



Illinois Department of Transportation

To: Maureen Addis Attn: Mike Brand
From: Jeffrey M. South By: Jeffrey P. Myers *JPM*
Subject: Pavement Design
Date: June 26, 2017

FAP 62 (IL Route 125)
Section W(RS-6), 106RS-5
Sangamon County
D-96-114-07
Contract 72B37

Attached for your review is the pavement design for the above-referenced section. This section of roadway contains four vertical curves that do not meet current policy. Proposed work includes raising the current profile through the sag vertical curves, with grade raises ranging from 1' to 4'.

Several options were considered for the new pavement with the results as follows (based on mechanistic design):

| | |
|----------------|------------|
| Full-Depth HMA | 10.00 inch |
| JPCP | 8.50 inch |

The district considered the following issues:

- Closing the road is not recommended due to the presence of numerous homes and businesses along the route.
- Staging the work would be costly due to the narrow corridor and safety requirements of barrier wall with a drop off of this height.
- Using Granular Embankment to gradually raise both lanes is not recommended due to the volume and types of traffic. The current average ADT is 5,500 with high AM/PM peak traffic. The HCV is 14%.
- The District 6 Construction staff recommendation was to stage the work using HMA to gradually raise the profile.

The district proposes to use HMA pavement to raise the profile through these vertical curves. HMA would be placed on alternating lanes to gradually raise the profile under traffic, with the new HMA pavement placed directly on the existing HMA pavement. Because the grade raise would be done entirely with HMA, the 10.00 inch pavement design would be exceeded in this design.

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Due to the above limitations on the proposed work, the district requests that this pavement design be considered a special design and that the requirement for a Life Cycle Cost Analysis be waived.

This project is scheduled for the November 2018 letting.

If you have any questions or require additional information, please contact Jay Edwards at (217) 785-0597 or jay.edwards@illinois.gov.

Enclosures

PROJECT AND TRAFFIC INPUTS (Enter Data in Gray Shaded Cells)

| | | | |
|--|---|-----------------------------------|---------------------------|
| Route: IL 125 | Comments: Vertical Curve Correction at Sag Vertical Curves West of IL 97 | | |
| Section: W(RS-6), 106RS-5 | Contract: 72B37 | | |
| County: Sangamon | Design Date: 06/23/2017 | JDE | <-- BY |
| Location: W of IL 97 | Modify Date: | | <-- BY |
| Facility Type: Other Marked State Route | # of Lanes = 2 or 3 | ADT | Year |
| Part of future 4 lanes or more ? No | One Way Street ? No | Current: | 6,400 2015 |
| Road Class: II | Subgrade Support Rating (SSR): Fair | Future: | 7,809 2035 |
| Construction Year: 2019 | Design Period (DP) = 20 years | Structural Design Traffic | |
| | | Minimum ADT | Actual ADT |
| | | Actual % of Total ADT | % of ADT in Design Lane |
| | | PV = 0 | 6,943 94.0% P = 50% |
| | | SU = 250 | 259 3.5% S = 50% |
| | | MU = 750 | 185 2.5% M = 50% |
| | | Struct. Design ADT = 7,386 (2029) | |

TRAFFIC FACTOR CALCULATION

FLEXIBLE PAVEMENT

Cpv = 0.15
 Csu = **112.06**
 Cmu = **385.44**
 TF flexible (Actual) = 1.01 (Actual ADT)
 TF flexible (Min) = 3.17 (Min ADT Fig. 54-2.C)

RIGID PAVEMENT

Cpv = 0.15
 Csu = **135.78**
 Cmu = **567.21**
 TF rigid (Actual) = 1.41 (Actual ADT)
 TF rigid (Min) = 4.59 (Min ADT Fig. 54-2.C)

