

99% SEDIMENT YIELD REDUCTION IN TWO EASY STEPS

A CASE STUDY



ALDOT ENVIRONMENTAL

AN EVOLUTION OF THINKING, FOCUS, AND APPLICATION (PHILOSOPHY)



ENVIRONMENTAL VISION:

AN INTEGRATED ENVIRONMENTAL CULTURE...



ALDOT'S MISSION:

TO PROVIDE A TRANSPORTATION SYSTEM...



MISSION



environmental
RESPONSIBILITIES

ALDOT ENVIRONMENTAL

AN EVOLUTION OF
THINKING, FOCUS, AND
APPLICATION (TECHNICAL)



EVOLUTION

EFFECTIVENESS → COMMUNICATION

IMPLEMENTATION → WORK

CAUSE → WATER

SOURCE → EROSION

SYMPTOM → SEDIMENT

THE FIVE PILLARS OF CONSTRUCTION
STORMWATER MANAGEMENT

$$A = \cancel{R K L S C P}$$

A = sediment yield

tons/acre/year



A CASE STUDY

Project Mission:

- to add two lanes to a section of I20/59 in Tuscaloosa
- Widen to inside
- Governor priority
- April letting



A CASE STUDY

MISSION:



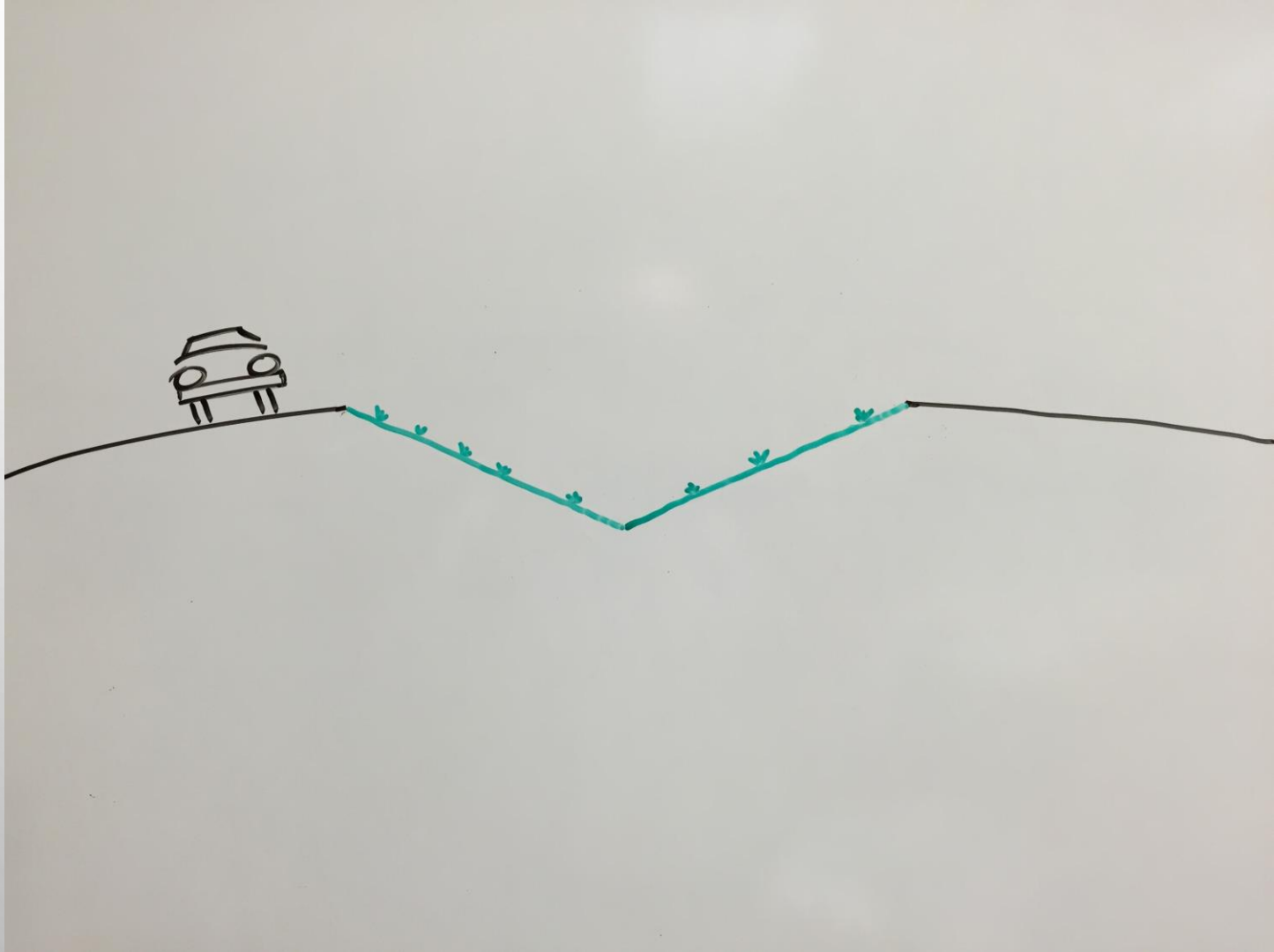
A CASE STUDY

MISSION:



