



**Matthew G. Bevin**  
Governor

**COMMONWEALTH OF KENTUCKY**  
**TRANSPORTATION CABINET**  
Frankfort, Kentucky 40622  
[www.transportation.ky.gov/](http://www.transportation.ky.gov/)

**Greg Thomas**  
Secretary

July 23, 2019

CALL NO. 101  
CONTRACT ID NO. 191224  
ADDENDUM # 2

Subject: FLEMING COUNTY, STP 0321 (027)  
Letting July 26, 2019

- (1) Revised - General Summary - Pages 63-65 of 220
- (2) Revised - Paving Summary - Pages 66-67 of 220
- (3) Revised - Special Notes - Page 80 of 220
- (4) Revised - Special Notes - Page 98 of 220
- (5) Revised - Special Note for Geocomposite Reinforcement for Asphalt -  
Pages 106-108 of 220
- (6) Revised - Proposal Bid Items - Pages 217-220 of 220

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in black ink that reads "Rachel Mills".

Rachel Mills, P.E.  
Director  
Division of Construction Procurement

RM:mr  
Enclosures



An Equal Opportunity Employer M/F/D

**KY 32 PAVEMENT REHABILITATION  
FLEMING COUNTY  
MILEPOST 17.452 TO 28.29  
ITEM NUMBER: 9-20009  
GENERAL SUMMARY**

| ITEM NUMBER | ITEM  | QUANTITY | UNIT     |
|-------------|---|----------|----------|
| 1           | DGA   | 206      | TON      |
| 78          | CRUSHED AGGREGATE SIZE NO 2 (1A)                | 34,117   | TON      |
| 191         | ASPHALT SCRATCH COURSE PG64-22 (2)              | 5,718    | TON      |
| 212         | CL2 ASPH BASE 1.00D PG64-22                     | 11,519   | TON      |
| 221         | CL2 ASPH BASE 0.75D PG64-22                     | 28,190   | TON      |
| 301         | CL2 ASPH SURF 0.38D PG64-22                     | 5,176    | TON      |
| 356         | ASPHALT MATERIAL FOR TACK (8)                   | 178      | TON      |
| 387         | CL3 ASPH SURF 0.38B PG76-22 KY 32               | 12,992   | TON      |
| 387         | CL3 ASPH SURF 0.38B PG76-22 Bridge (035B00012N) | 49       | TON      |
| 387         | CL3 ASPH SURF 0.38B PG76-22 Bridge (035B00013N) | 89       | TON      |
| 387         | CL3 ASPH SURF 0.38B PG76-22 Bridge (035B00014N) | 31       | TON      |
| 387         | CL3 ASPH SURF 0.38B PG76-22 Bridge (035B00015N) | 32       | TON      |
| 440         | ENTRANCE PIPE -15 IN                            | 8        | LIN FT   |
| 462         | CULVERT PIPE - 18 INCH                          | 119      | LIN FT   |
| 464         | CULVERT PIPE - 24 INCH                          | 24       | LIN FT   |
| 1000        | PERFORATED PIPE - 4 IN (9)                      | 300      | LF       |
| 1010        | NON-PERFORATED PIPE - 4 IN (9)                  | 50       | LF       |
| 1020        | PERF PIPE HEADWALL TYPE 1 - 4 IN (9)            | 1        | EACH     |
| 1204        | PIPE CULVERT HEADWALL-18 IN                     | 1        | EACH     |
| 1310        | REMOVE PIPE                                     | 52       | LIN FT   |
| 1433        | SLOPED BOX OUTLET TY. 1 - 18 IN                 | 2        | EACH     |
| 1450        | S & F BOX INLET-OUTLET-18 IN                    | 8        | EACH     |
| 1451        | S & F BOX INLET-OUTLET-24 IN                    | 2        | EACH     |
| 1691        | FLUME INLET TYPE 2                              | 8        | EACH     |
| 1890        | ISLAND HEADER CURB TYPE 1                       | 200      | LIN FT   |
| 1983        | DELINEATOR FOR GUARDRAIL - M/Y                  | 231      | EACH     |
| 2091        | REMOVE PAVEMENT                                 | 2,259    | SQ YD    |
| 2200        | ROADWAY EXCAVATION (4)                          | 42,065   | CU YD    |
| 2220        | FLOWABLE FILL                                   | 21       | CUYD     |
| 2237        | DITCHING  | 57,618   | LIN FT   |
| 2360        | GUARDRAIL TERMINAL SECTION NO. 1                | 41       | EACH     |
| 2363        | GUARDRAIL CONNECTOR TO BRIDGE END TY A          | 16       | EACH     |
| 2367        | GUARDRAIL END TREATMENT TYPE 1                  | 1        | EACH     |
| 2369        | GUARDRAIL END TREATMENT TYPE 2A                 | 2        | EACH     |
| 2373        | GUARDRAIL END TREATMENT TYPE 3                  | 6        | EACH     |
| 2381        | REMOVE GUARDRAIL                                | 26,125   | LIN FT   |
| 2391        | GUARDRAIL END TREATMENT TYPE 4A                 | 33       | EACH     |
| 2403        | REMOVE CONCRETE MASONRY                         | 17       | CU YD    |
| 2483        | CHANNEL LINING CLASS II                         | 175      | TON      |
| 2562        | TEMPORARY SIGNS (7)                             | 1,500    | SQ FT    |
| 2568        | MOBILIZATION                                    | 1        | LUMP SUM |
| 2569        | DEMOBILIZATION                                  | 1        | LUMP SUM |
| 2599        | FABRIC-GEOTEXTILE TYPE IV (1B)                  | 39,122   | SQ YD    |
| 2650        | MAINTAIN AND CONTROL TRAFFIC                    | 1        | LUMP SUM |
| 2671        | PORTABLE CHANGEABLE MESSAGE SIGN (7)            | 4        | EACH     |
| 2676        | MOBILIZATION FOR MILLING & TEXTURING            | 1        | LUMP SUM |
| 2677        | ASPHALT PAVE MILLING & TEXTURING                | 29,085   | TON      |
| 2696        | SHOULDER RUMBLE STRIPS-SAWED                    | 114,449  | LIN FT   |
| 2704        | SILT TRAP TYPE B                                | 13       | EACH     |
| 2707        | CLEAN SILT TRAP TYPE B                          | 13       | EACH     |
| 2726        | STAKING   | 1        | LUMP SUM |
| 2775        | ARROW PANEL (7)                                 | 4        | EACH     |
| 3000        | PRECAST BOX SECT 3 X 3                          | 9        | LIN FT   |

