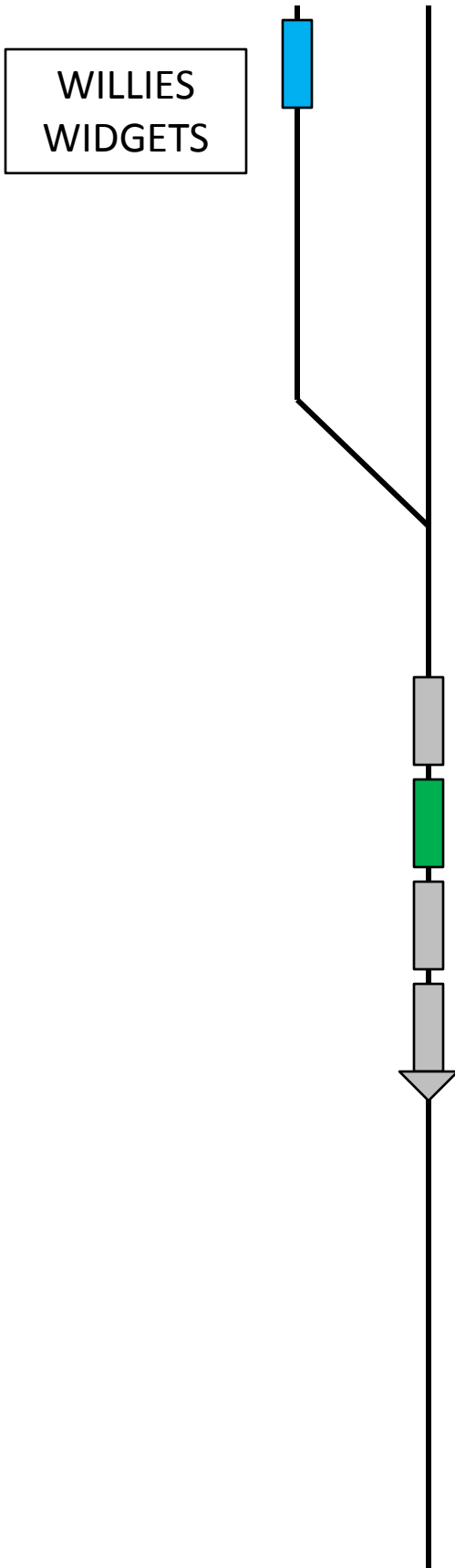
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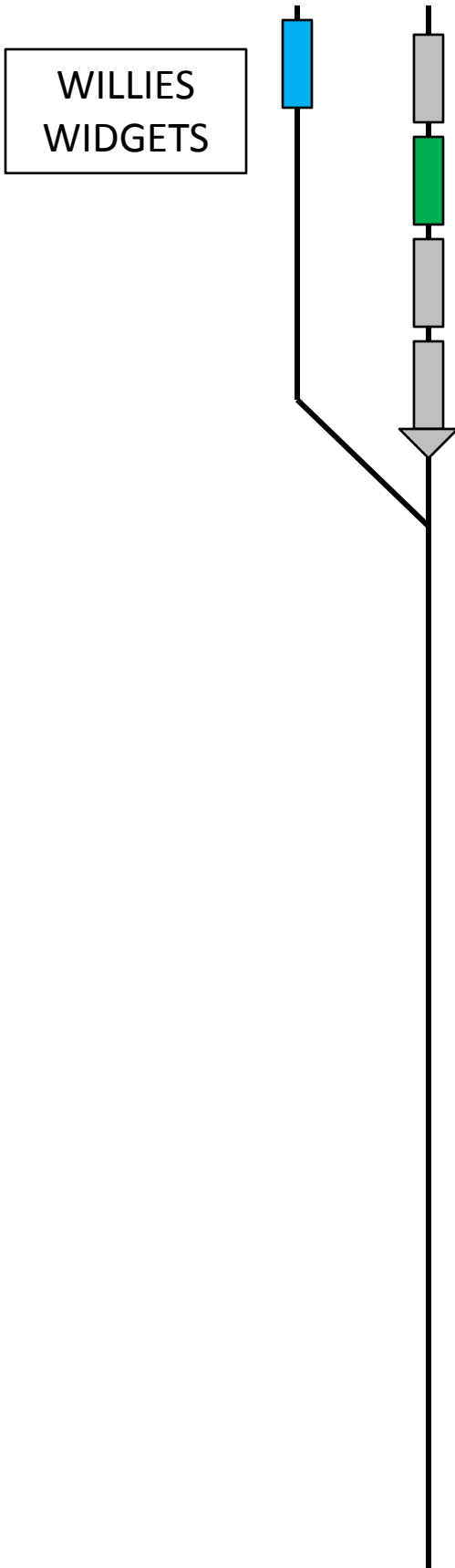
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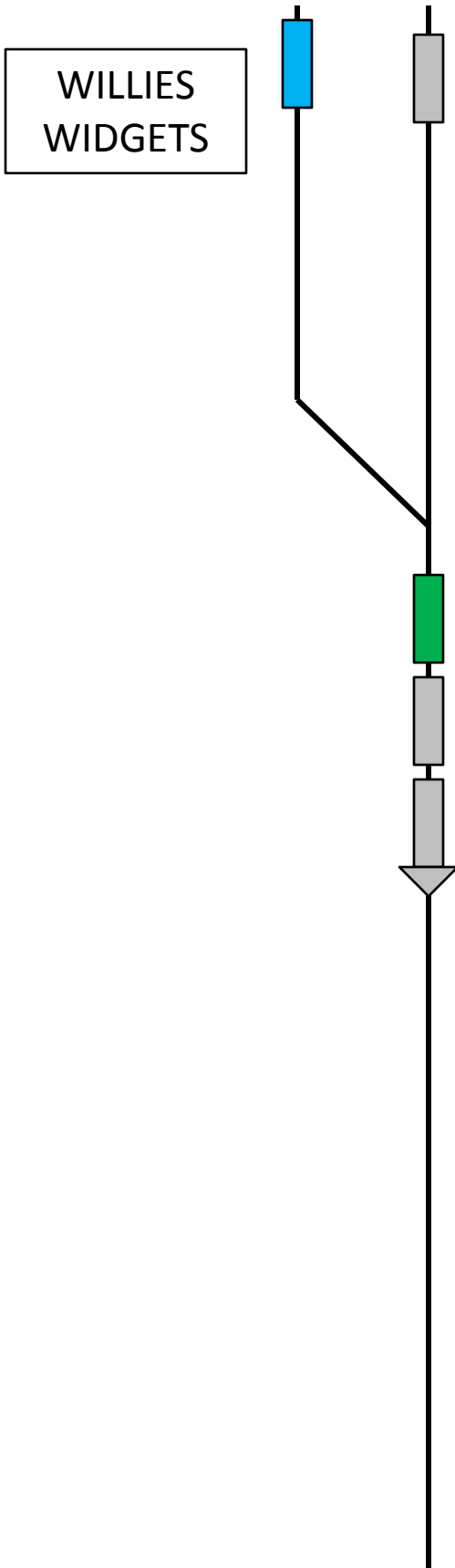
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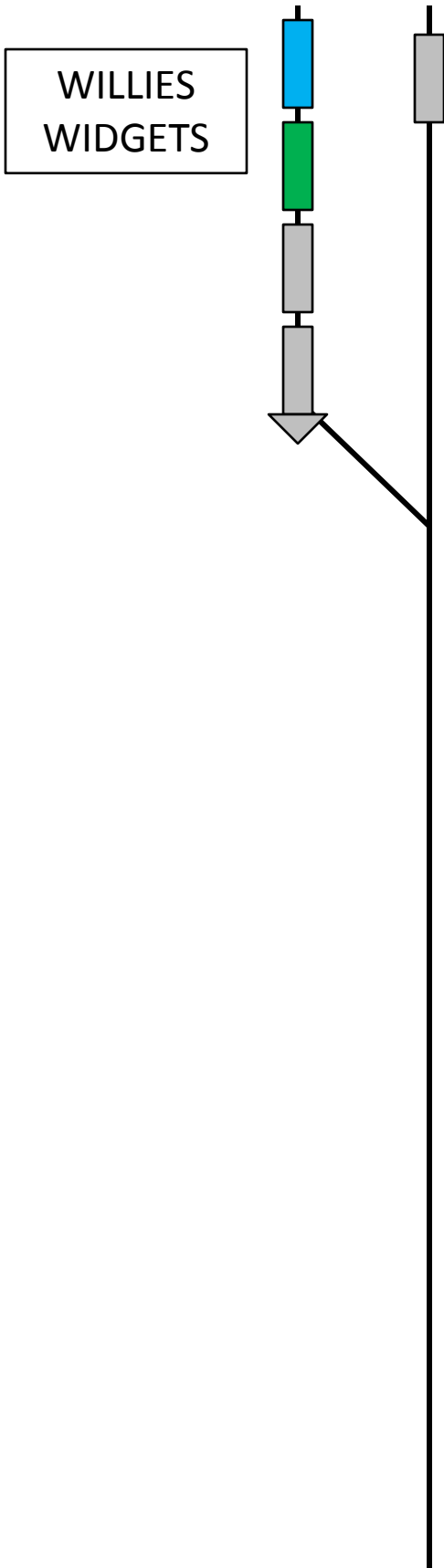
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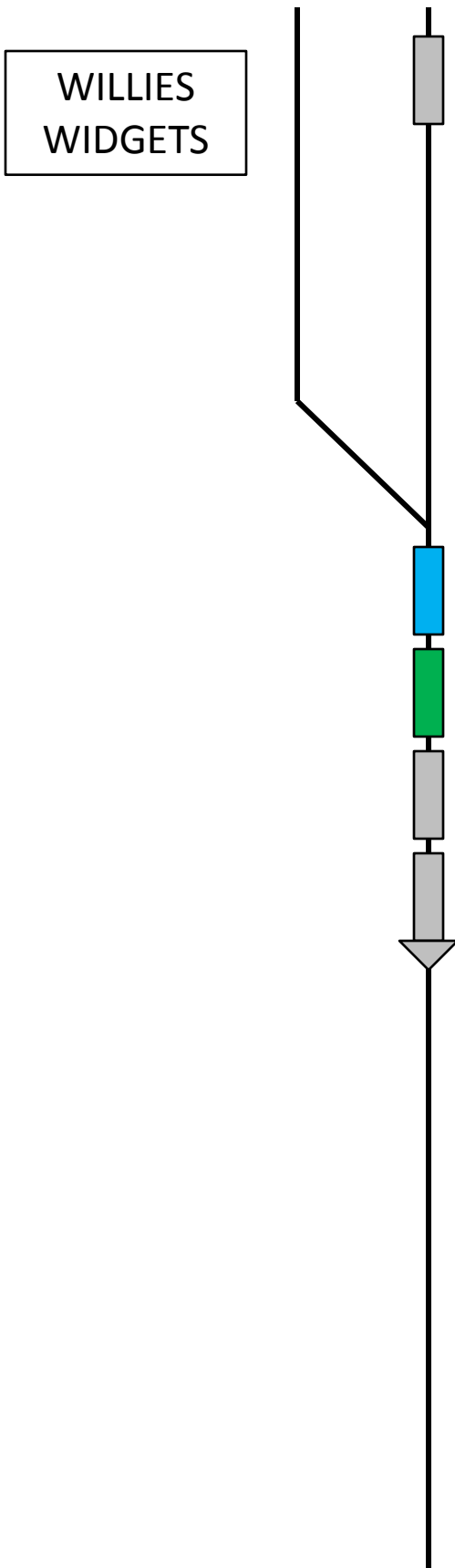
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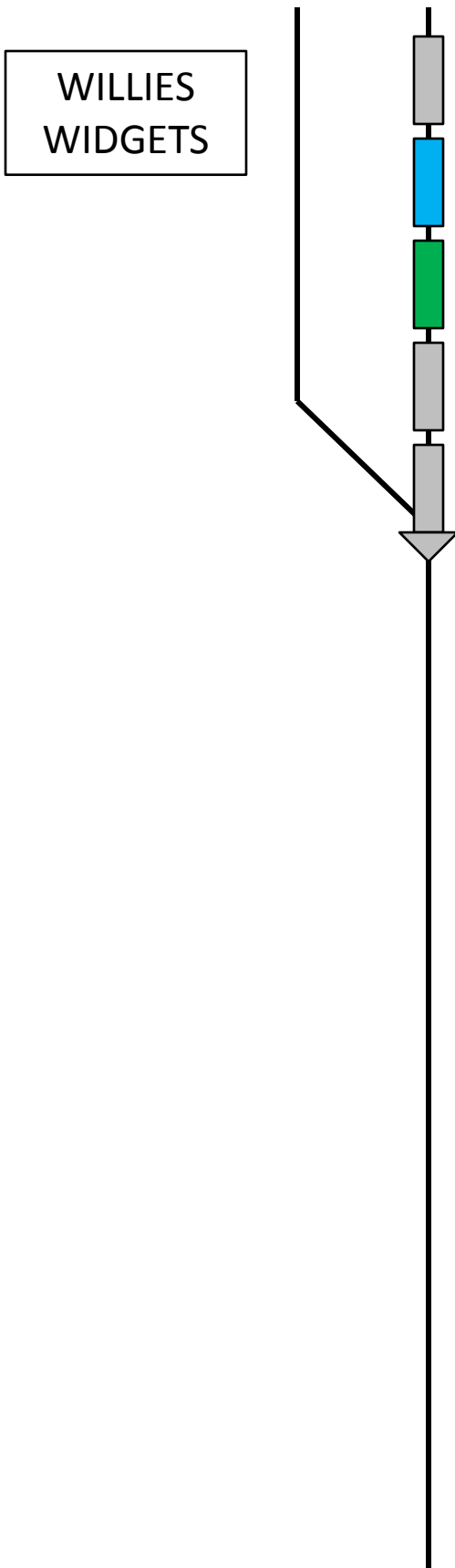
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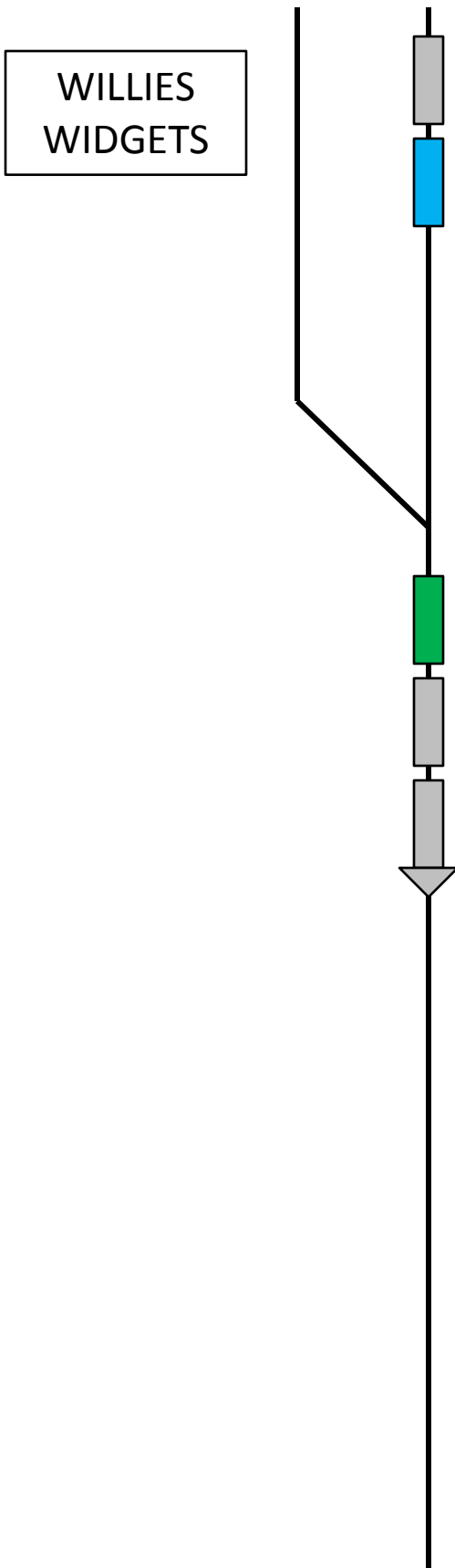
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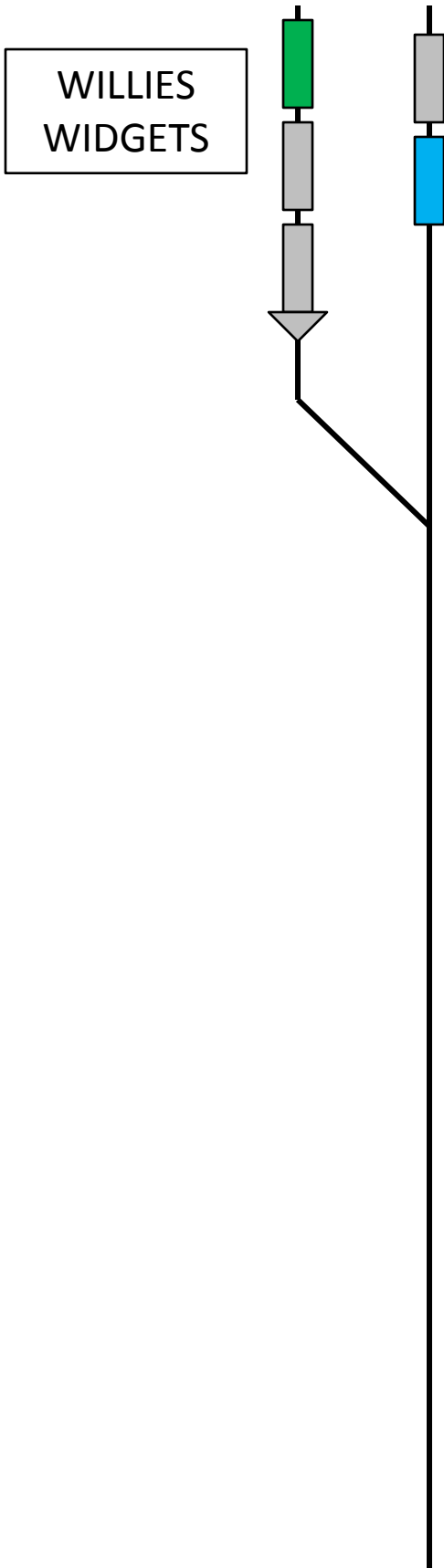
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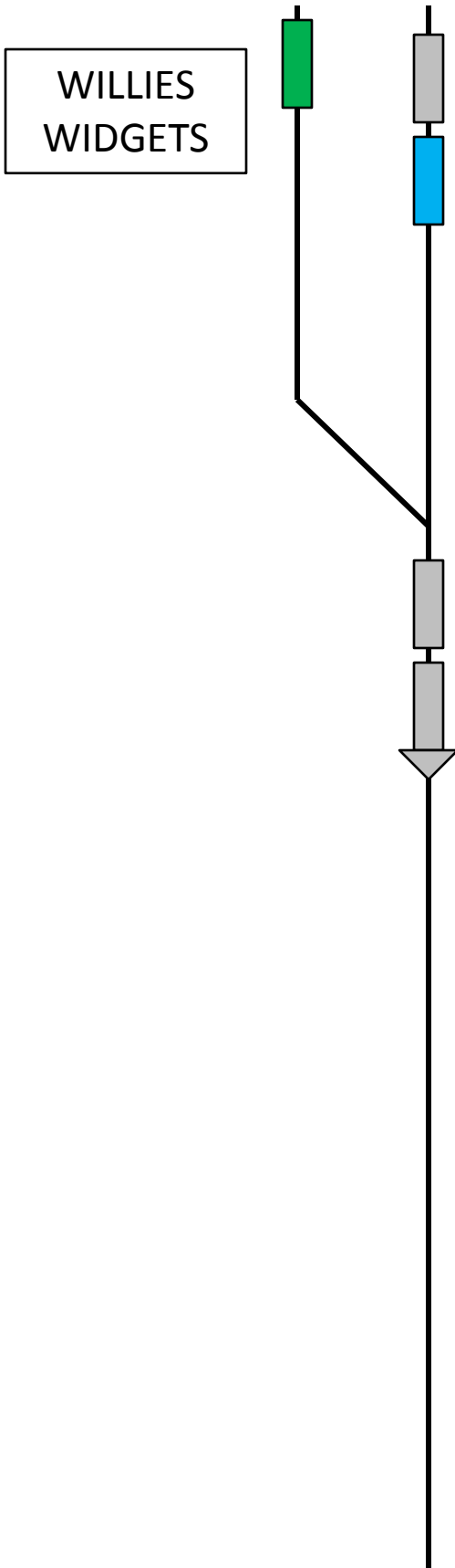
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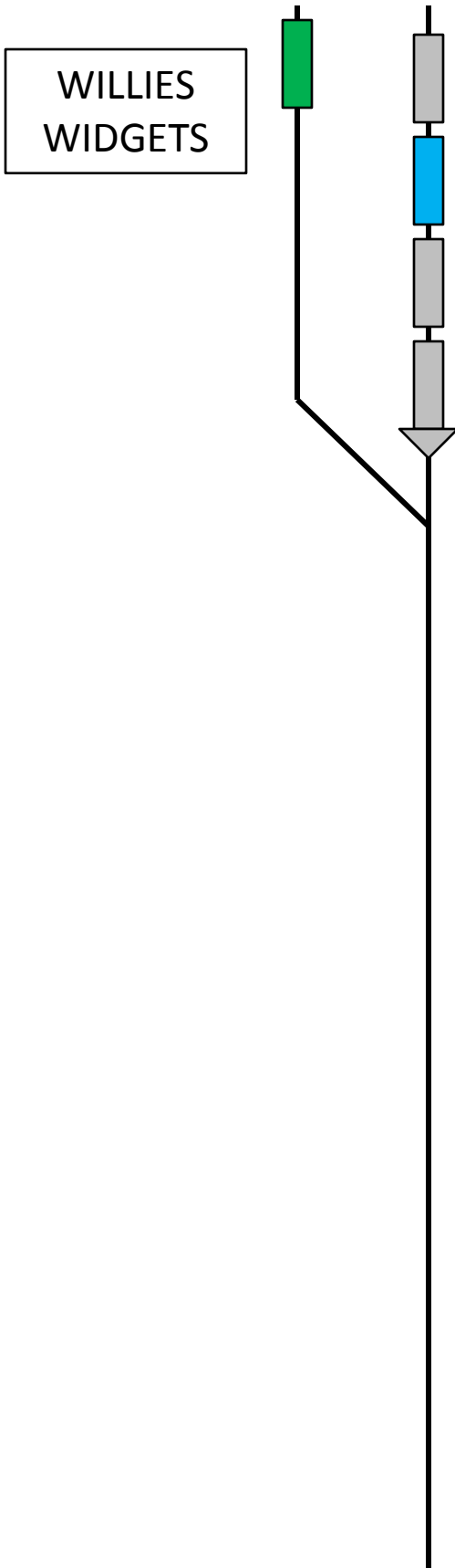
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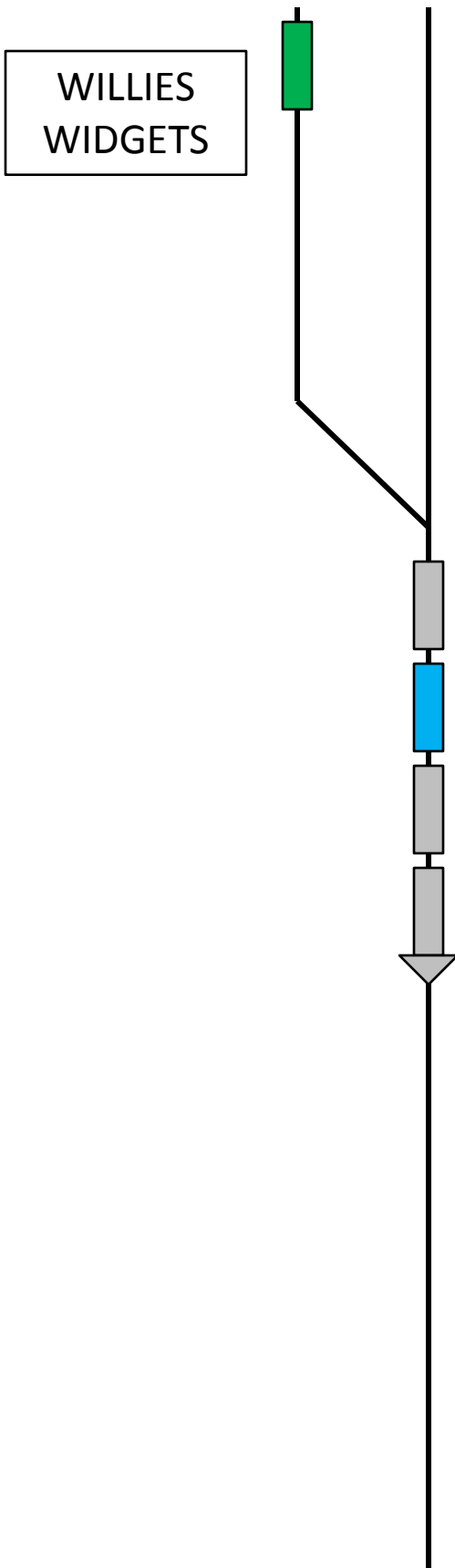
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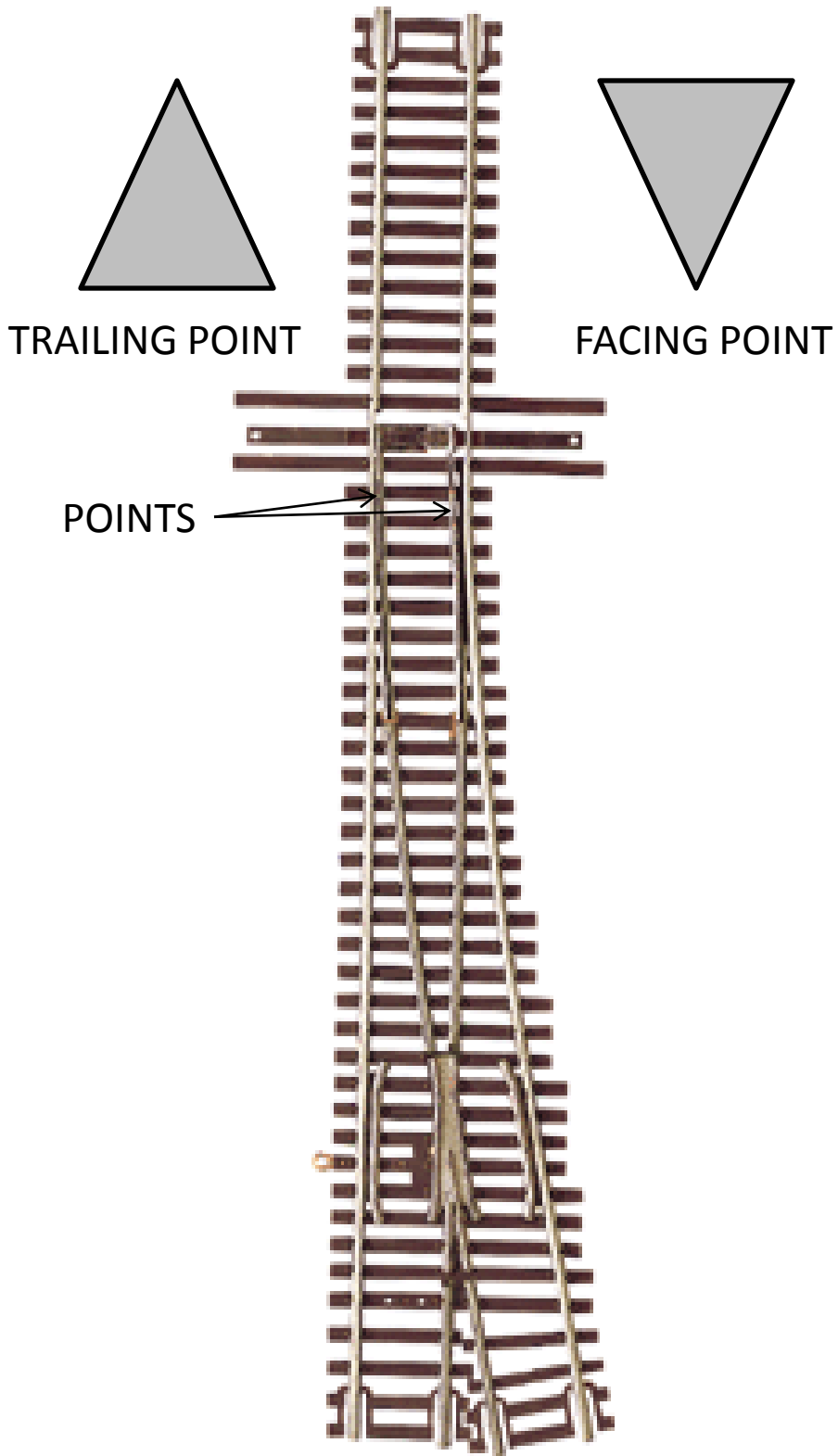
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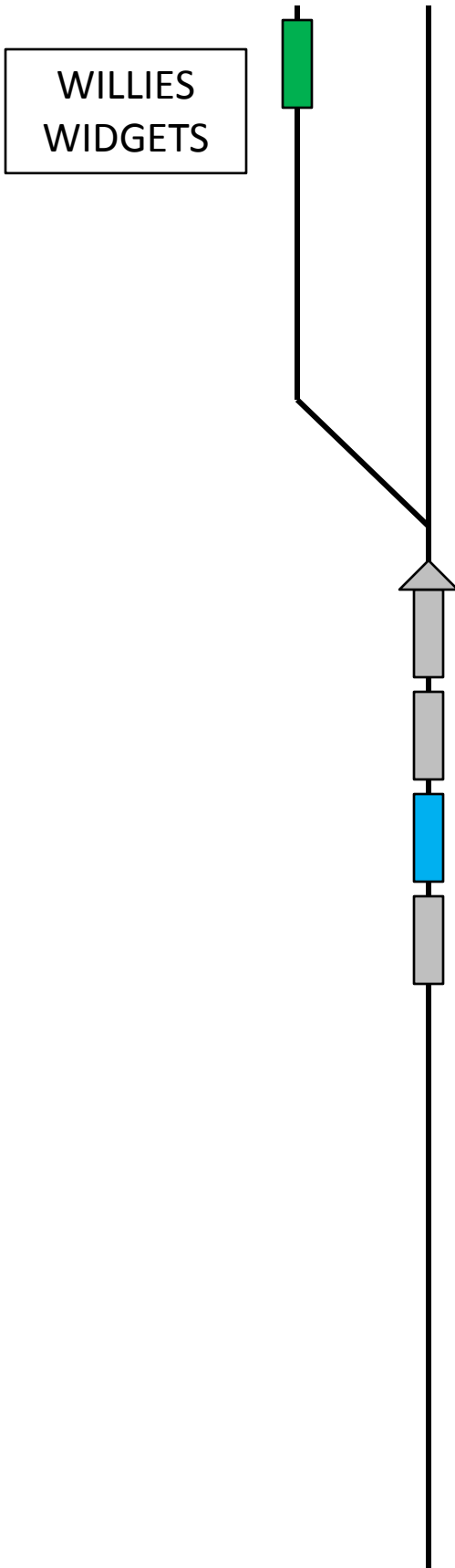
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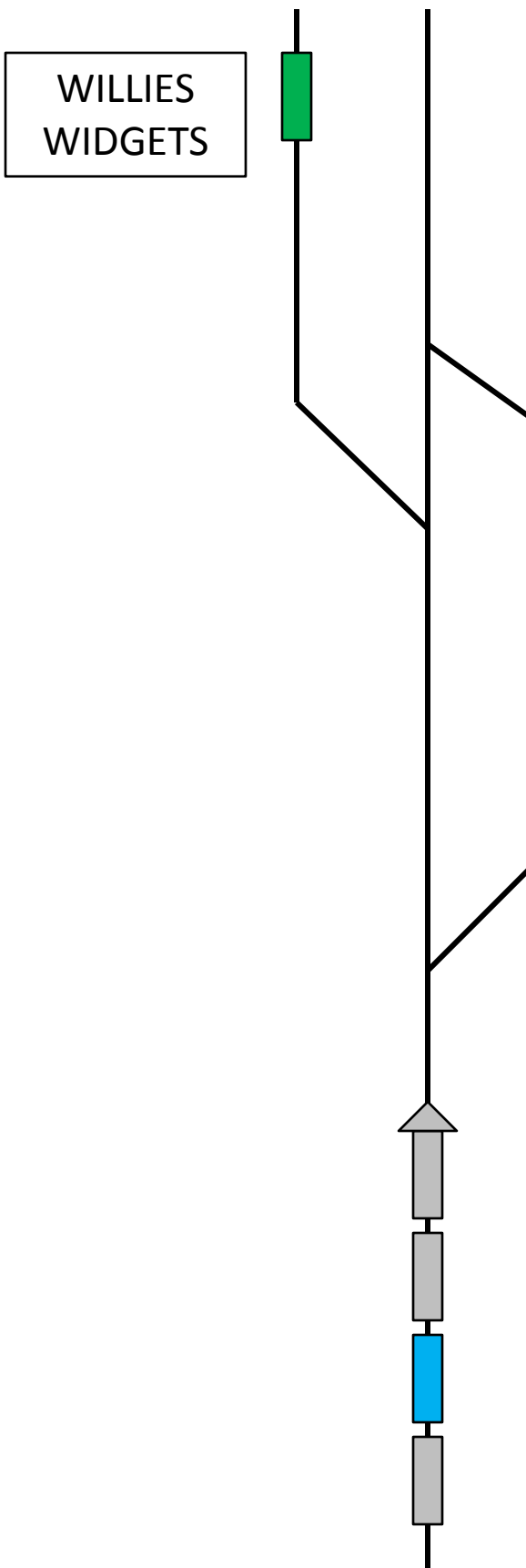
Operations 101