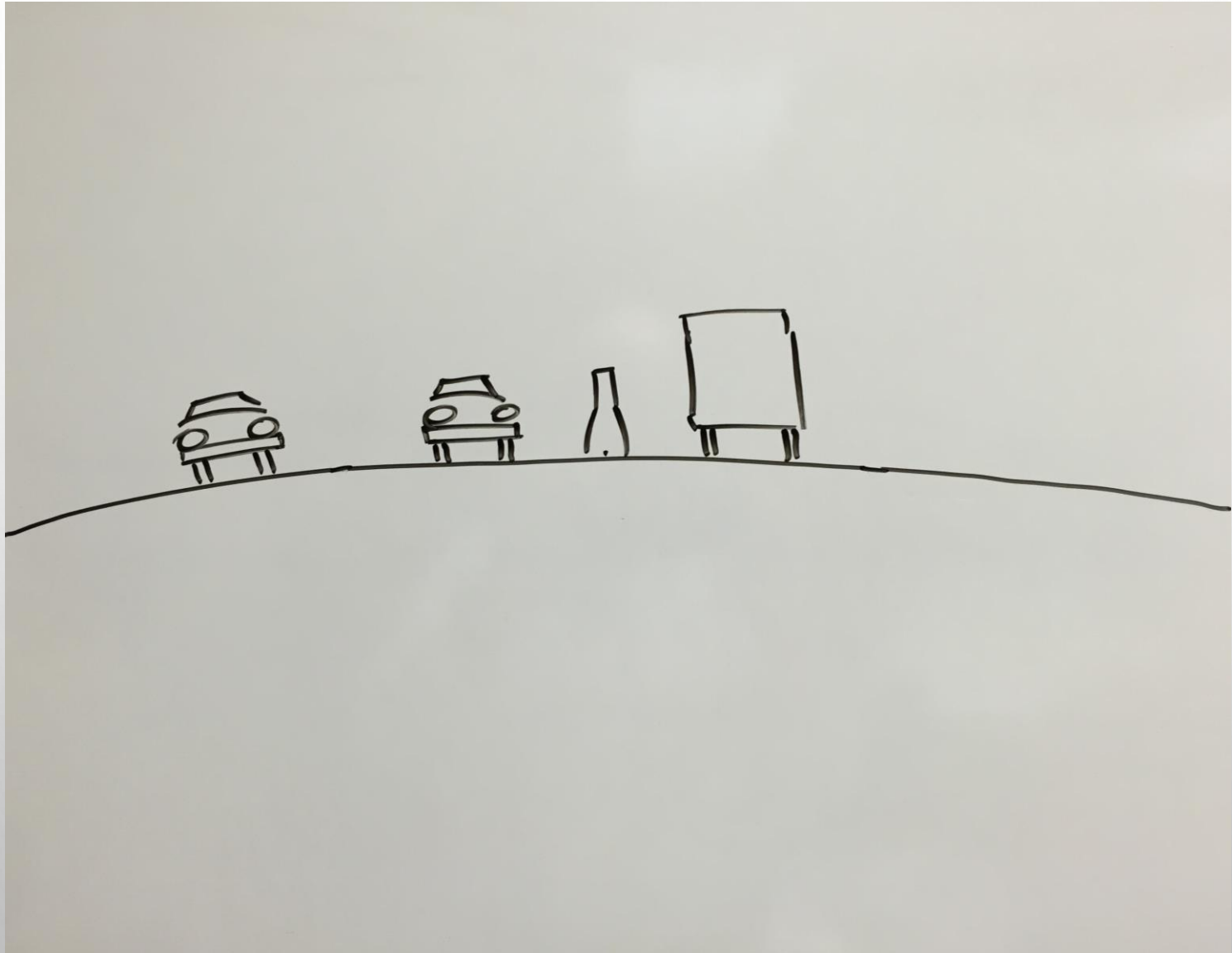
A CASE STUDY

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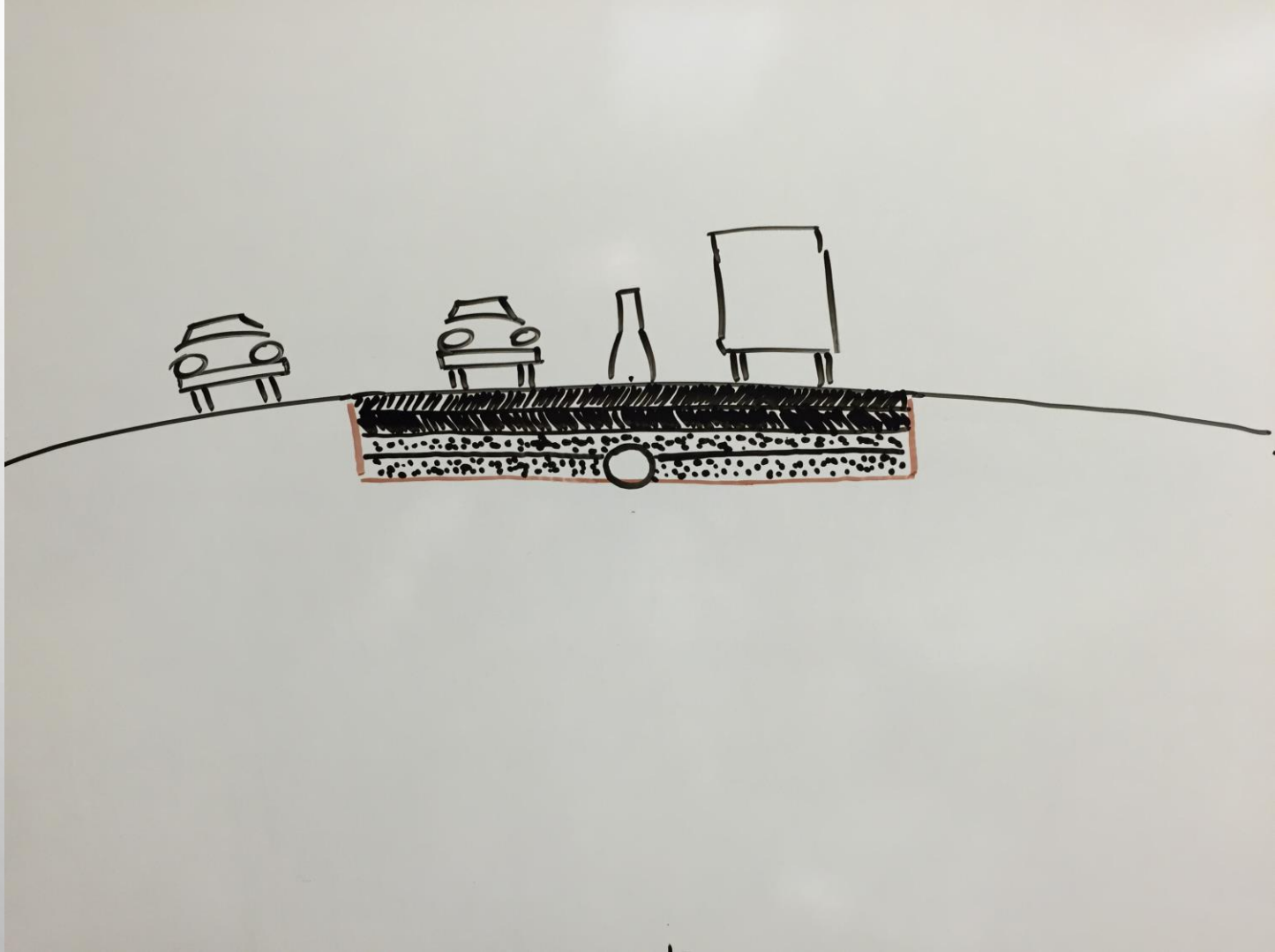
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