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| ITEM NUMBER | ITEM  | QUANTITY  | UNIT   |
|-------------|---|-----------|--------|
| 3000        | PRECAST BOX SECT 3 X 2.5                              | 9         | LIN FT |
| 3000        | PRECAST BOX SECT 4 X 2                                | 9         | LIN FT |
| 3000        | PRECAST BOX SECT 5 X 3                                | 9         | LIN FT |
| 3000        | PRECAST BOX SECT 6 X 2                                | 9         | LIN FT |
| 3000        | PRECAST BOX SECT 10 X 4                               | 9         | LIN FT |
| 3000        | PRECAST BOX SECT 14 X 4                               | 9         | LIN FT |
| 3171        | CONCRETE BARRIER WALL TYPE 9T (7)                     | 500       | LIN FT |
| 3250        | WATERPROOFING MEMBRANE Bridge (035B00012N)            | 440       | SQ YD  |
| 3250        | WATERPROOFING MEMBRANE Bridge (035B00013N)            | 812       | SQ YD  |
| 3250        | WATERPROOFING MEMBRANE Bridge (035B00014N)            | 281       | SQ YD  |
| 3250        | WATERPROOFING MEMBRANE Bridge (035B00015N)            | 290       | SQ YD  |
| 4934        | TEMP SIGNAL - MULTI PHASE (7)                         | 1         | EACH   |
| 5950        | EROSION CONTROL BLANKET                               | 61,222    | SQ YD  |
| 5963        | INITIAL FERTILIZER                                    | 2         | TON    |
| 5964        | 20-10-10 FERTILIZER                                   | 3         | TON    |
| 5985        | SEEDING AND PROTECTION                                | 59,720    | SQYD   |
| 6412        | STEEL POST MILE MARKERS                               | 22        | EACH   |
| 6511        | PAVE STRIPING-TEMP PAINT-6 IN                         | 402,373   | LIN FT |
| 6549        | PAVE STRIPING-TEMP REM TAPE-B                         | 2,500     | LIN FT |
| 6550        | PAVE STRIPING-TEMP REM TAPE-W                         | 1,250     | LIN FT |
| 6551        | PAVE STRIPING-TEMP REM TAPE-Y                         | 1,250     | LIN FT |
| 8003        | FOUNDATION PREPARATION (6)                            | 1         | LS     |
| 8100        | CONCRETE - CLASS A                                    | 34        | CU YD  |
| 8103        | CONCRETE - CLASS D - MODIFIED                         | 6         | CU YD  |
| 8150        | STEEL REINFORCEMENT                                   | 1,951     | LB     |
| 8510        | REM EPOXY BIT FOREIGN OVERLAY Bridge (035B00012N)     | 440       | SQ YD  |
| 8510        | REM EPOXY BIT FOREIGN OVERLAY Bridge (035B00013N)     | 812       | SQ YD  |
| 8510        | REM EPOXY BIT FOREIGN OVERLAY Bridge (035B00014N)     | 281       | SQ YD  |
| 8510        | REM EPOXY BIT FOREIGN OVERLAY Bridge (035B00015N)     | 290       | SQ YD  |
| 8903        | CRASH CUSHION TY VI CLASS BT TL3 (7)                  | 2         | EACH   |
| 10020NS     | FUEL ADJUSTMENT                                       | 65,742    | DOLLAR |
| 10030NS     | ASPHALT ADJUSTMENT                                    | 126,439   | DOLLAR |
| 20458ES403  | CENTERLINE RUMBLE STRIPS                              | 57,225    | LIN FT |
| 20366NN     | REPLACE GRATE   | 20        | EACH   |
| 20550ND     | SAWCUT PAVEMENT                                       | 110,194   | LIN FT |
| 21533EN     | EMBANKMENT (5)  | 9,520     | CU YD  |
| 21802EN     | GUARDRAIL - STEEL W BEAM S-FACE (7FT POST)            | 23,125    | LIN FT |
| 23010EN     | PAVE MARK TEMP PAINT STOP BAR-24 IN                   | 24        | LF     |
| 24489EC     | INLAID PAVEMENT MARKER                                | 715       | EACH   |
| 24544EC     | REMOVE (3)  | 2,850     | LF     |
| 24781EC     | INTELLIGENT COMPACTION FOR ASPHALT                    | 63,495    | TON    |
| 24891EC     | PAVE MOUNT INFRARED TEMP EQUIPMENT                    | 1,373,645 | SQ FT  |
| 24995EC     | PAVE STRIPING-SPRAY THERMO-6 IN W                     | 113,584   | LIN FT |
| 24995EC     | PAVE STRIPING-SPRAY THERMO-6 IN W Bridge (035B00012N) | 232       | LIN FT |
| 24995EC     | PAVE STRIPING-SPRAY THERMO-6 IN W Bridge (035B00013N) | 430       | LIN FT |
| 24995EC     | PAVE STRIPING-SPRAY THERMO-6 IN W Bridge (035B00014N) | 150       | LIN FT |
| 24995EC     | PAVE STRIPING-SPRAY THERMO-6 IN W Bridge (035B00015N) | 153       | LIN FT |
| 24996EC     | PAVE STRIPING-SPRAY THERMO-6 IN Y                     | 86,808    | LIN FT |
| 24996EC     | PAVE STRIPING-SPRAY THERMO-6 IN Y Bridge (035B00012N) | 145       | LIN FT |
| 24996EC     | PAVE STRIPING-SPRAY THERMO-6 IN Y Bridge (035B00013N) | 269       | LIN FT |
| 24996EC     | PAVE STRIPING-SPRAY THERMO-6 IN Y Bridge (035B00014N) | 19        | LIN FT |
| 24996EC     | PAVE STRIPING-SPRAY THERMO-6 IN Y Bridge (035B00015N) | 96        | LIN FT |
| 24986EC     | HMA ELECTRONIC DELIVERY MANAGEMENT SYSTEM             | 1         | LS     |