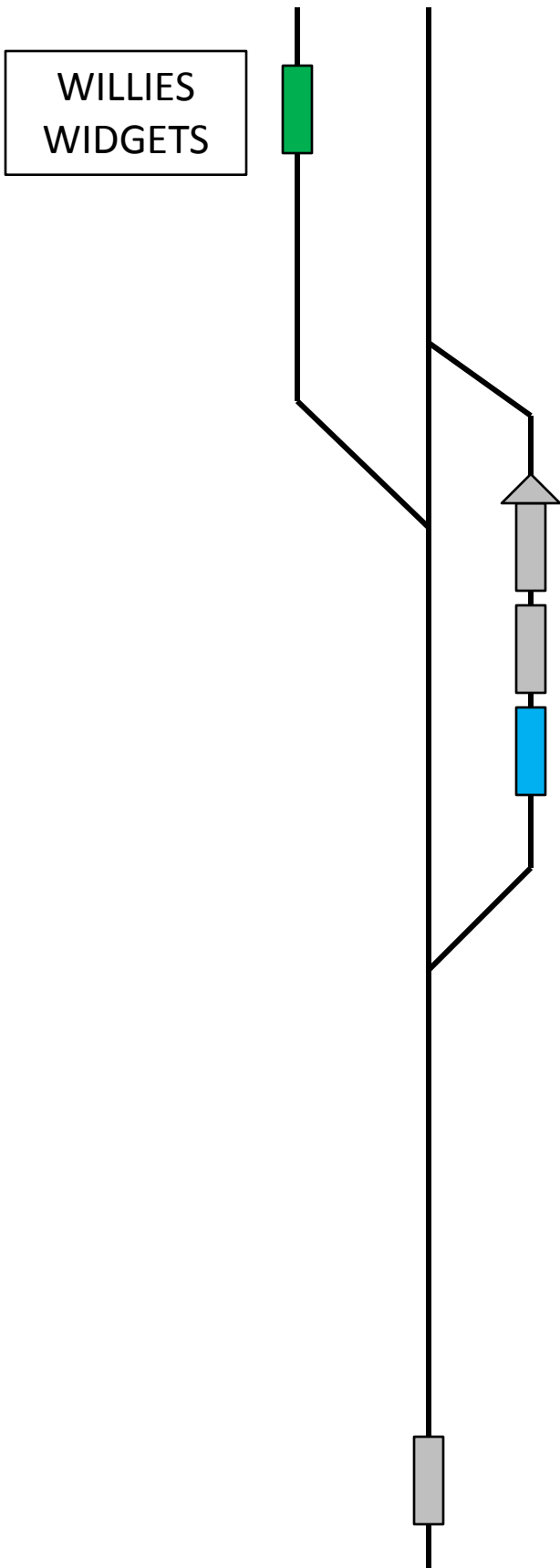
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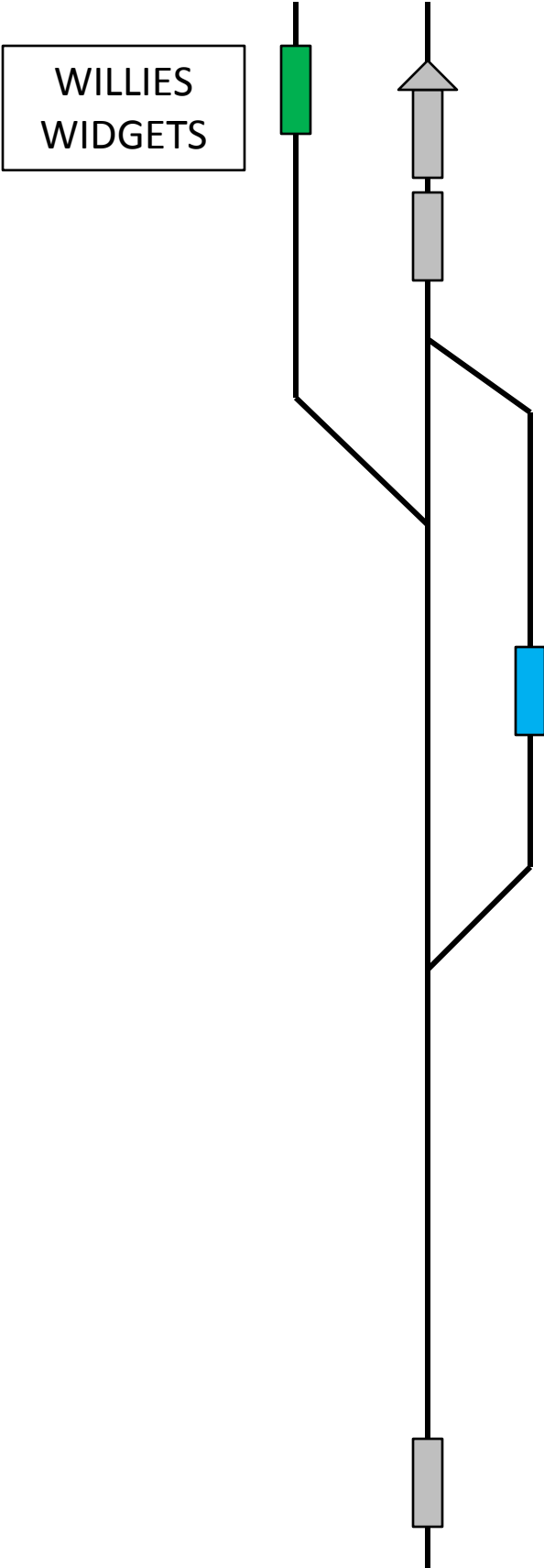
BASIC SIDING w. RUNAROUND TRACK



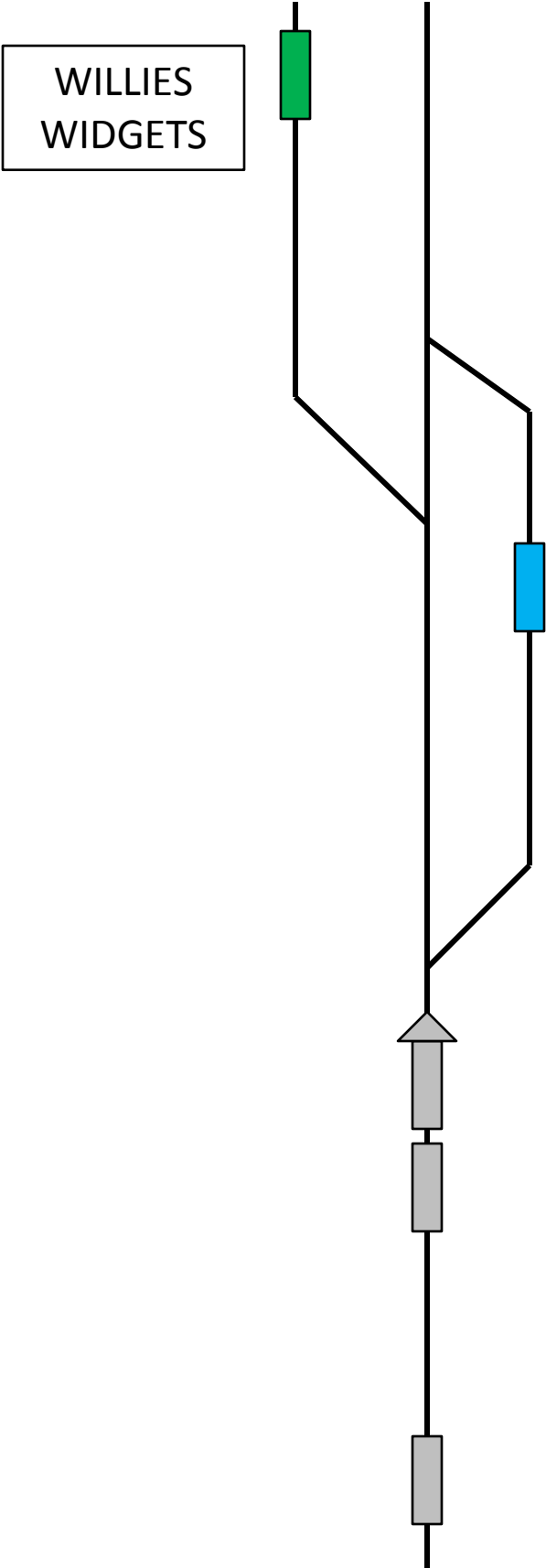
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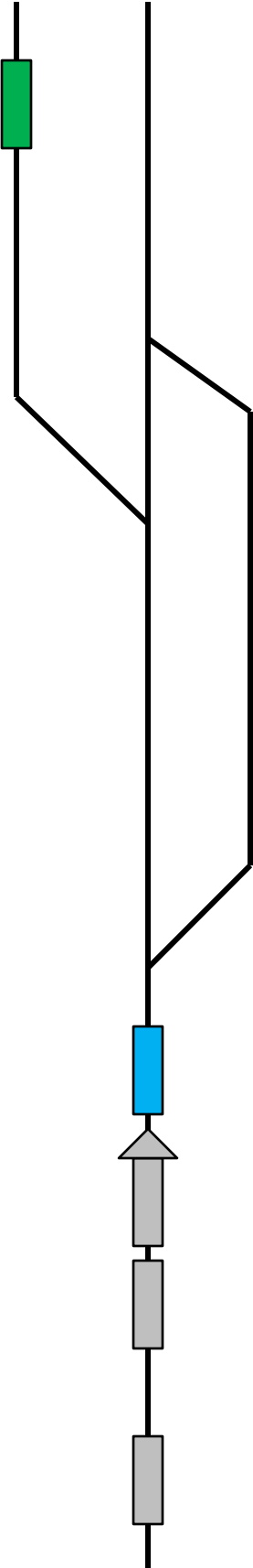


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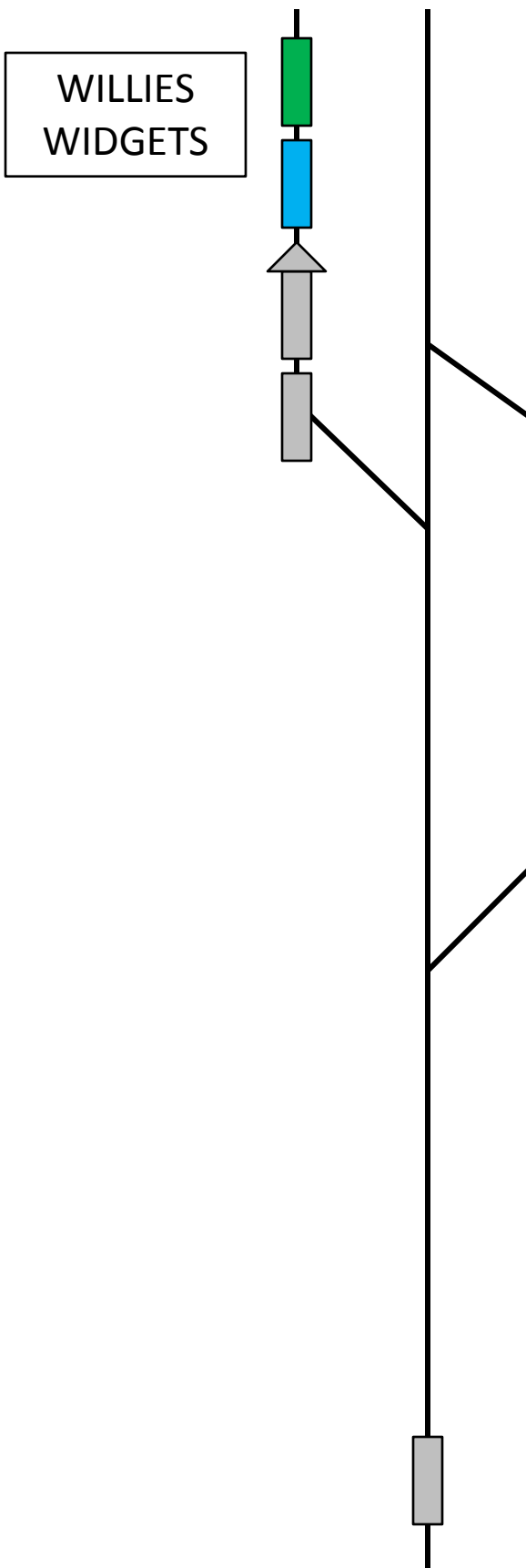


