



August 31, 2022

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**Subject: Winsome Filing No. 3  
Culvert Crossing Construction Document – Independent Design Review**

An independent structural review of the triple Reinforced Concrete Box Culvert (RCBC) was not completed, as the triple box culverts follow the CDOT CDOT Standard Detail M-601-3, Triple Concrete Box Culvert. A structural check was completed based on the CDOT standard detail M-601-3 using the member sizes and reinforcing for an 8 ft H x 12 ft W box culvert. The standard detail provides the structural details necessary for construction and vertical reinforcement in the walls. A structural check was completed to verify that the 7 ft height of the culvert conforms with the structural details for the 8 ft height. See calculations supporting the 7 ft box in the Appendix. This methodology is consistent with the intent of note number 7 on Sheet 2 of Detail M-601-3: "When a (Rise) R of less than 6 feet is required, use the bar sizes and the slab and wall thicknesses for the 6 foot rise". The detail provides the necessary design for the triple RCBC based on the amount of fill over the RCBC. No additional structural design or analysis, beyond that was completed with the project.

The plans hereto mentioned adhere to the principles and criteria in the following documents:

CDOT Standard Detail M-601-3, Triple Concrete Box Culvert

CDOT Standard Detail M-601-20, Wingwalls for Pipe or Box Culverts

El Paso County "Drainage Criteria Manual", dated October 31, 2018 ("DCM")

El Paso County "Engineering Criteria Manual" Revision 6, dated December 13, 2016 ("ECM")

CDOT "Drainage Design Manual", 2019. ("CDOT DDM")

Urban Drainage and Flood Control District Drainage Criteria Manual (UDFCDM), Vol. 1, prepared by Wright-McLaughlin Engineers, June 2001, with latest revisions.