**KY 32 PAVEMENT REHABILITATION  
 FLEMING COUNTY  
 MILEPOST 17.452 TO 28.29  
 ITEM NUMBER: 9-20009  
 GENERAL SUMMARY**

| ITEM NUMBER | ITEM  | QUANTITY | UNIT  |
|-------------|---|----------|-------|
| 25010EC     | GEOCOMPOSITE REINFORCEMENT FOR ASPHALT  | 252,067  | SQ YD |
| (1A)        | Includes quantity 10,000 Tons for shoulder stabilization to be used as directed by the Engineer.  |          |       |
| (1B)        | Includes quantity 36,000 SQ-YD for fabric geotextile type IV to be used as directed by the Engineer.  |          |       |
| (2)         | Includes quantity 100 Tons to be used as directed by the Engineer for Level and Wedging.  |          |       |
| (3)         | Remove rail at slide repair location, all removed rail becomes property of the contractor upon removal.   |          |       |
| (4)         | Quantity includes the sum total excavation from pavement, slide repair, and drainage totals.  |          |       |
| (5)         | Quantity includes 500 cuyd embankment for culvert extensions, guardrail entreatments, and other ares as directed by the engineer.   |          |       |
| (6)         | Quantity included for box culvert section replacements at Mileposts 20.0, 21.52, 22.20, 22.60, 24.54, 25.14, 27.55. This lump sum quantity includes crushed limestone no. 57, excavation, geotextile fabric, and any other incidentals or expenses required for foundation preparation for culvert repair and extension at these locations. |          |       |
| (7)         | Includes initial placement, any relocation required will not be paid for directly, but will be considered incidental to the bid item "maintain and control traffic."  |          |       |
| (8)         | To be used under asphalt scratch course and asphalt surface. Asphalt Material for Tack is estimated at 0.84 lbs per sq.yd.  |          |       |
| (9)         | To be used at slope repair area as directed by the engineer.  |          |       |
| NOTE:       | Quantities from all summaries have been carried over and included in this General Summary   |          |       |

**KY 32  
FLEMING COUNTY  
PAVEMENT REHABILITATION, MILE POST 17.452 TO 28.29  
ITEM NO. 9-2009**

**PAVING AREAS**

M.P. 17.45 TO M.P. 18.25  
M.P. 18.46 TO M.P. 19.12  
M.P. 19.18 TO M.P. 20.50  
M.P. 20.90 TO M.P. 26.27  
M.P. 26.42 TO M.P. 28.29