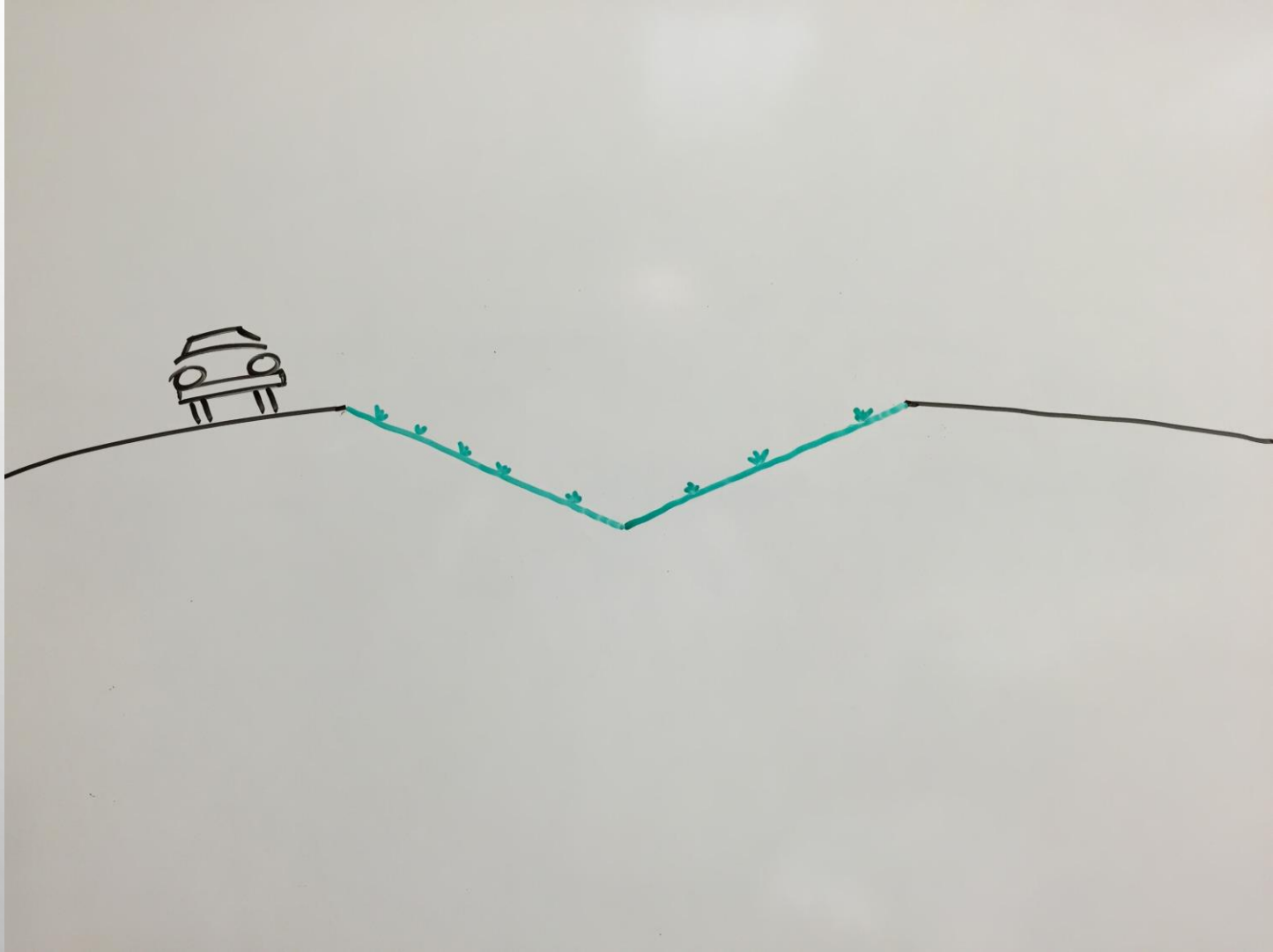
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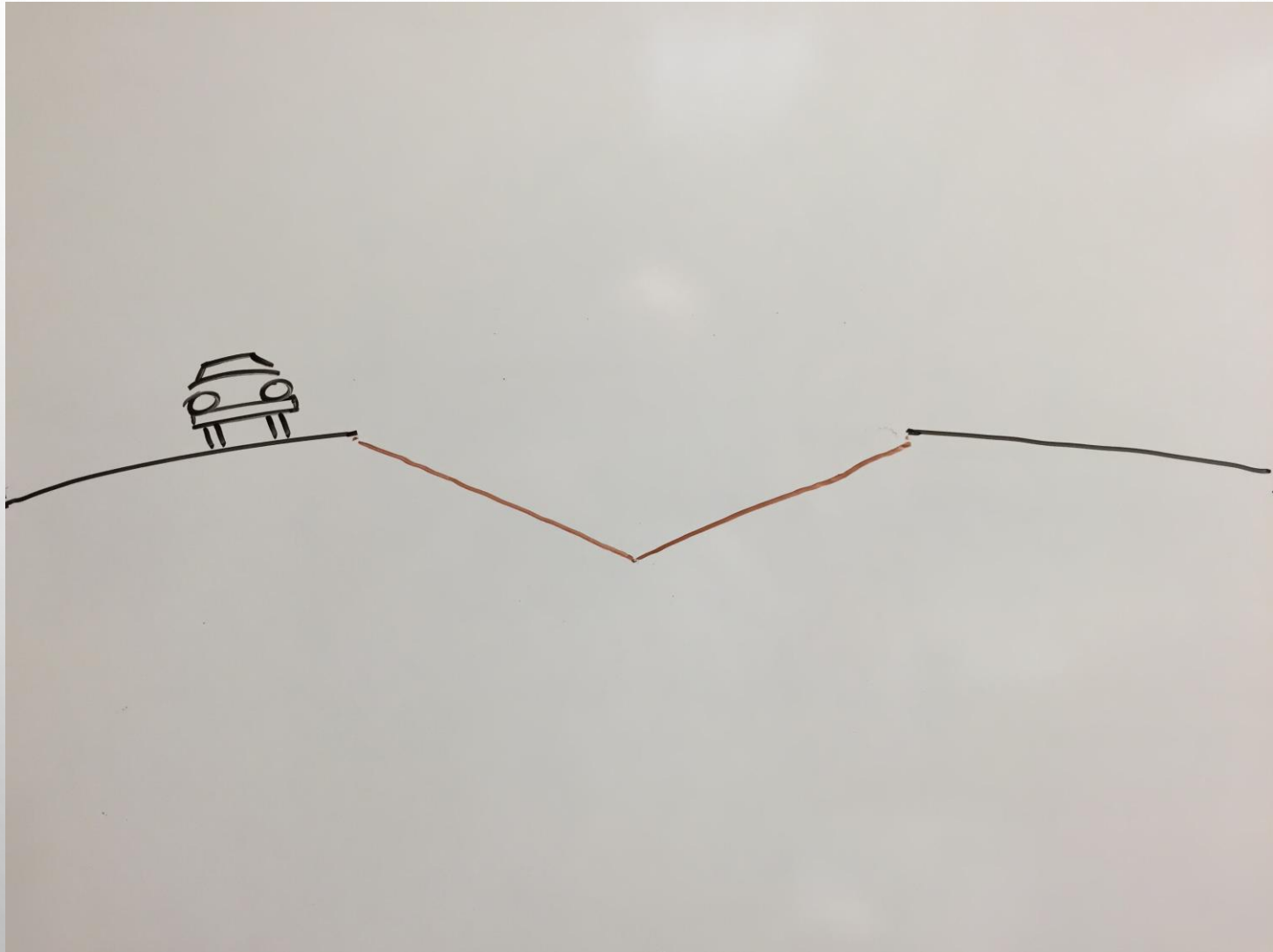
A CASE STUDY