NEW CONSTRUCTION / RECONSTRUCTION PAVEMENT DESIGN CALCULATIONS

| Full-Depth HMA Pavement | JPC Pavement |
|--|---|
| Use TF flexible = 3.17 | Use TF rigid = 4.59 |
| PG Grade Lower Binder Lifts = PG 64-22 (Fig. 53-4.R) | Edge Support = Tied Shoulder or C.&G. |
| HMA Mixture Temp. = 78.0 deg. F (Fig. 54-5.C) | Rigid Pavt Thick. = 8.50 in. (Fig. 54-4.F) |
| Design HMA Mixture Modulus (E _{HMA}) = 610 ksi (Fig. 54-5.D) | |
| Design HMA Strain (ε _{HMA}) = 86 (Fig. 54-5.E) | CRCP Pavement |
| Full Depth HMA Design Thickness = 10.00 in. (Fig. 54-5.G) | Use TF rigid = 4.59 |
| Limiting Strain Criterion Thickness = 16.00 in. (Fig. 54-5.I) | IBR value = 3 |
| Use Full-Depth HMA Thickness = 10.00 inches | CRCP Thickness = 7.75 in. (Fig. 54-4.N) |

TF MUST BE > 60 FOR CRCP

RECONSTRUCTION ONLY (SUPPLEMENTAL) PAVEMENT DESIGN CALCULATIONS

| HMA Overlay of Rubblized PCC | Unbonded Concrete Overlay |
|---|--|
| Use TF flexible = 3.17 | Review 54-4.03 for limitations and special considerations. |
| HMA Overlay Design Thickness = 7.75 in. (Fig. 54-5.U) | |
| Limiting Strain Criterion Thickness = 999.00 in. (Fig. 54-5.V) | |
| Use HMA Overlay Thickness = 999.00 inches | JPCP Thickness = NA inches |

CONTACT BMPR FOR ASSISTANCE

DESIGN TABLES FROM BDE MANUAL CHAPTER 54 - PAVEMENT DESIGN

| Class I Roads | Class II Roads | Class III Roads | Class IV Roads |
|--|--|----------------------------|------------------------|
| 4 lanes or more Part of a future 4 lanes or more One-way Streets with ADT > 3500 | 2 lanes with ADT > 2000 One way Street with ADT <= 3500 | 2 Lanes (ADT 750 -2000) | 2 Lanes (ADT < 750) |

| Facility Type | Min. Str. Design Traffic (Fig 54-2.C) | | |
|--------------------------|---------------------------------------|--------|--------|
| | PV | SU | MU |
| Interstate or Freeway | 0 | 500 | 1500 |
| Other Marked State Route | 0 | 250 | 750 |
| Unmarked State Route | No Min | No Min | No Min |

| Class | Traffic Factor ESAL Coefficients | | | |
|-------|----------------------------------|--------|------------------------|--------|
| | Rigid (Fig. 54-4.C) | | Flexible (Fig. 54-5.B) | |
| | Csu | Cmu | Csu | Cmu |
| I | 143.81 | 696.42 | 132.50 | 482.53 |
| II | 135.78 | 567.21 | 112.06 | 385.44 |
| III | 129.58 | 562.47 | 109.14 | 384.35 |
| IV | 129.58 | 562.47 | 109.14 | 384.35 |

| Class Table for One-Way Streets | |
|---------------------------------|-------|
| ADT | Class |
| 0 - 3500 | II |
| >3501 | I |

| Class Table for 2 or 3 lanes (not future 4 lane & not one-way street) | |
|---|-------|
| ADT | Class |
| 0 - 749 | IV |
| 750 - 2000 | III |
| >2000 | II |

| Design Lane Distribution Factors For Structural Design Traffic (Fig. 54-2.B) | | | | | | |
|--|-------|------|------|-------|------|------|
| Number of Lanes | Rural | | | Urban | | |
| | P | S | M | P | S | M |
| 1 Lane Ramp | 100% | 100% | 100% | 100% | 100% | 100% |
| 2 or 3 | 50% | 50% | 50% | 50% | 50% | 50% |
| 4 | 32% | 45% | 45% | 32% | 45% | 45% |
| 6 or more | 20% | 40% | 40% | 8% | 37% | 37% |

