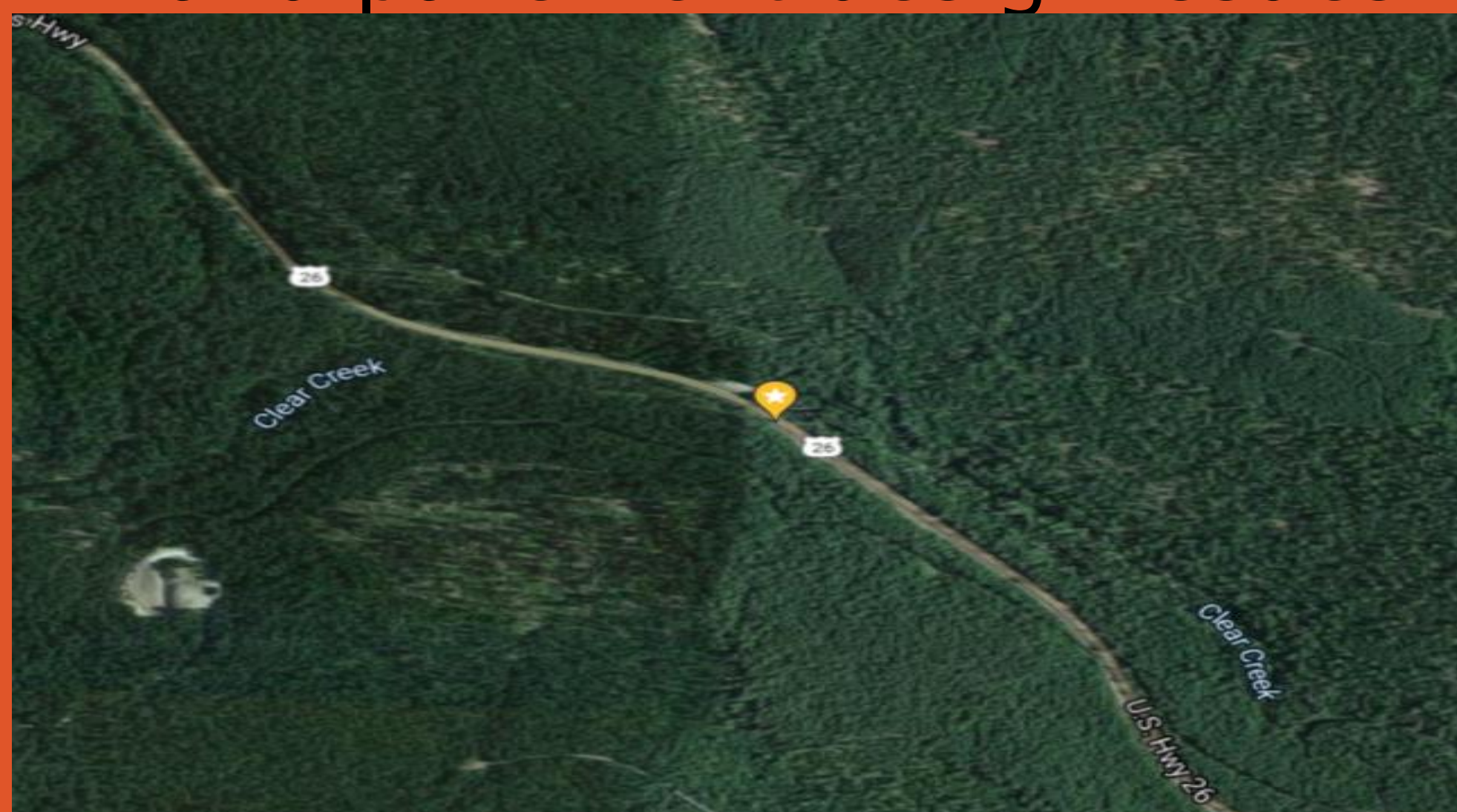


PROJECT OBJECTIVES

- Design a culvert that has a long-life cycle
- Improve fish passage
- Minimize stream bed disturbance
- Design effective drainage and pollution prevention
- Address roadway alignment and pavement design issues



Project Location

EXISTING CONDITIONS

- Major freight route
- 72' bridge span
- Large steep cut banks along creek
- Poor substructure
- Questionable original load rating