ACTIVITIES:



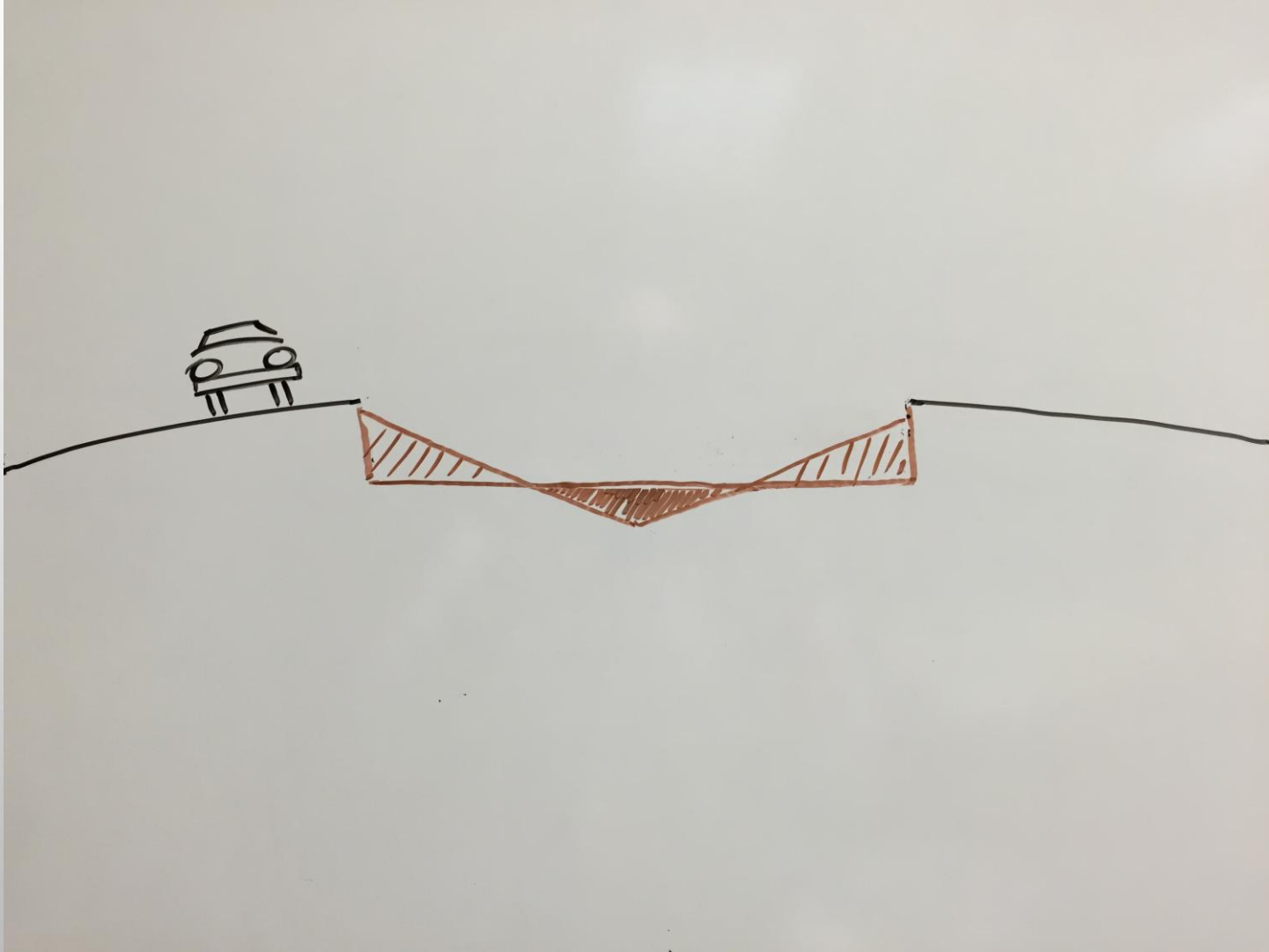
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ACTIVITIES:



