

**Cuyahoga County
Department of Public Works
Cuyahoga County Engineer's
Sample Pavement Notes**

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Note to Designer: In addition, the ODOT Location and Design (L&D) Manual (Volume 3) Pavement Notes most frequently used are: P101 Paving at Railroad Crossing, P103 Contraction and/or Expansion Joints, P104 Contraction Joints in Concrete Pavement or Base Widening and P105 Part-Width Construction.

CUY-P01

ITEMS 301, 302 AND 448, PG 64-22, AS PER PLAN (11/01/2013)

USE OF RECLAIMED ASPHALT CONCRETE PAVEMENT IS LIMITED TO A MAXIMUM OF 10% FOR SURFACE COURSES. USE OF RECLAIMED ASPHALT SHINGLES ARE NOT PERMITTED IN ANY ASPHALT CONCRETE COURSE.

THE COARSE AGGREGATE SHALL BE CRUSHED CARBONATE STONE (CCS) AND/OR CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS).

PRIOR TO PRODUCING THE ASPHALT CONCRETE FOR THIS CONTRACT, SUBMIT A JOB MIX FORMULA (JMF) FOR APPROVAL BY THE ENGINEER. USE A JMF THAT MEETS ALL REQUIREMENTS ESTABLISHED IN THE CONTRACT AND HAS PREVIOUSLY BEEN APPROVED FOR USE ON ODOT WORK. WHERE NO PREVIOUSLY APPROVED (BY ODOT) JMF IS AVAILABLE, DEVELOP A JMF MEETING ALL CRITERIA ESTABLISHED IN THE CONTRACT AND HAVE IT REVIEWED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY PRIOR TO SUBMISSION TO THE ENGINEER. THE INDEPENDENT TESTING LABORATORY SHALL HAVE APPROPRIATELY APPROVED PERSONNEL AND TESTING EQUIPMENT PER ODOT SUPPLEMENT 1041. ALL COST ASSOCIATED WITH THE ABOVE SHALL BE INCLUDED IN THE CUBIC YARD COST OF THE ASPHALT CONCRETE BID ITEM(S).

SAMPLING FOR VERIFICATION ACCEPTANCE (403.06.A) SHALL BE PERFORMED IN ACCORDANCE WITH ODOT SUPPLEMENT 1035 FOR ALL ITEM 448 MIXES.

UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, CONDUCT DENSITY GAUGE QUALITY CONTROL TESTING ON BOTH THE ITEM 448 ASPHALT CONCRETE SURFACE COURSE AND INTERMEDIATE COURSE MATS ACCORDING TO ODOT SUPPLEMENT 1055 REGARDLESS OF THE NUMBER OF LANES OR LENGTH OF CONTINUOUS PAVING.

Designer Note: Include this note on all County projects involving any of the above listed asphalt concrete paving materials. Edit for item(s) and performance grade required. For projects where this note is used for the main line pavement surface course, replace the second paragraph with the following:

“THE COARSE VIRGIN AGGREGATE FOR THE SURFACE COURSE SHALL BE A BLEND OF SIXTY PERCENT (60%) MINIMUM CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO WITH THE REMAINING PERCENTAGE COMPRISED OF CRUSHED CARBONATE STONE (CCS). THE COARSE AGGREGATE FOR ANY OTHER COURSE SHALL BE CRUSHED CARBONATE STONE (CCS) AND/OR CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS).”

CUY-P02

ITEM 448 – ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 70-22M, AS PER PLAN (11/01/2013)

USE OF RECLAIMED ASPHALT CONCRETE PAVEMENT IS LIMITED TO A MAXIMUM OF 10%.

THE COARSE VIRGIN AGGREGATE SHALL BE A BLEND OF SIXTY PERCENT (60%) MINIMUM AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO WITH THE REMAINING PERCENTAGE COMPRISED OF CRUSHED CARBONATE STONE (CCS).

PRIOR TO PRODUCING THE ASPHALT CONCRETE FOR THIS CONTRACT, SUBMIT A JOB MIX FORMULA (JMF) FOR APPROVAL BY THE ENGINEER. USE A JMF THAT MEETS ALL REQUIREMENTS ESTABLISHED IN THE CONTRACT AND HAS PREVIOUSLY BEEN APPROVED FOR USE ON ODOT WORK. WHERE NO PREVIOUSLY APPROVED (BY ODOT) JMF IS AVAILABLE, DEVELOP A JMF MEETING ALL CRITERIA ESTABLISHED IN THE CONTRACT AND HAVE IT REVIEWED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY PRIOR TO SUBMISSION TO THE ENGINEER. THE INDEPENDENT TESTING LABORATORY SHALL HAVE APPROPRIATELY APPROVED PERSONNEL AND TESTING EQUIPMENT PER ODOT SUPPLEMENT 1041. ALL COST ASSOCIATED WITH THE ABOVE SHALL BE INCLUDED IN THE CUBIC YARD COST OF THE ASPHALT CONCRETE BID ITEM.

SAMPLING FOR VERIFICATION ACCEPTANCE (403.06.A) SHALL BE PERFORMED IN ACCORDANCE WITH ODOT SUPPLEMENT 1035.

UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, CONDUCT DENSITY GAUGE QUALITY CONTROL TESTING ON THE ITEM 448 ASPHALT CONCRETE SURFACE COURSE MAT ACCORDING TO ODOT SUPPLEMENT 1055 REGARDLESS OF THE NUMBER OF LANES OR LENGTH OF CONTINUOUS PAVING.

Designer Note: Use this note for polymer modified surface courses with a medium traffic volume mix design. Typically use “Item 448 – Asphalt Concrete Intermediate Course, Type 2, PG 64-22, As Per Plan” per CUY-P01 with this item. For heavy traffic volume mix designs, use “Item 448 – Asphalt Concrete Surface Course, Type 1H, As Per Plan” and “Item 448 – Intermediate Course, Type 2, PG 64-28, As Per Plan” per the CUY-P04 plan note.