Existing Clear Creek Bridge



CLEAR CREEK BRIDGE REPLACEMENT

Located on U.S. Highway 26 at Milepost 64.04



Final Slab Culvert Design

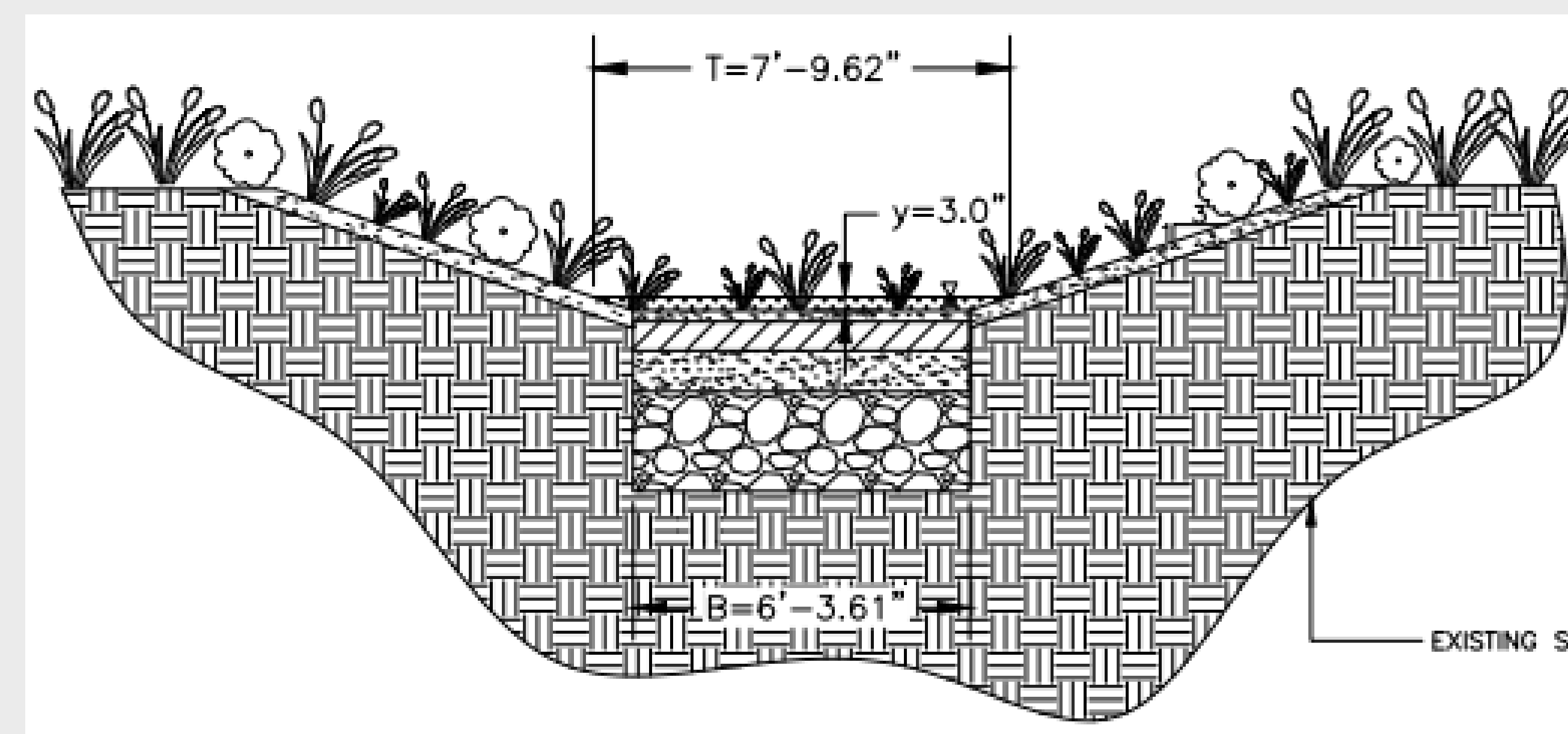
Source: http://iecs.com/completed_project/gleeson-line-bridge-over-mcdougall-drain/

SLAB CULVERT

- Wingwalls and abutments added to help channel the flow of the creek
- Culvert and wingwall foundations will be buried under the streambed to prevent scour from affecting the structures stability
- Peak discharge for a 100-year storm is used to determine culvert size
- Natural streambed material is left undisturbed to improve fish passage
- Structurally sound to withstand the weight of freight traffic