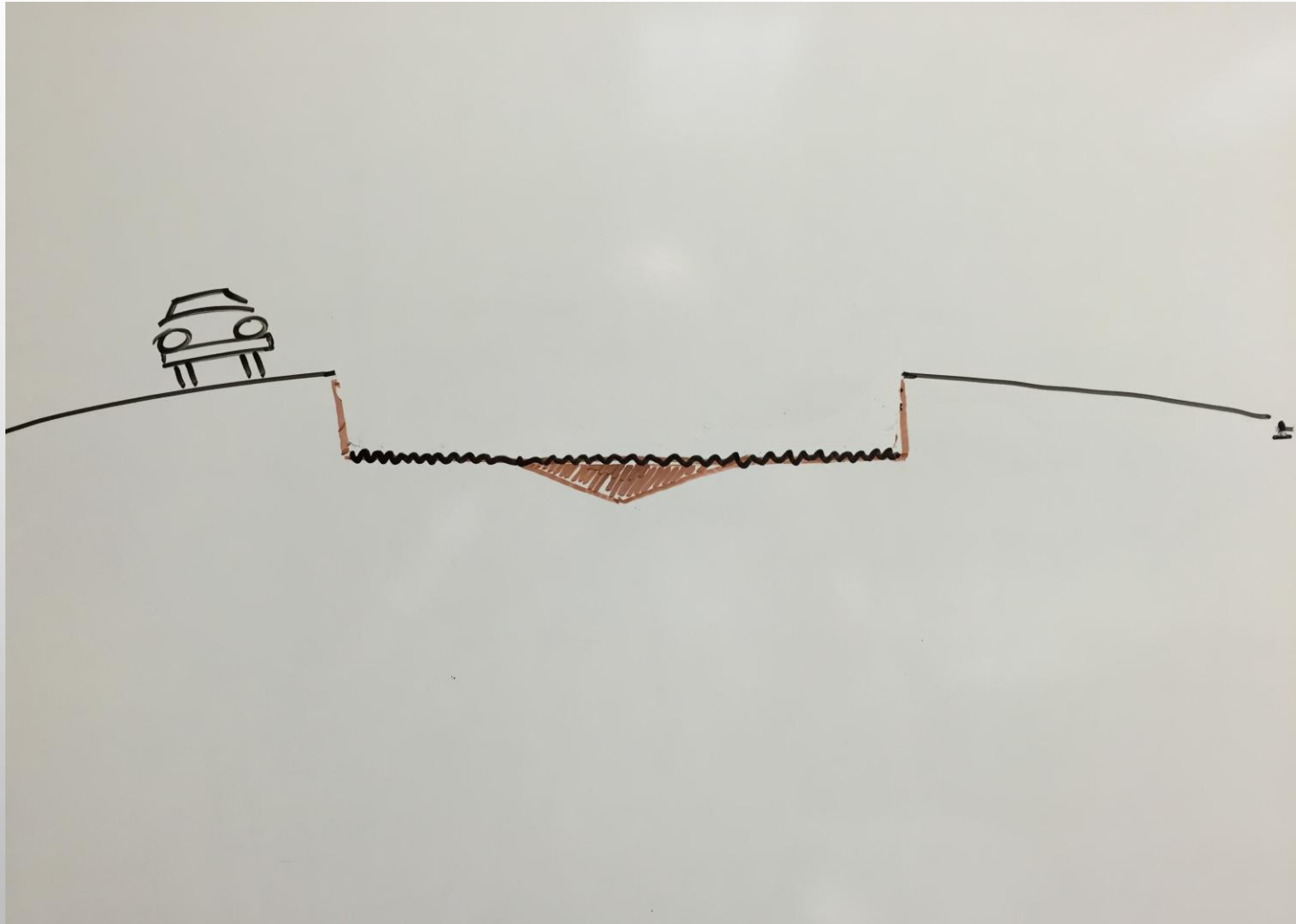
A CASE STUDY

ACTIVITIES:



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ACTIVITIES:



POTENTIAL IMPACTS:

- IMPACTS TO HABITAT
- IMPACTS TO WATER QUALITY
- IMPACTS TO PRIVATE PROPERTY
- REGULATORY ACTIONS
- CIVIL ACTIONS
- EMBARRASSMENT
- LOSS OF TRUST AND GRACE



ENVIRONMENTAL RESPONSIBILITIES:

- REGULATORY
 - GENERAL PERMIT
 - TMDL —
 - 32% TURBIDITY REDUCTION
 - 60.8 NTU LIMITATION
- SOCIAL EXPECTATIONS
 - HURRICANE CREEKKEEPER
 - FRIENDS OF HURRICANE CREEK
 - BLACK WARRIOR RIVERKEEPER
 - AL CLEAN WATER PARTNERSHIP
- ALDOT COMMITMENT TO PROTECT THE ENVIRONMENT





Project Mission:

- to add two lanes to a section of I-20/59 in Tuscaloosa


- Widen to inside
- Governor priority
- April letting

HOW?





THE FIVE PILLARS OF CONSTRUCTION STORMWATER MANAGEMENT

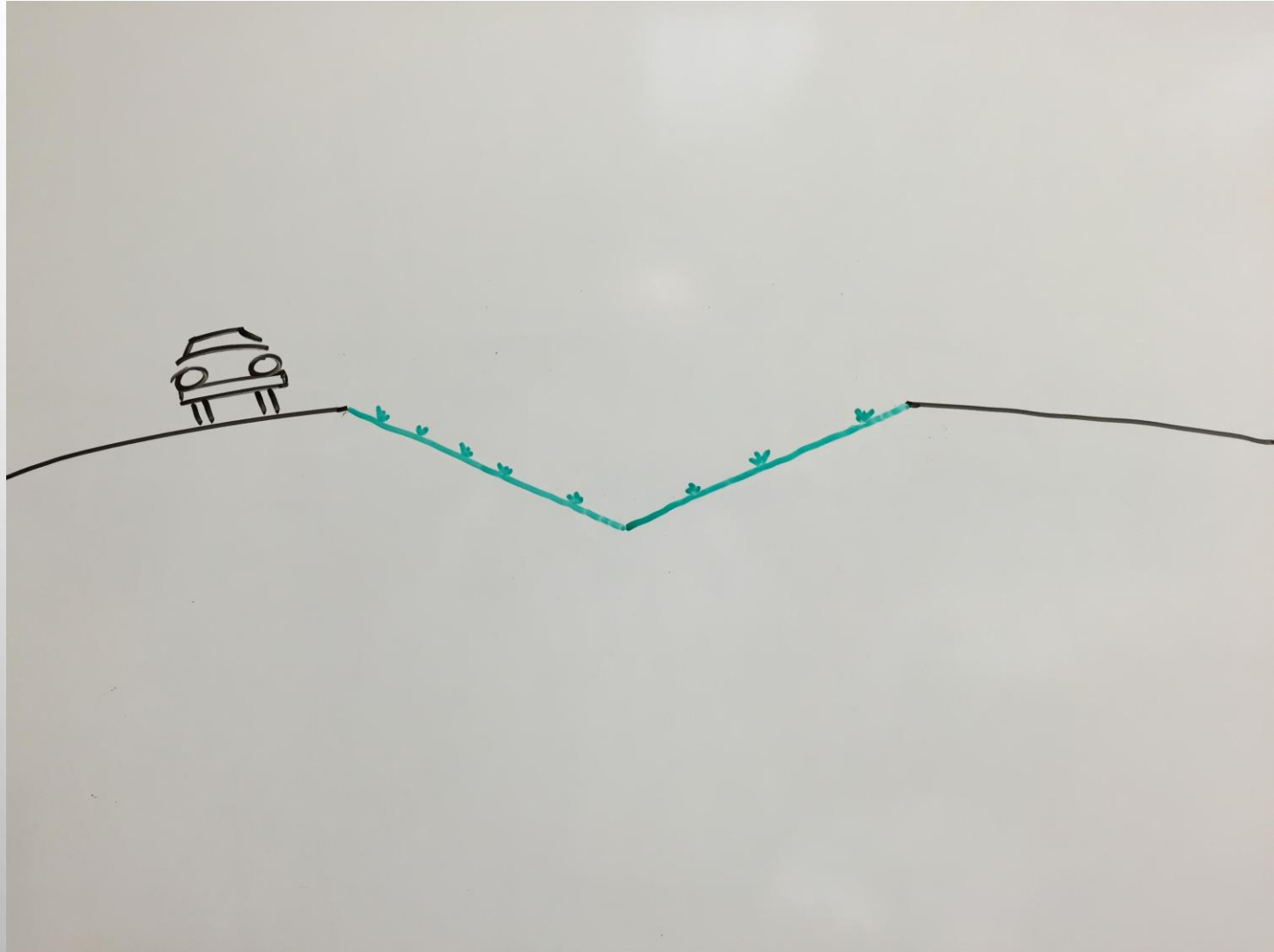
- **COMMUNICATION** - THE BEST MANAGEMENT PRACTICE.
 - **WORK** - CONTRACTORS CAN DO JUST ABOUT ANYTHING.
 - ~~**WATER**~~ - CLEAN WATER IN, CLEAN WATER OUT.
 - ~~**EROSION**~~ - GREEN IS GOOD.
 - ~~**SEDIMENT**~~ - SEDIMENT CONTROL ALONE IS INEFFECTIVE.
- 