| <b>MILLING AND OVERLAY</b>              |               | <b>FULL DEPTH WIDENING &amp; SLIDE REPAIR</b> |               |
|---|---------------|---|---------------|
| ITEM                                    | TOTAL<br>S.Y. | ITEM  | TOTAL<br>S.Y. |
| <b>DRIVING LANES</b>                    |               | <b>SHOULDERS</b>                              |               |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 140368        | 3.5" CL2 ASPH BASE 1.00D PG64-22              | 58784         |
| 2.5" CL2 ASPH BASE 0.75D PG64-22        | 141586        |   |               |
| 0.5" ASPHALT SCRATCH COURSE PG64-22     | 141586        |   |               |
| ASPHALT PAVE MILLING & TEXTURING (3.5") | 141586        |   |               |
| <b>SHOULDERS</b>                        | <b>S.Y.</b>   |   |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 58487         |   |               |
| 2.5" CL2 ASPH BASE 0.75D PG64-22        | 58487         |   |               |
| 0.5" ASPHALT SCRATCH COURSE PG64-22     | 58487         |   |               |
| <b>DRIVING LANES &amp; SHOULDERS</b>    | <b>S.Y.</b>   |   |               |
| GEOGRID REINFORCEMENT FOR ASPHALT       | 246893        |   |               |
| <b>M.P. 18.25 TO M.P. 18.46</b>         |               |   |               |
| <b>DRIVING LANES</b>                    | <b>S.Y.</b>   |   |               |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 4435          |   |               |
| ASPHALT PAVE MILLING & TEXTURING (1.5") | 4474          |   |               |
| <b>SHOULDERS</b>                        | <b>S.Y.</b>   |   |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 1232          |   |               |
| ASPHALT PAVE MILLING & TEXTURING (1.5") | 1232          |   |               |
| <b>M.P. 19.12 TO M.P. 19.18</b>         |               |   |               |
| <b>DRIVING LANES</b>                    | <b>S.Y.</b>   | <b>WIDENING</b>                               |               |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 422           | <b>SHOULDERS</b>                              | <b>S.Y.</b>   |
| 2.5" CL2 ASPH BASE 0.75D PG64-22        | 426           | 3.5" CL2 ASPH BASE 1.00D PG64-22              | 176           |
| 0.5" ASPHALT SCRATCH COURSE PG64-22     | 426           |   |               |
| ASPHALT PAVE MILLING & TEXTURING (3.5") | 426           |   |               |
| <b>SHOULDERS</b>                        | <b>S.Y.</b>   | <b>SLIDE REPAIR</b>                           |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 176           | <b>DRIVING LANES</b>                          | <b>S.Y.</b>   |
| 2.5" CL2 ASPH BASE 0.75D PG64-22        | 178           | 1.50" CL3 ASPH SURF 0.38B PG76-22             | 422           |
| 0.5" ASPHALT SCRATCH COURSE PG64-22     | 178           | 2.5" CL2 ASPH BASE 0.75D PG64-22              | 426           |
| <b>DRIVING LANES &amp; SHOULDERS</b>    | <b>S.Y.</b>   | 3.0" CL2 ASPH BASE 0.75D PG64-22              | 430           |
| GEOGRID REINFORCEMENT FOR ASPHALT       | 1478          | <b>SHOULDERS</b>                              | <b>S.Y.</b>   |
|   |               | 1.50" CL3 ASPH SURF 0.38D PG76-22             | 176           |
|   |               | 2.5" CL2 ASPH BASE 0.75D PG64-22              | 178           |
|   |               | 3.0" CL2 ASPH BASE 0.75D PG64-22              | 179           |
|   |               | <b>DRIVING LANES &amp; SHOULDERS</b>          | <b>S.Y.</b>   |
|   |               | 6" DGA  | 598           |
| <b>M.P. 20.50 TO M.P. 20.54</b>         |               |   |               |
| <b>M.P. 20.54 TO M.P. 20.74</b>         |               |   |               |
| <b>M.P. 20.74 TO M.P. 20.90</b>         |               |   |               |
| <b>DRIVING LANES</b>                    | <b>S.Y.</b>   |   |               |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 563           |   |               |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 4459          |   |               |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 4693          |   |               |
| ASPHALT PAVE MILLING & TEXTURING (1.5") | 9715          |   |               |
| <b>SHOULDERS</b>                        | <b>S.Y.</b>   |   |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 235           |   |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 1173          |   |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 375           |   |               |
| ASPHALT PAVE MILLING & TEXTURING (1.5") | 1783          |   |               |
| <b>M.P. 26.27 TO M.P. 26.42</b>         |               |   |               |
| <b>DRIVING LANES</b>                    | <b>S.Y.</b>   | <b>SHOULDERS</b>                              | <b>S.Y.</b>   |
| 1.50" CL3 ASPH SURF 0.38B PG76-22       | 2112          | 3.5" CL2 ASPH BASE 1.00D PG64-22              | 880           |
| 2.5" CL2 ASPH BASE 0.75D PG64-22        | 2130          |   |               |
| 0.5" ASPHALT SCRATCH COURSE PG64-22     | 2130          |   |               |
| ASPHALT PAVE MILLING & TEXTURING (3.5") | 2130          |   |               |
| <b>SHOULDERS</b>                        | <b>S.Y.</b>   |   |               |
| 1.50" CL2 ASPH SURF 0.38D PG64-22       | 880           |   |               |
| 2.5" CL2 ASPH BASE 0.75D PG64-22        | 880           |   |               |
| 0.5" ASPHALT SCRATCH COURSE PG64-22     | 880           |   |               |

**KY 32  
 FLEMING COUNTY  
 PAVEMENT REHABILITATION, MILE POST 17.452 TO 28.29  
 ITEM NO. 9-20009**

**DRIVING LANES & SHOULDERS**  
 GEOGRID REINFORCEMENT FOR ASPHALT

**S.Y.**  
 3696

**M.P. 17.54 TO M.P. 28.29**

SHOULDER RUMBLE STRIPS SAWED (LF)  
 CENTERLINE RUMBLE STRIPS (LF)  
 SAWCUT PAVEMENT (LF)  
 ROADWAY EXCAVATION (CU YDS)  
 EMBANKMENT (CU YDS)  
 ASPHALT MATERIAL FOR TACK (TONS)

**S.Y.**  
 114449  
 57225  
 110194  
 30936  
 9020  
 423896

**PAVING SUMMARY**

| CODE       | ITEM                                   | UNITS        |
|------------|--|--------------|
| 1          | DGA                                    | 206 TON      |
| 191        | ASPHALT SCRATCH COURSE PG64-22         | 5618 TON     |
| 212        | CL2 ASPH BASE 1.00D PG64-22            | 11519 TON    |
| 221        | CL2 ASPH BASE 0.75D PG64-22            | 28190 TON    |
| 301        | CL2 ASPH SURF 0.38D PG64-22            | 5176 TON     |
| 356        | ASPHALT MATERIAL FOR TACK              | 178 TON      |
| 387        | CL3 ASPH SURF 0.38B PG76-22            | 12992 TON    |
| 2200       | ROADWAY EXCAVATION                     | 30936 CU YD  |
| 2677       | ASPHALT PAVE MILLING & TEXTURING       | 29085 TON    |
| 2696       | SHOULDER RUMBLE STRIPS-SAWED           | 114449 LF    |
| 20458ES403 | CENTERLINE RUMBLE STRIPS               | 57225 LF     |
| 20550ND    | SAWCUT PAVEMENT                        | 110194 LF    |
| 21533EN    | EMBANKMENT                             | 9020 CU YD   |
| 25010EC    | GEOCOMPOSITE REINFORCEMENT FOR ASPHALT | 252067 SQ YD |

\*QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

**QUANTITIES HAVE BEEN CARRIED OVER AND INCLUDED IN THE GENERAL SUMMARY**

13. **CAUTION:** Underground utilities are present in areas where reconstruction will occur with this project. The contractor must call BUD (1-800-752-6007 to reach KY 811) before any construction activity begins. See Special note for BUD for more details.
  