| | | | | |
|---|---|---------------------|------|------------------------|
| PARTIAL DEPTH SHLD PATCH | (Mill & Fill Surf) | Shoulder Mix | 2.00 | \$78.06 / SQ YD |
| PARTIAL DEPTH PVMT PATCH | (Mill & Fill +2.00 ") | Leveling Binder Mix | 2.00 | \$79.52 / SQ YD |
| PARTIAL DEPTH SHLD PATCH | (Mill & Fill +2.00 ") | Shoulder Mix | 2.00 | \$78.06 / SQ YD |
| LONGITUDINAL SHOULDER JOINT ROUT & SEAL | | | | \$2.00 / LIN FT |
| CENTERLINE JOINT ROUT & SEAL | | | | \$2.00 / LIN FT |
| RANDOM / THERMAL CRACK ROUT & SEAL | (100% Rehab = 110.00' / Station / Lane) | | | \$2.00 / LIN FT |

| | |
|-------------------------------------|-----------|
| FLEXIBLE TOTAL LIFE-CYCLE COST | \$711,101 |
| FLEXIBLE TOTAL ANNUAL COST PER MILE | \$153,133 |

PCC PAVEMENT

JPCP

ROUTE
SECTION
COUNTY
LOCATION

Job Route
Job Section
Job County
Job Location

FACILITY TYPE

INTERSTATE

PROJECT LENGTH 1000 FT == > 0.19 Miles
 # OF CENTERLINES 2 CL
 # OF LANES 4 LANES
 # OF EDGES 4 EP
 LANE WIDTH - AVERAGE 12 FT
 SHOULDER WIDTH PCC Inside 6 FT
 PCC Outside 10 FT
 Total Width of Paved Shoulders 32 FT

PAVEMENT THICKNESS (RIGID) JPCP 10.00 IN TIED SHLD
 SHOULDER THICKNESS 10.00 IN

POLICY OVERLAY THICKNESS 3.75 IN

| RIGID PAVEMENT | TRAFFIC FACTORS | MINIMUM | ACTUAL | USE |
|--------------------------------|------------------|---------|--------|---------------------------|
| Worksheet Construction Type is | New Construction | 10.05 | 1.00 | 10.05 |
| | | | | The Pavement Type is JPCP |

INITIAL COSTS

| ITEM | THICKNESS | 100% QUANTITY | UNIT | UNIT PRICE | COST |
|---------------------------------|-----------------------------|---------------|--------|------------------|-----------|
| JPC PAVEMENT | (10.00") | 5,333 | SQ YD | \$50.00 / SQ YD | \$266,650 |
| PAVEMENT REINFORCEMENT | | 0 | SQ YD | \$22.00 / SQ YD | \$0 |
| STABILIZED SUBBASE | (4.00") | 6,000 | SQ YD | \$19.00 / SQ YD | \$114,000 |
| PCC SHOULDERS | | 3,556 | SQ YD | \$40.00 / SQ YD | \$142,240 |
| CURB & GUTTER | | 0 | LIN FT | \$30.00 / LIN FT | \$0 |
| SUBBASE GRAN MATL TY C | (~ 3.48") | 418 | TONS | \$25.00 / TON | \$10,450 |
| IMPROVED SUBGRADE: | Modified Soil Width = 82.0' | 9,111 | SQ YD | \$7.00 / SQ YD | \$63,777 |
| Reserved For User Supplied Item | | 0 | UNITS | \$0.00 / UNITS | \$0 |
| Reserved For User Supplied Item | | 0 | UNITS | \$0.00 / UNITS | \$0 |
| PAVEMENT REMOVAL | | 5,333 | SQ YD | \$0.00 / SQ YD | \$0 |
| SHOULDER REMOVAL | | 3,556 | SQ YD | \$0.00 / SQ YD | \$0 |

Note: * Denotes User Supplied Quantity
 RIGID CONSTRUCTION INITIAL COST \$597,117
 RIGID CONSTRUCTION ANNUAL COST PER MILE \$128,587

MAINTENANCE COSTS:

