

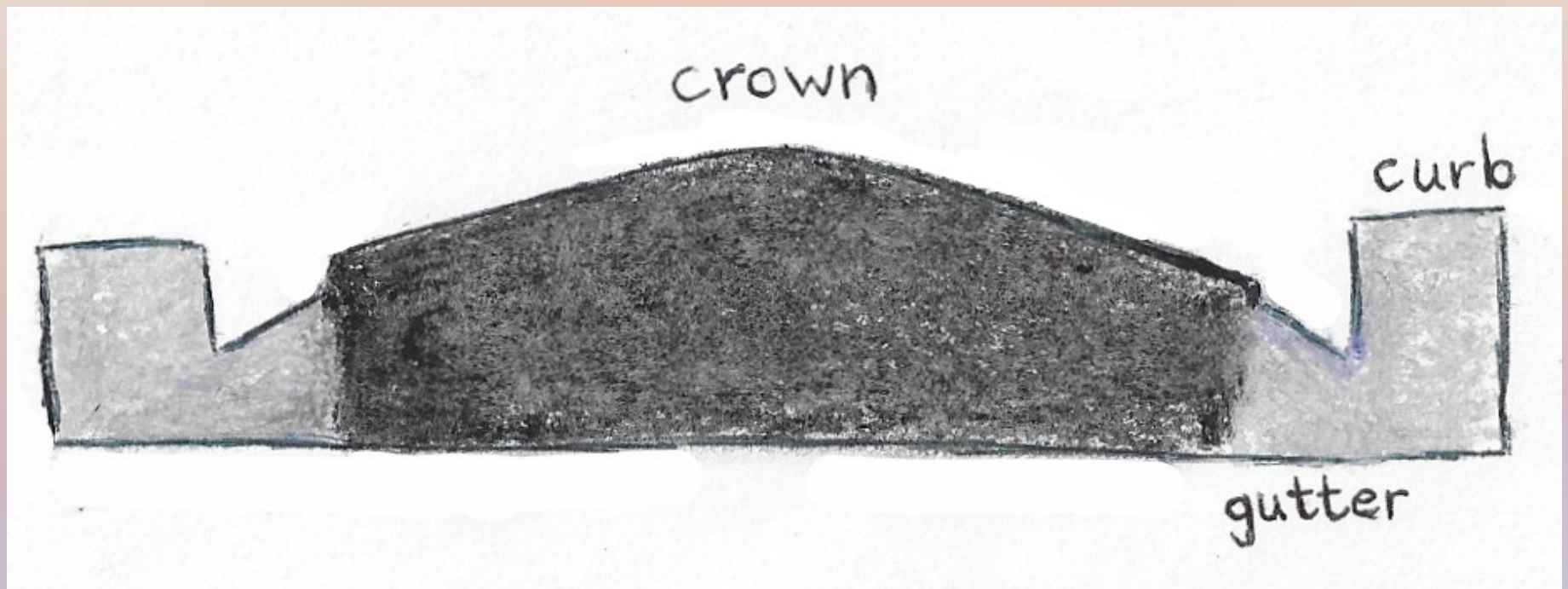
# Smooother Valley Gutters

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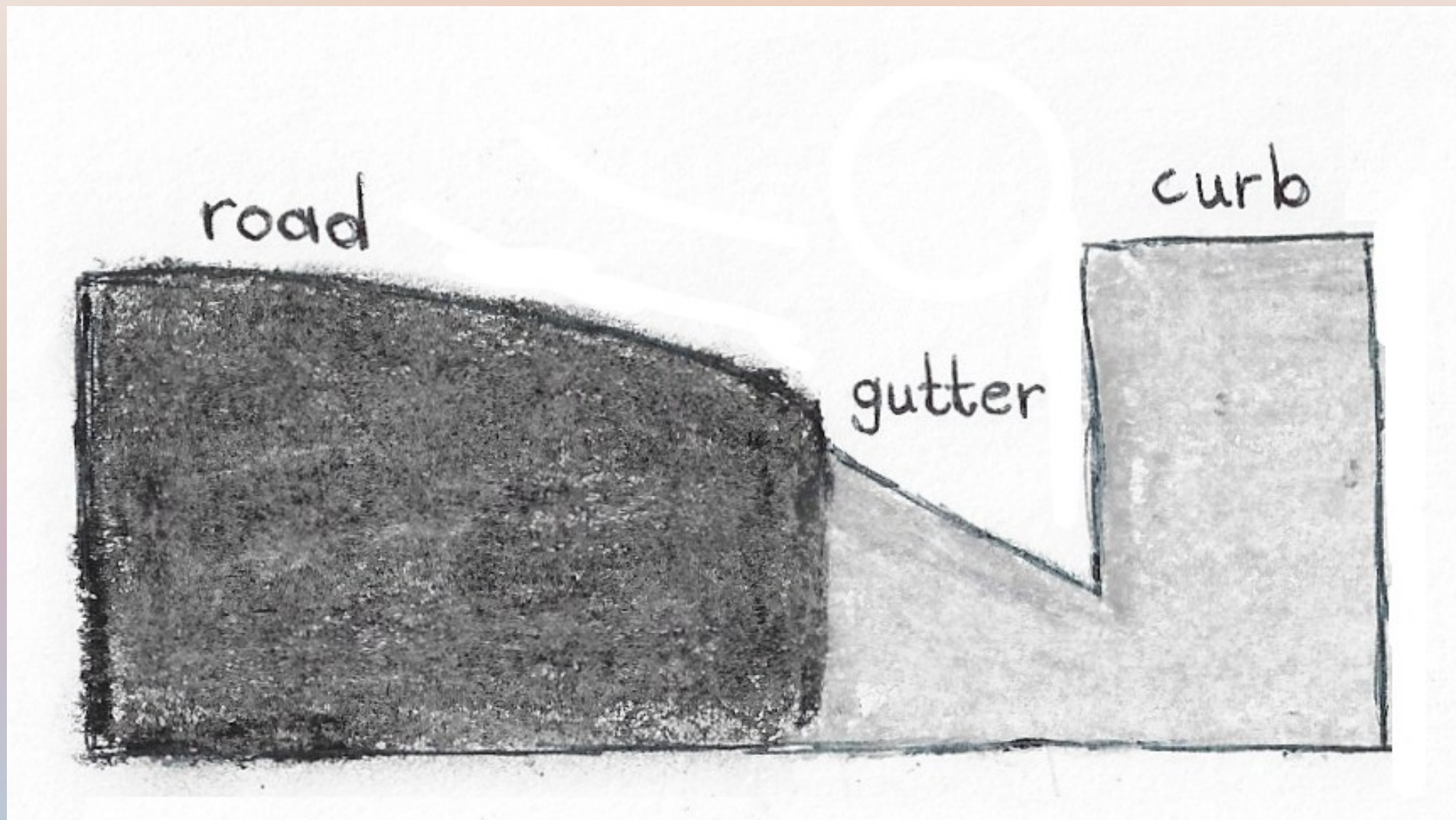
# Some Definitions

