

F.A.S. 656 (NEOGA ROAD)

CLASS II ROAD
FUNCTIONAL CLASSIFICATION : RURAL MAJOR COLLECTOR
DESIGN PERIOD = 20 YEARS
DESIGN ESALs = 231,000
LOAD = 73,280 POUND ROAD

PAVEMENT DESIGN TRAFFIC

CURRENT A.D.T. = 2050
DESIGN YEAR: 2027
2027 A.D.T. = 2600
PU % = 94.4 %
SU % = 4.3 %
MU % = 1.3 %

DESIGN LANE DISTRIBUTION (for all vehicle classes) = 50%

VEHICLE	DESIGN ADT (both directions) (1)	DAILY TRAFFIC BY VEHICLE TYPE(2)	TRUCK FACTOR	DIRECTIONAL DISTRIBUTION %	CUMULATIVE ESALs FOR DESIGN PERIOD
PASSENGER CARS	2195	94.4 %	0.0004	50	3,205
SINGLE UNIT TRUCKS	100	4.3 %	0.307	50	112,055
MULTI UNIT TRUCKS	30	1.3 %	1.056	50	115,632
TOTAL	2325	100 %			230,892

(1) NUMBER OF VEHICLES IN BOTH DIRECTIONS FOR THE DESIGN YEAR 2017. THESE VALUES WERE PROVIDED BY I.D.O.T.

(2) DAILY TRAFFIC PERCENTAGES WERE DETERMINED BY DIVIDING THE INDIVIDUAL ADT VALUES BY THE 2325 TOTAL

EXISTING PAVEMENT STRUCTURE

3 1/2" BITUMINOUS OIL AND CHIP BUILDUP
6" SOIL CEMENT
6" GRANULAR SUB BASE MATERIAL TYPE B (GRAVEL)

PAVEMENT DESIGN INFORMATION

ILLINOIS BEARING RATIO (I.B.R.)(ASSUMED) = 3.0
PAVEMENT DESIGN BASED ON F.W.D. TESTING (*)
FINAL RECOMMENDATION:
MILL 1"
LEVEL BINDER 3/4"
BINDER 2 1/2"
SURFACE 1 1/4"

(*) I.D.O.T. MODIFIED A.A.S.H.T.O.PAVEMENT DESIGN METHOD

MIXTURE REQUIREMENTS

Location	FAS 656 Surface & Incidental	FAS 656 Binder	FAS 656 Level Binder	FAS 656 Bit. Base Crse. Widening	FAS 656 Patching CL D
AC/PG	PG 64-22	PG 64-22	PG 64-22	PG 64-22	PG 64-22
RAP % (Max.)	15 % (Max)	15 % (Max)	15 % (Max)	15 % (Max)	15 % (Max)
Design Air Voids	4.0% at Ndes=50	4.0% at Ndes=50	4.0% at Ndes=50	4.0% at Ndes=70	4.0% at Ndes= 70
Mix Comp. (Gradation)	IL-9.5	IL-19.0	IL-9.5	IL-19.0	IL-19.0
Friction Aggregate	Mix C	N/A	Mix C	N/A	N/A

Location	FAS 656
Mixture Use	Bituminous Shoulder
AC/PG	PG 64-22
RAP % (Max.)	15 % (Max)
Design Air Voids	4.0% at Ndes=30
Mix Comp. (Gradation)	IL-9.5L
Friction Aggregate	Mix C

WIDENING PAVEMENT DESIGN

EXISTING Dt = 1.97
3 1/2" BITUMINOUS OIL AND CHIP BUILDUP @ 0.15 = 0.525
6" SOIL CEMENT @ 0.15 = 0.900
6" GRANULAR SUB BASE MATERIAL TYPE B (GRAVEL) @ 0.09 = 0.540
HOT MIX ASPHALT @ 0.400
1.97 / 0.40 = 4.925" SAY 5.0"(*)
(*) USE 6" MIN. THICKNESS OF HMA IN ALL WIDENING AND PATCHING

PAVEMENT DESIGN

SCALE	APPROVED BY	DRAWN BY
DATE	REVIEWED	
DRAWING NUMBER		