STORMWATER

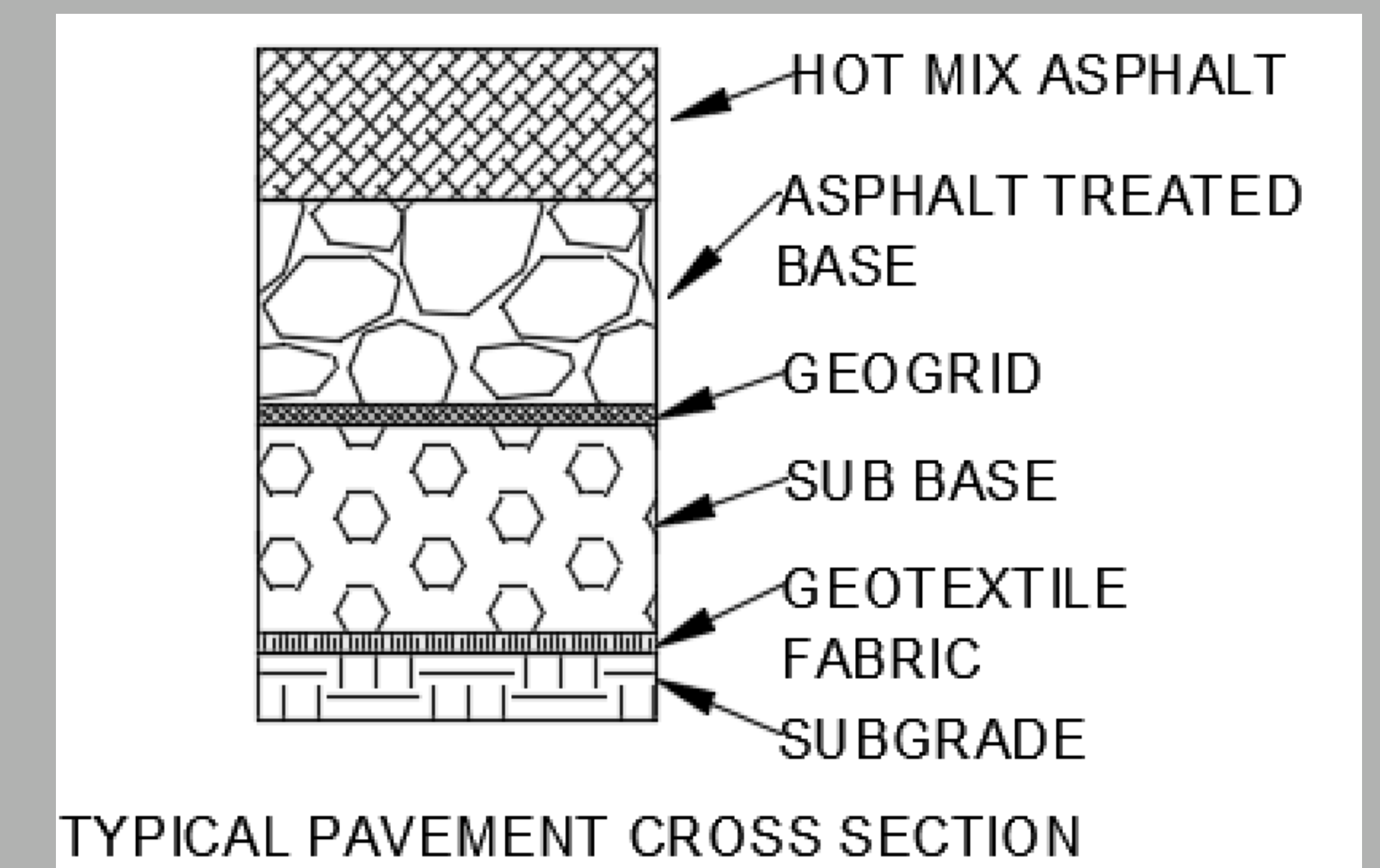
- Upgrade existing roadside drainage ditches to better handle peak storm conditions.
- Install a trapezoidal bioswale to filter stormwater runoff
- Prevents pollution from entering Clear Creek