CUY-P03

ITEM 442 – ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), AS PER PLAN

ITEM 442 – ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (448), AS PER PLAN (11/01/2013)

USE OF RECLAIMED ASPHALT CONCRETE PAVEMENT IS LIMITED TO A MAXIMUM OF 10% FOR THE SURFACE COURSE. USE OF RECLAIMED ASPHALT SHINGLES ARE NOT PERMITTED IN ANY ASPHALT CONCRETE COURSE.

THE COARSE VIRGIN AGGREGATE FOR THE SURFACE COURSE SHALL BE A BLEND OF SIXTY PERCENT (60%) MINIMUM CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO WITH THE REMAINING PERCENTAGE COMPRISED OF CRUSHED CARBONATE STONE (CCS). THE COARSE AGGREGATE FOR THE INTERMEDIATE COURSE SHALL BE CRUSHED CARBONATE STONE (CCS) AND/OR CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS).

PRIOR TO PRODUCING THE ASPHALT CONCRETE FOR THIS CONTRACT, SUBMIT A JOB MIX FORMULA (JMF) FOR APPROVAL BY THE ENGINEER. USE A JMF THAT MEETS ALL REQUIREMENTS ESTABLISHED IN THE CONTRACT AND HAS PREVIOUSLY BEEN APPROVED FOR USE ON ODOT WORK. WHERE NO PREVIOUSLY APPROVED (BY ODOT) JMF IS AVAILABLE, DEVELOP A JMF MEETING ALL CRITERIA ESTABLISHED IN THE CONTRACT AND HAVE IT REVIEWED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY PRIOR TO SUBMISSION TO THE ENGINEER. THE INDEPENDENT TESTING LABORATORY SHALL HAVE APPROPRIATELY APPROVED PERSONNEL AND TESTING EQUIPMENT PER ODOT SUPPLEMENT 1041. ALL COST ASSOCIATED WITH THE ABOVE SHALL BE INCLUDED IN THE CUBIC YARD COST OF THE ASPHALT CONCRETE BID ITEMS.

SAMPLING FOR VERIFICATION ACCEPTANCE (403.06.A) SHALL BE PERFORMED IN ACCORDANCE WITH ODOT SUPPLEMENT 1035.

UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, CONDUCT DENSITY GAUGE QUALITY CONTROL TESTING ON BOTH THE ITEM 442 ASPHALT CONCRETE SURFACE COURSE AND INTERMEDIATE COURSE MATS ACCORDING TO ODOT SUPPLEMENT 1055 REGARDLESS OF THE NUMBER OF LANES OR LENGTH OF CONTINUOUS PAVING.

Designer Note: These items are typically specified for full depth flexible pavement medium or heavy traffic volume mix designs. May also be specified for composite pavements where the entire asphalt wearing course is not removed down to the rigid base.

CUY-P04

ITEM 448 – ASPHALT CONCRETE SURFACE COURSE, TYPE 1H, AS PER PLAN

ITEM 448 – ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-28, AS PER PLAN (11/01/2013)

USE OF RECLAIMED ASPHALT CONCRETE PAVEMENT IS LIMITED TO A MAXIMUM OF 10% FOR THE SURFACE COURSE. USE OF RECLAIMED ASPHALT SHINGLES ARE NOT PERMITTED IN ANY ASPHALT CONCRETE COURSE.

THE AGGREGATE GRADATION FOR THE SURFACE COURSE ITEM SHALL BE IN ACCORDANCE WITH THE MEDIUM TRAFFIC VOLUME TYPE 1 SURFACE COURSE MIX IN TABLE 441.02-1. IN ADDITION, THE COARSE AGGREGATE FOR THE SURFACE COURSE SHALL BE A BLEND OF SIXTY (60%) PERCENT MINIMUM CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO WITH THE REMAINING PERCENTAGE COMPRISED OF CRUSHED CARBONATE STONE (CCS). THE COARSE AGGREGATE FOR THE INTERMEDIATE COURSE SHALL BE CRUSHED CARBONATE STONE (CCS) AND/OR CRUSHED AIR COOLED BLAST FURNACE SLAG (ACBFS).

PRIOR TO PRODUCING THE ASPHALT CONCRETE FOR THIS CONTRACT, SUBMIT A JOB MIX FORMULA (JMF) FOR APPROVAL BY THE ENGINEER. USE A JMF THAT MEETS ALL REQUIREMENTS ESTABLISHED IN THE CONTRACT AND HAS PREVIOUSLY BEEN APPROVED FOR USE ON ODOT WORK. WHERE NO PREVIOUSLY APPROVED (BY ODOT) JMF IS AVAILABLE, DEVELOP A JMF MEETING ALL CRITERIA ESTABLISHED IN THE CONTRACT AND HAVE IT REVIEWED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY PRIOR TO SUBMISSION TO THE ENGINEER. THE INDEPENDENT TESTING LABORATORY SHALL HAVE APPROPRIATELY APPROVED PERSONNEL AND TESTING EQUIPMENT PER ODOT SUPPLEMENT 1041. ALL COST ASSOCIATED WITH THE ABOVE SHALL BE INCLUDED IN THE CUBIC YARD COST OF THE ASPHALT CONCRETE BID ITEMS.

SAMPLING FOR VERIFICATION ACCEPTANCE (403.06.A) SHALL BE PERFORMED IN ACCORDANCE WITH ODOT SUPPLEMENT 1035.

UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, CONDUCT DENSITY GAUGE QUALITY CONTROL TESTING ON BOTH THE ITEM 448 ASPHALT CONCRETE SURFACE COURSE AND INTERMEDIATE COURSE MATS ACCORDING TO ODOT SUPPLEMENT 1055 REGARDLESS OF THE NUMBER OF LANES OR LENGTH OF CONTINUOUS PAVING.