BASIC SIDING w. RUNAROUND TRACK

WILLIES
WIDGETS

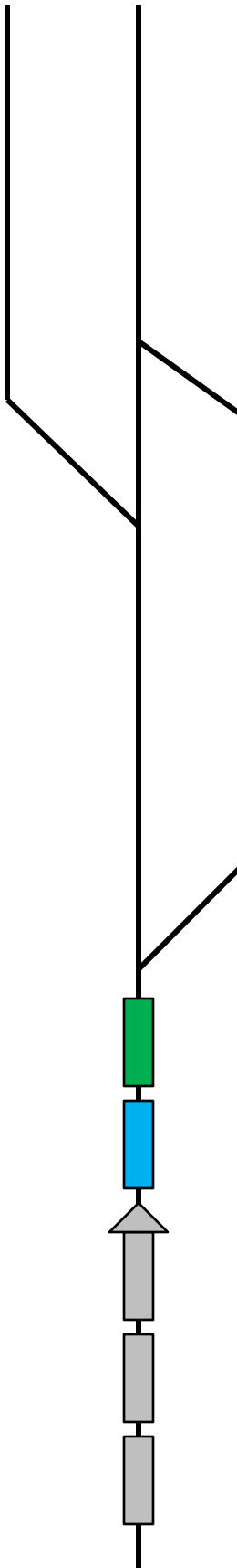


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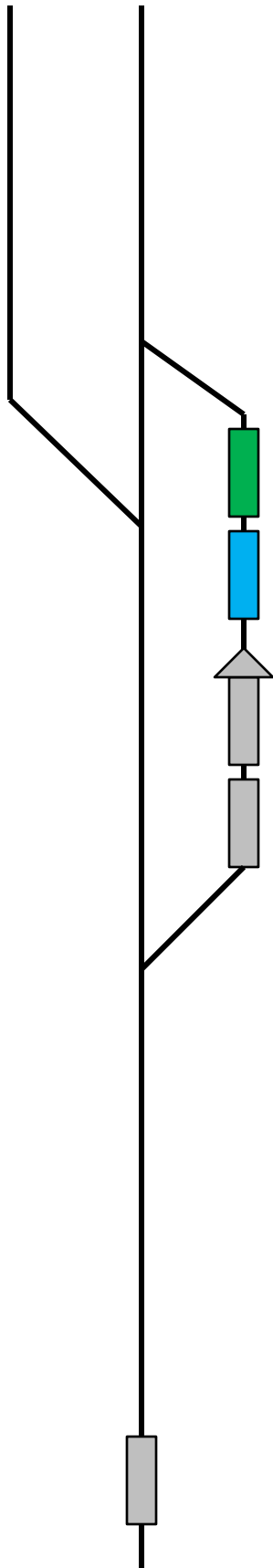
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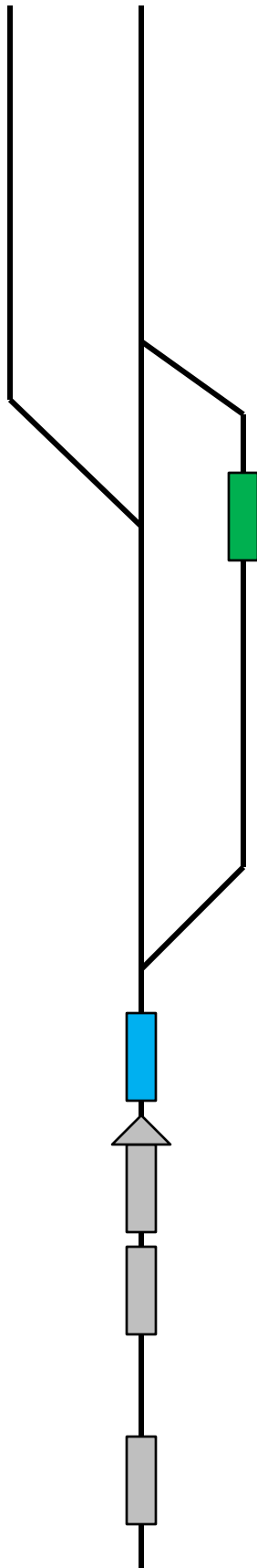
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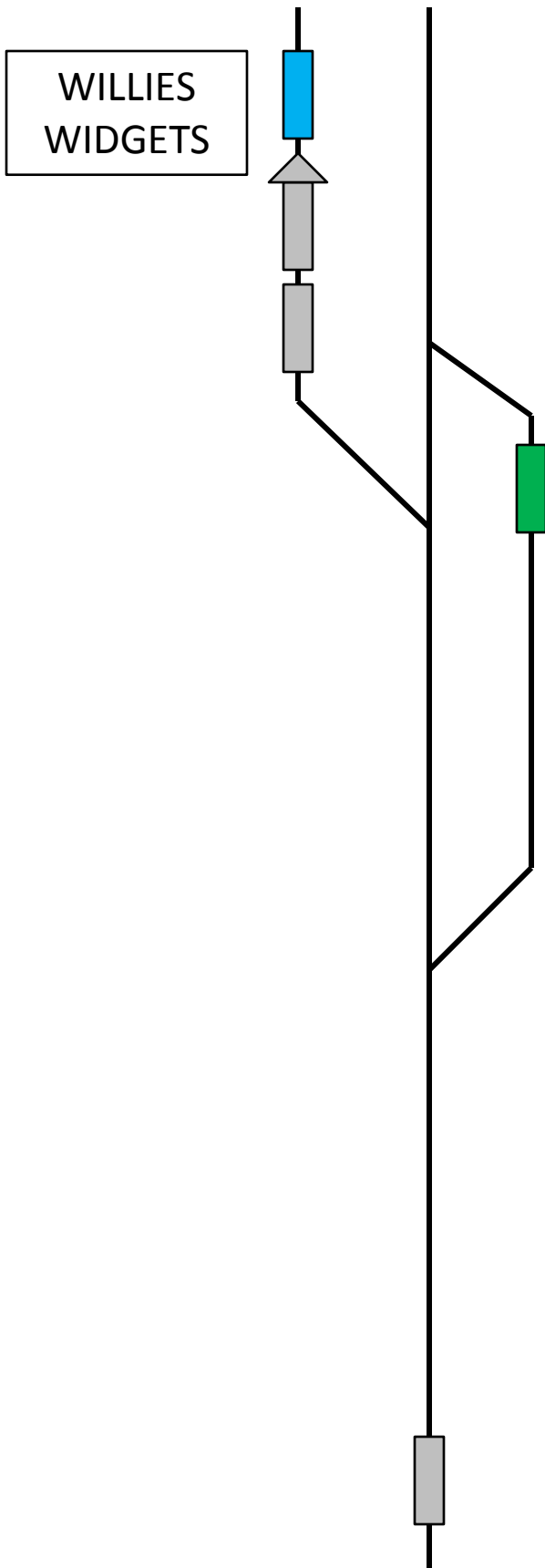


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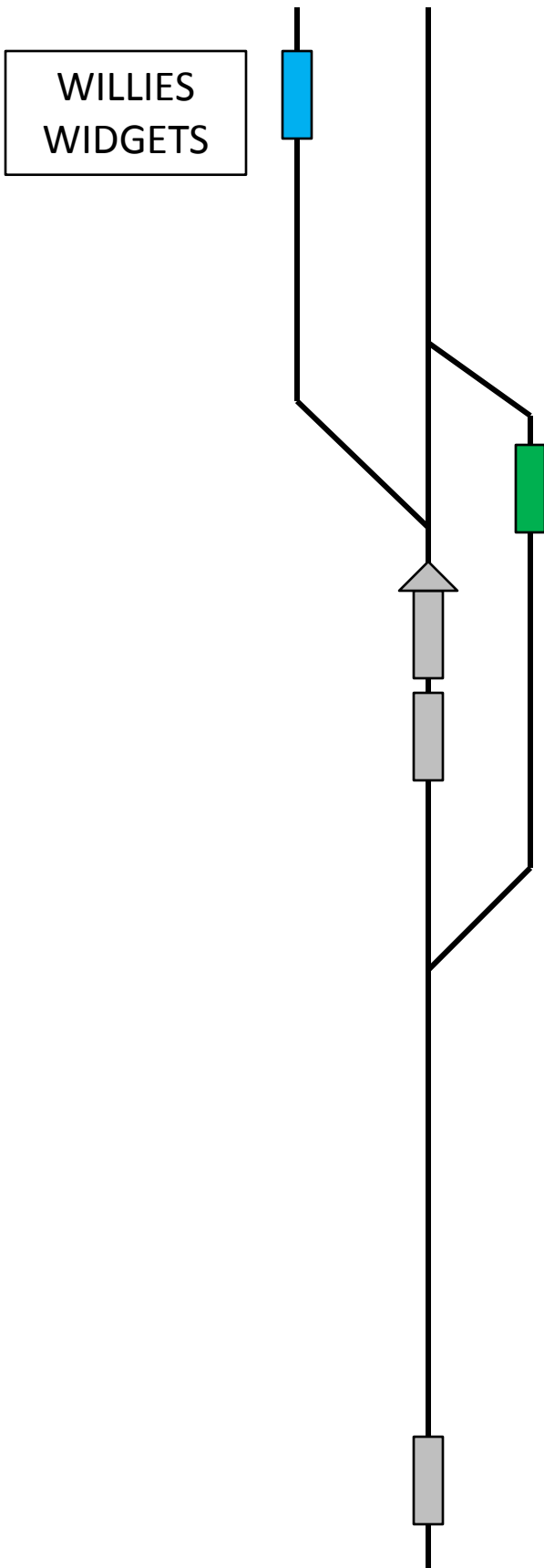
WILLIES
WIDGETS



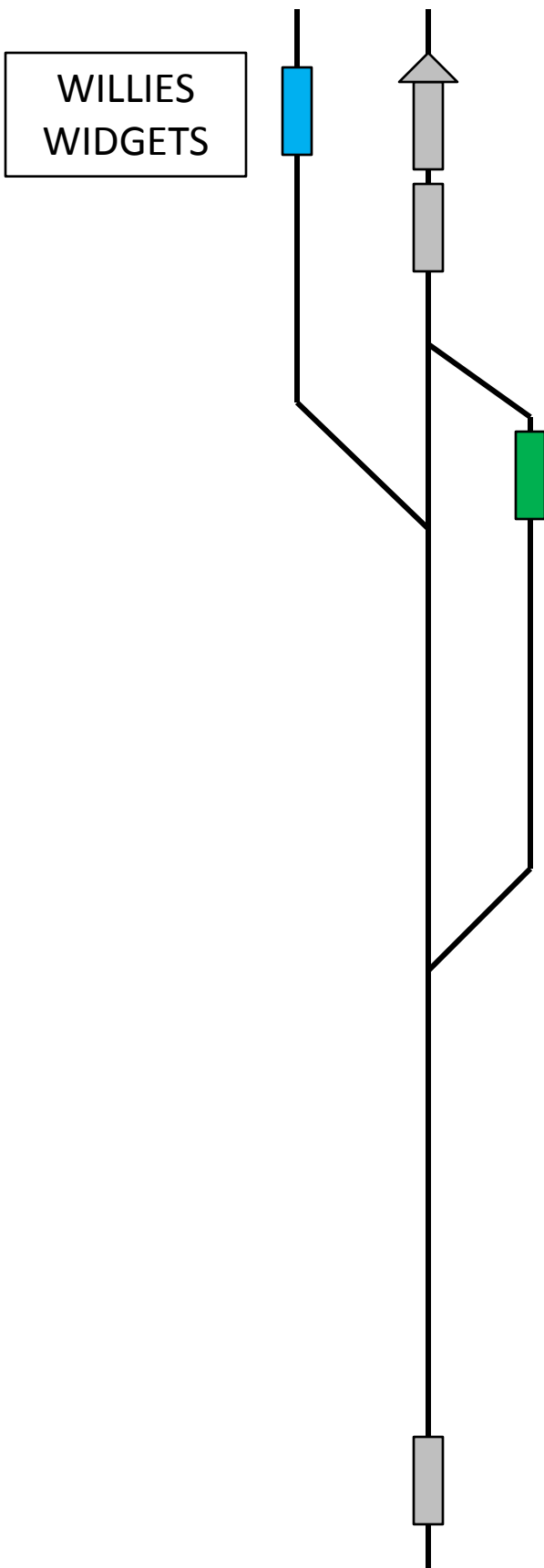
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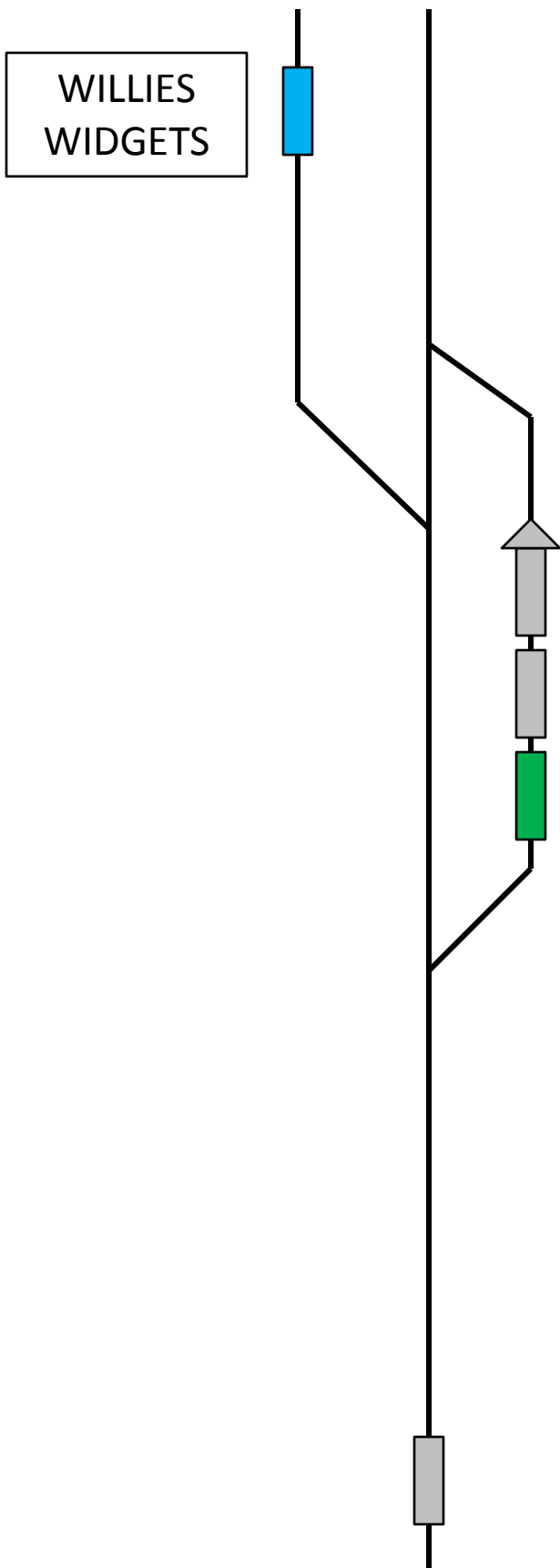
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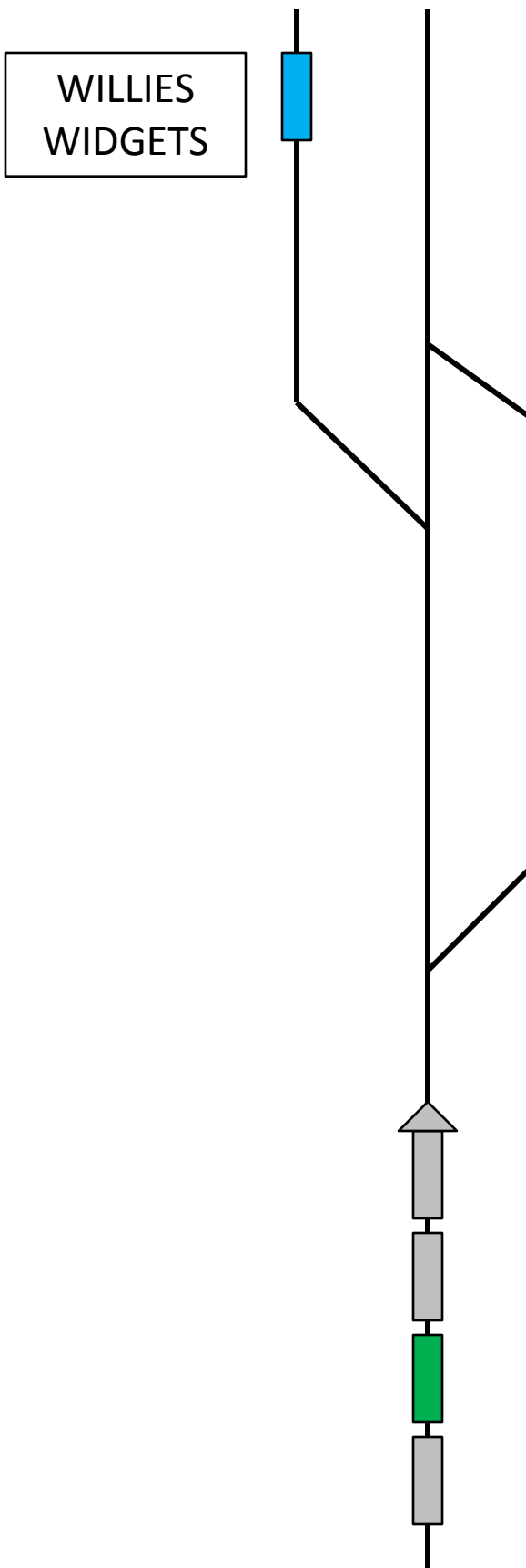
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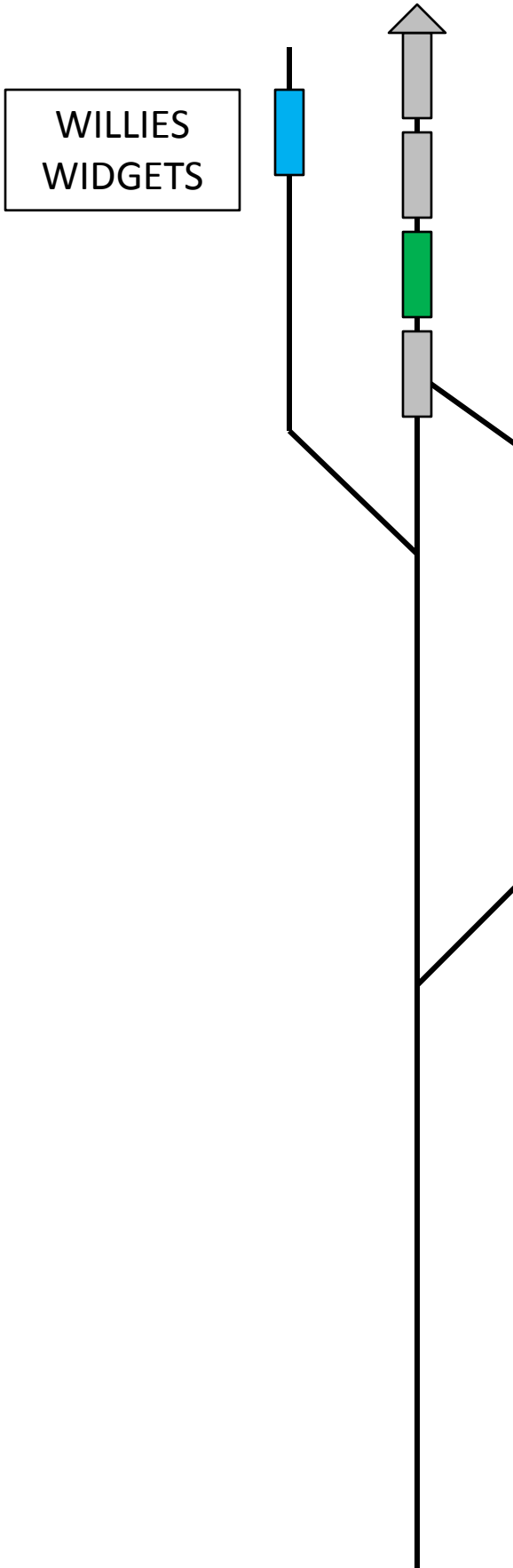
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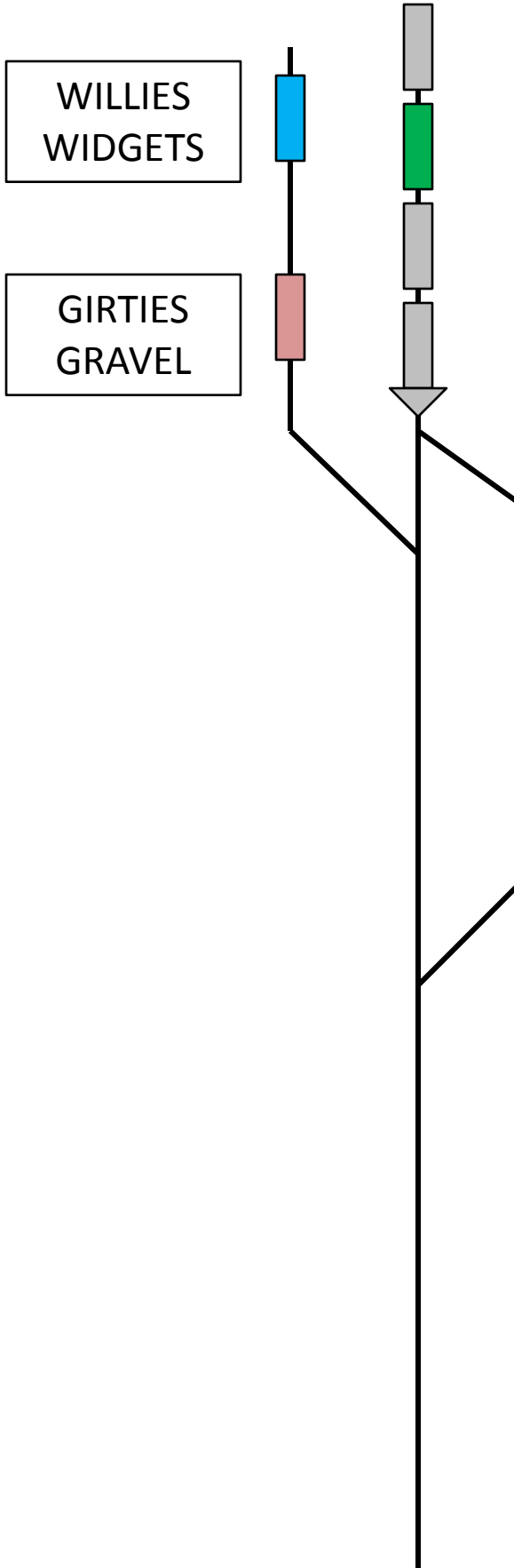
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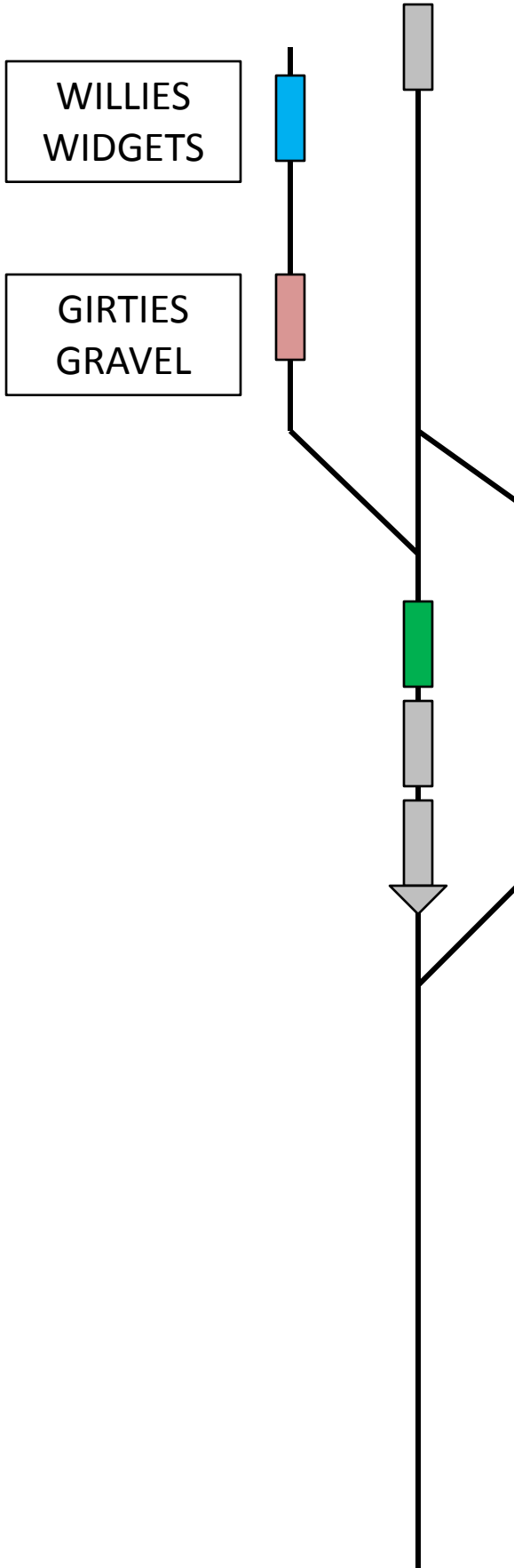
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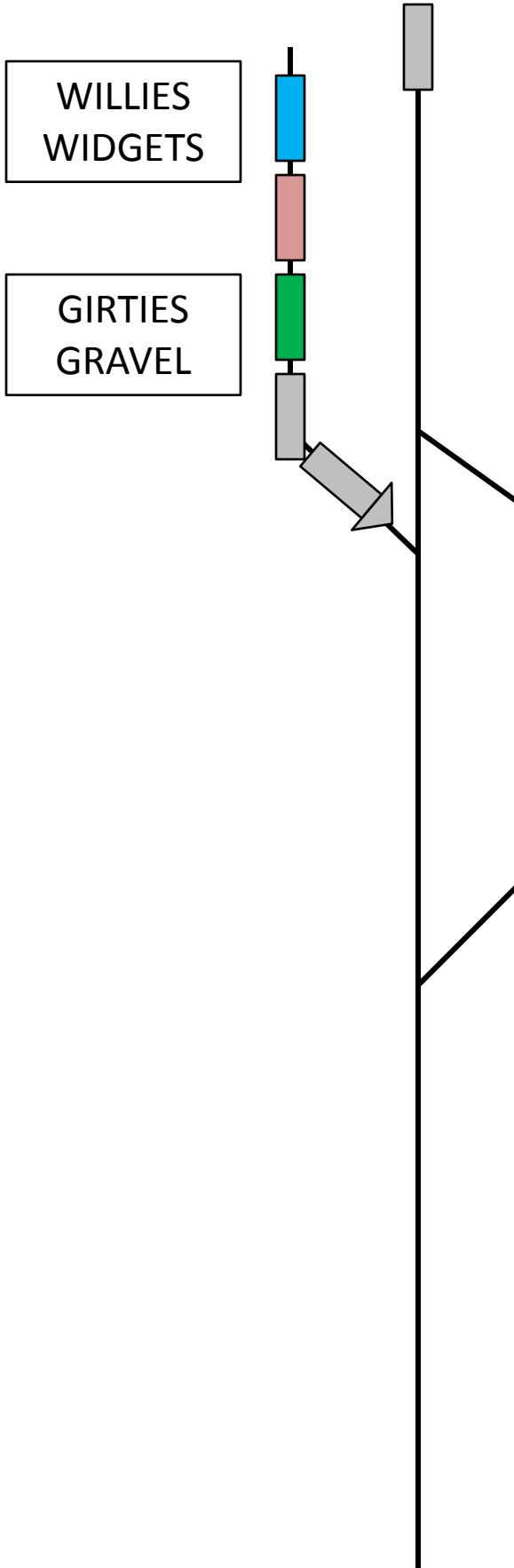
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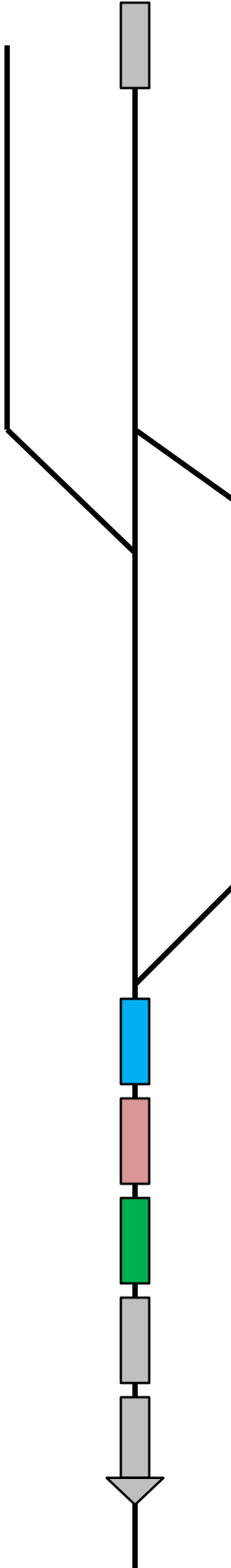
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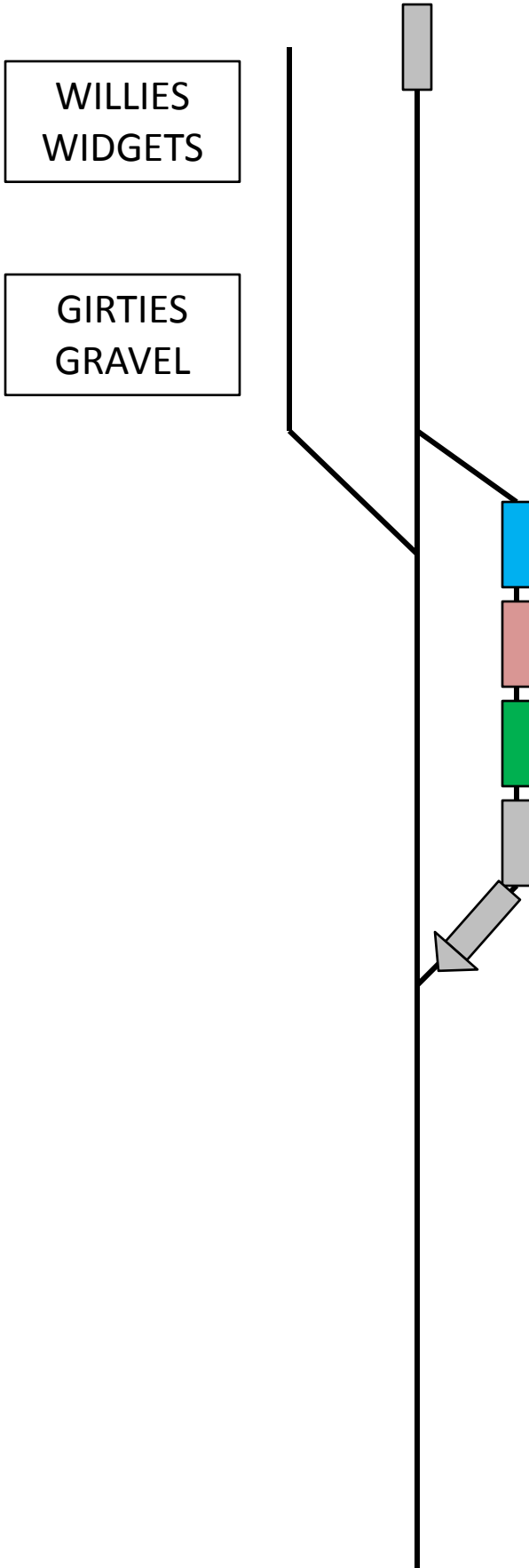
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WILLIES
WIDGETS