Bioswale Cross-Section

TRANSPORTATION

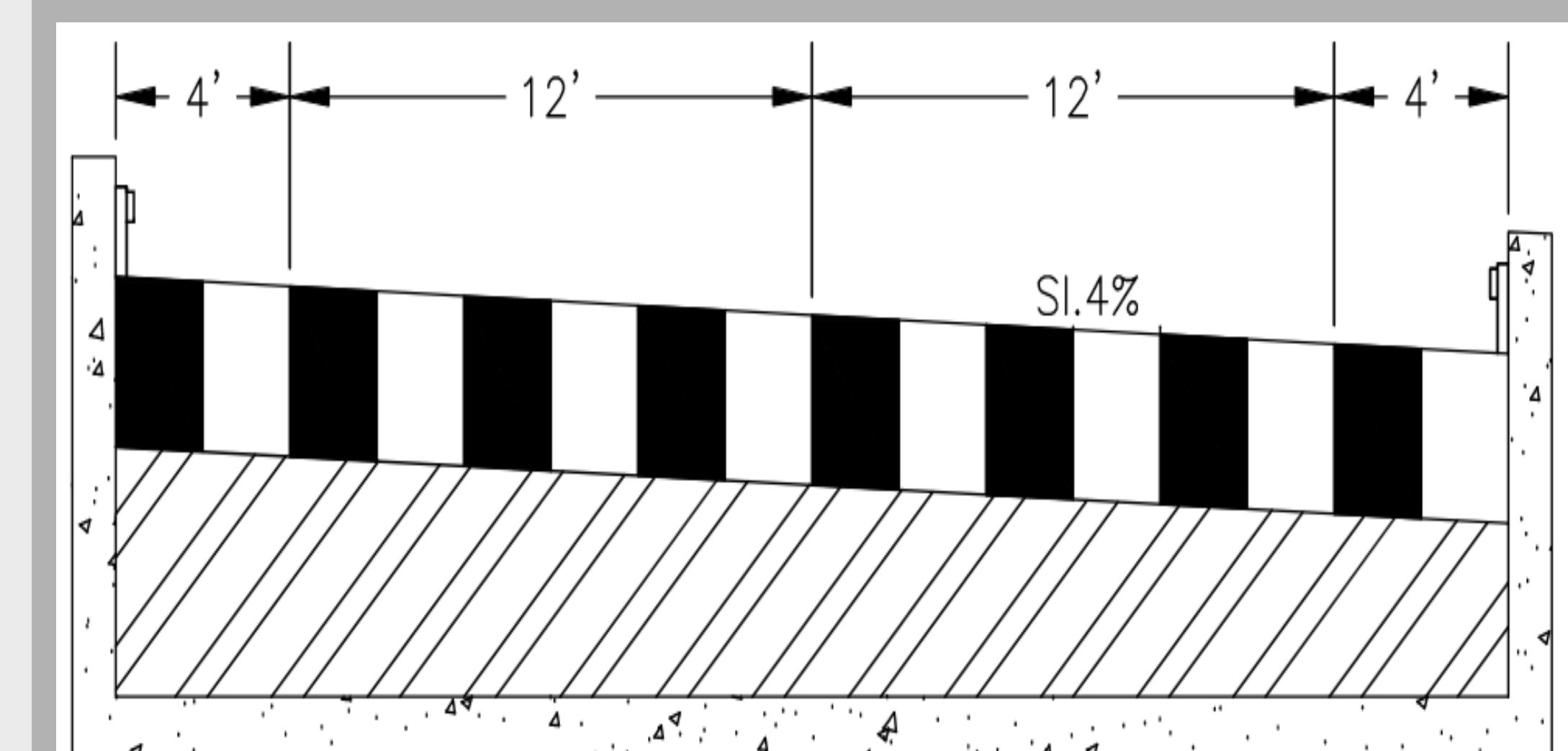
- A 200 ft long spiral curve to provide a smooth transition into the turn
- Implement a slight sag vertical curve to fit existing elevations of the terrain
- Redesign pavement layers based on a 30-year design



TYPICAL PAVEMENT CROSS SECTION
Pavement Layers

SAFETY

- Implement signs along newly designed curves
- 12ft lanes to allow for freight traffic
- Guardrails are placed on the edge of the roadway
- All project designs aspects meet ODOT, AASHTO, and ACI safety requirements



Roadway Cross-Section