Designer Note: Use this note for heavy traffic volume mix designs.

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC MS, AS PER PLAN (11/01/2013)

WHEN THIS ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 255, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN AND AS OTHERWISE DETAILED OR SPECIFIED ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING BP-2.5C.

255.02 MATERIALS.

THE "CLASS QC MS" CONCRETE USED FOR THE RIGID PAVEMENT REPLACEMENT (255) AND INTEGRAL CONCRETE CURB (609) SHALL CONFORM TO THE "MODIFICATIONS TO ITEM 499 CONCRETE - GENERAL" AS CONTAINED IN THE "SECTION 400 PROPOSAL NOTES" OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET".

255.04 CORRECTION OF DISTURBED SUBBASE AND SUBGRADE.

SUITABLE SUBBASE DISTURBED IN AREAS WHERE CONCRETE PAVEMENT IS REMOVED SHALL BE SHAPED AND RECOMPACTED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE COUNTY. UNSUITABLE SUBBASE, AS DETERMINED BY THE ENGINEER, SHALL BE REMOVED AND REPLACED WITH "ITEM 304 - AGGREGATE BASE, AS PER PLAN" TO THE DEPTH OF ADJACENT SUBBASE.

WHERE UNSUITABLE SUBGRADE MATERIAL IS ENCOUNTERED, IT SHALL BE REMOVED TO THE DEPTH DETERMINED BY THE ENGINEER, AND REPLACED IN EIGHT (8) INCH MAXIMUM (LOOSE DEPTH) MECHANICALLY COMPACTED LAYERS. SUITABLE EMBANKMENT MATERIAL (204.02) REQUIRED TO REPLACE THE UNDERCUT SUBGRADE SHALL, TO THE EXTENT POSSIBLE, EXHIBIT THE SAME PHYSICAL PROPERTIES AS THE ADJACENT SOUND SUBGRADE MATERIALS. HOWEVER, USE OF SLAG, IN ANY FORM, IS NOT PERMITTED. ALL EXPOSED OR RECONSTRUCTED SUBGRADE SOILS SHALL BE COMPACTED TO THE SATISFACTION OF THE ENGINEER. IN CONJUNCTION WITH THE ABOVE SUBGRADE WORK, AN ESTIMATED QUANTITY OF ITEM 204 - GEOTEXTILE FABRIC IS PROVIDED FOR USE AS DIRECTED BY THE ENGINEER.

REMOVAL AND DISPOSAL OF UNSUITABLE SUBBASE OR SUBGRADE MATERIAL SHALL BE CONSIDERED INCIDENTAL TO ITEM 255 AND NO SEPARATE PAYMENT WILL BE MADE.

255.061 CURB REPLACEMENT.

INTEGRAL CONCRETE CURB REMOVED IN CONJUNCTION WITH THE PAVEMENT REMOVAL OPERATIONS SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE ITEM 255 PAVEMENT REMOVAL. INTEGRAL CONCRETE CURB SO REMOVED SHALL BE REPLACED (IN KIND) IN ACCORDANCE WITH THE "INTEGRAL CONCRETE CURB REPLACEMENT DETAIL, METHOD B", AS SHOWN ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING MD-1C AND PAID FOR UNDER ITEM 609 - CURB, TYPE ____ USING CLASS QC MS CONCRETE, AS PER PLAN.

255.07 WEARING COURSE REPLACEMENT.

MATERIAL FOR ANY ASPHALT CONCRETE OVERLAYS SHALL BE PAID FOR SEPARATELY AND BE AS DETAILED/SPECIFIED ELSEWHERE IN THE PLANS.

255.09 METHOD OF MEASUREMENT.

THE REPLACEMENT MATERIAL FOR UNSUITABLE SUBGRADE MATERIAL SHALL BE FURNISHED, PLACED, MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 204 - EMBANKMENT, AS PER PLAN OR, WHERE DIRECTED BY THE ENGINEER, ITEM 204 - GRANULAR EMBANKMENT, AS PER PLAN. THE REPLACEMENT MATERIAL FOR UNSUITABLE SUBBASE SHALL BE FURNISHED, PLACED, MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 304 - AGGREGATE BASE, AS PER PLAN.

255.10 BASIS FOR PAYMENT.

PAYMENT FOR ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC MS, AS PER PLAN IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND LABOR PER 255.10 AND AS SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO INTEGRAL CONCRETE CURB AND/OR PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION AND/OR REMOVAL, AS NECESSARY, FURNISHING AND PLACING DOWELS, TIE BARS, MESH AND THE CLASS QC MS CONCRETE.

QUANTITIES FOR THE ABOVE WORK ARE ESTIMATED/CALCULATED ON SHEET NO(S). _____ AND CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. PAYMENT FOR ACTUALLY COMPLETED AND ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR:

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT,	
CLASS QC MS, AS PER PLAN	SQ. YD.
ITEM 255 - FULL DEPTH PAVEMENT SAWING	FT.
ITEM 204 - EMBANKMENT, AS PER PLAN	CU. YD.
ITEM 204 - GRANULAR EMBANKMENT, AS PER PLAN	CU. YD.
ITEM 204 - GEOTEXTILE FABRIC	SQ. YD.

ITEM 304 – AGGREGATE BASE, AS PER PLAN
ITEM 609 – CURB, TYPE ____ USING CLASS QC MS CONCRETE, AS PER PLAN

CU. YD.
FT.