$$A = R \cancel{KLS} C P$$

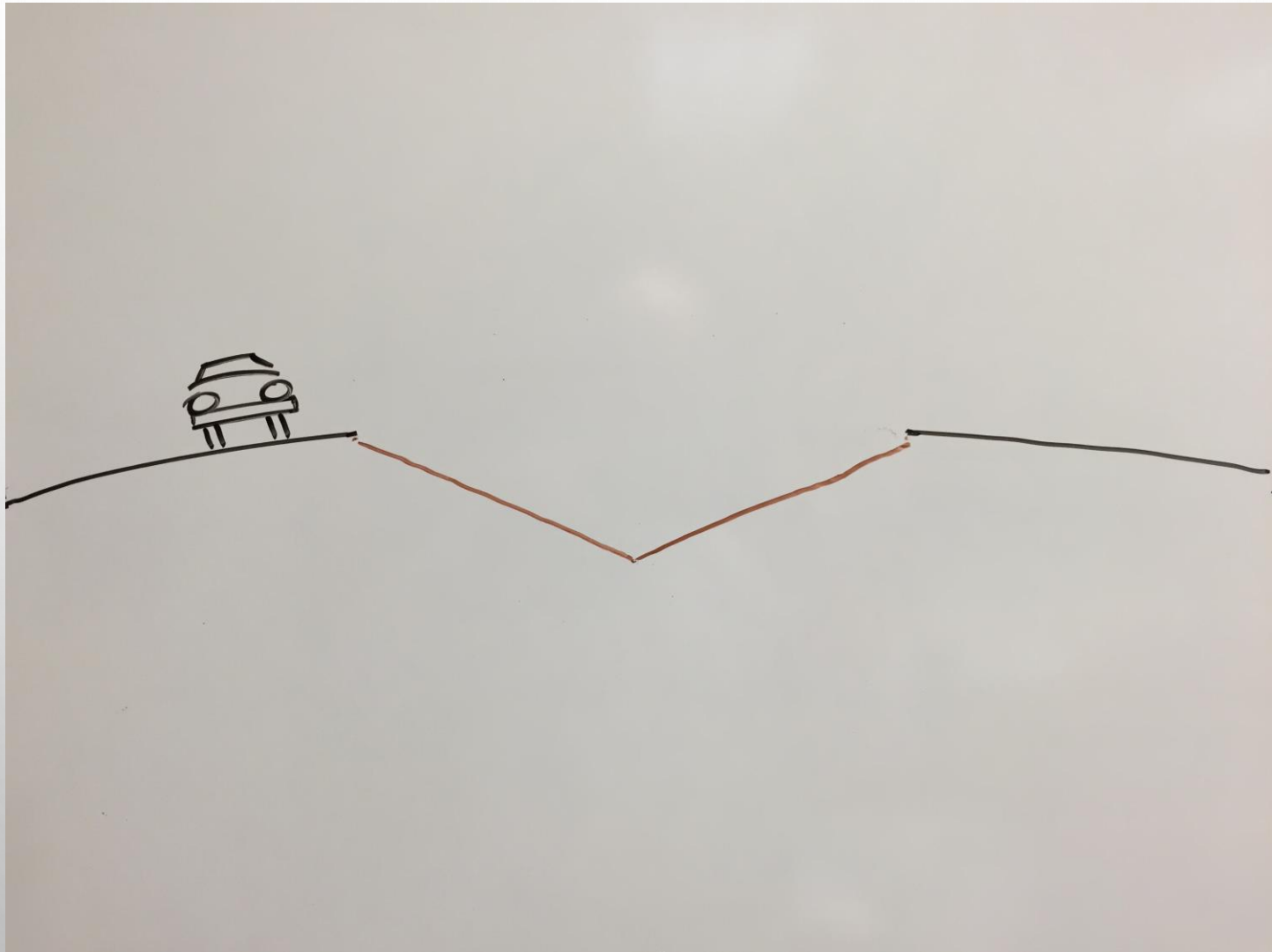
A = sediment yield in **tons/acre/year**