GIRTIES
GRAVEL



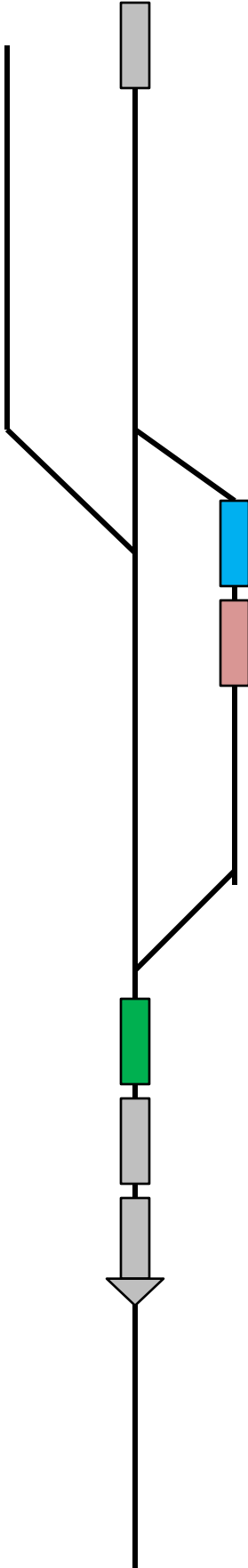
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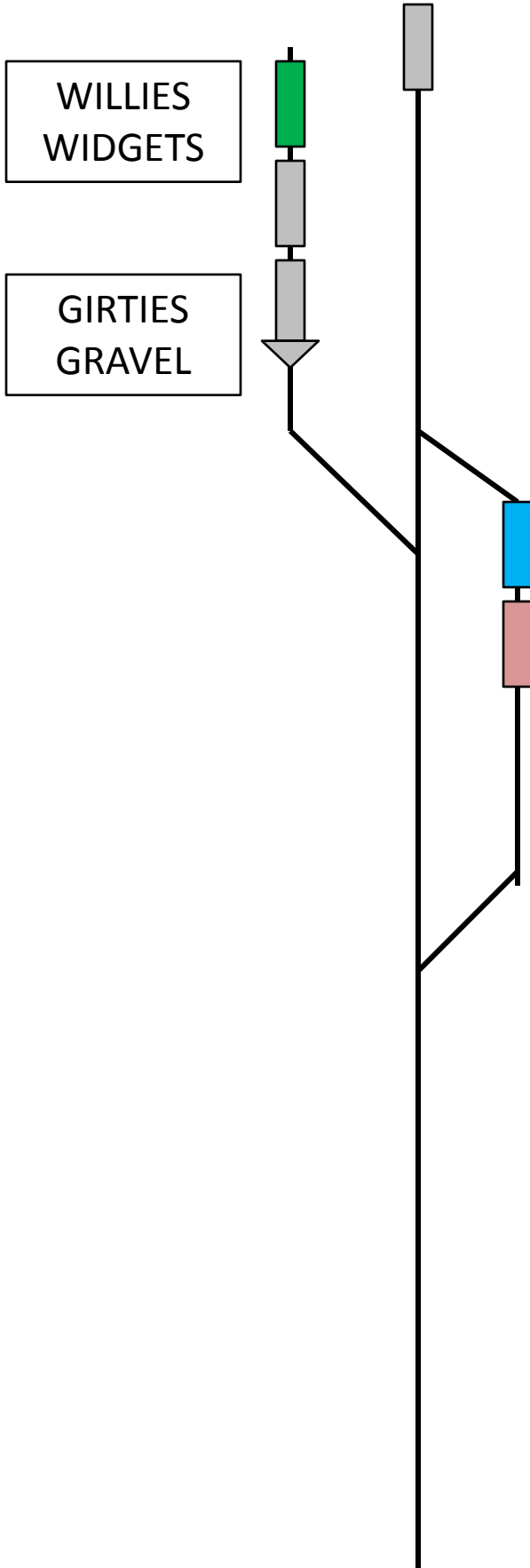
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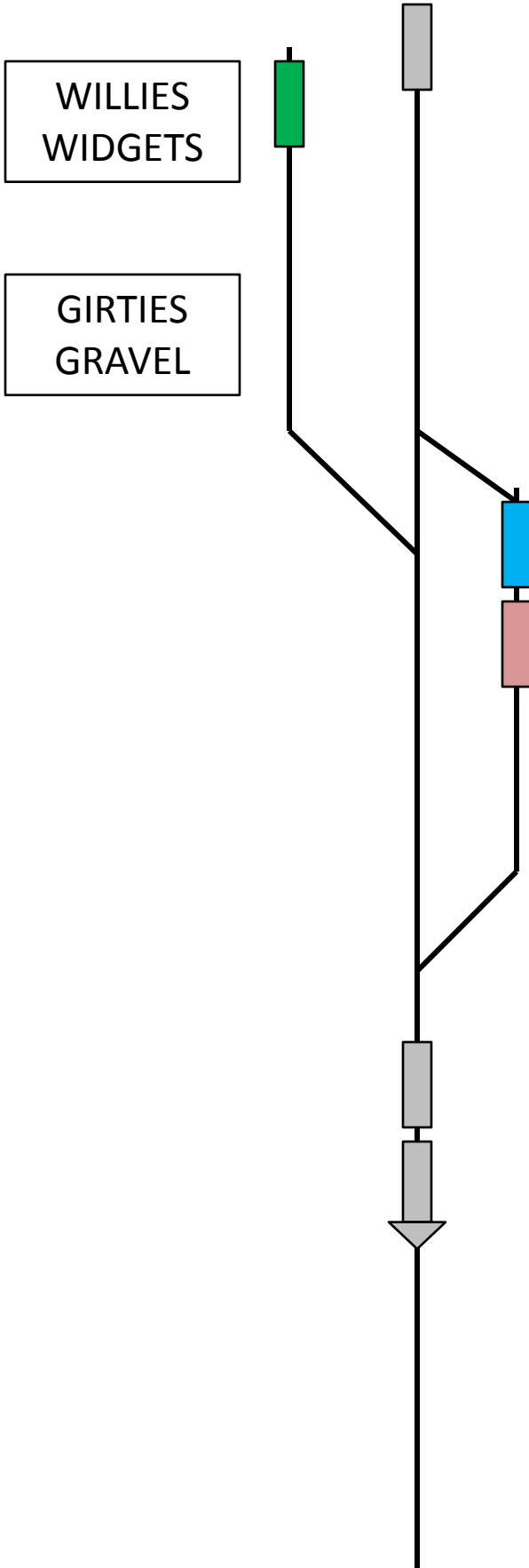
GIRTIES
GRAVEL