-OR-

THE FOLLOWING ESTIMATED QUANTITIES TO BE USED AS DIRECTED BY THE ENGINEER, ARE CARRIED TO THE GENERAL SUMMARY FOR THIS WORK AND PAYMENT IS INCLUDED IN THE CONTRACT UNIT PRICE BID FOR:

ITEM 255 – FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC MS, AS PER PLAN	_____ SQ. YD.
ITEM 255 – FULL DEPTH PAVEMENT SAWING	_____ FT.
ITEM 204 – EMBANKMENT, AS PER PLAN	_____ CU. YD.
ITEM 204 – GRANULAR EMBANKMENT, AS PER PLAN	_____ CU. YD.
ITEM 204 – GEOTEXTILE FABRIC	_____ SQ. YD.
ITEM 304 – AGGREGATE BASE, AS PER PLAN	_____ CU. YD.
ITEM 609 – CURB, TYPE ____ USING CLASS QC MS CONCRETE, AS PER PLAN	_____ FT.

Designer Note: This note is used in conjunction with the Cuyahoga County Engineer's Construction Drawing BP-2.5C. Reference BP-2.5C on the Title Sheet. Typically specify "Class QC MS" concrete. Where/if the project MOT requirements allow, specify "Class QC 1" concrete and modify note accordingly. Provide estimated quantities for "Class QC MS" or "Class QC 1", as appropriate. Specify curb type, if required. For estimating the quantity of Item 255 – Full Depth Pavement Sawing (ft.), assume approximately two (2) to three (3) times the quantity of pavement removed/replaced (sq.yds.). The designer should determine which last paragraph to use. Add CUY-P06 for existing concrete pavement (w/o wearing course) rehabilitation and resurfacing projects where known locations of "Class QC FS" concrete required for MOT can be identified on the plans.

CUY-P06

**ITEM 255 – FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC FS,
AS PER PLAN (11/01/2013)**

WHEN THIS ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 255, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN AND AS OTHERWISE DETAILED OR SPECIFIED ON THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING BP-2.5C.

255.01 DESCRIPTION.

THIS WORK CONSISTS OF FULL DEPTH REMOVAL OF EXISTING PAVEMENT AND RIGID REPLACEMENT USING "CLASS QC FS" CONCRETE PER 255.01 AT THE LOCATIONS SHOWN IN THE PLANS.

255.02 MATERIALS.

THE "CLASS QC FS" CONCRETE USED FOR RIGID PAVEMENT REPLACEMENT (255), SHALL CONFORM TO THE "MODIFICATIONS TO ITEM 499 CONCRETE – GENERAL" AS CONTAINED IN THE "SECTION 400 PROPOSAL NOTES" OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET".

255.04 CORRECTION OF DISTURBED SUBBASE AND SUBGRADE.

SUITABLE SUBBASE DISTURBED IN AREAS WHERE CONCRETE PAVEMENT IS REMOVED SHALL BE SHAPED AND RECOMPACTED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE COUNTY. UNSUITABLE SUBBASE, AS DETERMINED BY THE ENGINEER, SHALL BE REMOVED AND REPLACED WITH "ITEM 304 - AGGREGATE BASE, AS PER PLAN" TO THE DEPTH OF ADJACENT SUBBASE. DO NOT EXCEED A MAXIMUM MECHANICALLY COMPACTED LIFT OF FOUR (4) INCHES.

WHERE UNSUITABLE SUBGRADE MATERIAL IS ENCOUNTERED, IT SHALL BE REMOVED TO THE DEPTH DETERMINED BY THE ENGINEER, AND REPLACED WITH "ITEM 304 – AGGREGATE BASE, AS PER PLAN". DO NOT EXCEED A MAXIMUM MECHANICALLY COMPACTED LIFT OF FOUR (4) INCHES. ALL EXPOSED UNDERLYING SUBGRADE SOILS SHALL BE COMPACTED TO THE SATISFACTION OF THE ENGINEER.

REMOVAL AND DISPOSAL OF UNSUITABLE SUBBASE OR SUBGRADE MATERIAL SHALL BE CONSIDERED INCIDENTAL TO ITEM 255 AND NO SEPARATE PAYMENT WILL BE MADE.

255.07 WEARING COURSE REPLACEMENT.

MATERIAL FOR ANY ASPHALT CONCRETE OVERLAYS SHALL BE PAID FOR SEPARATELY AND BE AS DETAILED/SPECIFIED ELSEWHERE IN THE PLANS.

255.09 METHOD OF MEASUREMENT.

THE REPLACEMENT MATERIAL FOR UNSUITABLE SUBGRADE AND/OR SUBBASE SHALL BE FURNISHED, PLACED, MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 304 - AGGREGATE BASE, AS PER PLAN.

255.10 BASIS FOR PAYMENT.

PAYMENT FOR ITEM 255 – FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC FS, AS PER PLAN IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS AND LABOR PER 255.10 AND AS SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION AND/OR REMOVAL, AS NECESSARY, FURNISHING AND PLACING DOWELS, TIE BARS, MESH AND THE CLASS QC FS CONCRETE.

PLAN QUANTITIES FOR THE ABOVE WORK ARE ESTIMATED/CALCULATED ON SHEET NO(S). _____ AND CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. PAYMENT FOR ACTUALLY COMPLETED AND ACCEPTED QUANTITIES SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR:

ITEM 255 – FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC FS, AS PER PLAN	SQ. YD.
ITEM 255 – FULL DEPTH PAVEMENT SAWING	FT.
ITEM 304 – AGGREGATE BASE, AS PER PLAN	CU. YD.

Designer Note: Use this note for existing concrete pavement (w/o wearing course) rehabilitation and resurfacing projects where the known locations of “Class QC FS” concrete repairs (255) required for MOT can be determined during design and shown/delineated on the plans (typically shown on the MOT plans). For each location that “Class QC FS” concrete repair areas are shown on the plans, specify the corresponding closure time constraints. This note is used in conjunction with the Cuyahoga County Engineer's Construction Drawing BP-2.5C. Reference BP-2.5C on the Title Sheet.