14. A Material Transfer Vehicle shall be required for this project.

|              |  |
|--------------|--|
| Special Note | Geocomposite Reinforcement for Asphalt <i>attached</i>                 |
| Special Note | Spray Applied Thermoplastic Pavement Marking Materials <i>attached</i> |
| Special Note | Experimental KYTC and Hamburg Testing <i>attached</i>                  |
| Special Note | Culvert Extension <i>attached</i>                                      |
| Special Note | Intelligent Compaction of Asphalt Mixtures <i>attached</i>             |
| Special Note | Bridge Deck Waterproofing Membrane <i>attached</i>                     |
| Special Note | Paver Mounted Temperature Profiles <i>attached</i>                     |
| Special Note | Bridge Demolition, Renovation and Abatement <i>attached</i>            |
| Special Note | Material Transfer Vehicle <i>attached</i>                              |
| Special Note | Paver Mounted Temperature Profiles <i>attached</i>                     |



July 19, 2019

**SPECIAL NOTE FOR GEOCOMPOSITE REINFORCEMENT FOR ASPHALT**

This Special Note will apply where indicated on the plans or in the proposal. Section references herein are to the Department’s 2019 Standard Specifications for Road and Bridge Construction.

**1.0 DESCRIPTION.** This specification covers geocomposites used as an interlayer in asphalt pavements.

**2.0 MATERIALS AND EQUIPMENT.**

**2.1 Geocomposite.** The geocomposite shall consist of a geogrid component with a non-woven geotextile (paving fabric) backing. Furnish fiberglass-reinforced or polyester geogrid coated with an elastomeric polymer. Ensure the geogrid forms a stable network such that the ribs, filaments, or yarns retain their dimensional stability, including selvages. Furnish geogrid with a non-woven paving fabric backing composed of long chain synthetic polymers that are 95 percent by weight polyolefins or polyesters.

**A) Physical Requirements.** Furnish the specified geogrid type conforming to the Physical Requirements Table and ASTM D 4759. Ensure that each geogrid shipment is accompanied by a manufacturer’s certification listing minimum average roll specification values (MARV) of each lot number for those properties listed in the table below. Furnish geogrid with a non-woven geotextile backing that conforms to AASHTO M288 Type II paving fabric with the exception of mass per unit area. Products that meet all Type II requirements except mass per unit area will be acceptable.

| PROPERTY  | TEST METHOD              | SPECIFICATION |
|---|--------------------------|---------------|
| Geogrid Tensile Strength, lb/in (min.)              | ASTM D6637 Test Method A | 560           |
| Geogrid Elongation, % (max.)                        | ASTM D6637               | < 3           |
| Melting Point of Paving Fabric Component, °F (min.) | ASTM D 276               | 320           |
| Grid Size, inch (min/max)                           | Calipered                | 0.5/1.25      |

**B) Packaging, Shipment, and Storage.** Ensure that each roll is labeled with the manufacturer’s name, product type, style number, lot number, roll number, manufactured date, roll dimensions, chemical composition, and applicable physical properties. Protect the geocomposite from direct sunlight, ultraviolet rays, flames, aggressive chemicals, mud, dirt, dust, and debris during all periods of shipment and storage. Keep geocomposite dry until installation, and do not store directly on the ground.

July 19, 2019

**2.2 Asphalt Distributor. Conform to 406.02.05.**

**2.3 Rolling Equipment.** Use pneumatic-tired rollers that weigh at least 12 tons and have 7 to 9 tires capable of inflation pressures up to 125 psi. Maintain an inflation pressure in all tires within  $\pm 5$  psi of the manufacturer's recommended pressure. Arrange the tires so that the gap between the tires of the front axle is covered by the tires of the rear axle. Mount wheels to provide equal contact pressure under each wheel. Use a tire tread that is satisfactory to the Engineer. Maintain tire size and inflation pressure such that the contact pressure is at least 80 psi.

**3.0 CONSTRUCTION.**

**3.1 Geocomposite Representative.** Ensure that a representative of the geocomposite manufacturer is on the project when work begins, and remains on call as the project progresses, to advise the Engineer.

**3.2 Weather Restrictions.** Do not place the geocomposite when weather conditions, in the opinion of the Engineer, are not suitable. Ensure the air and pavement temperatures are sufficient to allow the tack coat to hold the geocomposite in place. Specifically, ensure the temperature is at least 50 °F and rising.

**3.3 Surface Preparation.** Perform any needed base repairs and repair all potholes, cracks greater than 1/4 inch, and any badly damaged or rough pavement, which may require milling or placement of leveling, course. Ensure the surface is dry, clean, dust-free, and between 40 and 140 °F. Unless the geocomposite is precoated with an adhesive, apply tack according to the manufacturer's recommendations. This tack coat will not be measured for payment and will be considered incidental to the geocomposite. Distributor truck must be calibrated to supply the tack at the manufacturer's recommended rate before the job begins and this calibration is to be witnessed by the representative of the geocomposite manufacturer on the project. No work to install the geocomposite shall take place unless a representative from the geocomposite manufacture is on site.

**3.4 Geocomposite Placement.** Place the geocomposite while the tack coat is still tacky/broken. Keep the material flat and wrinkle free throughout the installation. Roll the geocomposite until the adhesive is activated or the geocomposite is seated in the tack coat. Clean the roller with an asphalt release agent. Brooming may be required. On sharp curves, cut the edges and fold the geocomposite over in the direction of the placement of the asphalt overlay. Overlap side joints by one to 2 inches. Overlap all end-of-roll joints by 3 to 6 inches. Ensure that the overlaps are shingled in the direction of paving.

**3.5 Asphalt Placement.** Place the asphalt overlay at a minimum 2-inch compacted thickness. Pave over the geocomposite on the same day of its placement. Except for paving equipment and vehicles, allow no traffic on the grid. Do not place tack coat on top of the interlayer grid.

**3.6 Geocomposite Repair.** Repair any visible distress that occurs due to movement of the geocomposite immediately after rolling. For small areas, remove the asphalt

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mixture from the affected area; replace the geocomposite in its original position, and replace, level, and compact the asphalt mixture. Cut the geocomposite if necessary for it to lie flat.