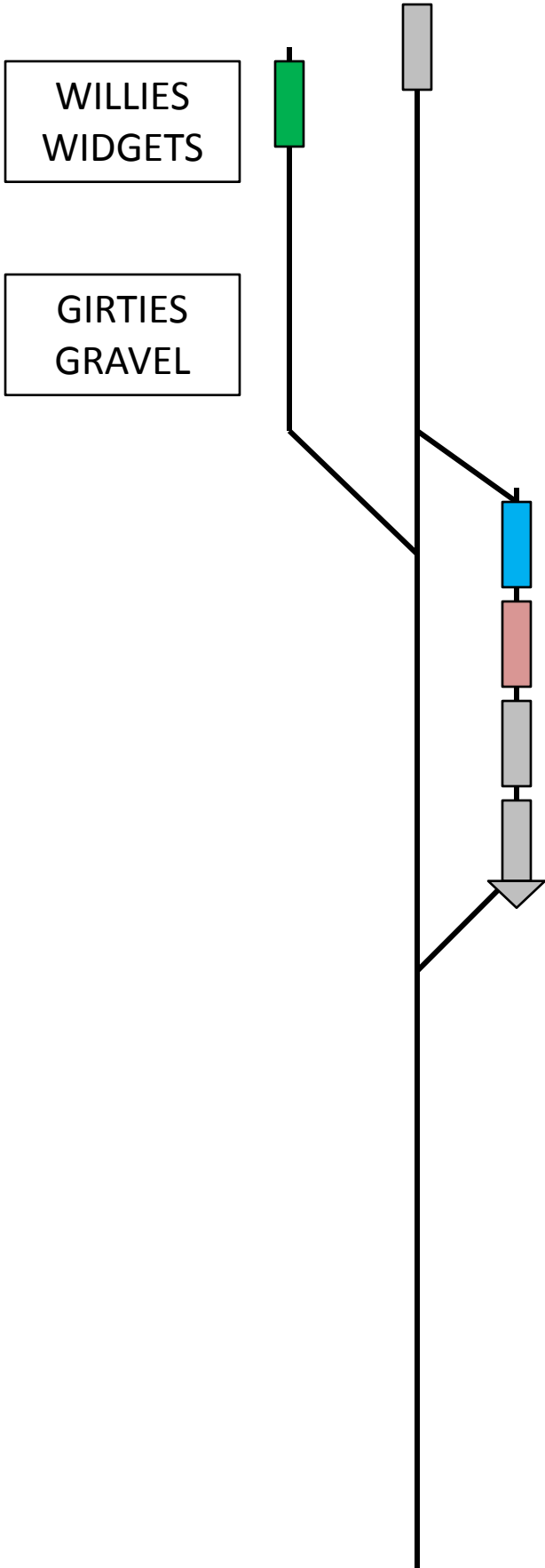
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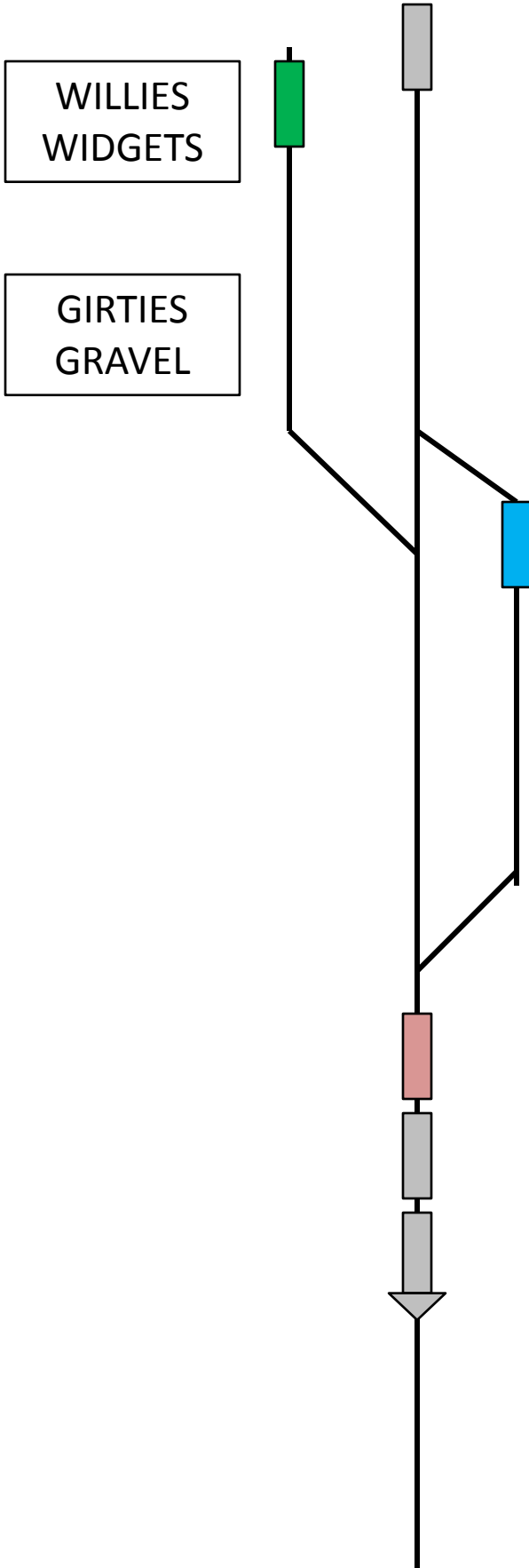
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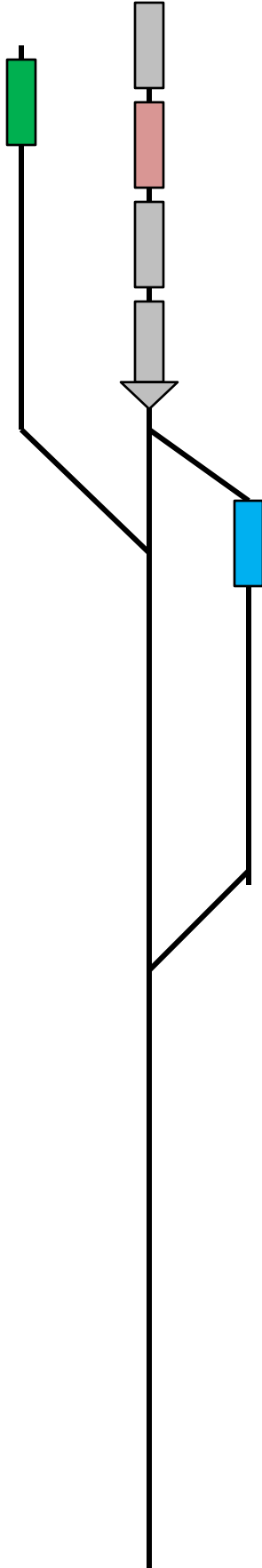
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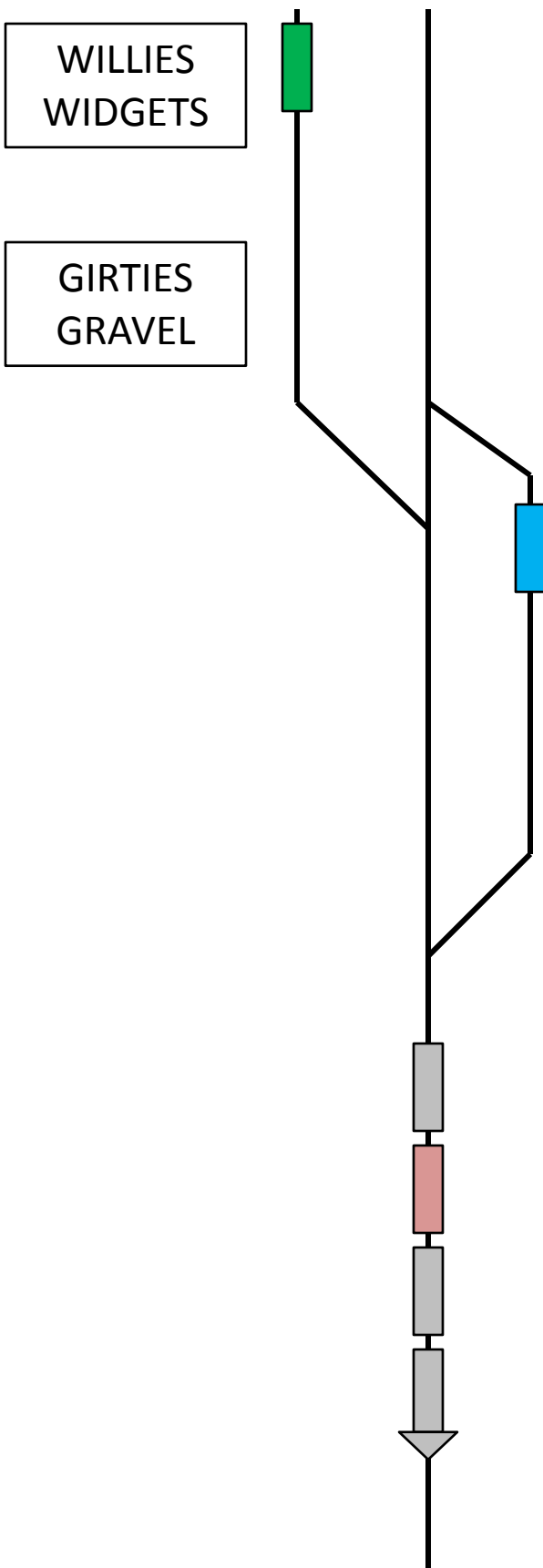
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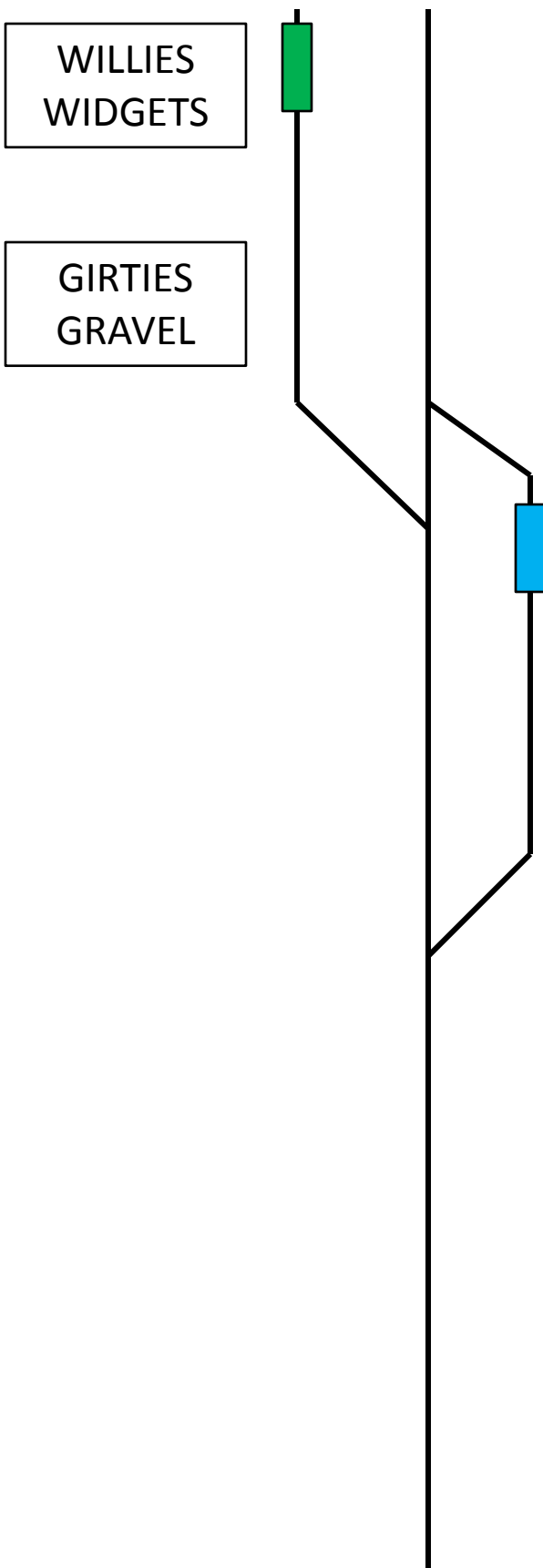
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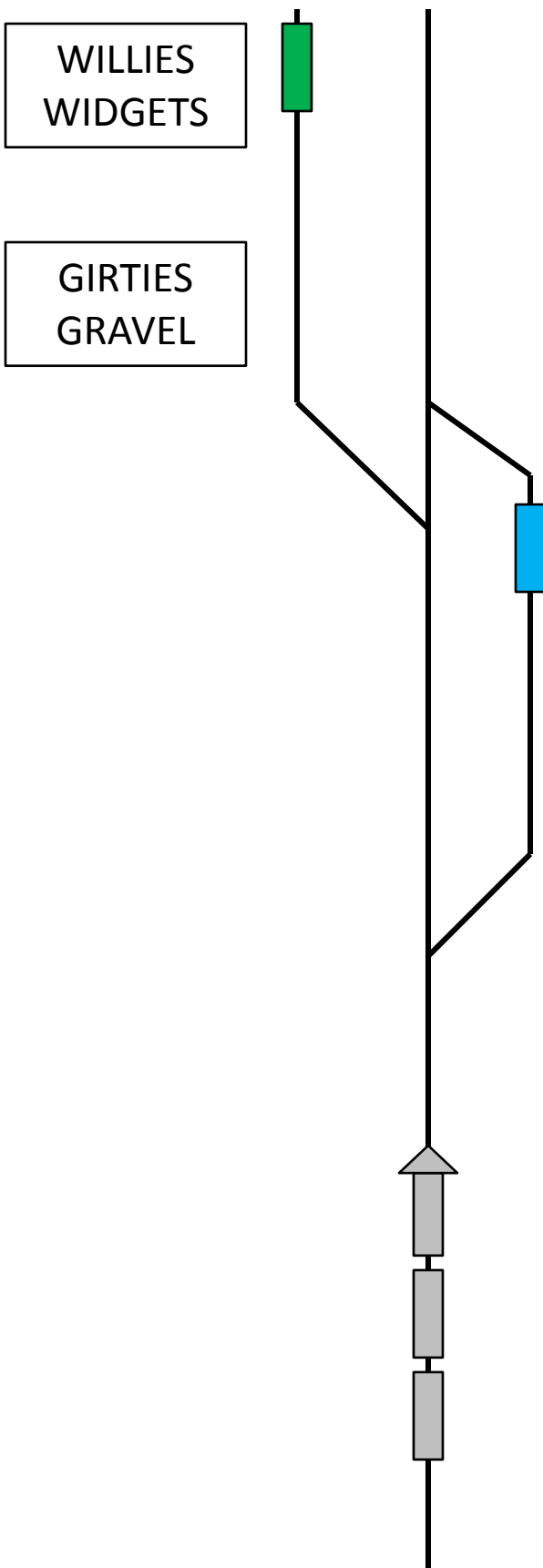
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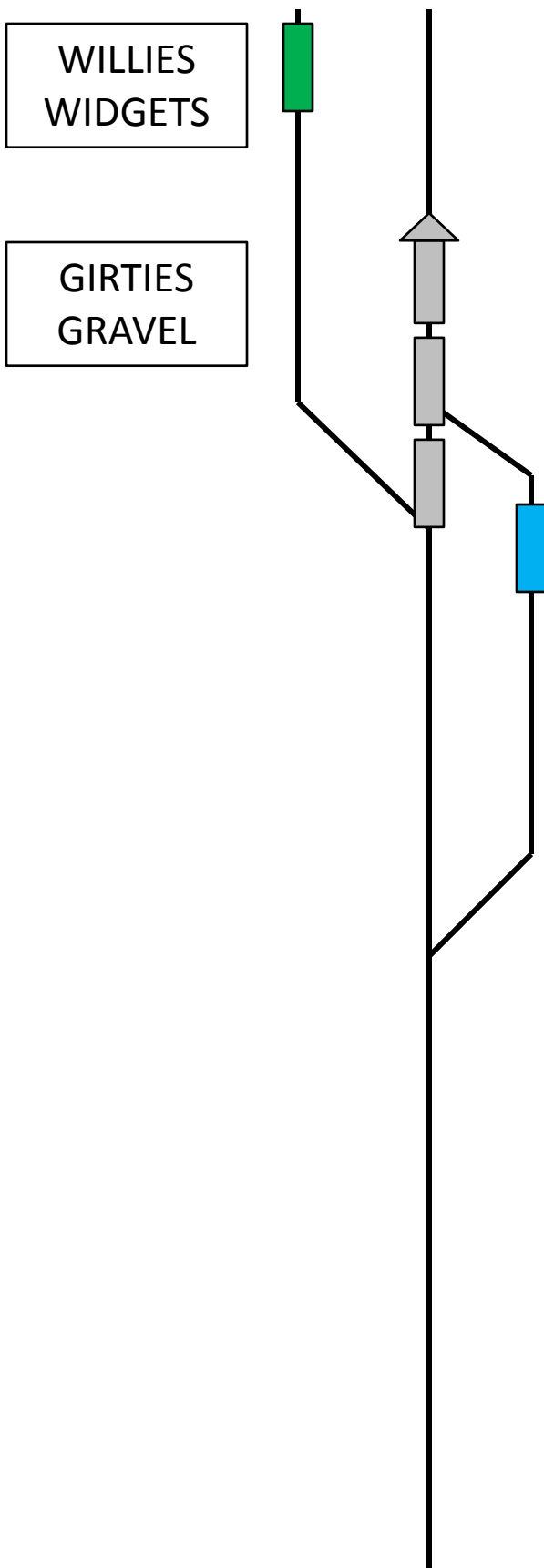
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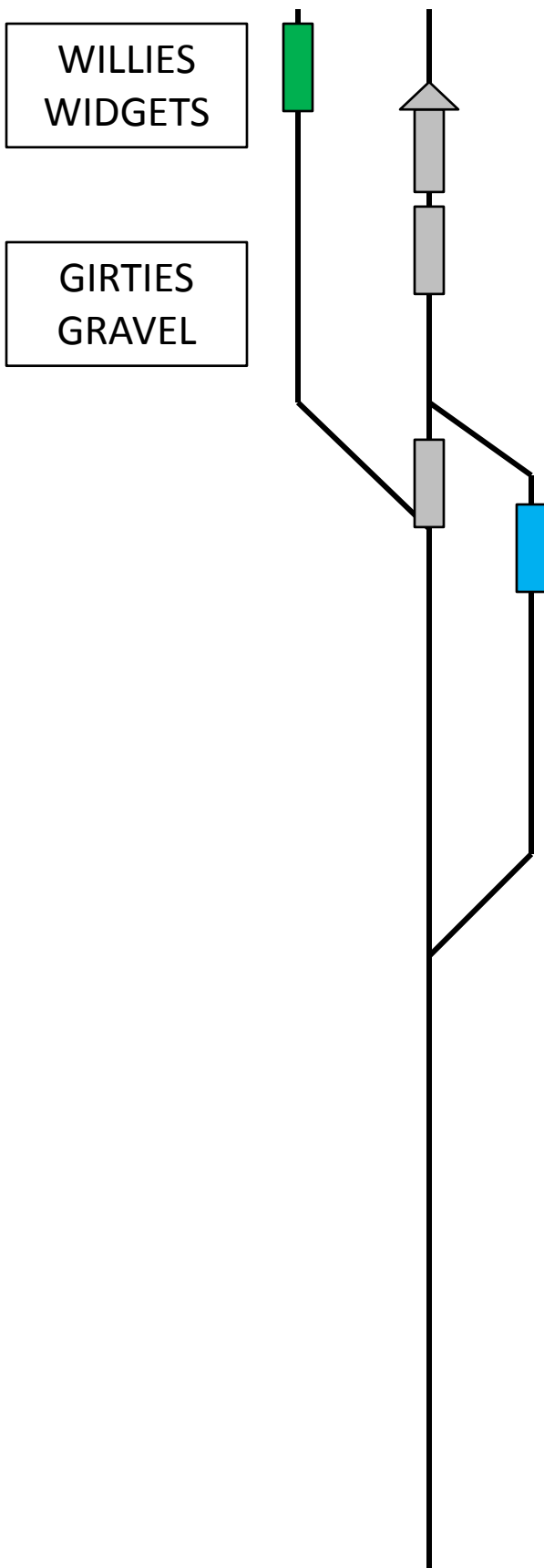
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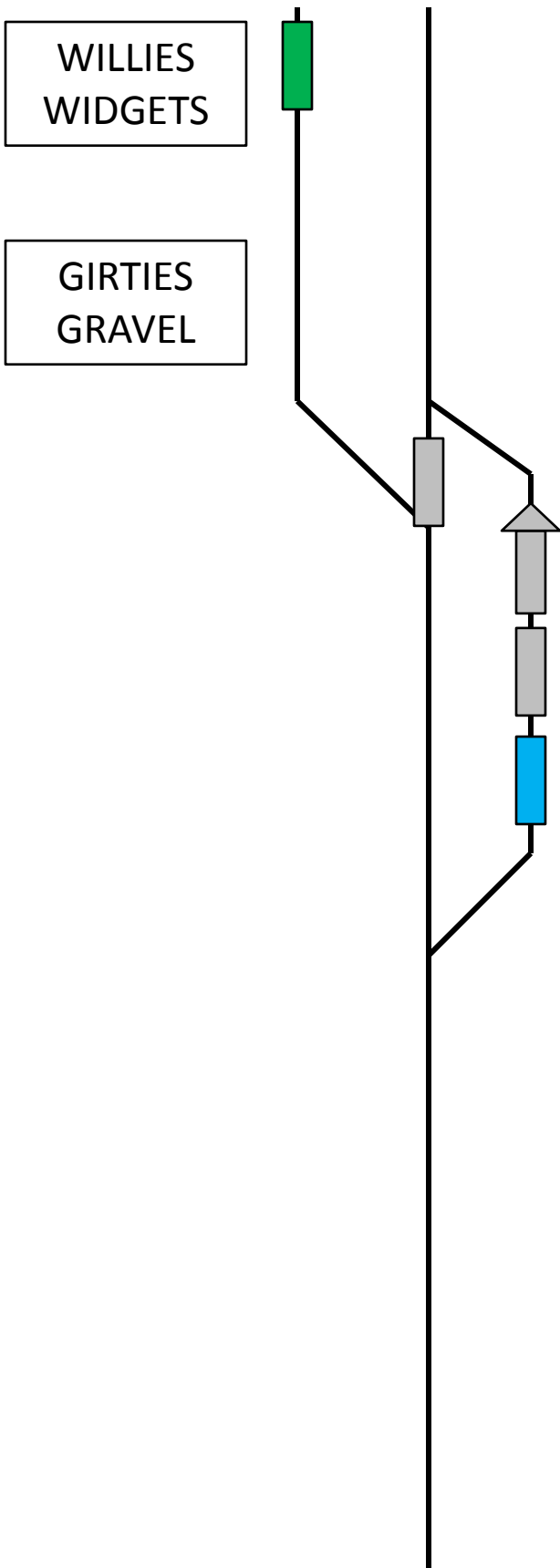
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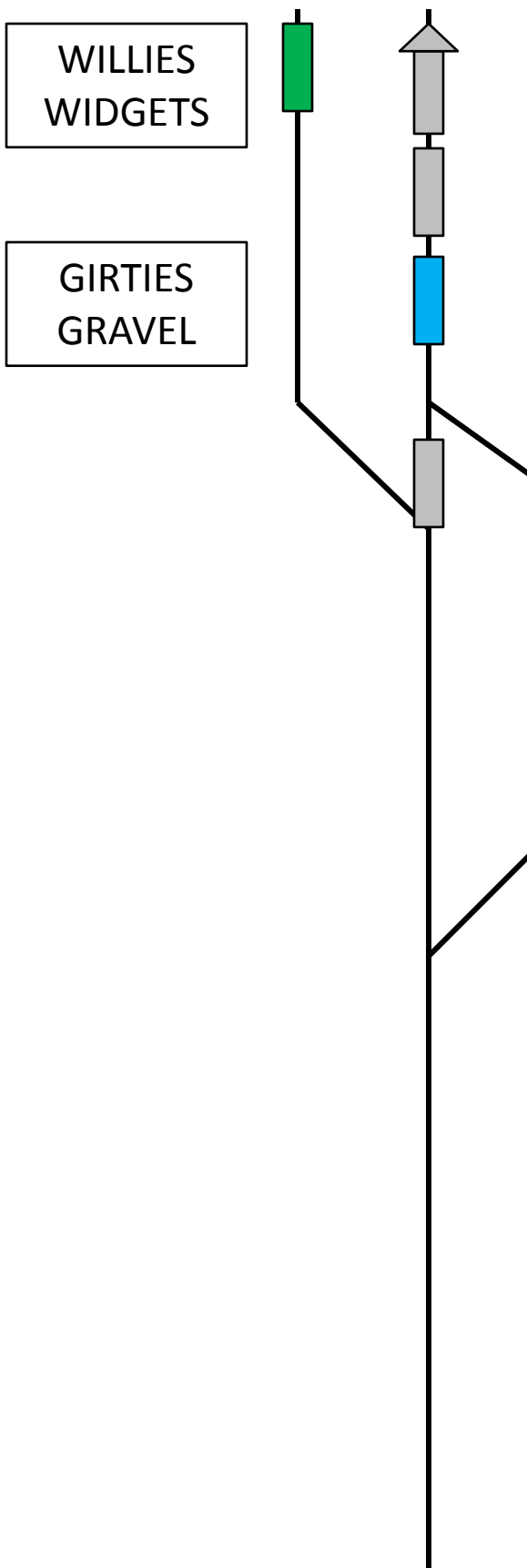
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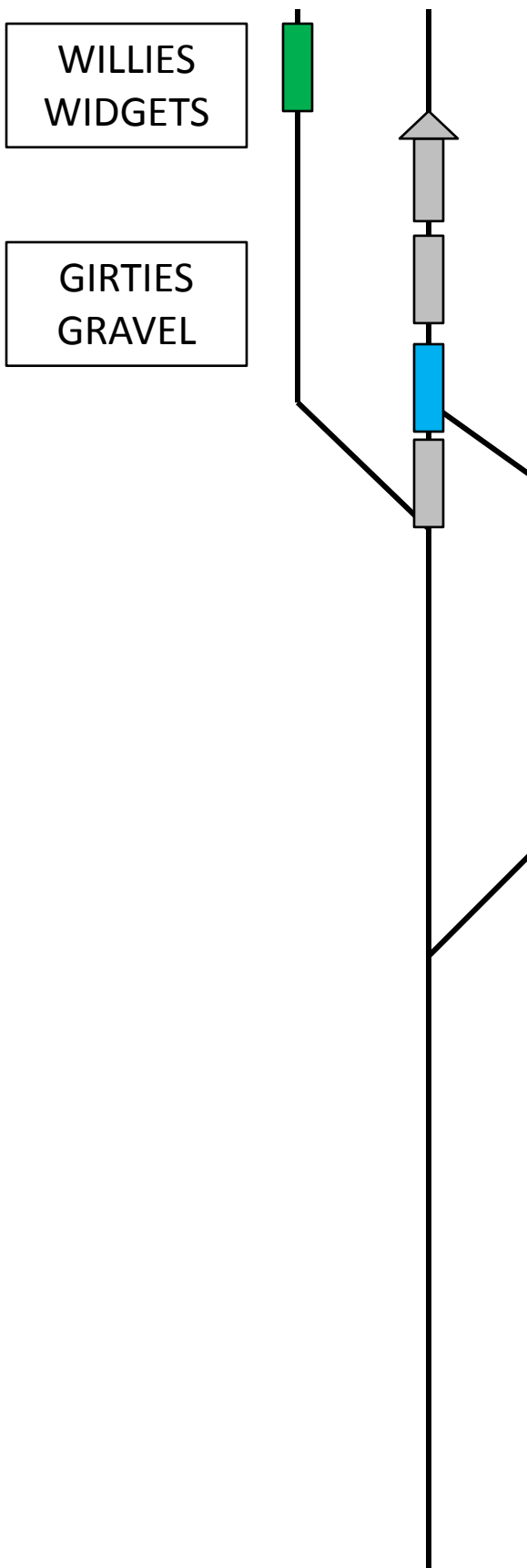
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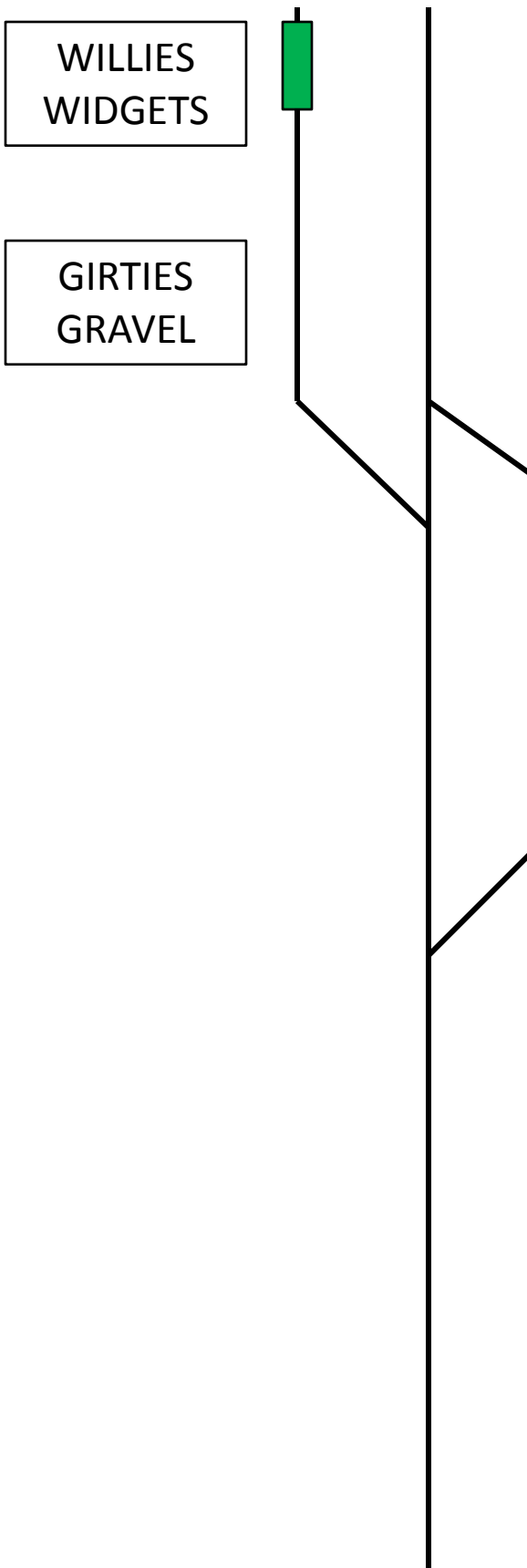
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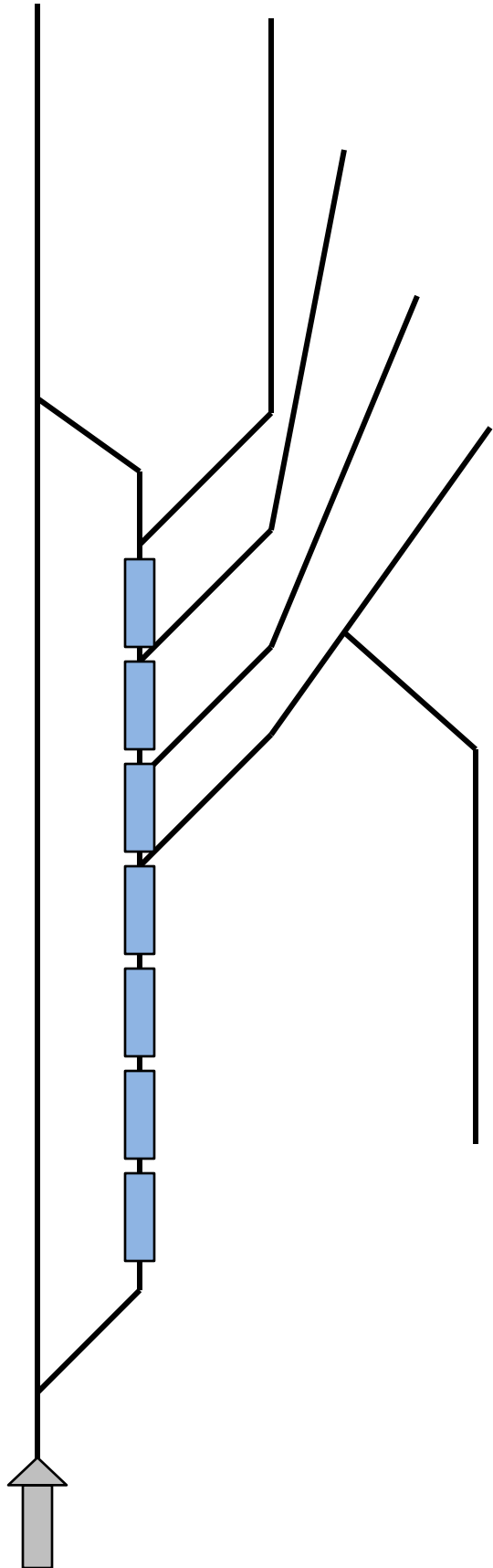
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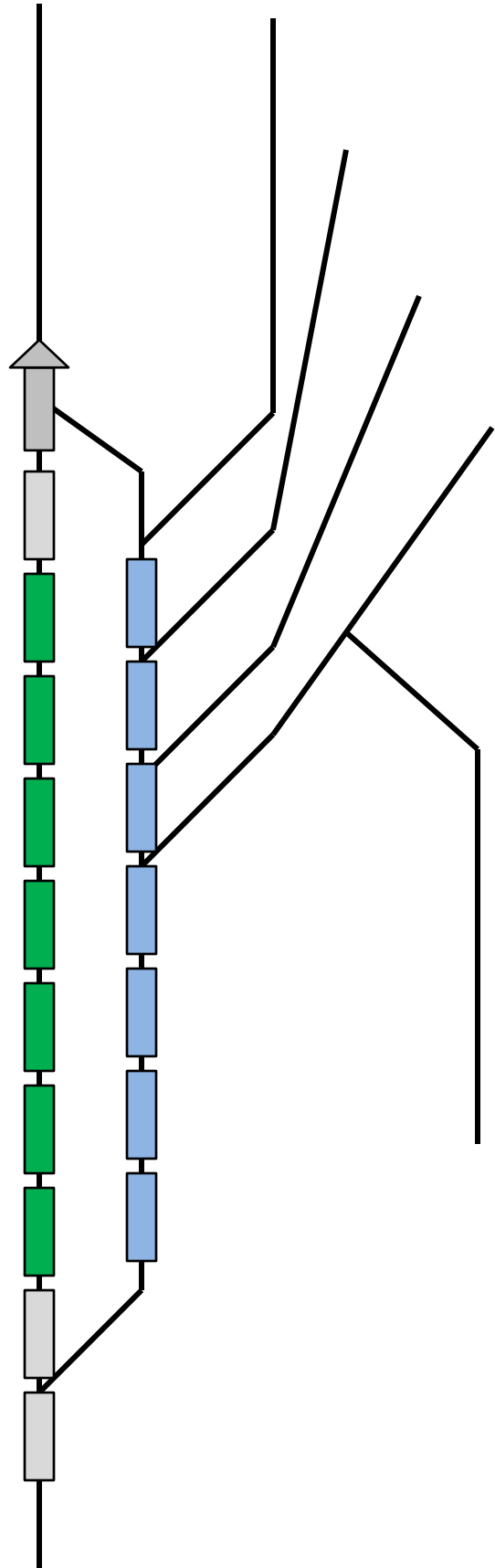
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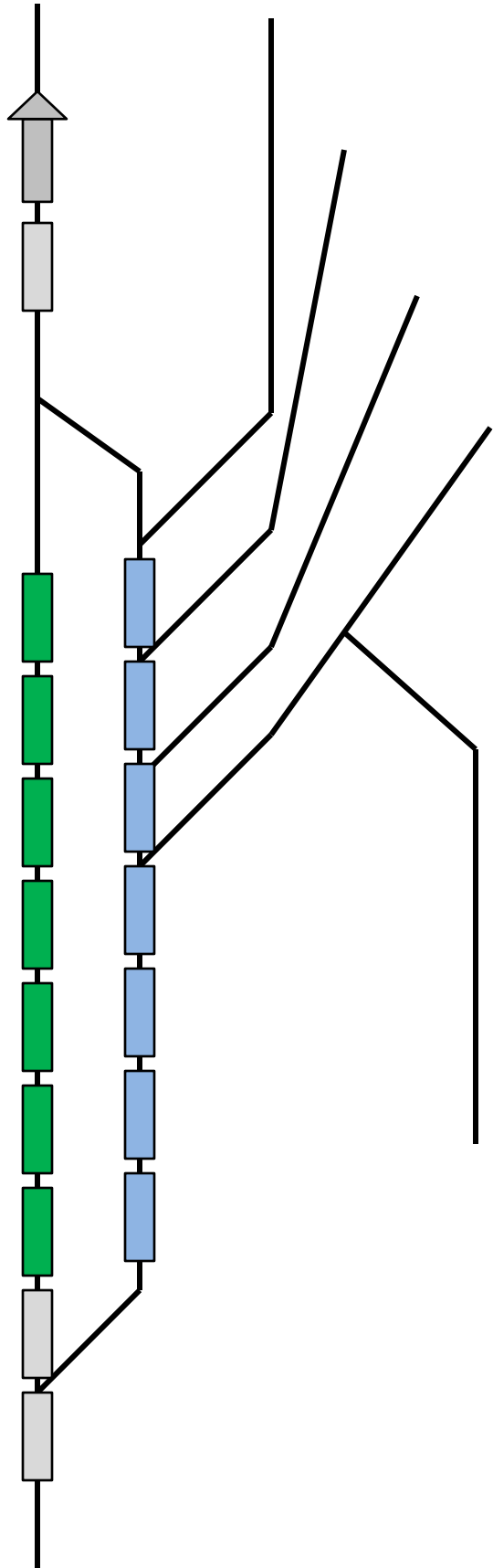
MULTIPLE SIDINGS at a LARGE INDUSTRY