CUY-P07

CONCRETE PAVEMENT GRINDING FOR BUTT JOINT CONSTRUCTION PER BP-3.1 (05/28/2010)

ALL WEDGE-SHAPED CONCRETE PAVEMENT REMOVALS REQUIRED TO CONSTRUCT BUTT JOINTS PER ODOT STANDARD CONSTRUCTION DRAWING BP-3.1 SHALL BE PERFORMED AND PAID FOR IN ACCORDANCE WITH "ITEM 254 – PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, AS PER PLAN" (SEE PLAN NOTE).

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 254 – PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, AS PER PLAN ____ SQ. YD.

-OR-

A QUANTITY AS ESTIMATED/CALCULATED ON SHEET NO. _____ HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE ABOVE SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR:

ITEM 254 – PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, AS PER PLAN

Designer Note: Use this note where a project's resurfacing limits about existing concrete pavements. The designer should decide which last paragraph to use. Reference BP-3.1 on the Title Sheet and add CUY-P10 plan note.

CUY-P08

JOINT AND CRACK SEALING CONCRETE PAVEMENT (BASE) PRIOR TO OVERLAY (03/01/2005)

THE FOLLOWING METHOD OF CLEANING AND SEALING SHALL BE REQUIRED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

JOINTS AND CRACKS SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATERIAL BY APPROVED EQUIPMENT/METHODS SUCH AS SAND BLASTING, WATER UNDER PRESSURE, COMPRESSED AIR, ETC.; AND THE CONTACT SURFACES SHALL BE CLEAN AND DRY WHEN THE SEAL IS APPLIED.

WHERE LONGITUDINAL, TRANSVERSE OR OTHER RANDOM CRACKS OCCUR, AND WHERE SUCH CRACKS, IN THE OPINION OF THE ENGINEER, ARE NOT STRUCTURALLY DAMAGING TO THE RIGID PAVEMENT (STRUCTURALLY DETERIORATED CRACKS AND JOINTS SHALL BE REPAIRED PER THE PARTIAL AND/OR FULL DEPTH PAVEMENT REPAIR OPERATIONS OUTLINED ELSEWHERE IN THE PLANS), THE CONTRACTOR SHALL CLEAN AND SEAL THE CRACK OPENINGS AS FOLLOWS:

- A. WHERE THE CRACK SURFACE OPENING IS GREATER THAN 3/4", IT SHALL BE CLEANED THEN SEALED AS FOLLOWS: THE LOWER PORTION OF THE CRACK SHALL BE FILLED WITH HOT-APPLIED 705.04 JOINT SEALER. THE UPPER PORTION OF THE CRACK SHALL BE FILLED FLUSH TO THE SURFACE WITH SAND ASPHALT. THE SAND SHALL CONFORM TO 703.05 (A), EXCEPT THAT 100% MUST PASS THE NUMBER 4 SIEVE. THE ASPHALT BINDER CONTENT SHALL BE AS DIRECTED BY THE LABORATORY WITHIN THE FOLLOWING LIMITS:

ASPHALT BINDER (PERCENT OF TOTAL MIX) 5.0 TO 10.0

- B. CRACKS WITH SURFACE OPENINGS LESS THAN 3/4" SHALL BE CLEANED AND FILLED WITH A 705.04 JOINT SEALER FLUSH TO THE SURFACE WITHOUT EXCESS.

UNLESS OTHERWISE DESIGNATED FOR PARTIAL OR FULL-DEPTH REPAIR, EXISTING LONGITUDINAL AND TRANSVERSE PAVEMENT JOINTS (INCLUDING EXISTING CURB JOINTS) SHALL BE CLEANED AND RESEALED WITH 705.04 JOINT SEALER. FOR JOINT OPENINGS WIDER THAN 3/4" AN APPROVED BOND-BREAKING BACKER ROD MATERIAL SHALL BE INSTALLED SUCH THAT ONLY THE UPPER 1" OF THE JOINT WILL SUBSEQUENTLY BE SEALED WITH 705.04. EXISTING JOINT SEALER SHALL BE REMOVED BY METHODS APPROVED BY THE ENGINEER. TRANSVERSE JOINTS SHALL BE FILLED TO APPROXIMATELY 1/8" TO 1/4" BELOW THE PAVEMENT SURFACE. LONGITUDINAL JOINTS SHALL BE FILLED FLUSH TO THE SURFACE WITHOUT EXCESS. WHERE AS DETERMINED BY THE ENGINEER, PORTIONS OF EXISTING JOINTS THAT ARE SOUNDLY SEALED SHALL BE LEFT UNDISTURBED EXCEPT THAT THEY SHALL BE SWEEPED CLEAN AND/OR BLOWN CLEAN WITH COMPRESSED AIR PRIOR TO THE OVERLAY OPERATIONS. PORTIONS OF EXISTING PREFORMED ELASTIC JOINT SEALER (705.11) SHALL MINIMALLY BE REMOVED FOR ENTIRE SLAB-WIDTH SEGMENTS; ALL AS DIRECTED OR OTHERWISE APPROVED BY THE ENGINEER.

THE METHOD OF MEASUREMENT SHALL BE THE ACTUAL NUMBER OF FEET MEASURED ALONG THE CONCRETE PAVEMENT CRACK OR JOINT.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR:

ITEM SPECIAL - CONCRETE PAVEMENT JOINT CLEANED AND FILLED _____ FT.
 ITEM SPECIAL - CONCRETE PAVEMENT CRACK CLEANED AND FILLED _____ FT.

-OR-

A QUANTITY AS ESTIMATED/CALCULATED ON SHEET NO. _____ HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE ABOVE SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER FOOT FOR:

ITEM SPECIAL - CONCRETE PAVEMENT JOINT CLEANED AND FILLED
 ITEM SPECIAL - CONCRETE PAVEMENT CRACK CLEANED AND FILLED

Designer Note: This note is intended for use on existing concrete pavement and/or base which is to be overlaid with asphalt. The designer should decide which payment paragraph to use.

