



# Standard Drawing Report

**Date:** October 4, 2017

**Technical Owner:** Civil – Brett I. Kesterson, P.E.

**Standard Drawing No.** P-536      **Calculation Book No.** 536

**Drawing Title:** Driveway Connection Detail



Expires 06/30/2019

## Background Information, Including Reference Material:

Asphalt and concrete pavement designs using WinPAS 12 pavement thickness design of pavement structures developed by the American Concrete Association based on the 1993 AASHTO Guide for Design of Pavement Structures.

American Concrete Pavement Association strength converter using the ACI 330 method to determine flexural strength from compression strength.

## Assumption Made:

Asphalt connection: poor soils, low reliability and poor serviceability to account for soil conditions throughout City.

Concrete connection: poor soils, low reliability and poor serviceability to account for soil conditions throughout City. Flexural strength of 478psi from 3000psi compressive strength.

## Design Narrative:

The 2-1/2 inch asphalt and 4 inch concrete connections behind driveways have been in use in Portland since at least the mid 1970's.

The back calculations for pavement loads shows the asphalt to have capacity for 1,000 ESALs over 20 years. This is minimal for a connection to a residence. However, if this connection is use in a commercial or retail location for a parking lot, research should be done to make sure garbage disposal vehicles will not be using the connection to access disposal bins, etc.

The back calculation for the pavement loads shows the concrete to have capacity for 18,900 ESAL's for 20 years. This is adequate for most residential as well as commercial and retail locations with passenger vehicles and the occasional garbage disposal vehicle.