

|               |                |          |              |           |
|---------------|----------------|----------|--------------|-----------|
| FAU RTE.      | SECTION        | COUNTY   | TOTAL SHEETS | SHEET NO. |
| 3791          | 02-00037-00-WR | COOK     | 40           | 4         |
| F.H.W.A. REG. |                | ILLINOIS | PROJECT:     |           |
| 83957         |                |          |              |           |

### MECHANISTIC DESIGN FLEXIBLE PAVEMENT

Urban Class II Roadway      ADT = 3500  
 PV = 3462      P = S = M = 50%  
 SU = 28  
 MU = 10      SSR = FAIR  
 DP = 20 YRS

USE TRAFFIC FACTOR EQ 54-5.2

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

$$= 20 \left[ \frac{(0.15 \times 0.5 \times 3462) + (112.06 \times 0.5 \times 28) + (385.44 \times 0.5 \times 10)}{1 \times 10^6} \right]$$

$$= 20 \left[ \frac{259.65 + 1568.84 + 1927.2}{1 \times 10^6} \right] = 20(0.003755)$$

TF = 0.075 ACTUAL

TF = 0.50 MINIMUM

AC MICTURE TEMP = 78°F

N70 PG 64-22 AC 20  
 E<sub>AC</sub> = 598

DESIGN AC STRAIN = 130

THICKNESS = 8.25"

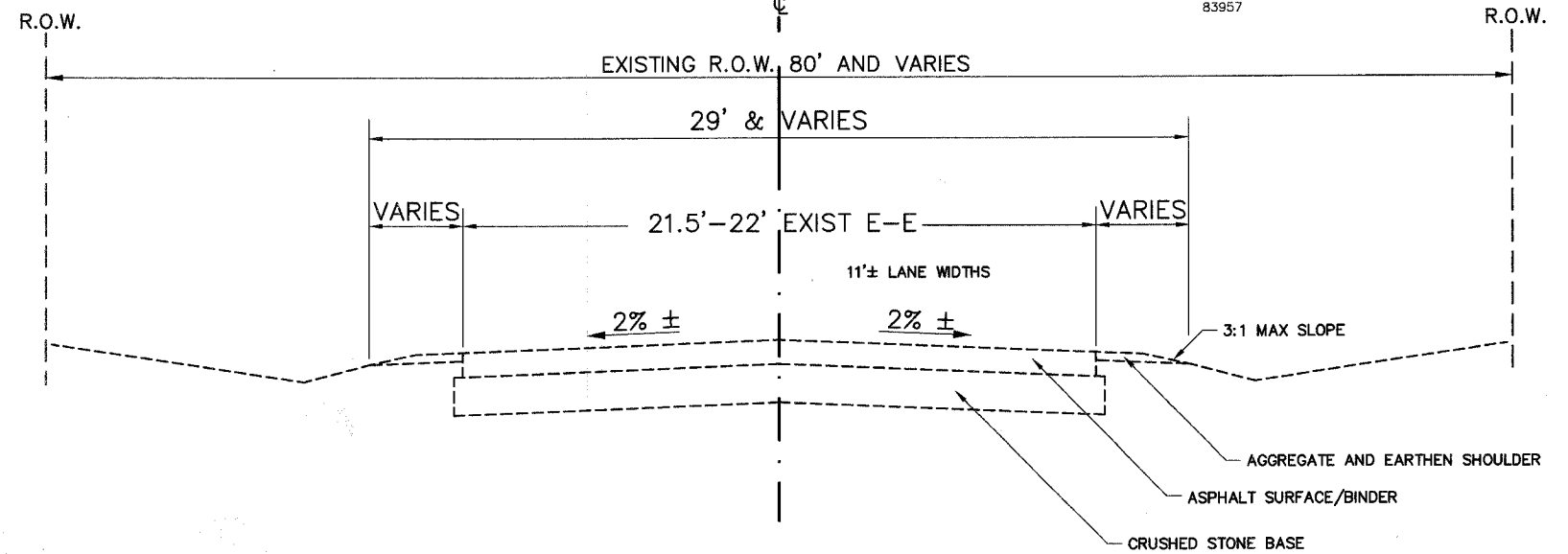
|  |                                   |                      |
|--|-----------------------------------|----------------------|
| STRUCTURAL DESIGN TRAFFIC:                           | Year                              | 20                   |
| PV =   | 3462                              | SU = 28      MU = 10 |
| ROAD/STREET CLASSIFICATION:                          | Class 11 URBAN                    |                      |
| PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE: | P = 50      S = 50      M = 50    |                      |
| TRAFFIC FACTOR:                                      | Actual TF = 0.075                 | AC Type = 20         |
|  | Minimum TF = 0.5                  |                      |
| PG GRADE:  | Binder = 64-22                    | Surface = 64-22      |
| SUBGRADE SUPPORT RATING:                             | SSR = FAIR (Sta. 53+00 to 106+00) |                      |
|  | SSR = (Sta. to )                  |                      |

| HOT-MIX MIXTURE REQUIREMENTS                              |           |             |
|---|-----------|-------------|
| MIXTURE TYPE  | AC TYPE   | VOIDS       |
| <b>FULL DEPTH PAVEMENT</b>                                |           |             |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70, 2"          | PG 64-22  | 4% @ 70 GYR |
| HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70               | PG 64-22* | 4% @ 70 GYR |
| <b>DRIVEWAYS</b>  |           |             |
| HMA SURFACE COURSE, MIX C, N 50 (IL 9.5 mm); 2"           | PG 64-22  | 4% @ 50 GYR |
| ** HMA BASE COURSE (HMA BINDER IL-19 mm); PE -6", CE - 8" | PG 64-22* | 4% @ 50 GYR |