**3.7 Sampling and Testing.** The Department will sample the geocomposite at the project site according to ASTM D 4354 and KM 64-113 at a frequency the Engineer determines. The Department will test the geocomposite for all properties possible given the testing equipment availability. When the Department determines that an individual sample fails to meet any specification requirement, the Department will reject that roll and sample two additional rolls from the same lot. When the Department determines that either of these two additional samples fails to comply with any part of the specification, the Department will reject the entire quantity of rolls represented by that sample.

**4.0 MEASUREMENT.** The Department will measure the quantity of geocomposite in square yards. The Department will not measure geocomposite when the contract indicates that the geocomposite are incidental to the work being performed or when no separate bid item for geocomposite is listed in the proposal. The Department will not measure providing the geocomposite manufacturer’s representative for payment and will consider it incidental to the geocomposite. Tack coat, applied per the geocomposite manufacturer’s recommendations, will not be paid and will be considered incidental to the geocomposite.

**5.0 PAYMENT.** The Department will make payment for the installed and accepted quantities under the following:

| <u>Code</u> | <u>Pay Item</u>                        | <u>Pay Unit</u> |
|-------------|--|-----------------|
| 25010EC     | Geocomposite Reinforcement for Asphalt | Square Yard     |

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**Section: 0001 - PAVING**

| LINE | BID CODE   | ALT | DESCRIPTION                                   | QUANTITY   | UNIT | UNIT PRIC | FP | AMOUNT |
|------|------------|-----|---|------------|------|-----------|----|--------|
| 0010 | 00001      |     | DGA BASE                                      | 206.00     | TON  |           | \$ |        |
| 0020 | 00191      |     | ASPHALT SCRATCH COURSE PG64-22                | 5,718.00   | TON  |           | \$ |        |
| 0030 | 00212      |     | CL2 ASPH BASE 1.00D PG64-22                   | 11,519.00  | TON  |           | \$ |        |
| 0040 | 00221      |     | CL2 ASPH BASE 0.75D PG64-22                   | 28,190.00  | TON  |           | \$ |        |
| 0050 | 00301      |     | CL2 ASPH SURF 0.38D PG64-22                   | 5,176.00   | TON  |           | \$ |        |
| 0055 | 00356      |     | ASPHALT MATERIAL FOR TACK<br>(ADDED: 7-23-19) | 178.00     | TON  |           | \$ |        |
| 0060 | 00387      |     | CL3 ASPH SURF 0.38B PG76-22                   | 12,992.00  | TON  |           | \$ |        |
| 0070 | 02677      |     | ASPHALT PAVE MILLING & TEXTURING              | 29,085.00  | TON  |           | \$ |        |
| 0080 | 02696      |     | SHOULDER RUMBLE STRIPS                        | 114,449.00 | LF   |           | \$ |        |
| 0090 | 20458ES403 |     | CENTERLINE RUMBLE STRIPS                      | 57,255.00  | LF   |           | \$ |        |
| 0100 | 20550ND    |     | SAWCUT PAVEMENT                               | 110,194.00 | LF   |           | \$ |        |
| 0110 | 25010EC    |     | GEOCOMPOSITE REINFORCEMENT FOR<br>ASPHALT     | 252,067.00 | SQYD |           | \$ |        |

**Section: 0002 - ROADWAY**

| LINE | BID CODE | ALT | DESCRIPTION   | QUANTITY  | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|---|-----------|------|-----------|----|--------|
| 0120 | 00078    |     | CRUSHED AGGREGATE SIZE NO 2                         | 34,117.00 | TON  |           | \$ |        |
| 0122 | 01000    |     | PERFORATED PIPE-4 IN<br>(ADDED: 7-23-19)            | 300.00    | LF   |           | \$ |        |
| 0125 | 01010    |     | NON-PERFORATED PIPE-4 IN<br>(ADDED: 7-23-19)        | 50.00     | LF   |           | \$ |        |
| 0127 | 01020    |     | PERF PIPE HEADWALL TY 1-4 IN<br>(ADDED: 7-23-19)    | 1.00      | EACH |           | \$ |        |
| 0130 | 01983    |     | DELINEATOR FOR GUARDRAIL MONO<br>DIRECTIONAL YELLOW | 231.00    | EACH |           | \$ |        |
| 0140 | 02091    |     | REMOVE PAVEMENT                                     | 2,259.00  | SQYD |           | \$ |        |
| 0150 | 02200    |     | ROADWAY EXCAVATION                                  | 42,065.00 | CUYD |           | \$ |        |
| 0160 | 02220    |     | FLOWABLE FILL                                       | 21.00     | CUYD |           | \$ |        |
| 0170 | 02237    |     | DITCHING  | 57,618.00 | LF   |           | \$ |        |
| 0180 | 02360    |     | GUARDRAIL TERMINAL SECTION NO 1                     | 41.00     | EACH |           | \$ |        |
| 0190 | 02363    |     | GUARDRAIL CONNECTOR TO BRIDGE END<br>TY A           | 16.00     | EACH |           | \$ |        |
| 0200 | 02367    |     | GUARDRAIL END TREATMENT TYPE 1                      | 1.00      | EACH |           | \$ |        |
| 0210 | 02369    |     | GUARDRAIL END TREATMENT TYPE 2A                     | 2.00      | EACH |           | \$ |        |
| 0220 | 02373    |     | GUARDRAIL END TREATMENT TYPE 3                      | 6.00      | EACH |           | \$ |        |
| 0230 | 02381    |     | REMOVE GUARDRAIL                                    | 26,125.00 | LF   |           | \$ |        |
| 0240 | 02391    |     | GUARDRAIL END TREATMENT TYPE 4A                     | 33.00     | EACH |           | \$ |        |
| 0250 | 02562    |     | TEMPORARY SIGNS                                     | 1,500.00  | SQFT |           | \$ |        |
| 0260 | 02599    |     | FABRIC-GEOTEXTILE TYPE IV                           | 39,122.00 | SQYD |           | \$ |        |
| 0270 | 02650    |     | MAINTAIN & CONTROL TRAFFIC                          | 1.00      | LS   |           | \$ |        |
| 0280 | 02671    |     | PORTABLE CHANGEABLE MESSAGE SIGN                    | 4.00      | EACH |           | \$ |        |
| 0290 | 02676    |     | MOBILIZATION FOR MILL & TEXT                        | 1.00      | LS   |           | \$ |        |
| 0300 | 02704    |     | SILT TRAP TYPE B                                    | 13.00     | EACH |           | \$ |        |
| 0310 | 02707    |     | CLEAN SILT TRAP TYPE B                              | 13.00     | EACH |           | \$ |        |
| 0320 | 02726    |     | STAKING   | 1.00      | LS   |           | \$ |        |
| 0330 | 02775    |     | ARROW PANEL   | 4.00      | EACH |           | \$ |        |

