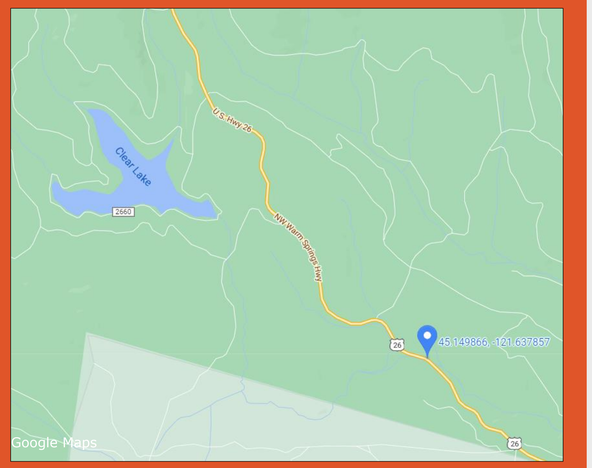
US26: BRIDGE REPLACEMENT

BOX CULVERT DESIGN FOR CLEAR CREEK

PROJECT BACKGROUND

- LOCATION: WASCO COUNTY, OR AT THE INTERSECTION OF US-26 AND CLEAR CREEK
- EXISTING STRUCTURE: MULTI-SPAN BRIDGE SUPPORTING US-26 TRAFFIC AND PASSAGE OF CLEAR CREEK
- NEED: REPLACE EXISTING BRIDGE DUE TO AGING STRUCTURE, ENVIRONMENTAL CONCERNS, AND POOR ALIGNMENT



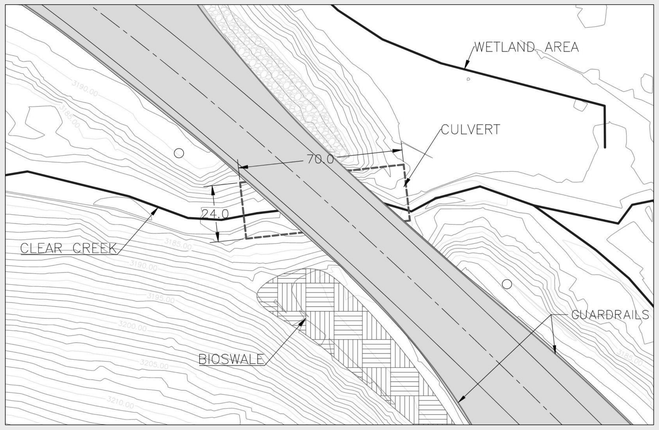
PROJECT OBJECTIVES

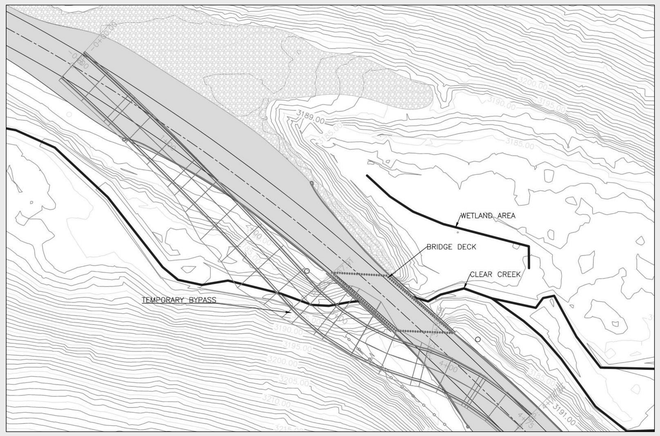
- ENSURE THE SAFETY OF THE PUBLIC THROUGHOUT THE DEMOLITION AND CONSTRUCTION PROCESS AND WITH THE SELECTED DESIGN
- PROVIDE STREAM AND WETLAND PROTECTION BY MAINTAING CURRENT STREAM CHARACTERISTICS AND REDUCING RUNOFF POLLUTION
- REDUCE CONSTRUCTION IMPACTS ON TRAFFIC BY PROVIDING TWO BYPASS LANES
- MINIMIZE COSTS AND REDUCE CONTRUCTION TIME

Oregon State University

PROPOSED CONDITIONS

- CONSTRUCT A SURFACE OF EXISTING TOPOGRAPHY AND SITE CONDITIONS
- INCORPORATE THE SELECTED CULVERT, STORMWATER SYSTEM, AND PAVEMENT SECTIONS INTO A SINGLE DRAWING
- GRADE ALL AREAS TO THE RESPECTIVE HEIGHTS TO ENSURE ADEQUATE RUNOFF COLLECTION AND MAINTAIN STREAM ELEVATIONS
- QUANTIFY THE NECESSARY CUT & FILL TO GRADE ALL DESIGN FEATURES



