

**MECHANISTIC DESIGN
FLEXIBLE PAVEMENT**

Urban Class II Roadway ADT = 2500
 PV = 2475 P = S = M = 50%
 SU = 20
 MU = 5
 DP = 20 YRS SSR = FAIR

USE TRAFFIC FACTOR EQ 54-5.2

$$TF = DP \left[\frac{(0.15 \times P \times PV) + (112.06 \times S \times SU) + (385.44 \times M \times MU)}{1 \times 10^6} \right]$$

$$= 20 \left[\frac{(0.15 \times 0.5 \times 2475) + (112.06 \times 0.5 \times 20) + (385.44 \times 0.5 \times 5)}{1 \times 10^6} \right]$$

$$= 20 \left[\frac{185.63 + 1120.60 + 963.6}{1 \times 10^6} \right] = 20(0.00227)$$

TF = 0.045 ACTUAL

TF = 0.50 MINIMUM

AC MIXTURE TEMP = 78°F

N70 PG 64-22 AC 20
 E_{AC} = 598

DESIGN AC STRAIN = 130
 THICKNESS = 8.25"

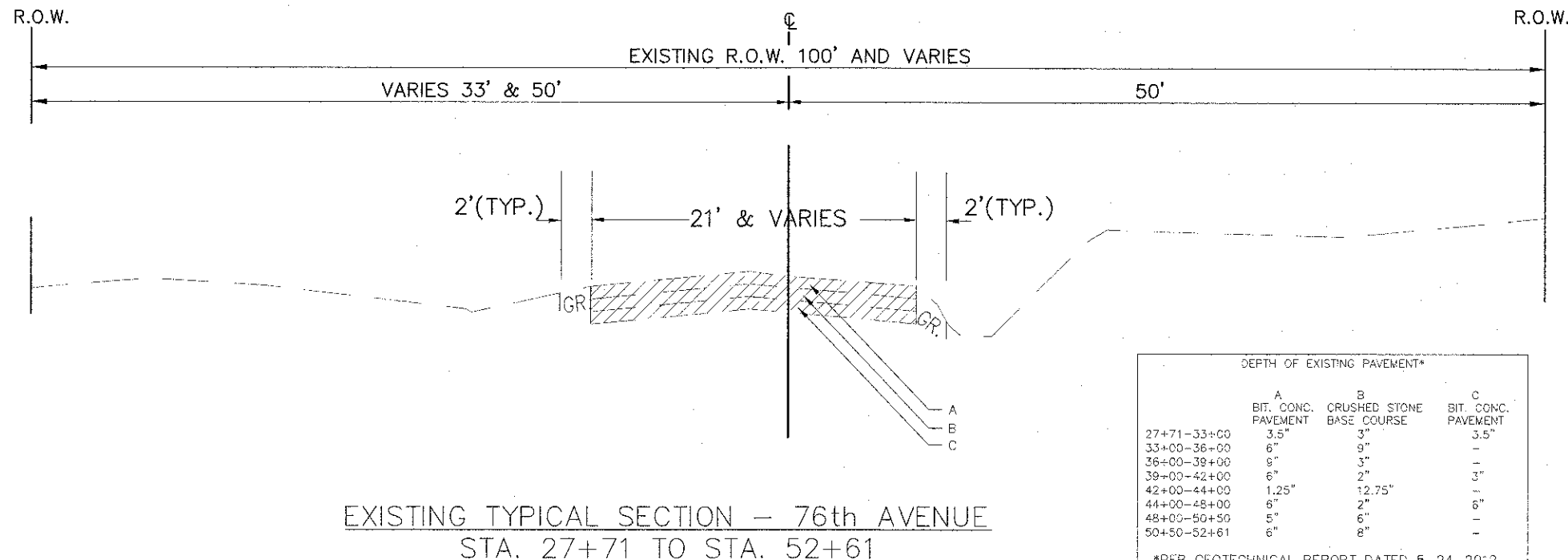
STRUCTURAL DESIGN TRAFFIC:	Year	20
PV =	2475	SU = 20 MU = 5
ROAD/STREET CLASSIFICATION:	Class 11 URBAN	
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:	P = 50 S = 50 M = 50	
TRAFFIC FACTOR:	Actual TF = 0.045	AC Type = 20
	Minimum TF = 0.5	
PG GRADE:	Binder = 64-22	Surface = 64-22
SUBGRADE SUPPORT RATING:	SSR = FAIR (Sta. 27+00 to 53+00)	
	SSR = (Sta. to)	

HOT-MIX MIXTURE REQUIREMENTS		
MIXTURE TYPE	AIR VOIDS @ Ndes	LOCATION
RESURFACING		
HOT-MIX ASPHALT SURFACE COURSE, MIX D, N 50 (IL 9.5 mm); 1 1/2"	4% @ 50 Gyr.	ISHMALA DRIVE SEQUOIA DRIVE 128TH STREET POTAWATOMI DRIVE
FULL DEPTH PAVEMENT		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, 2"	4% @ 50 Gyr.	76TH AVE.
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50; 6 1/4" (2 LIFTS)	4% @ 50 Gyr.	76TH AVE.
DRIVEWAYS		
HOT-MIX ASPHALT SURFACE COURSE, MIX D, N 50 (IL 9.5 mm); 3"	4% @ 50 Gyr.	76TH AVE.
HOT-MIX ASPHALT BASE COURSE (HMA BINDER IL-19 mm); PE - 6" (2 LIFTS), CE - 8 (3 LIFTS)"	4% @ 50 Gyr.	76TH AVE.

