FLEXIBLE PAVEMENT DESIGN

Project:_____

Given:

- Number of Lanes: _____
- Functional Classification: _____
- _____ Traffic: _____
- _____ Traffic: _____ (using a growth factor of __%)
- 24 hour truck %: _____
- Design Period: _____
- Open to Traffic: _____
- Subgrade CBR: _____

Solution:

Step 1 – Determine the 18 Kip Equivalent Single Axle Loading (ESAL)

Design Period: _____
Mid-year: _____
Interpolated ADT: _____

Figure 202-1:

Directional Distribution, D	=	_____%
Lane Factor	=	_____%
B:C Ratio	=	_____
B factor	=	_____
C factor	=	_____

Using equations in Section 202.2:

Where:	ADT	=	Mid-Year, Average Daily Traffic
	$\%T_{24}$	=	24-hour truck percentage of ADT
	%D	=	Directional Distribution
	%LF	=	Lane Factor
	%B, C	=	% B or C trucks of the total trucks
	CF	=	Appropriate truck conversion factor

B ESAL's = ADT * $\%T_{24}$ * %D * %LF * %B * CF

ESAL B: _____

C ESAL's = ADT * $\%T_{24}$ * %D * %LF * %C * CF

ESAL C: _____

Total ESAL: _____ ESAL/day

Design Period ESAL's = _____ ESAL/day * 365.25 days/yr. * ___ yrs = _____

= _____* 10^6 ESAL

Step 2 – Determine the Subgrade Resilient Modulus (M_r) (formula in Section 203.1)

M_r = 1200 * CBR
= 1200 * _____
= _____

Step 3 – Determine the Design Structural Number (SN) using Figures 402-2 and 402-3.

Reliability (Figure 201-1) = _____%
Overall Standard Deviation (Figure 201-1) = _____
18-kip Single Axle Loads (Step 1) = _____ x 10^6 ESAL
Subgrade Resilient Modulus, M_r (Step 2) = _____psi

Design Structural Number (SN) = _____

Step 4 – Design the typical section using the layer coefficients found in Figure 401-1.

Option 1:

Material	Thickness	Coefficient	SN

Total SN = _____

Option 2:

Material	Thickness	Coefficient	SN

Total SN = _____

Option 3: Material	Thickness	Coefficient	SN

Total SN = _____