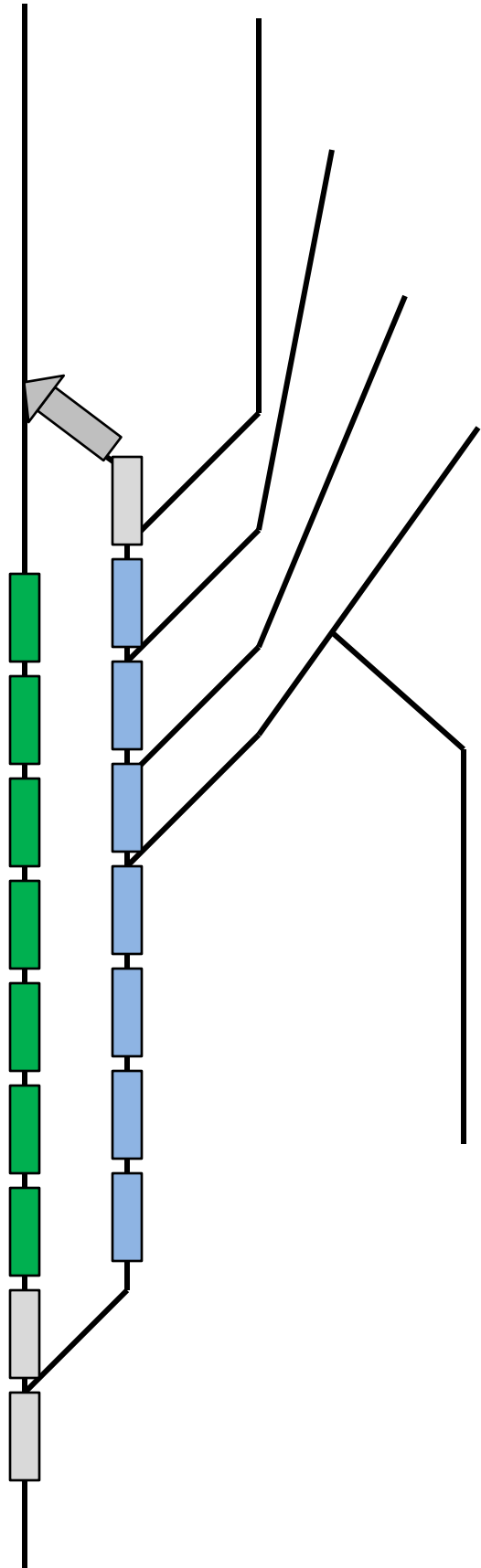
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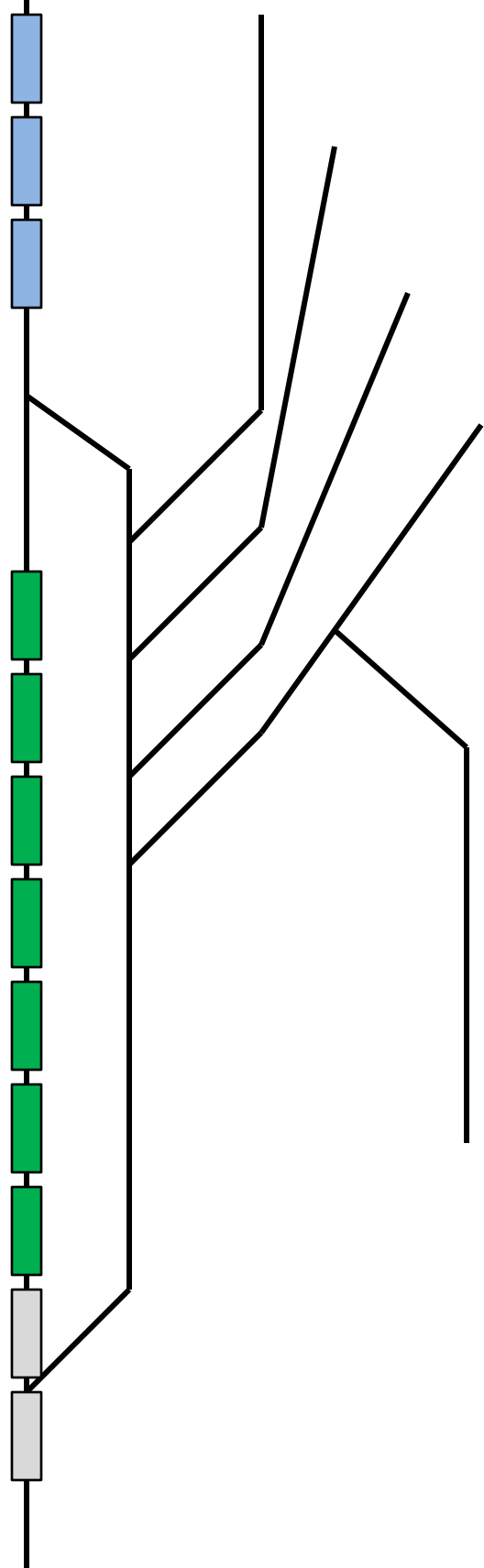
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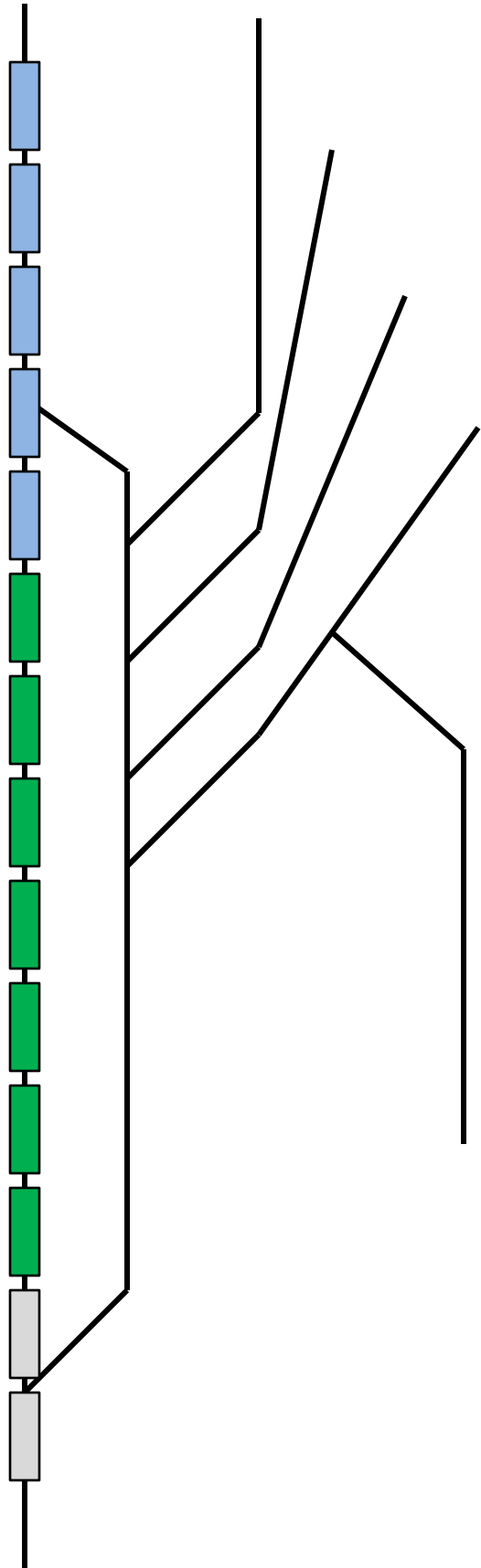
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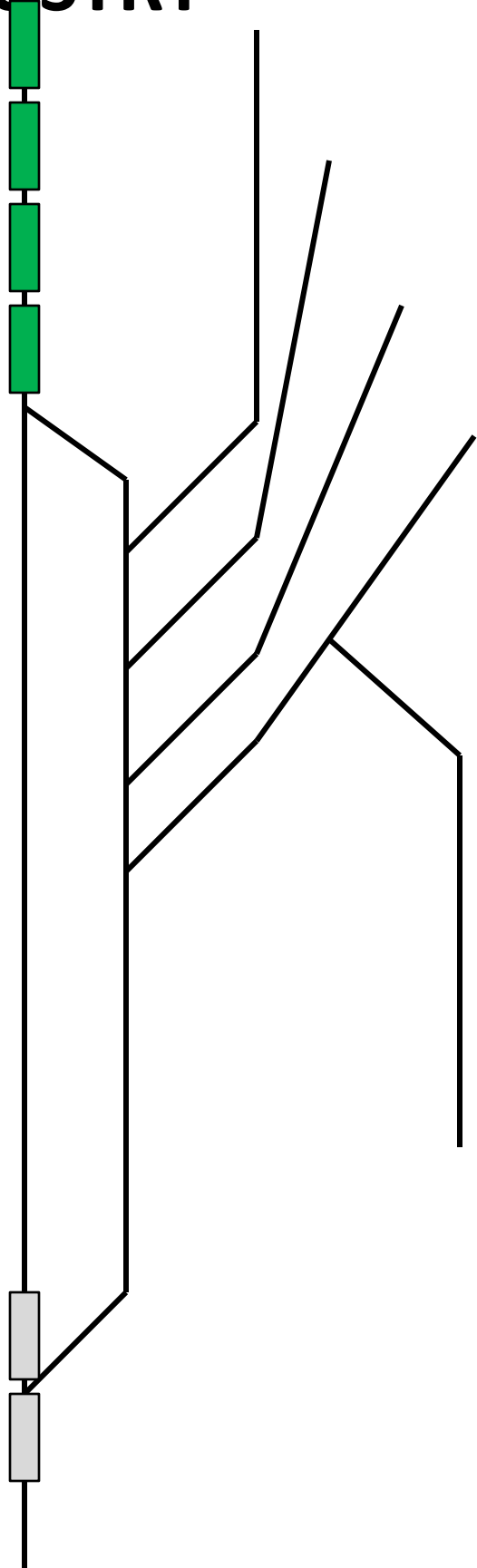
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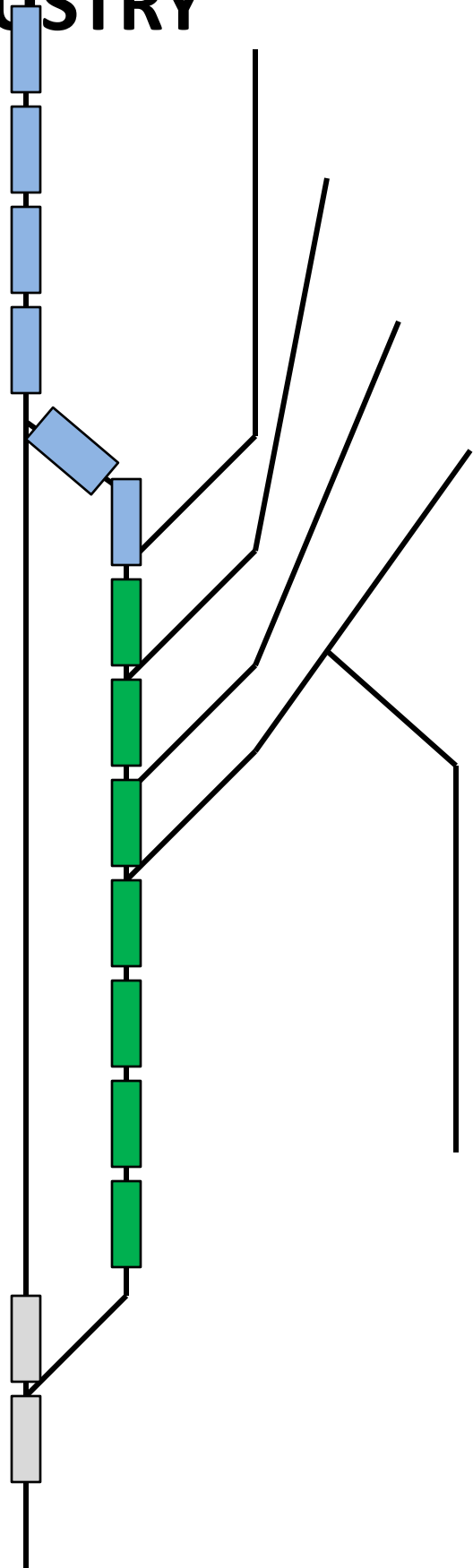
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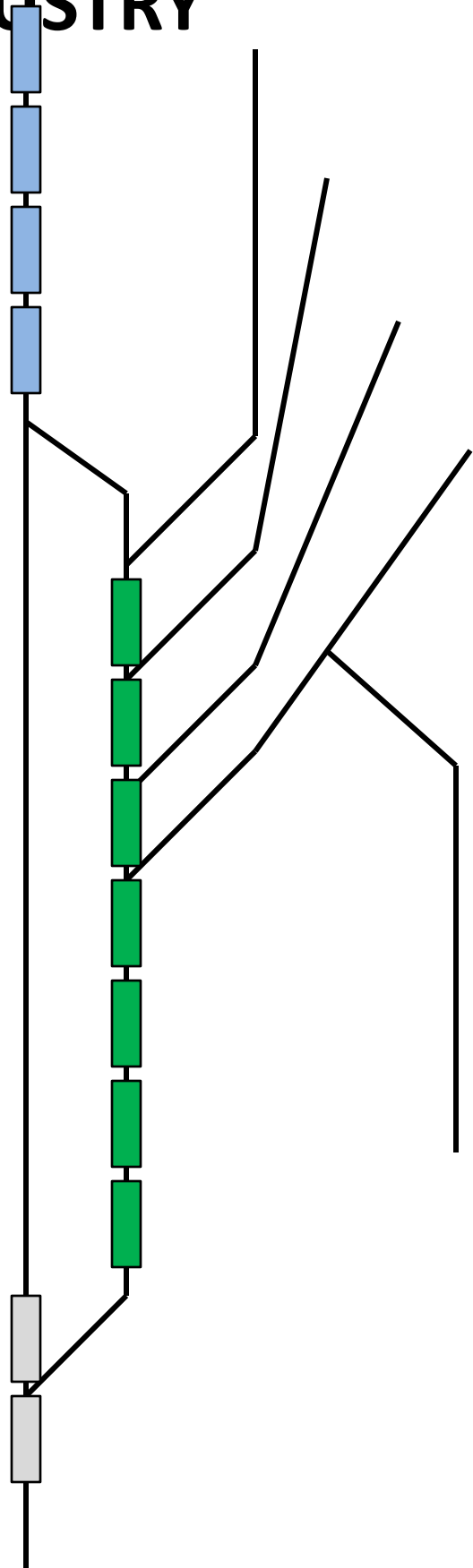
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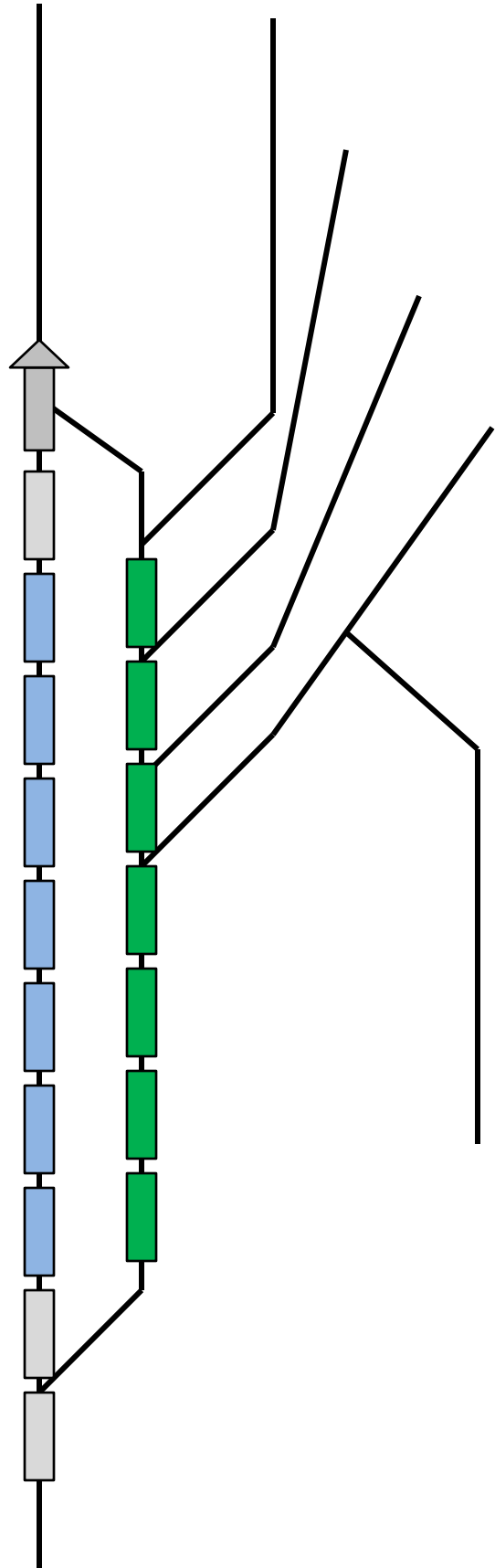
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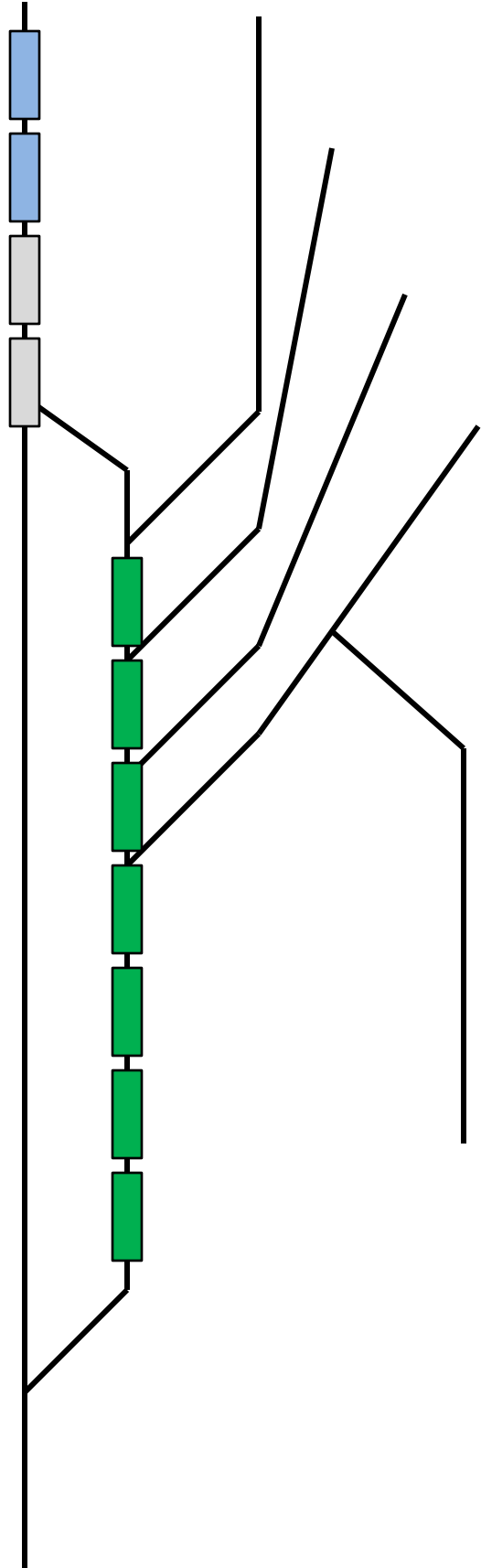
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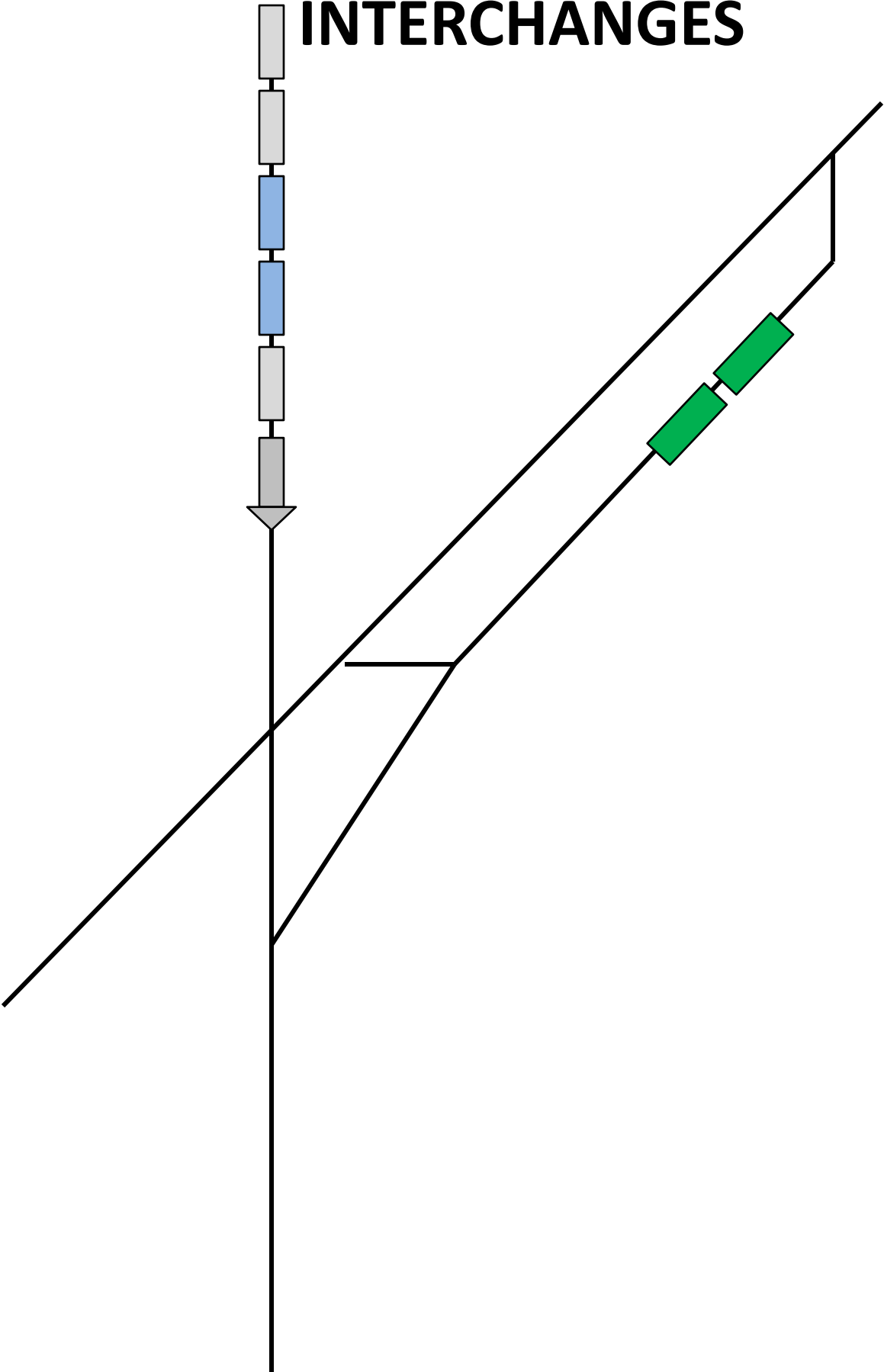
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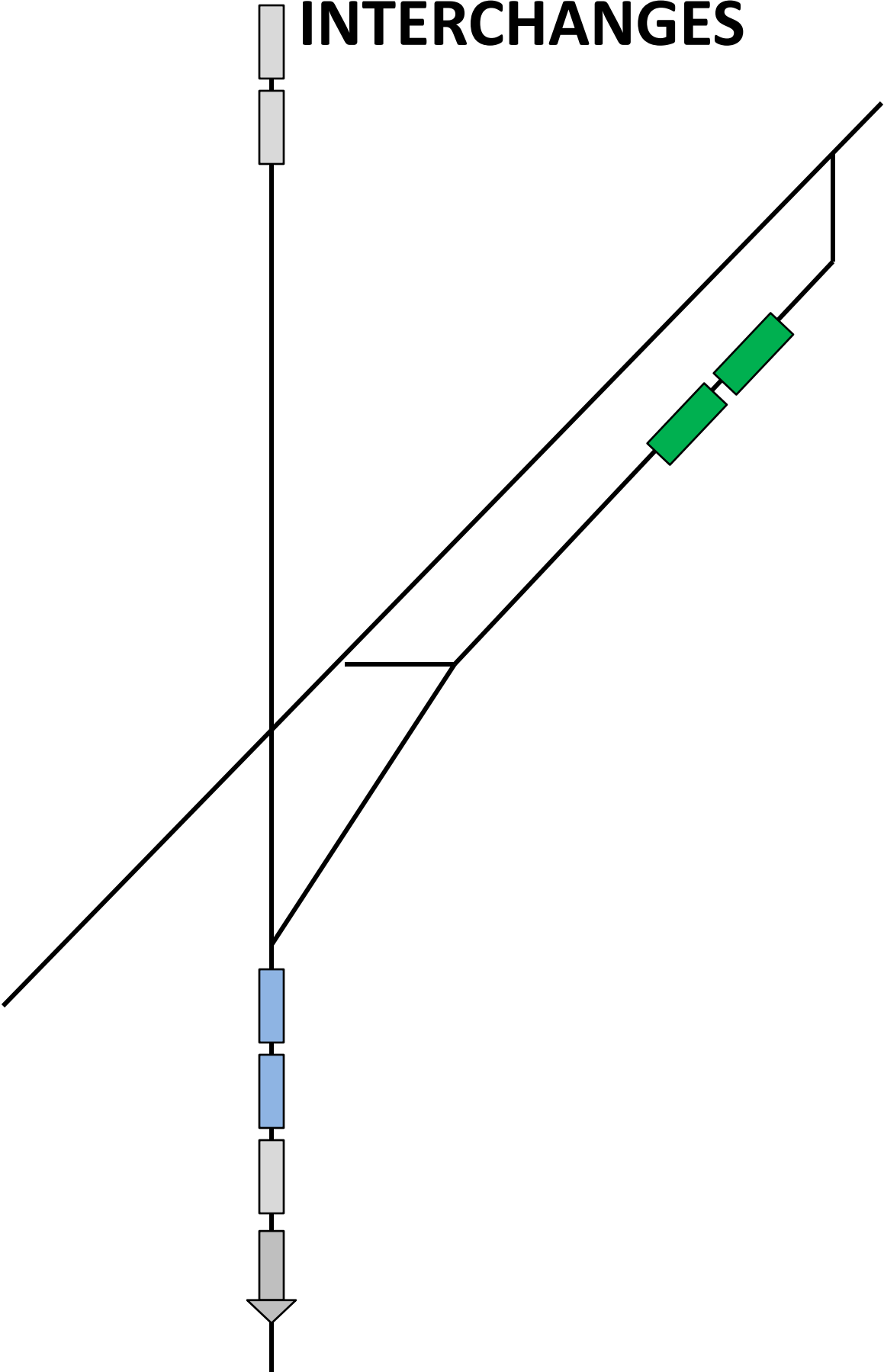
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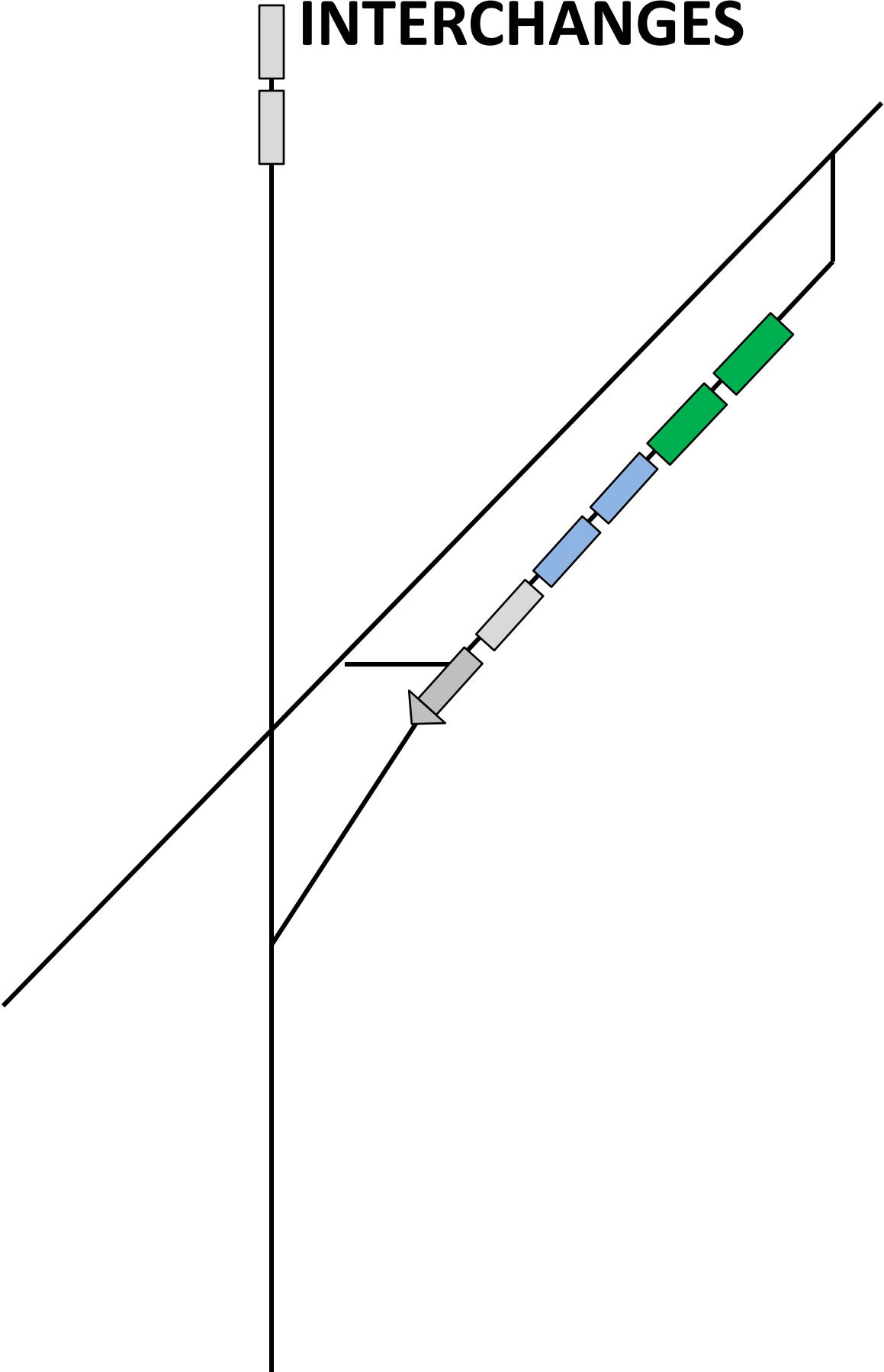
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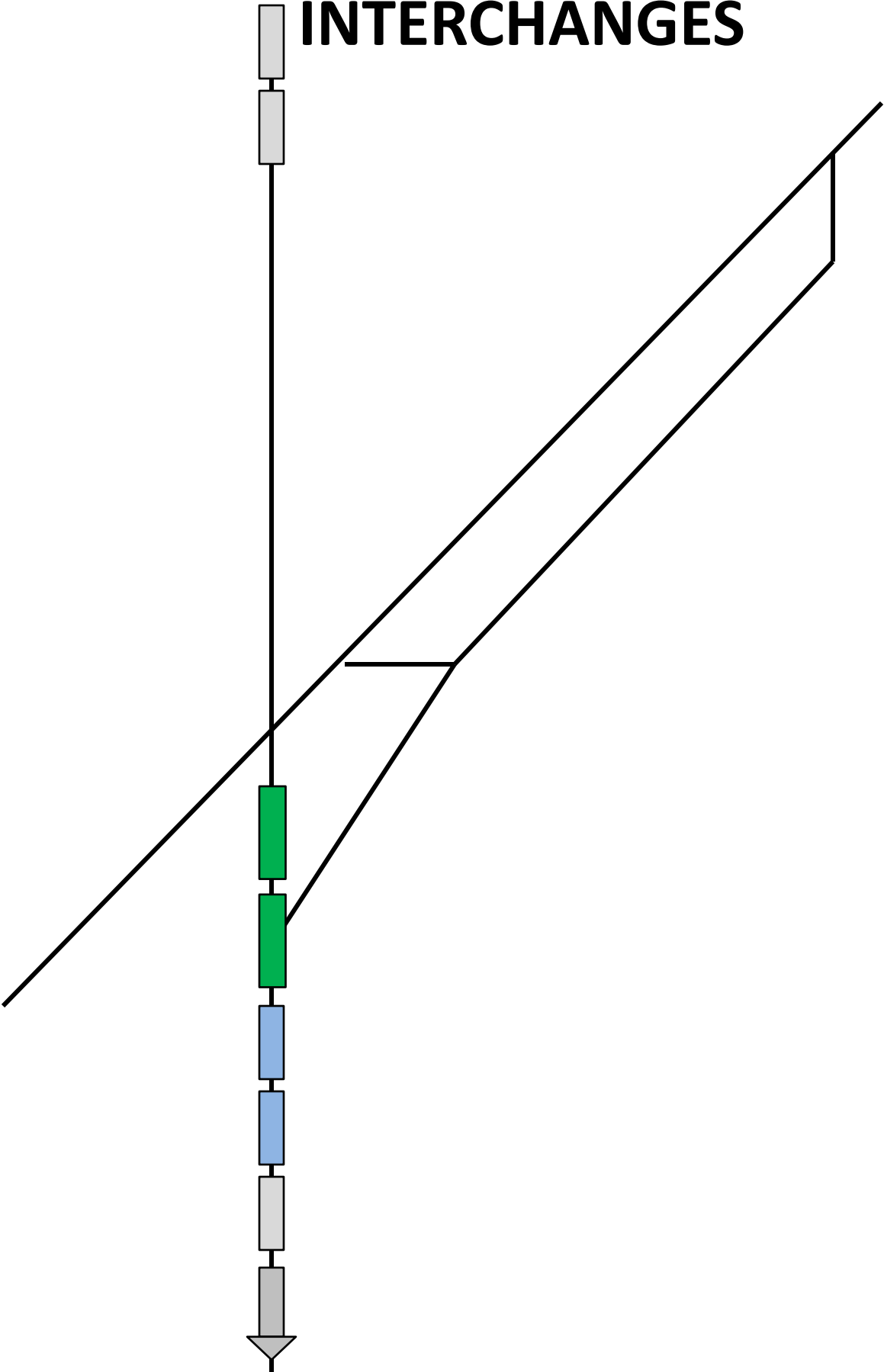
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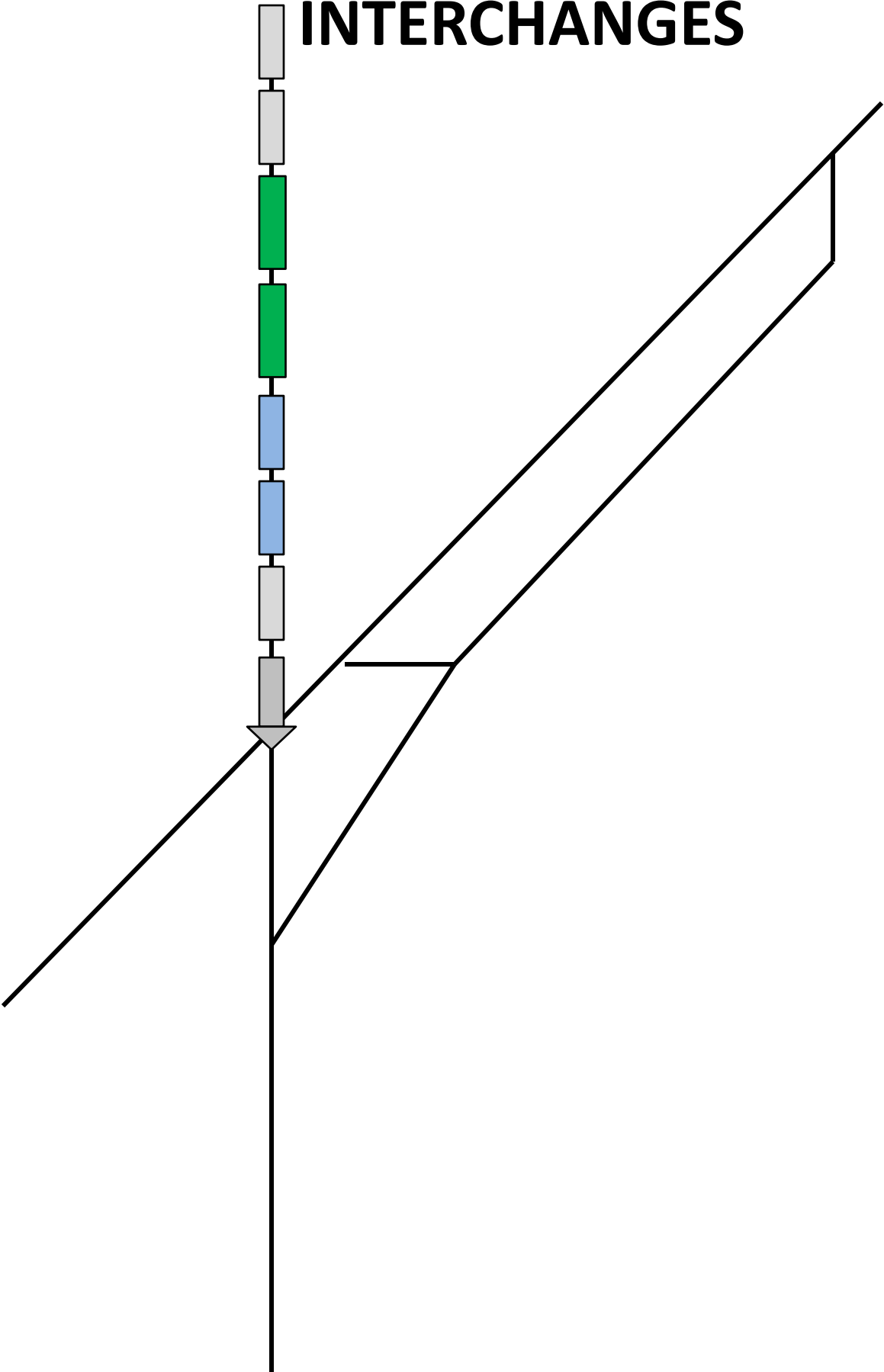
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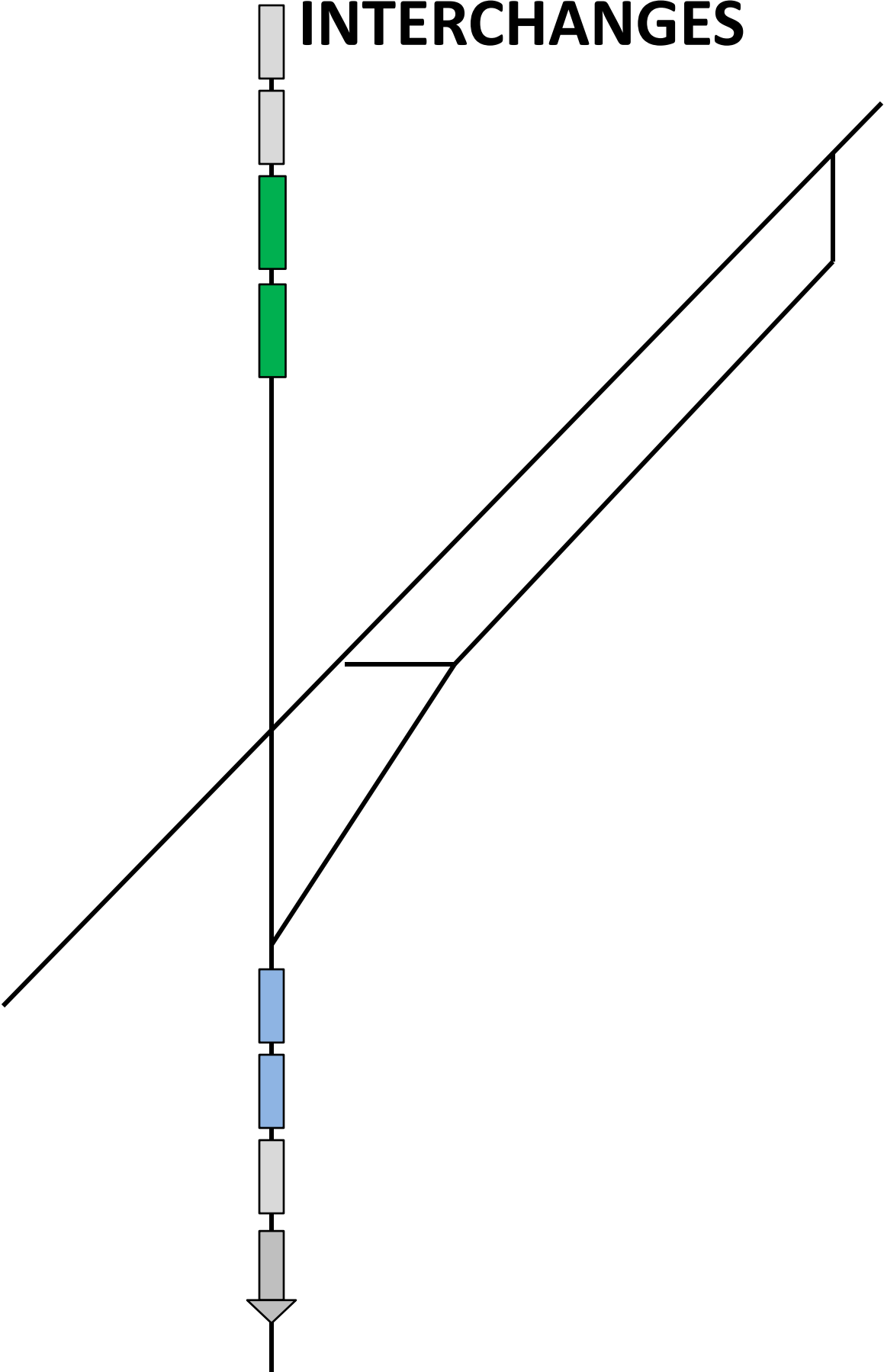
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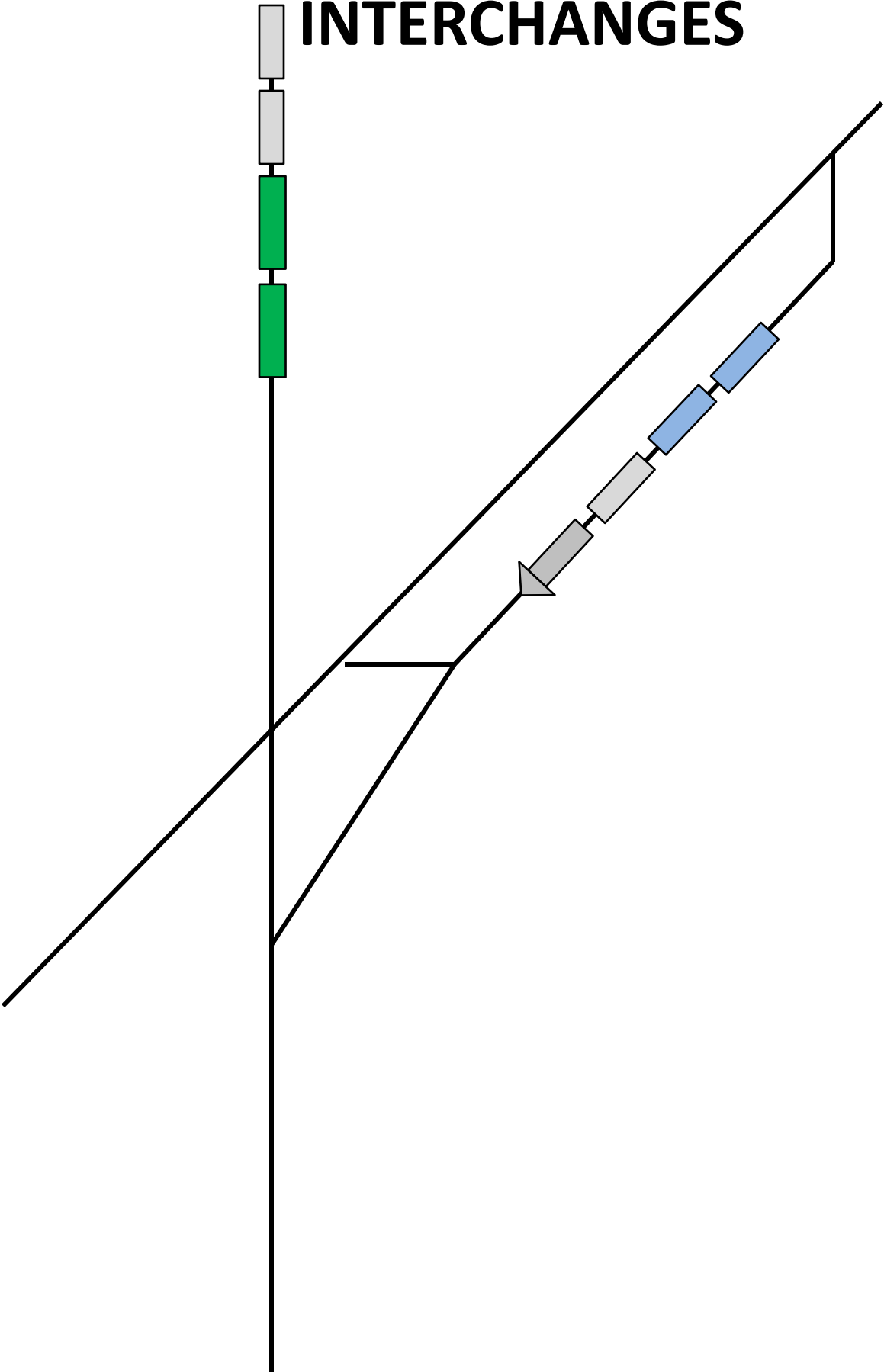
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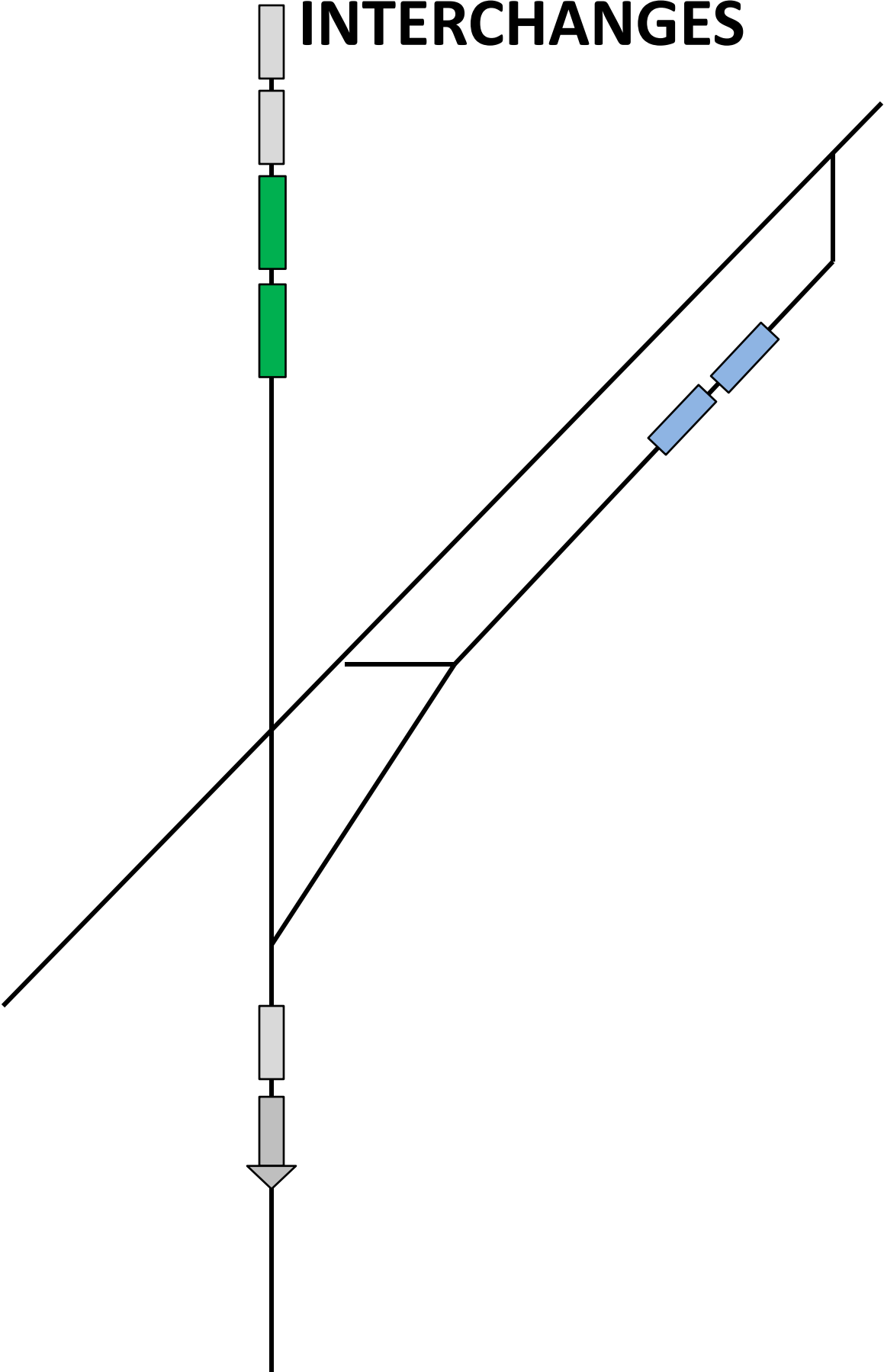
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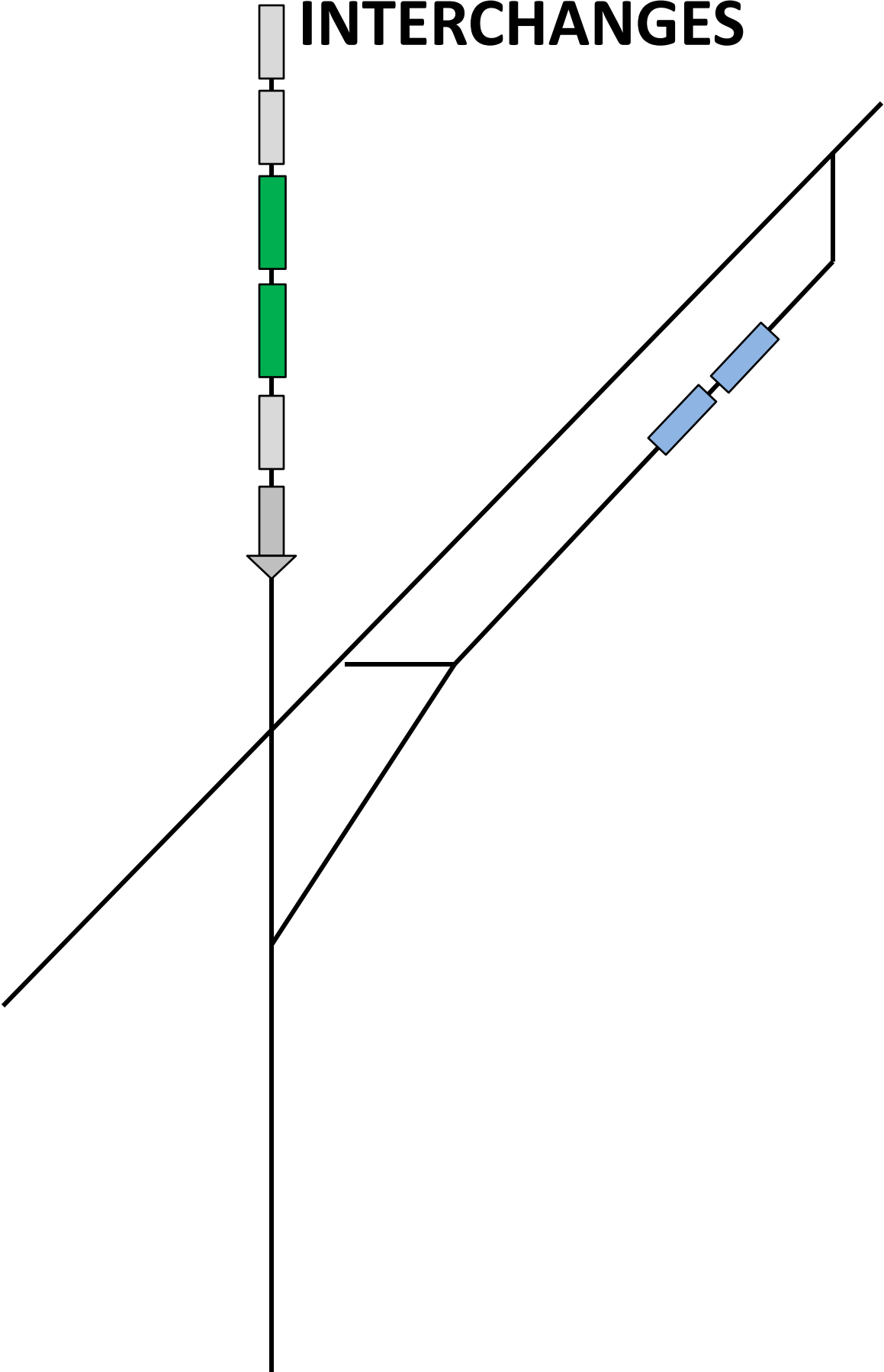
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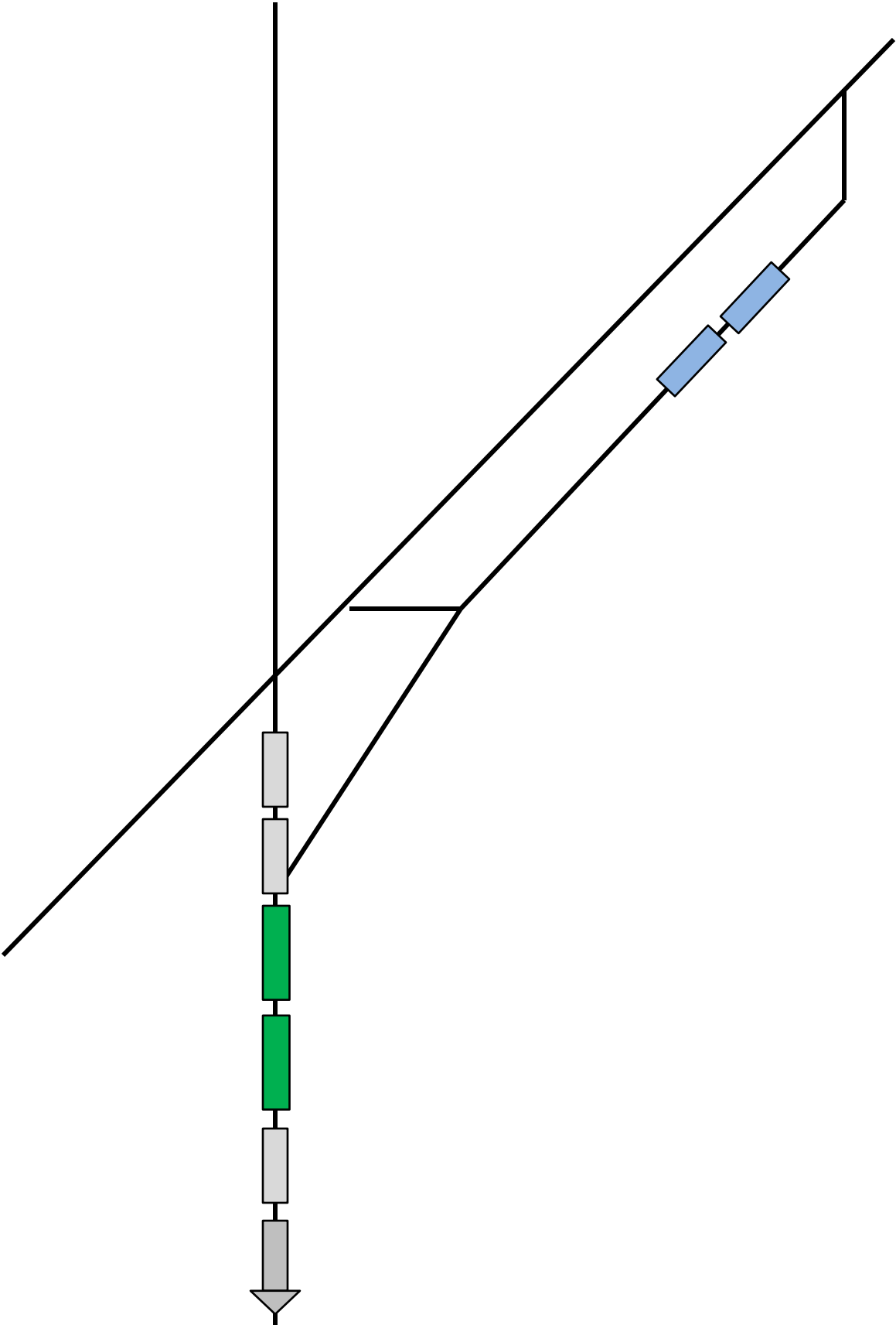
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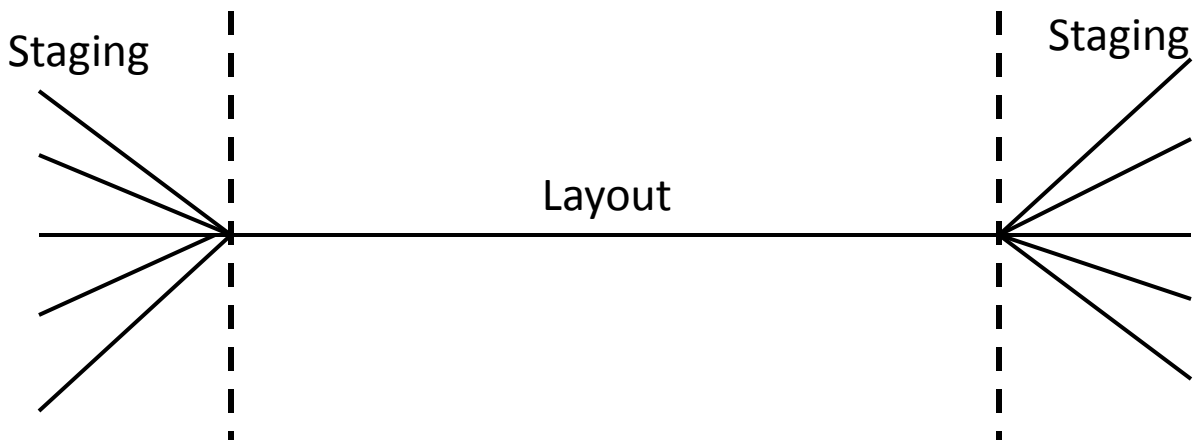