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| LINE | BID CODE | ALT | DESCRIPTION   | QUANTITY     | UNIT | UNIT PRIC | FP | AMOUNT       |
|------|----------|-----|---|--------------|------|-----------|----|--------------|
| 0340 | 03171    |     | CONCRETE BARRIER WALL TYPE 9T                             | 500.00       | LF   |           | \$ |              |
| 0350 | 04934    |     | TEMP SIGNAL MULTI PHASE                                   | 1.00         | EACH |           | \$ |              |
| 0360 | 05950    |     | EROSION CONTROL BLANKET                                   | 61,222.00    | SQYD |           | \$ |              |
| 0370 | 05963    |     | INITIAL FERTILIZER  | 2.00         | TON  |           | \$ |              |
| 0380 | 05964    |     | MAINTENANCE FERTILIZER                                    | 3.00         | TON  |           | \$ |              |
| 0390 | 05985    |     | SEEDING AND PROTECTION                                    | 59,720.00    | SQYD |           | \$ |              |
| 0400 | 06412    |     | STEEL POST MILE MARKERS                                   | 22.00        | EACH |           | \$ |              |
| 0410 | 06511    |     | PAVE STRIPING-TEMP PAINT-6 IN                             | 403,770.00   | LF   |           | \$ |              |
| 0420 | 06549    |     | PAVE STRIPING-TEMP REM TAPE-B                             | 2,500.00     | LF   |           | \$ |              |
| 0430 | 06550    |     | PAVE STRIPING-TEMP REM TAPE-W                             | 1,250.00     | LF   |           | \$ |              |
| 0440 | 06551    |     | PAVE STRIPING-TEMP REM TAPE-Y                             | 1,250.00     | LF   |           | \$ |              |
| 0450 | 08903    |     | CRASH CUSHION TY VI CLASS BT TL3<br>(REVISED: 7-18-19)    | 2.00         | EACH |           | \$ |              |
| 0460 | 10020NS  |     | FUEL ADJUSTMENT   | 65,742.00    | DOLL | \$1.00    | \$ | \$65,742.00  |
| 0470 | 10030NS  |     | ASPHALT ADJUSTMENT  | 126,439.00   | DOLL | \$1.00    | \$ | \$126,439.00 |
| 0490 | 21533EN  |     | EMBANKMENT  | 9,520.00     | CUYD |           | \$ |              |
| 0500 | 21802EN  |     | G/R STEEL W BEAM-S FACE (7 FT POST)                       | 23,125.00    | LF   |           | \$ |              |
| 0510 | 23010EN  |     | PAVE MARK TEMP PAINT STOP BAR-24 IN<br>(REVISED: 7-23-19) | 24.00        | LF   |           | \$ |              |
| 0530 | 24489EC  |     | INLAID PAVEMENT MARKER                                    | 715.00       | EACH |           | \$ |              |
| 0535 | 24544EC  |     | REMOVE<br>RAILROAD RAIL<br>(ADDED: 7-23-19)               | 2,850.00     | LF   |           | \$ |              |
| 0540 | 24781EC  |     | INTELLIGENT COMPACTION FOR ASPHALT                        | 63,495.00    | TON  |           | \$ |              |
| 0545 | 24891EC  |     | PAVE MOUNT INFRARED TEMP EQUIPMENT<br>(ADDED: 7-23-19)    | 1,373,645.00 | SF   |           | \$ |              |
| 0550 | 24986EC  |     | HMA ELECTRONIC DELIVERY MGMT<br>SYSTEM                    | 1.00         | L S  |           | \$ |              |
| 0560 | 24995EC  |     | PAVE STRIPING-SPRAY THERMO-6 IN W<br>(REVISED: 7-18-19)   | 114,549.00   | LF   |           | \$ |              |
| 0570 | 24996EC  |     | PAVE STRIPING-SPRAY THERMO-6 IN Y<br>(REVISED: 7-18-19)   | 87,337.00    | LF   |           | \$ |              |