CUY-P09

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN (11/01/2013)

WHEN THIS ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 251, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

251.02 REMOVAL OF EXISTING PAVEMENT.

APPROVED REMOVAL METHODS SHALL SATISFACTORILY ESTABLISH A NEAT VERTICAL FACE ALONG THE ENTIRE PERIMETER OF THE REPAIR AREA IN ORDER TO SUBSEQUENTLY PERMIT THE PROPER PLACEMENT AND COMPACTION OF THE ASPHALT CONCRETE PATCHING MATERIAL. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, REMOVAL DEPTHS SHALL VARY FROM A ONE AND A HALF (1-1/2) INCH MINIMUM TO A THREE (3) INCH MAXIMUM.

PARTIALLY EMBEDDED STEEL MESH EXPOSED SHALL BE WIRE-BRUSHED OR OTHERWISE CLEANED TO REMOVE ALL LOOSE RUST. LOOSENED OR TOTALLY EXPOSED WIRE MESH REINFORCING SHALL BE CUT AND REMOVED AS REQUIRED WITHOUT DISPLACEMENT OR DISRUPTION TO THE REINFORCEMENT AND/OR PAVEMENT TO REMAIN.

251.04 METHOD OF MEASUREMENT.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR ITEM 251 – PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN _____ SQ. YD.

-OR-

A QUANTITY FOR THE ABOVE WORK AS ESTIMATED / CALCULATED ON SHEET NO. _____ HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

Designer Note: This note is solely intended for partial depth repair of concrete pavement. The designer should decide which last paragraph to use.

CUY-P10

ITEM 254 - PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, AS PER PLAN (05/28/2010)

ALL PROVISIONS OF ITEM 254, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

254.01 DESCRIPTION.

THE WORK CONSISTS OF PLANING THE EXISTING **CONCRETE** PAVEMENT AND DISPOSING OF THE CUTTINGS.

254.06 METHOD OF MEASUREMENT.

THE ENGINEER WILL MEASURE THE QUANTITY OF **CONCRETE** PAVEMENT PLANING BY THE NUMBER OF SQUARE YARDS.

254.07 BASIS OF PAYMENT.

NO PAYMENT WILL BE MADE FOR REPAIRS DUE TO DAMAGE CAUSED BY PLANING OPERATIONS.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR THE ACCEPTED QUANTITY OF ITEM 254 – PAVEMENT PLANING, PORTLAND CEMENT CONCRETE, AS PER PLAN.

Designer Note: Use this note/item for “concrete” pavement planing.

CUY-P11

ITEM 253 - PAVEMENT REPAIR, AS PER PLAN (06/19/2006)

ALL PROVISIONS OF ITEM 253 SHALL APPLY EXCEPT AS MODIFIED OR APPENDED HEREIN.

253.02 – REMOVAL OF EXISTING PAVEMENT.

THE ENGINEER WILL DESIGNATE THE LOCATION AND LIMITS OF AREAS TO BE REPAIRED UNDER THIS ITEM ONLY AFTER HE/SHE HAS DETERMINED THAT THE REPAIR CANNOT BE MADE UNDER "ITEM 254 - PATCHING PLANED SURFACE", WHERE APPLICABLE. THE DEPTH OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER. THE PAVEMENT SHALL BE REMOVED IN A MANNER SUCH THAT NEAT VERTICAL FACES ARE ESTABLISHED FOR THE ENTIRE PERIMETER OF THE REPAIR AREA. ANY METHOD REQUIRED TO ESTABLISH THE NEAT VERTICAL FACE (INCLUDING SAW CUTTING) SHALL BE INCLUDED IN THE COST OF THIS ITEM.

253.03 - PLACEMENT OF AGGREGATE AND/OR ASPHALT CONCRETE PAVEMENT COURSES.

THE ENGINEER WILL SELECT FROM ITEMS 301, 304, AND 448, ALONE OR IN COMBINATION, TO FILL THE REPAIR AREA. ITEM 304 SHALL BE USED TO REPLACE EXISTING AGGREGATE BASE COURSES ONLY.

253.04 - METHOD OF MEASUREMENT.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER CUBIC YARD FOR ITEM 253 - PAVEMENT REPAIR, AS PER PLAN.

A QUANTITY FOR THE ABOVE WORK AS ESTIMATED/CALCULATED ON SHEET NO. _____ HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

- OR -

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 253 - PAVEMENT REPAIR, AS PER PLAN _____ CU. YD.

Designer Note: For use on existing composite pavement or full depth flexible pavement rehab projects. The designer should decide which last paragraph to use.

CUY-P12

ITEM 304 - AGGREGATE BASE, AS PER PLAN (05/28/2010)

MATERIAL FURNISHED FOR THIS ITEM SHALL BE LIMITED TO CRUSHED CARBONATE STONE.

AGGREGATE BASE MATERIAL MAY BE SPREAD UPON THE SUBGRADE ONLY AFTER THE PRESCRIBED SUBGRADE AND SUBBASE DRAINAGE HAS BEEN PLACED.

REFERENCE IS ALSO MADE TO THE “SUBGRADE PLACEMENT” REQUIREMENTS OF THE “ITEM SPECIAL - SUBGRADE GEOTEXTILE FABRIC” PLAN NOTE.

Designer Note: Include this note on all County projects where Item 304 Aggregate Base is used. Edit for specific project use. When post-pave underdrain installation is required/approved, replace the second paragraph with the following: “AGGREGATE BASE MATERIAL MAY BE SPREAD UPON THE SUBGRADE ONLY AFTER THE PRESCRIBED SUBGRADE AND SUBBASE DRAINAGE HAS BEEN PLACED, EXCEPT THAT FOR PORTLAND CEMENT PAVEMENTS, UNDERDRAINS NEED NOT BE PLACED PRIOR TO PLACING THE AGGREGATE BASE MATERIAL, PROVIDED ADEQUATE SURFACE DRAINAGE FOR THE SUBGRADE IS MAINTAINED DURING CONSTRUCTION, PER 203.04(A).” Delete the second paragraph entirely for Rehabilitation and/or Resurfacing Projects. Delete the last paragraph if inapplicable.