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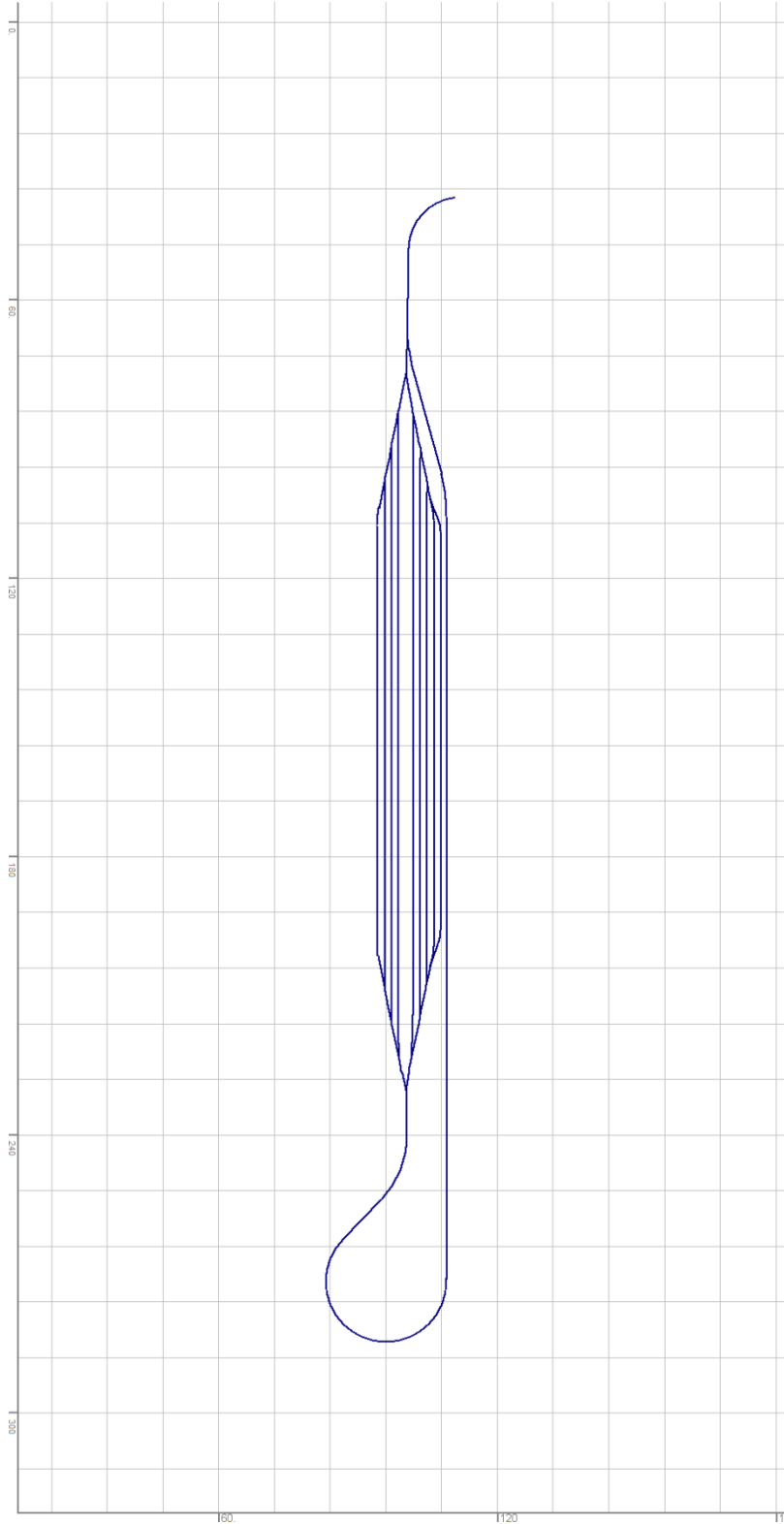