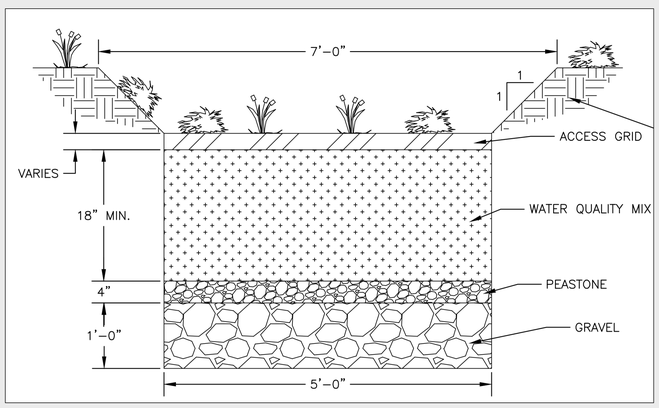


TRAFFIC CONTROL & PAVING

- BUILD A TEMPORARY ROADWAY TO MAINTAIN TWO LANES OF TRAFFIC FLOW AT ALL TIMES
- INCLUDE A STREAM BYPASS USING A CORRUGATED METAL PIPE THAT SUPPORTS PEAK FLOWS DURING THE IN-WATER WORK PERIOD
- REMOVE THE EXISTING, HEAVILY-TRAFFICKED ASPHALT AND REPLACE WITH 10-INCHES OF NEW ASPHALT
- MAINTAIN A MAX SLOPE OF 2% ON EACH SIDE OF THE ROADWAY CROWN TO COMPLY WITH ADA REQUIREMENTS

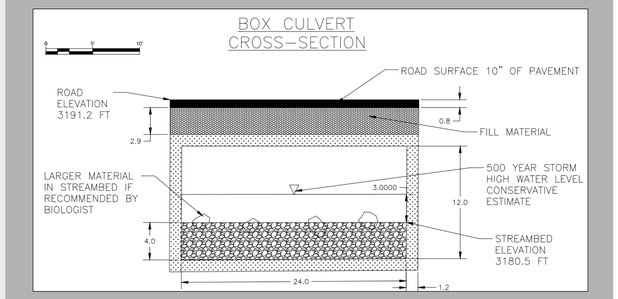
STORMWATER SYSTEM

- IMPROVE EXISTING STORMWATER RUNOFF SYSTEM; THE OLD SYSTEM DOES NOT HAVE A WATER FILTRATION SYSTEM
- RETROFITTING EXISTING DITCH WITH A BIOSWALE
- THE VEGETATION IN THE BIOSWALE WILL FILTER OUT THE IMPURITIES IN THE RUNOFF
- THE RUNOFF WILL OUTPUT INTO THE STREAM
- NO PIPING SYSTEM PRESENT AS THIS WOULD REQUIRE FUTURE MAINTENANCE

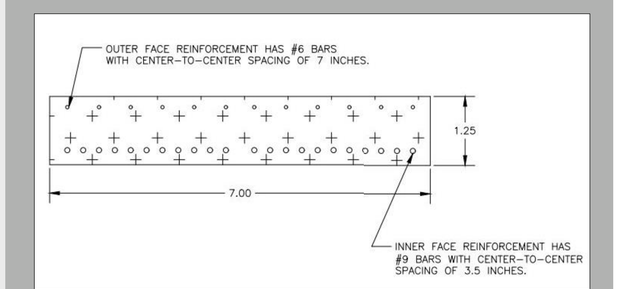


CULVERT DESIGN

- US FISH AND WILDLIFE SERVICE FISH PASSAGE: MIMICKING STREAM MORPHOLOGY
- SCOUR PROTECTION USING COUNTERSUNK STRUCTURE AND IMPROVED ALIGNMENT
- DESIGNED FOR 500 YEAR STORM FLOW AND GIVEN ADDITIONAL CLEARENCE TO PREVENT ROAD OVERTOPPING AND ALLOWING FOR LARGE DEBRIS FLOW



- DESIGNED FOR STRENGTH 1 LIMIT STATE DUE TO TRAFFIC LOADS BEING THE GOVERNING LOADS
- SLAB THICKNESS = 15 INCHES
- INNER FACE REINFORCEMENT FOR EACH WALL/SLAB AND OUTER FACE REINFORCEMENT FOR TOP SLAB ONLY
- GRADE 60 REBAR AND CONCRETE STRENGTH = 6000 PSI



Oregon Department of Transportation