| ITEM | THICKNESS | MATERIAL | T | UNIT COST |
|--|-----------|-------------|------|---------------------------|
| ROUTINE MAINTENANCE ACTIVITY | | | | \$0.00 / LANE-MILE / YEAR |
| HMA POLICY OVERLAY | (3.75") | | 3.75 | |
| HMA POLICY OVERLAY PVMT | (3.75") | 1.0130 | 3.75 | \$20.21 / SQ YD |
| HMA SURFACE MIX | (1.50") | 1.0052 | 1.50 | \$8.02 / SQ YD |
| HMA BINDER MIX | (2.25") | 1.0182 | 2.25 | \$12.19 / SQ YD |
| HMA POLICY OVERLAY SHLD | (3.75") | | 3.75 | \$15.12 / SQ YD |
| CLASS A PAVEMENT PATCHING | | | | \$195.00 / SQ YD |
| CLASS B PAVEMENT PATCHING | | | | \$150.00 / SQ YD |
| CLASS C SHOULDER PATCHING | | | | \$145.00 / SQ YD |
| PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA Surf) | | Surface Mix | 1.50 | \$77.98 / SQ YD |
| PARTIAL DEPTH PVMT PATCH (Mill & Fill HMA 1.50") | | Surface Mix | 1.50 | \$77.98 / SQ YD |
| LONGITUDINAL SHOULDER JOINT ROUT & SEAL | | | | \$2.00 / LIN FT |
| CENTERLINE JOINT ROUT & SEAL | | | | \$2.00 / LIN FT |
| REFLECTIVE TRANSVERSE CRACK ROUT & SEAL | | | | \$2.00 / LIN FT |
| RANDOM CRACK ROUT & SEAL (100% Rehab = 100.00' / Station / Lane) | | | | \$2.00 / LIN FT |

RIGID TOTAL LIFE-CYCLE COST \$727,263
 RIGID TOTAL ANNUAL COST PER MILE \$156,613

LIFE-CYCLE COST ANALYSIS: NEW DESIGN

Calculated / Revised : **9/5/13 9:40 AM**

| | | | | JPCP | HMA |
|--------------|-----------------|----------------------|--|-----------|-----------|
| CONSTRUCTION | INITIAL COST | PRESENT WORTH | | \$597,117 | \$512,043 |
| | | ANNUAL COST PER MILE | | \$128,587 | \$110,266 |
| MAINTENANCE | LIFE-CYCLE COST | PRESENT WORTH | | \$130,146 | \$199,058 |
| | | ANNUAL COST PER MILE | | \$28,026 | \$42,866 |
| TOTAL | LIFE-CYCLE COST | PRESENT WORTH | | \$727,263 | \$711,101 |
| | | ANNUAL COST PER MILE | | \$156,613 | \$153,133 |

LIFE-CYCLE COST ANALYSIS: FINAL SUMMARY

| | | | | |
|------------------------------------|-------------------|------|-----------|------|
| LOWEST COST OPTION | =====> | HMA | \$153,133 | |
| OTHER OPTIONS (LOWEST TO HIGHEST): | TYPE / PERCENTAGE | JPCP | \$156,613 | 2.3% |