CUY-P13

ITEM SPECIAL - SUBGRADE GEOTEXTILE FABRIC (03/01/2005)

DESCRIPTION

THIS WORK SHALL CONSIST OF FURNISHING AND PLACING A NONWOVEN OR A MONOFILAMENT WOVEN GEOTEXTILE FABRIC BETWEEN THE COMPLETED/ACCEPTED SUBGRADE AND THE AGGREGATE BASE (SUBBASE) FOR USE AS A PERMEABLE SEPARATOR WHICH ALLOWS LONG-TERM PASSAGE OF WATER WHILE RETAINING IN-SITU SOIL WITHOUT CLOGGING; ALL IN ACCORDANCE WITH THESE SPECIFICATIONS, THE APPLICABLE PROVISIONS OF AASHTO M 288, THE MANUFACTURER’S RECOMMENDATIONS AND AT THE DIRECTION OR APPROVAL OF THE ENGINEER.

MATERIALS

FIBERS USED IN THE MANUFACTURE OF THE GEOTEXTILES, AND THE THREADS USED IN JOINING GEOTEXTILES BY SEWING, SHALL BE RESISTANT TO CHEMICAL ATTACK, MILDEW, AND ROT; AND SHALL CONSIST OF LONG-CHAIN SYNTHETIC POLYMERS, COMPOSED OF AT LEAST 95 PERCENT BY WEIGHT OF POLYOLEFINS OR POLYESTERS. THEY SHALL BE FORMED INTO A STABLE NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN THEIR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER, INCLUDING SELVAGES. ACCEPTABLE/APPROVED NONWOVEN OR MONOFILAMENT WOVEN GEOTEXTILES USED FOR THIS PURPOSE (SUBGRADE/SUBBASE - SEPARATION/FILTRATION) SHALL MINIMALLY CONFORM TO THE APPLICABLE PHYSICAL REQUIREMENTS OF AASHTO M 288, “TABLE 1 (CLASS 2)” AND “TABLE 2” FOR “CLASS 2 GEOTEXTILES” AS SHOWN HEREINAFTER.

TABLE 1. GEOTEXTILE STRENGTH PROPERTY REQUIREMENTS ⁽¹⁾
CLASS 2 GEOTEXTILE

TEST METHODS	UNITS	NONWOVEN	MONOFILAMENT
		ELONGATION ≥ 50% ⁽²⁾	WOVEN ELONGATION < 50% ⁽²⁾
GRAB STRENGTH	ASTM D 4632 (LBS.)	160	250
SEWN SEAM STRENGTH	ASTM D 4632 (LBS.)	140	220
TEAR STRENGTH	ASTM D 4533 (LBS.)	55	55
PUNCTURE STRENGTH	ASTM D 4833 (LBS.)	55	90

PROPERTY NOTES FOR TABLE 1.

1. ALL NUMERIC VALUES IN TABLE 1 REPRESENT MINIMUM AVERAGE ROLL VALUES (MARV) IN THE WEAKER PRINCIPAL DIRECTION.
2. AS MEASURED IN ACCORDANCE WITH ASTM D 4632.

**TABLE 2. SUBSURFACE DRAINAGE GEOTEXTILE REQUIREMENTS
CLASS 2 GEOTEXTILES**

TEST METHODS	UNITS	REQUIREMENTS PERCENT IN-SITU SOIL PASSING NO. 200 ⁽¹⁾			
		< 15	15 TO 50	> 50	
PERMITTIVITY ⁽⁴⁾	ASTM D 4491	sec ⁻¹	0.5	0.2	0.1
APPARENT OPENING SIZE ⁽³⁾	ASTM D 4751	mm	0.43	0.25	0.22 ⁽²⁾
ULTRAVIOLET STABILITY (RETAINED STRENGTH)	ASTM D 4355	%	50% AFTER 500 HRS. OF EXPOSURE		

PROPERTY NOTES FOR TABLE 2.

1. BASED ON GRAIN SIZE ANALYSIS OF IN-SITU SOIL IN ACCORDANCE WITH AASHTO T 88.
2. FOR COHESIVE SOILS WITH A PLASTICITY INDEX GREATER THAN 7, GEOTEXTILE MAXIMUM AVERAGE ROLL VALUE FOR APPARENT OPENING SIZE IS 0.30 mm.
3. MAXIMUM AVERAGE ROLL VALUE.
4. MINIMUM AVERAGE ROLL VALUE (MARV) IN THE WEAKER PRINCIPAL DIRECTION.

CERTIFICATION SHALL BE FURNISHED IN ACCORDANCE WITH 101.03 (CERTIFIED TEST DATA) OF THE CUYAHOGA COUNTY ENGINEER'S GENERAL PROVISIONS AND PER AASHTO M 288; ALL BEFORE THE FABRIC IS PLACED. THE ENGINEER MAY REQUIRE SAMPLING FOR TESTING PURPOSES AS DIRECTED BY THE LABORATORY AND PER THE APPLICABLE PORTIONS OF AASHTO M 288.

CONSTRUCTION REQUIREMENTS

GEOTEXTILE PACKAGING AND STORING. THE GEOTEXTILE ROLLS SHALL BE FURNISHED WITH SUITABLE WRAPPING FOR PROTECTION AGAINST MOISTURE, EXTENDED ULTRAVIOLET EXPOSURE, CONTAMINANTS AND DAMAGE DUE TO SHIPPING. EACH ROLL SHALL BE LABELED OR TAGGED TO PROVIDE PRODUCT IDENTIFICATION SUFFICIENT FOR FIELD INVENTORY AND QUALITY CONTROL PURPOSES. ROLLS SHALL BE STORED IN A MANNER WHICH PROTECTS THEM FROM THE ELEMENTS. IF STORED OUTDOORS, THEY SHALL BE ELEVATED AND PROTECTED WITH A WATERPROOF COVER.