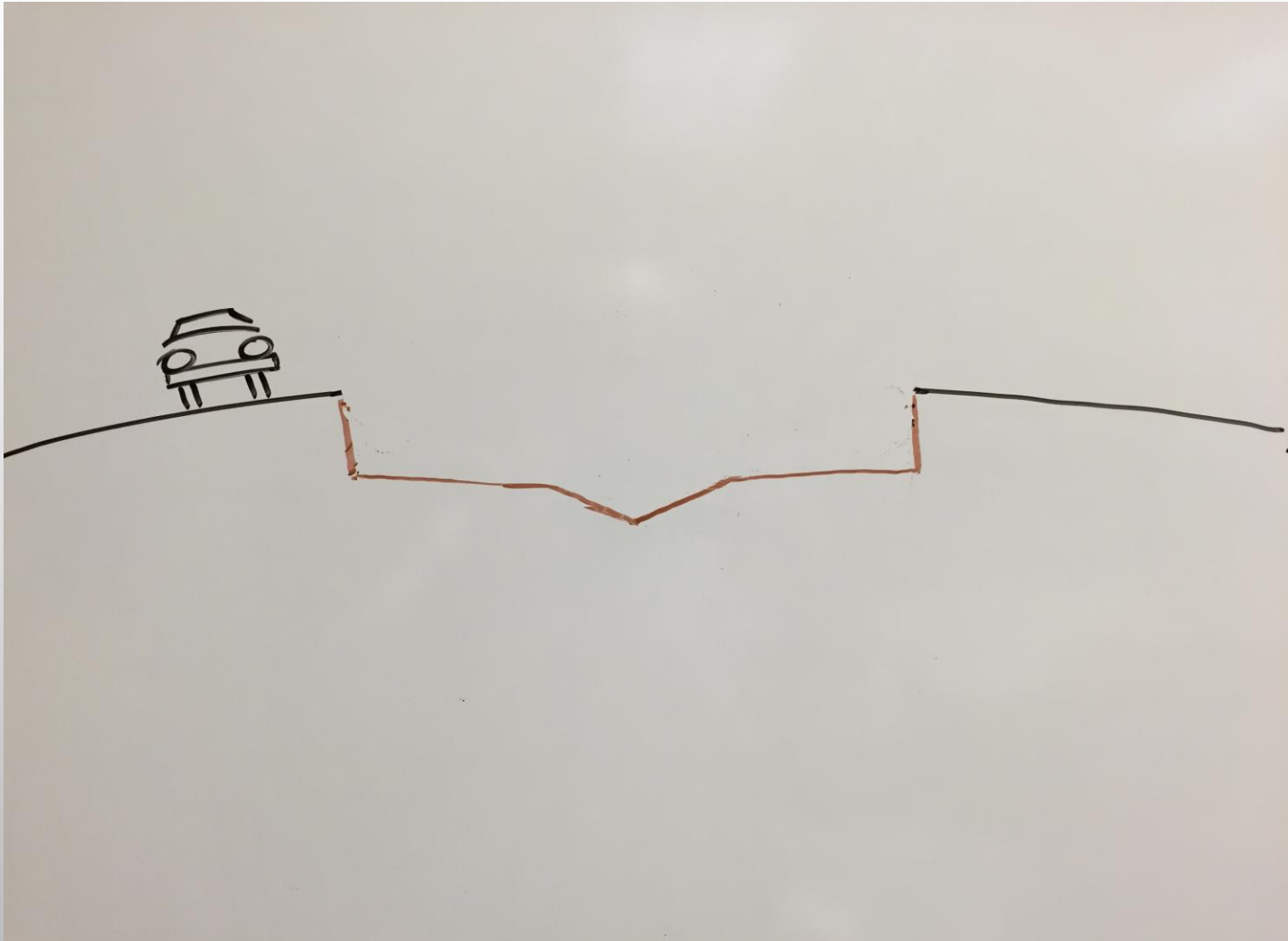
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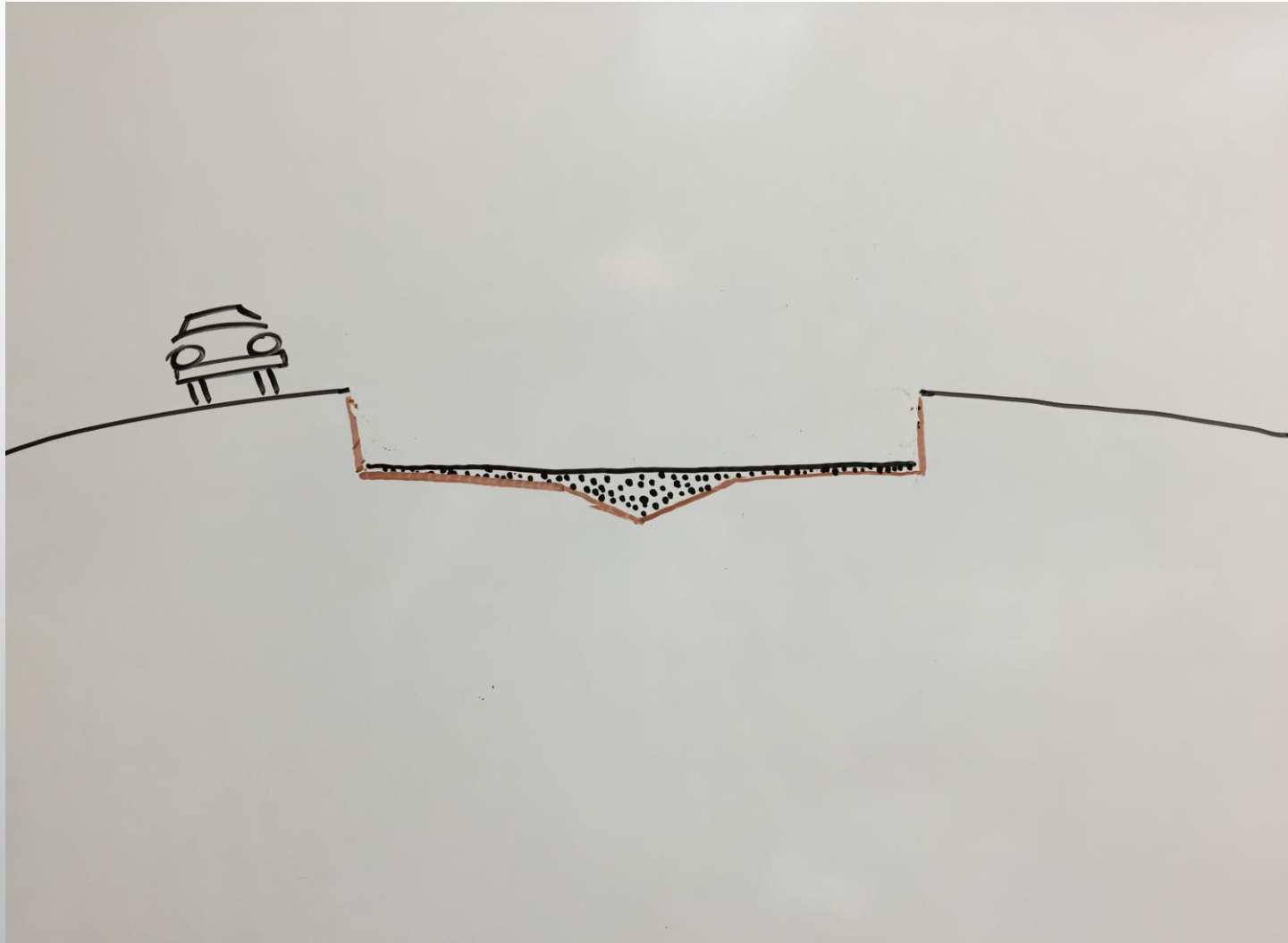
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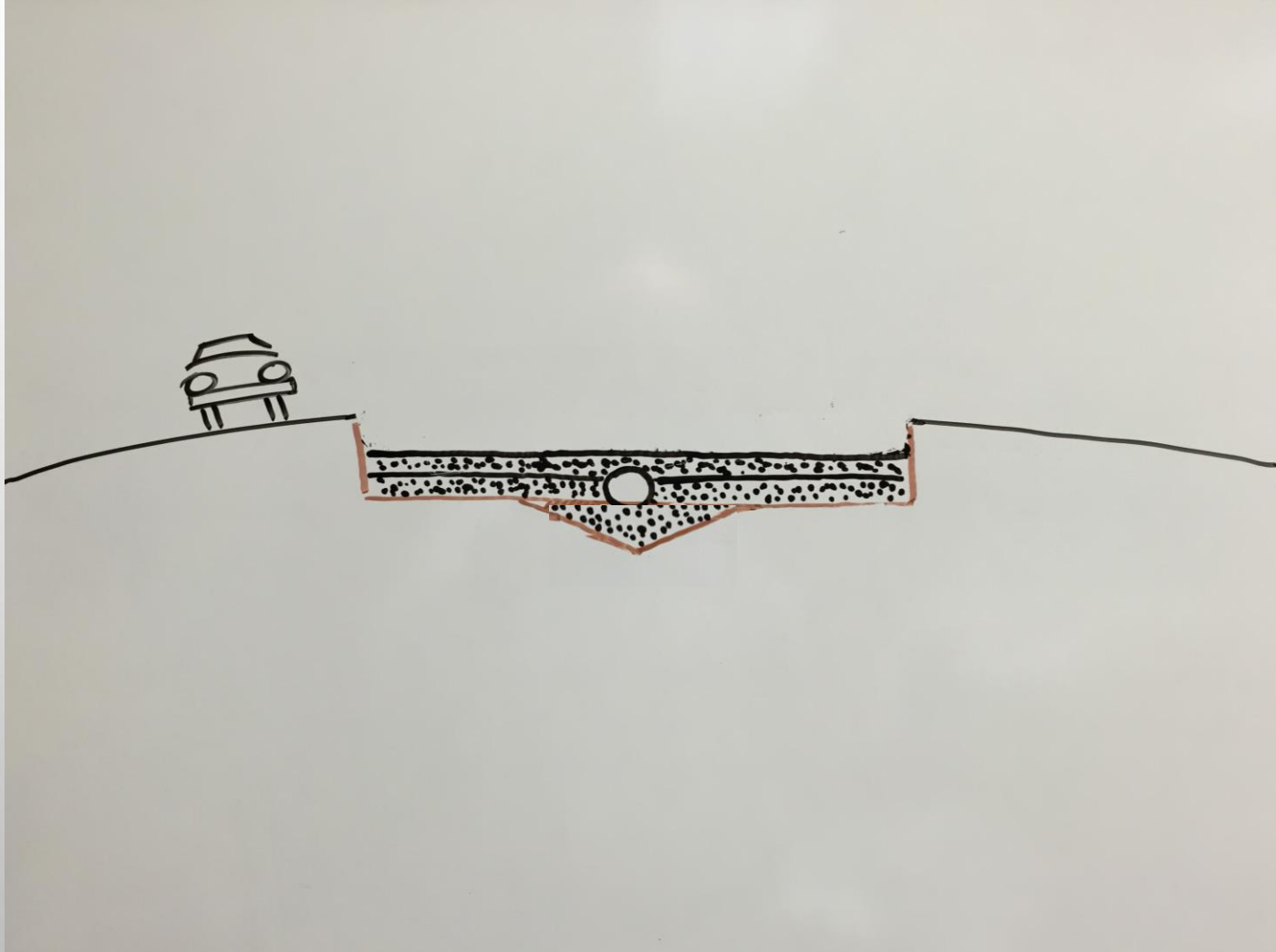
A CASE STUDY