Staging Yards

- Represent 'Off Layout' Locations
- Usually Hidden
- Used for Set Up of Trains Coming Onto the Layout and Places for Trains to Go to When leaving Layout



Staging Yards



Car Forwarding

Car Cards & Waybills

KIND 50' STEEL BOX CAR AAR XM

R.R./No. MEC9035

DESC MEC D.D. STEEL BOX CAR (BX CR RED)

EMPTY CAR
RETURN TO:

Reorder Micro-Mark #82910

Top Edge of Pocket

↓ FOLD LINE ↓

*Fold this section up,
then tape two outside edges
to form pocket for waybill.*

Car Cards & Waybills

DROP OFF

- Industry Receiving the Car
- Address of the Receiver
- Railroads the Car Travelled on
- Route Car Took on the Layout
- Where the Shipment Originated
- What's in the Car

FREIGHT WAYBILL 1	
CONSIGNEE	Sun Oil
ADDRESS	Portland, Maine
ROUTING	PRR, NYC, B&M, MEC, PT
VIA	Rigby Yard, PT Interchange
SHIPPER	Mobile Oil
ADDRESS	Paulsboro, NJ
LADING	Fuel Oil
LADING	Empty
ADDRESS	Portland, Maine
SHIPPER	Sun Oil
VIA	PT Interchange, Rigby Yard
ROUTING	PT, MEC, B&M, NYC, PRR
ADDRESS	Paulsboro, NJ
CONSIGNEE	Mobile Oil
FREIGHT WAYBILL 2	

PICK-UP

- Where the Car is Headed
- City Where Consignee is Located
- How the Car Will Get There
- Yard the Car Will go To for Further Routing
- Who is Sending the Car

FREIGHT WAYBILL 2	
CONSIGNEE	Farmers Grain Company
ADDRESS	Belmond, Iowa
ROUTING	MEC, B&M, NYC, M&StL
VIA	Rigby Yard (Portland)
SHIPPER	Nickels Coal & Feed
ADDRESS	Deering Jct., Maine
LADING	Empty
LADING	Grain, Feed
ADDRESS	Belmond, Iowa
SHIPPER	Farmers Grain Company
VIA	Rigby Yard (Portland)
ROUTING	M&StL, NYC, B&M, MEC
ADDRESS	Deering Jct., Maine
CONSIGNEE	Nickels Coal & Feed
FREIGHT WAYBILL 1	

Car Cards & Waybills

Car Cards/Waybills at Each Industry Are Stored/Placed into a Box With Three Slots

PICK UP

SET OUT

DROP OFF

Cars ready to be Picked Up Will Have their Cards in the PICK-UP Slot. Only Pick Those Cars Up.

Cars That Are Dropped Off Have Their Cards Placed into the SET-OUT Slot

Cars that Are at the Industry/Siding but are not Ready for Pick Up Will Have Their Cards in the HOLD Slot.

Car Cards & Waybills

Advantages:

- Fairly Easy to Set up Compared to Other Methods
- Easy to Find 'Lost' Cars
- Easy to Reset After an Ops Session
- Operator Can Make Adjustments Between Ops Sessions

Disadvantages:

- Cards Can be Difficult to Handle Especially for a Large Train (aka 52 Card Pick-Up)
- Difficult to Read
 - Can be Made Easier by Placing a Photo on Each Car Card

SWITCH LISTS

Switch Lists are Generated From a Computer Program
Such as Rail Op, Ship It!, Decapod Systems and now
JMRI

Operator Gets a Single Sheet of Paper Showing all
Required Moves

SWITCH LISTS

Advantages:

Easy To Understand. Each move is spelled out on the Switch List

Operator Know if He Has the Correct Number of Cars at the End of the Run

Switch List Has List of What Cars Should be on the Train at the End of the Run

Easy to Start a New Session at the End of the First Session as the Program Knows Where Each Car is Located Provided Crews Did Their Job Correctly

Disadvantages:

Very Difficult to Set Up

Every Car, Every Train, Every Siding, Siding Length, Industry, Number and Type of Cars Needed at Each Industry, Number of Times Car is Switched out (Every Session, Every Other Session) Must Be Entered Before a Switch List Can be Generated

Difficult to Find Lost Cars