- Valley: low spot in road intersection
- Gutter: section of road paved with concrete for transporting water
- Valley gutter: dip in road intersection paved with concrete designed to transport water

# Basic Road Shape

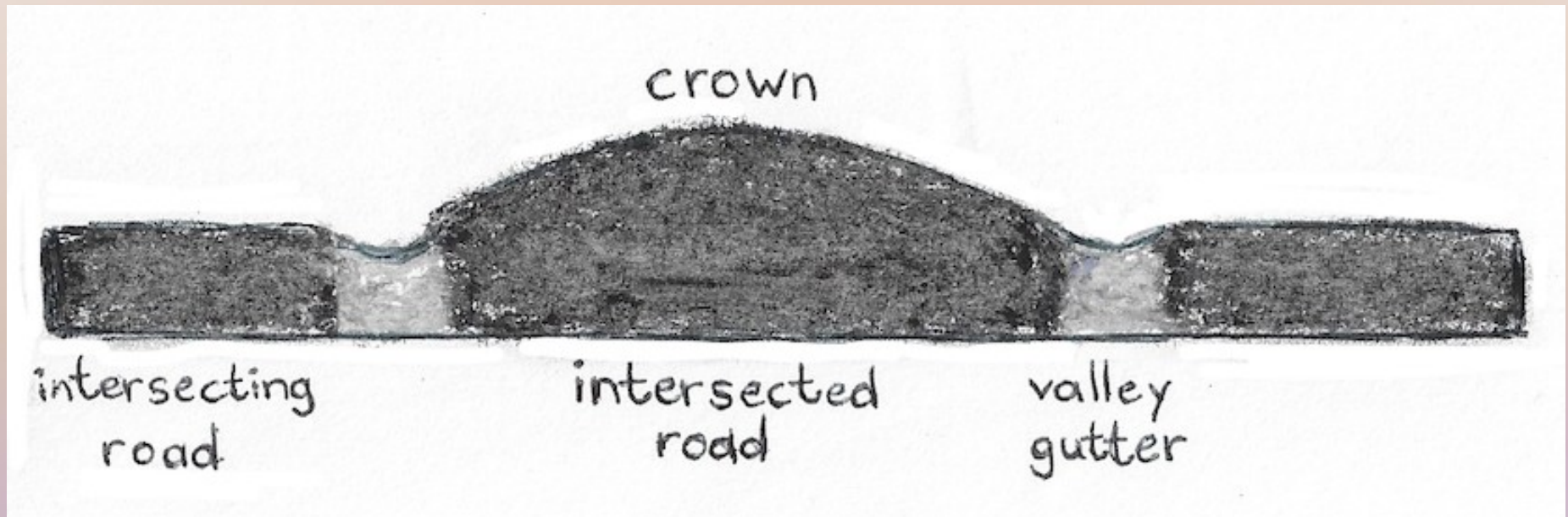


# Gutter Detail





# Intersection Shape



Art by E.A. Zokaites



# Problem – Crumbling Road

- On flat surfaces, water seeps into asphalt
- Wet asphalt gradually crumbles
- One solution is valley gutters





# Problem – Slow Dips





# Problem – Road & Car Damage





# Recommendations

- Create smoother roads
- Eliminate need for slow dip signs
- Remove valley gutters where drainage is sufficient
- Reduce height of excessive road crowns
- Reduce depth of valley; widen, flatten valley
- Align valley gutter slope with road slope
- Optimize valleys for each intersection
- Eliminate bumps between road, valley gutter
- Precision grind existing bumps

# Enjoy Nature (PA)