FULL-DEPTH HMA PAVEMENT
 HMA OVERLAY OF RUBBLIZED PCC PAVEMENT
 Figure 54-7.C
 STANDARD DESIGN

| MAINTENANCE COSTS: | ITEM | % | QUANTITY | UNIT | UNIT COST | COST | PRESENT WORTH |
|------------------------------|-------------------------------|------------------|----------------------------------|-----------------|-----------|-----------------------------|---------------|
| YEAR 5 | | | | | | | |
| | LONG SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | |
| | CNTR LINE JOINT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | |
| | RNDM / THRM CRACK R&S | 50.00% | 2,200 | LIN FT | \$2.00 | \$4,400 | |
| | PD PVMT PATCH M&F SURF | 0.10% | 5 | SQ YD | \$80.64 | \$403 | |
| | PWFn = | 0.8626 | | PW = | 0.8626 X | \$16,803 | \$14,494 |
| YEAR 10 | | | | | | | |
| | LONG SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | |
| | CNTR LINE JOINT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | |
| | RNDM / THRM CRACK R&S | 50.00% | 2,200 | LIN FT | \$2.00 | \$4,400 | |
| | PD PVMT PATCH M&F SURF | 0.50% | 27 | SQ YD | \$80.64 | \$2,177 | |
| | PWFn = | 0.7441 | | PW = | 0.7441 X | \$18,577 | \$13,823 |
| YEAR 15 | | | | | | | |
| | MILL PVMT & SHLD 2.00" | 100.00% | 8,889 | SQ YD | \$3.00 | \$26,667 | |
| | PD PVMT PATCH M&F ADD'L 2.00" | 1.00% | 53 | SQ YD | \$79.52 | \$4,215 | |
| | HMA OVERLAY PVMT 2.00" | 100.00% | 5,333 | SQ YD | \$10.71 | \$57,141 | |
| | HMA OVERLAY SHLD 2.00 " | 100.00% | 3,556 | SQ YD | \$8.06 | \$28,672 | |
| | PWFn = | 0.6419 | | PW = | 0.6419 X | \$116,695 | \$74,902 |
| YEAR 20 | | | | | | | |
| | LONG SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | |
| | CNTR LINE JOINT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | |
| | RNDM / THRM CRACK R&S | 50.00% | 2,200 | LIN FT | \$2.00 | \$4,400 | |
| | PD PVMT PATCH M&F SURF | 0.10% | 5 | SQ YD | \$80.64 | \$403 | |
| | PWFn = | 0.5537 | | PW = | 0.5537 X | \$16,803 | \$9,303 |
| YEAR 25 | | | | | | | |
| | LONG SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | |
| | CNTR LINE JOINT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | |
| | RNDM / THRM CRACK R&S | 50.00% | 2,200 | LIN FT | \$2.00 | \$4,400 | |
| | PD PVMT PATCH M&F SURF | 0.50% | 27 | SQ YD | \$80.64 | \$2,177 | |
| | PWFn = | 0.4776 | | PW = | 0.4776 X | \$18,577 | \$8,872 |
| HMA SD | | | | | | | |
| YEAR 30 INTERSTATE | | | | | | | |
| | MILL PVMT ONLY 2.00" | 100.00% | 5,333 | SQ YD | \$3.00 | \$15,999 | |
| | PD PVMT PATCH M&F ADD'L 2.00" | 2.00% | 107 | SQ YD | \$79.52 | \$8,509 | |
| | PD SHLD PATCH M&F SURF 2.00" | 1.00% | 36 | SQ YD | \$78.06 | \$2,810 | |
| | HMA OVERLAY PVMT 3.75 " | 100.00% | 5,333 | SQ YD | \$20.21 | \$107,785 | |
| | HMA OVERLAY SHLD 1.75 " | 100.00% | 3,556 | SQ YD | \$7.06 | \$25,088 | |
| | PWFn = | 0.4120 | | PW = | 0.4120 X | \$160,191 | \$65,997 |
| YEAR 35 | | | | | | | |
| | LONG SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | |
| | CNTR LINE JOINT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | |
| | RNDM / THRM CRACK R&S | 50.00% | 2,200 | LIN FT | \$2.00 | \$4,400 | |
| | PD PVMT PATCH M&F SURF | 0.10% | 5 | SQ YD | \$80.64 | \$403 | |
| | PWFn = | 0.3554 | | PW = | 0.3554 X | \$16,803 | \$5,972 |
| YEAR 40 | | | | | | | |
| | LONG SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | |
| | CNTR LINE JOINT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | |
| | RNDM / THRM CRACK R&S | 50.00% | 2,200 | LIN FT | \$2.00 | \$4,400 | |
| | PD PVMT PATCH M&F SURF | 0.50% | 27 | SQ YD | \$80.64 | \$2,177 | |
| | PWFn = | 0.3066 | | PW = | 0.3066 X | \$18,577 | \$5,695 |
| | | | | | | | \$199,058 |
| ROUTINE MAINTENANCE ACTIVITY | | | | 0.76 Lane Miles | 0.00 | \$0 | \$0 |
| | | | | | | MAINTENANCE LIFE-CYCLE COST | \$199,058 |
| 45 | YEAR LIFE CYCLE | CRFn = 0.0407852 | MAINTENANCE ANNUAL COST PER MILE | | | | \$42,866 |