THE UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN

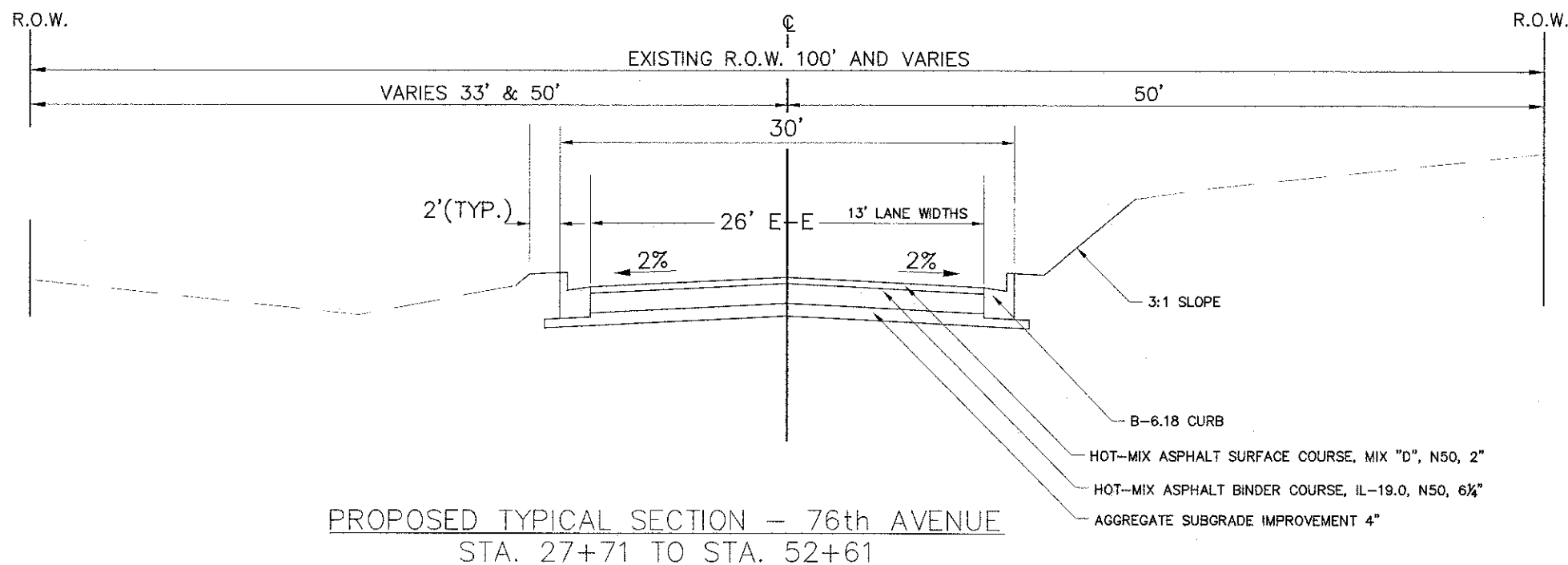
THE "AC TYPE" FOR POLYMERIZED HMA MIXES SHALL BE "SBS/SBR PG 70-22 AND FOR NON-POLYMERIZED HMA THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS. FOR "PERCENT OF RAP" SEE DISTRICT ONE SPECIAL PROVISIONS.

* When RAP exceeds 20%, the new asphalt binder in the mix shall be PG 58-22.



	DEPTH OF EXISTING PAVEMENT*		
	A BIT. CONC. PAVEMENT	B CRUSHED STONE BASE COURSE	C BIT. CONC. PAVEMENT
27+71-33+00	3.5"	3"	3.5"
33+00-36+00	6"	9"	-
36+00-39+00	9"	3"	-
39+00-42+00	6"	2"	3"
42+00-44+00	1.25"	12.75"	-
44+00-48+00	6"	2"	6"
48+00-50+50	5"	6"	-
50+50-52+61	6"	8"	-

*PER GEOTECHNICAL REPORT DATED 5-24-2012
 PREPARED BY SEECO CONSULTANTS



H:\11-PH\3004\PLANS-ENG\REV-1\11-PH-004_SITE_2012-09-05.dwg
 PLOT DATE = Sep 10, 2012
 USER NAME = \$USER\$
 DESIGNED -
 REVISIONS -
 DRAWN -
 CHECKED -
 PLOT SCALE = \$SCALE\$
 PLOT DATE = Sep 10, 2012

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

76TH AVENUE 131ST STREET TO 127TH STREET
 TYPICAL ROAD CROSS SECTION
 SCALE: NTS SHEET NO. OF SHEETS STA. 27+71 TO STA. 52+61

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3791	08-00043-00-FP	COOK	27	4
CONTRACT NO. 63747			ILLINOIS FED. AID PROJECT	