

CSM
93AASHTO

MATERIALS AND TESTS UNIT
Final Pavement Design, Concrete Pavement

DATE: 01/24/18
File: I-5912

PROJECT DESCRIPTION:

I-5912 45905.1.1 F. A. No. : -
Route: I-77
From MM 78.5 to MM 83.4
County: Surry Division: 11
Request: Ramie Shaw Length (mi.) 4.9

TRAFFIC DATA

Initial Year:	2014	Projection Year:	2040
Initial Year ADT:	32,000	Proj. Yr. ADT:	69,000
% DUALS:	4.0	% TTST:	20.0
LANE/DIRECT:	2	DES. LIFE:	30
DIR %:	50.0	Growth (%):	3.0
CONSTR. YR:	2018	Constr. Year ADT:	36,015
Constr. Year ADTT(trucks):	8644	30 YEAR ADT=	87,403

DESIGN PARAMETERS

Road Type:	Interstate	Rural/Urban:	Rural
Standard Error:	0.35	Reliability Level:	95
Initial SI:	4.50	LANE DIST:	0.9
TERM. SI:	2.75	DUAL FACT.:	0.30
Mod. Subgrade (K) (pci):	400	TTST FACT:	1.60
Load Transfer Coeff(J):	2.8	Drainage Coef (C _d):	1.0
Elastic Modulus(E _c):	3,500,000	Modulus of Rupture (S' _c):	650

CALCULATIONS DATA

DAILY 18 K =	8,657	ADD'L 18K=	0
Z _r =	-1.645	TOT. 18 K =	94,885,686
Thickness=	13.50 in.	ΔPSI=	1.75

RECOMMENDED DESIGN:

13.5 in. Jointed Concr. Pavement with Dowels
0.0 in. NGI
1.25 in. S9.5B
Soil Stab.

Total Thickness: 14.75 in.

Perform Life Cycle Cost Analysis

Flex Shoulder Thickness: 13.5 in. Jointed Concr. Pavement with Dowels