The Unit Weight used to calculate all Hot-Mix Asphalt Surface Mixture Quantities is 112 lbs/sq yd/in

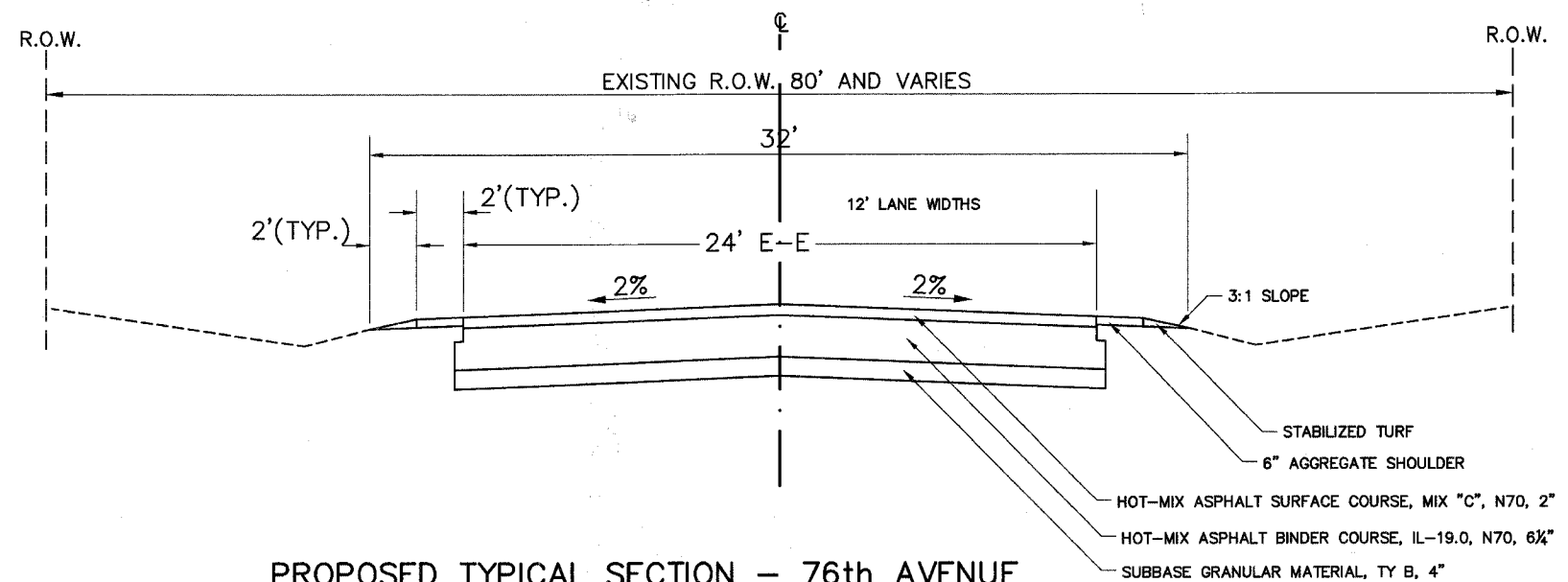
\* When RAP exceeds 20%, the new asphalt binder in the mix shall be PG 58-22.

\*\* Use 8" Aggregate Base Course, Type B



NOTE:  
 STA. 53+10 TO STA. 75+00 - EXISTING CENTERLINE ROAD VARIES 0-2.5' LEFT OF CENTERLINE ROW  
 STA. 75+00 TO STA. 105+93 - EXISTING CENTERLINE ROAD VARIES 0-3.5' RIGHT OF CENTERLINE ROW  
 11'± LANE WIDTHS

### EXISTING TYPICAL SECTION - 76th AVENUE STA. 53+00 TO STA. 106+00



### PROPOSED TYPICAL SECTION - 76th AVENUE STA. 53+00 TO STA. 106+00

**MORRIS ENGINEERING, INC.**  
 5100 LINCOLN AVE Lisle, ILLINOIS 60532  
 PHONE: (630) 271-0770 WEBSITE: ECIVIL.COM

LOCATION: H:\04-PH\3003\PLANS-ENG\REV-3\dwg\SHEET-TITLE-NOTES-DETAILS.dwg  
 DRAWN BY: CJS DESIGN BY: RAC CHECKED BY: JUV  
 JOB NO.: 04-PH-3003 SCALE: NTS

**76TH AVENUE RECONSTRUCTION  
127TH STREET TO ILLINOIS ROUTE 83  
TYPICAL ROAD CROSS SECTION  
STA. 53+00 TO STA. 106+00**

| DATE      | REVISIONS       | BY  | SHEET             |
|-----------|-----------------|-----|-------------------|
| 1 5-09-07 | PER IDOT REVIEW | RAC | 4<br>OF 40 SHEETS |
| 2 5-24-07 | PER IDOT REVIEW | RAC |                   |
| 3 9-04-07 | PER IDOT REVIEW | RAC |                   |
| 4         |                 |     |                   |

PLOT DATE: Sep 04, 2007 FILENAME: H:\04-PH\3003\PLANS-ENG\REV-3\dwg\SHEET-TITLE-NOTES-DETAILS.dwg