**Section: 0003 - DRAINAGE**

| LINE | BID CODE | ALT | DESCRIPTION                                     | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|---|----------|------|-----------|----|--------|
| 0580 | 00440    |     | ENTRANCE PIPE-15 IN                             | 8.00     | LF   |           | \$ |        |
| 0590 | 00462    |     | CULVERT PIPE-18 IN                              | 119.00   | LF   |           | \$ |        |
| 0600 | 00464    |     | CULVERT PIPE-24 IN                              | 24.00    | LF   |           | \$ |        |
| 0610 | 01204    |     | PIPE CULVERT HEADWALL-18 IN                     | 1.00     | EACH |           | \$ |        |
| 0620 | 01310    |     | REMOVE PIPE                                     | 52.00    | LF   |           | \$ |        |
| 0630 | 01433    |     | SLOPED BOX OUTLET TYPE 1-18 IN                  | 2.00     | EACH |           | \$ |        |
| 0640 | 01450    |     | S & F BOX INLET-OUTLET-18 IN                    | 8.00     | EACH |           | \$ |        |
| 0650 | 01451    |     | S & F BOX INLET-OUTLET-24 IN                    | 2.00     | EACH |           | \$ |        |
| 0660 | 01691    |     | FLUME INLET TYPE 2<br>(REVISED: 7-18-19)        | 8.00     | EACH |           | \$ |        |
| 0670 | 01890    |     | ISLAND HEADER CURB TYPE 1<br>(REVISED: 7-18-19) | 200.00   | LF   |           | \$ |        |
| 0680 | 02403    |     | REMOVE CONCRETE MASONRY                         | 17.00    | CUYD |           | \$ |        |
| 0690 | 02483    |     | CHANNEL LINING CLASS II                         | 175.00   | TON  |           | \$ |        |

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| LINE | BID CODE | ALT | DESCRIPTION                        | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|------------------------------------|----------|------|-----------|----|--------|
| 0700 | 03000    |     | PRECAST CONC BOX SECT<br>(10 X 4)  | 9.00     | LF   |           | \$ |        |
| 0710 | 03000    |     | PRECAST CONC BOX SECT<br>(14 X 4)  | 9.00     | LF   |           | \$ |        |
| 0720 | 03000    |     | PRECAST CONC BOX SECT<br>(3 X 2.5) | 9.00     | LF   |           | \$ |        |
| 0730 | 03000    |     | PRECAST CONC BOX SECT<br>(3 X 3)   | 9.00     | LF   |           | \$ |        |
| 0740 | 03000    |     | PRECAST CONC BOX SECT<br>(4 X 2)   | 9.00     | LF   |           | \$ |        |
| 0750 | 03000    |     | PRECAST CONC BOX SECT<br>(5 X 3)   | 9.00     | LF   |           | \$ |        |
| 0760 | 03000    |     | PRECAST CONC BOX SECT<br>(6 X 2 )  | 9.00     | LF   |           | \$ |        |
| 0770 | 08003    |     | FOUNDATION PREPARATION             | 1.00     | LS   |           | \$ |        |
| 0780 | 08100    |     | CONCRETE-CLASS A                   | 34.00    | CUYD |           | \$ |        |
| 0790 | 08103    |     | CONCRETE-CLASS D MOD               | 6.00     | CUYD |           | \$ |        |
| 0800 | 08150    |     | STEEL REINFORCEMENT                | 1,951.00 | LB   |           | \$ |        |
| 0810 | 20366NN  |     | REPLACE GRATE                      | 20.00    | EACH |           | \$ |        |

**Section: 0004 - BRIDGE - 035B00012N**

| LINE | BID CODE | ALT | DESCRIPTION                                | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|--|----------|------|-----------|----|--------|
| 0820 | 00387    |     | CL3 ASPH SURF 0.38B PG76-22                | 49.00    | TON  |           | \$ |        |
| 0825 | 03250    |     | WATERPROOFING MEMBRANE<br>(ADDED: 7-18-19) | 440.00   | SQYD |           | \$ |        |
| 0860 | 08510    |     | REM EPOXY BIT FOREIGN OVERLAY              | 440.00   | SQYD |           | \$ |        |

**Section: 0005 - BRIDGE - 035B00013N**

| LINE | BID CODE | ALT | DESCRIPTION                                | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|--|----------|------|-----------|----|--------|
| 0870 | 00387    |     | CL3 ASPH SURF 0.38B PG76-22                | 89.00    | TON  |           | \$ |        |
| 0875 | 03250    |     | WATERPROOFING MEMBRANE<br>(ADDED: 7-18-19) | 812.00   | SQYD |           | \$ |        |
| 0910 | 08510    |     | REM EPOXY BIT FOREIGN OVERLAY              | 812.00   | SQYD |           | \$ |        |

**Section: 0006 - BRIDGE - 035B00014N**

| LINE | BID CODE | ALT | DESCRIPTION                                | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|--|----------|------|-----------|----|--------|
| 0920 | 00387    |     | CL3 ASPH SURF 0.38B PG76-22                | 31.00    | TON  |           | \$ |        |
| 0925 | 03250    |     | WATERPROOFING MEMBRANE<br>(ADDED: 7-18-19) | 281.00   | SQYD |           | \$ |        |
| 0960 | 08510    |     | REM EPOXY BIT FOREIGN OVERLAY              | 281.00   | SQYD |           | \$ |        |

**Section: 0007 - BRIDGE - 03500015N**

| LINE | BID CODE | ALT | DESCRIPTION | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|-------------|----------|------|-----------|----|--------|
|------|----------|-----|-------------|----------|------|-----------|----|--------|

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| LINE | BID CODE | ALT | DESCRIPTION                                | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|--|----------|------|-----------|----|--------|
| 0970 | 00387    |     | CL3 ASPH SURF 0.38B PG76-22                | 32.00    | TON  |           | \$ |        |
| 0975 | 03250    |     | WATERPROOFING MEMBRANE<br>(ADDED: 7-18-19) | 290.00   | SQYD |           | \$ |        |
| 1010 | 08510    |     | REM EPOXY BIT FOREIGN OVERLAY              | 290.00   | SQYD |           | \$ |        |

#### Section: 0008 - DEMOBILIZATION &/OR MOBILIZATION

| LINE | BID CODE | ALT | DESCRIPTION    | QUANTITY | UNIT | UNIT PRIC | FP | AMOUNT |
|------|----------|-----|----------------|----------|------|-----------|----|--------|
| 1020 | 02568    |     | MOBILIZATION   | 1.00     | LS   |           | \$ |        |
| 1030 | 02569    |     | DEMOBILIZATION | 1.00     | LS   |           | \$ |        |