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A CASE STUDY









ALTERNATE

TRADITIONAL







“WE CAN’T DICTATE THE CONTRACTOR’S MEANS AND METHODS... CAN WE?”

- WHY NOT?
- THE CONTRACTOR WORKS FOR US, RIGHT?
- WE HAVE DIFFERENT INTERESTS.
- WE HAVE EXPERTISE WHERE THEY DON’T.



“DIDN'T THAT SLOW PRODUCTION?”

- CONTRACTOR:
 - “WE MAY HAVE BEEN SHUT DOWN FOR A DAY AFTER A RAIN, NOT A WEEK.”
 - “UNLESS THE RAIN WAS FALLING, WE WERE WORKING.”



“DIDN'T THAT SLOW PRODUCTION?”

- CONTRACTOR:
 - “WE WOULD HAVE WAITED UNTIL APRIL TO START RATHER THAN LAST NOVEMBER... AND WE WOULD NOT HAVE BEEN SHIFTING TRAFFIC TODAY.”
 - “PRODUCTION WAS INCREASED BY AT LEAST 35%.”

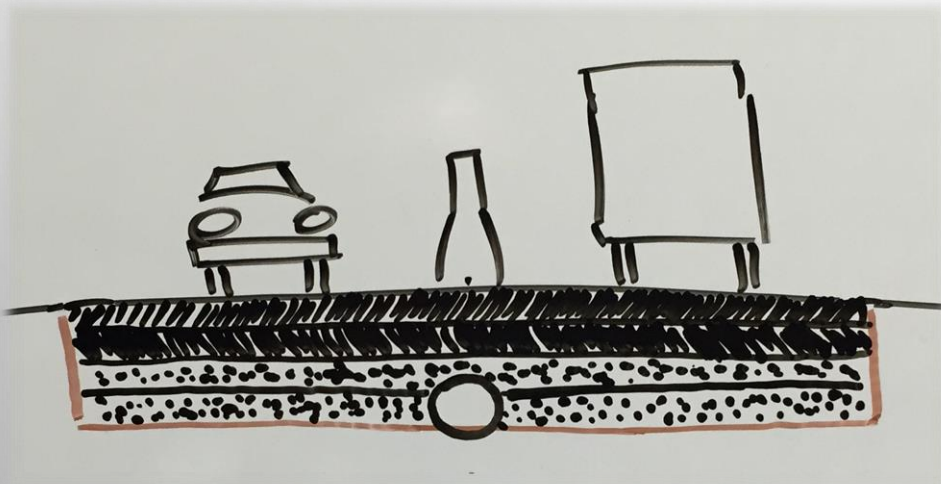


“WHAT ABOUT QUALITY?”

“This is actually a better structural buildup.”

- Lyndi Blackburn, P.E.

ALDOT Asst. State Materials & Tests Engineer



“IF YOU DON’T MIND ME ASKIN’,
HOW MUCH DID SHE SET YOU BACK?”

- DEPENDS ON WHAT YOU WANT TO SEE
- SIGNIFICANT DIRECT CONTRACT COST INCREASES
NOT CONSIDERING SAVINGS DUE TO IMPROVEMENTS IN -
 - SAFETY
 - REDUCTION IN TRAFFIC DELAYS
 - PRODUCTION
 - HEADACHE



DO YOU REALIZE WHAT WE JUST DID?

- ENVIRONMENTAL PROTECTION, WITH BENEFITS IN...
 - QUALITY
 - SAFETY
 - TRAFFIC
 - PRODUCTION
 - COST



“I HAVE NEVER SEEN A BETTER RUN ROAD PROJECT BY ALDOT.”

“THAT DOESN'T MEAN I BELIEVE THEY CAN BUILD THE EASTERN BYPASS (BOONDOGGLE EXPRESSWAY) WITH THE SAME CONTROL. WE'LL SEE.”

- John Wathen
Hurricane Creekeeper Blog
June, 2015





THE END...