JOINTED PLAIN CONCRETE PAVEMENT
 UNBONDED JOINTED PLAIN CONCRETE OVERLAY
 Figure 54-7.A

| MAINTENANCE COSTS: | ITEM | % | QUANTITY | UNIT | UNIT COST | COST | PRESENT WORTH | |
|--------------------|----------------------------------|------------------|----------------------------------|--------|-----------------|-----------|---------------|-----|
| YEAR 10 | | | | | | | | |
| | PAVEMENT PATCH CLASS B | 0.10% | 5 | SQ YD | \$150.00 | \$750 | | |
| | | PWFn = 0.7441 | | | PW = 0.7441 X | \$750 | \$558 | |
| YEAR 15 | | | | | | | | |
| | PAVEMENT PATCH CLASS B | 0.20% | 11 | SQ YD | \$150.00 | \$1,650 | | |
| | | PWFn = 0.6419 | | | PW = 0.6419 X | \$1,650 | \$1,059 | |
| YEAR 20 | | | | | | | | |
| | PAVEMENT PATCH CLASS B | 2.00% | 107 | SQ YD | \$150.00 | \$16,050 | | |
| | SHOULDER PATCH CLASS C | 0.50% | 18 | SQ YD | \$145.00 | \$2,610 | | |
| | LONGITUDINAL SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | | |
| | CENTERLINE JT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | | |
| | | PWFn = 0.5537 | | | PW = 0.5537 X | \$30,660 | \$16,976 | |
| YEAR 25 | | | | | | | | |
| | PAVEMENT PATCH CLASS B | 3.00% | 160 | SQ YD | \$150.00 | \$24,000 | | |
| | SHOULDER PATCH CLASS C | 1.00% | 36 | SQ YD | \$145.00 | \$5,220 | | |
| | | PWFn = 0.4776 | | | PW = 0.4776 X | \$29,220 | \$13,956 | |
| YEAR 30 | | | | | | | | |
| | INTERSTATE | | | | | | | |
| | PAVEMENT PATCH CLASS B | 4.00% | 213 | SQ YD | \$150.00 | \$31,950 | | |
| | SHOULDER PATCH CLASS C | 1.50% | 53 | SQ YD | \$145.00 | \$7,685 | | |
| | HMA POLICY OVERLAY 3.75" (PVMT) | 100.00% | 5,333 | SQ YD | \$20.21 | \$107,785 | | |
| | HMA POLICY OVERLAY 3.75" (SHLD) | 100.00% | 3,556 | SQ YD | \$15.12 | \$53,760 | | |
| | | PWFn = 0.4120 | | | PW = 0.4120 X | \$201,180 | \$82,883 | |
| YEAR 35 | | | | | | | | |
| | INTERSTATE | | | | | | | |
| | LONGITUDINAL SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | | |
| | CENTERLINE JT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | | |
| | RANDOM CRACK R&S | 50.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | | |
| | REFLECTIVE TRANSVERSE CRACK R&S | 40.00% | 1,286 | LIN FT | \$2.00 | \$2,572 | | |
| | PD PVMT PATCH M&F HMA SURF 1.50" | 0.10% | 5 | SQ YD | \$77.98 | \$390 | | |
| | | PWFn = 0.3554 | | | PW = 0.3554 X | \$18,962 | \$6,739 | |
| YEAR 40 | | | | | | | | |
| | INTERSTATE | | | | | | | |
| | PAVEMENT PATCH CLASS B | 0.50% | 27 | SQ YD | \$150.00 | \$4,050 | | |
| | LONGITUDINAL SHLD JT R&S | 100.00% | 4,000 | LIN FT | \$2.00 | \$8,000 | | |
| | CENTERLINE JT R&S | 100.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | | |
| | REFLECTIVE TRANSVERSE CRACK R&S | 60.00% | 1,930 | LIN FT | \$2.00 | \$3,860 | | |
| | RANDOM CRACK R&S | 50.00% | 2,000 | LIN FT | \$2.00 | \$4,000 | | |
| | PD PVMT PATCH M&F HMA SURF 1.50" | 0.50% | 27 | SQ YD | \$77.98 | \$2,105 | | |
| | | PWFn = 0.3066 | | | PW = 0.3066 X | \$26,015 | \$7,975 | |
| | | | | | | | \$130,146 | |
| | ROUTINE MAINTENANCE ACTIVITY | | | | 0.76 Lane Miles | \$0.00 | \$0 | \$0 |
| | MAINTENANCE LIFE-CYCLE COST | | | | | | \$130,146 | |
| 45 | YEAR LIFE CYCLE | CRFn = 0.0407852 | MAINTENANCE ANNUAL COST PER MILE | | | | \$28,026 | |