GEOTEXTILE EXPOSURE FOLLOWING PLACEMENT. EXPOSURE OF GEOTEXTILES TO THE ELEMENTS BETWEEN LAYDOWN AND COVER SHALL BE KEPT TO A MINIMUM. GEOTEXTILES SHALL BE PLACED AND COVERED AS QUICKLY AS POSSIBLE. IN ANY CASE, EXPOSURE SHALL NOT EXCEED SEVEN (7) DAYS.

SEWN SEAMS. BOTH FACTORY AND FIELD SEWN SEAMS SHALL CONFORM TO THE STRENGTH REQUIREMENTS OF THE "MATERIALS" SECTION SPECIFIED HEREIN. ALL SEAMS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THREADS USED FOR SEWING SHALL CONSIST OF HIGH STRENGTH POLYPROPYLENE OR POLYESTER. NYLON THREAD SHALL NOT BE USED. THE THREAD SHALL BE OF CONTRASTING COLOR TO THAT OF THE GEOTEXTILE ITSELF. FOR SEAMS WHICH ARE SEWN IN THE FIELD, THE CONTRACTOR SHALL PROVIDE AT LEAST A SIX (6) FOOT LENGTH OF SEWN SEAM FOR SAMPLING BY THE ENGINEER BEFORE THE GEOTEXTILE IS INSTALLED. FOR SEAMS WHICH ARE SEWN IN THE FACTORY, THE ENGINEER SHALL OBTAIN SAMPLES OF THE FACTORY SEAMS AT RANDOM FROM ANY ROLL OF GEOTEXTILE WHICH IS USED ON THE PROJECT. FOR SEAMS THAT ARE FIELD SEWN, THE SEAMS SEWN FOR SAMPLING SHALL BE SEWN USING THE SAME EQUIPMENT AND PROCEDURES AS WILL BE USED FOR THE PRODUCTION SEAMS. IF SEAMS ARE SEWN IN BOTH THE MACHINE AND CROSS MACHINE DIRECTION, SAMPLES OF SEAMS FROM BOTH DIRECTIONS SHALL BE PROVIDED. THE SEAM ASSEMBLY DESCRIPTION SHALL BE SUBMITTED BY THE CONTRACTOR ALONG WITH THE SAMPLE OF THE SEAM. THE DESCRIPTION SHALL INCLUDE THE SEAM TYPE, STITCH TYPE, SEWING THREAD AND STITCH DENSITY.

SITE PREPARATION. THE INSTALLATION SITE SHALL BE PREPARED IN ACCORDANCE WITH ITEM 204 - SUBGRADE COMPACTION. REMOVE ALL SHARP OBJECTS AND LARGE STONES FROM THE SUBGRADE.

INSTALLATION. THE GEOTEXTILE SHALL BE UNROLLED AND LAID AS SMOOTHLY AS POSSIBLE ON THE PREPARED AND ACCEPTED SUBGRADE IN THE DIRECTION OF CONSTRUCTION TRAFFIC. WRINKLES OR FOLDS SHALL BE AVOIDED. ADJACENT GEOTEXTILE ROLLS SHALL BE OVERLAPPED TWO (2) FEET IN THE DIRECTION OF SUBBASE PLACEMENT. THE GEOTEXTILE MAY BE HELD IN PLACE PRIOR TO SUBBASE PLACEMENT BY PINS, STAPLES, OR PILES OF SUITABLE SUBBASE MATERIAL. ON CURVES, THE GEOTEXTILE MAY BE FOLDED OR CUT TO CONFORM TO THE CURVES. THE FOLD OR OVERLAP SHALL BE IN THE DIRECTION OF CONSTRUCTION AND HELD IN PLACE AS PRESCRIBED ABOVE.

DAMAGE REPAIR. PRIOR TO COVERING, THE GEOTEXTILES SHALL BE INSPECTED BY A CERTIFIED INSPECTOR OF THE ENGINEER TO ENSURE THAT THE GEOTEXTILE HAS NOT BEEN DAMAGED (i.e., HOLES, TEARS, RIPS) DURING THE INSTALLATION. DAMAGED GEOTEXTILES, AS IDENTIFIED BY THE ENGINEER, SHALL BE REPAIRED IMMEDIATELY. COVER THE DAMAGED AREA WITH A GEOTEXTILE PATCH, WHICH EXTENDS TWO (2) FEET BEYOND THE DAMAGED AREA.

SUBBASE PLACEMENT. THE SUBBASE SHALL BE PLACED BY END DUMPING ONTO THE GEOTEXTILE FROM THE EDGE OF THE GEOTEXTILE, OR OVER PREVIOUSLY PLACED SUBBASE AGGREGATE. CONSTRUCTION VEHICLES SHALL NOT BE ALLOWED DIRECTLY ON THE GEOTEXTILE. USING A MOTOR GRADER OR BULLDOZER, SPREAD THE SUBBASE MATERIAL FROM THE BACK-DUMPED PILE. MAINTAIN A MINIMUM LIFT THICKNESS OF SIX (6) INCHES BETWEEN THE GEOTEXTILE AND EQUIPMENT TIRES OR TRACKS AT ALL TIMES. ANY SUDDEN STOPS, STARTS OR TURNS ON THE SUBBASE MATERIAL BY CONSTRUCTION EQUIPMENT SHALL BE AVOIDED. IF VIBRATORY COMPACTORS ARE USED, REASONABLE COMPACTION AND RUT STABILITY MUST FIRST BE ESTABLISHED BY THE SUBBASE SPREADING EQUIPMENT. ANY RUTS OCCURRING DURING CONSTRUCTION SHALL BE FILLED WITH ADDITIONAL SUBBASE MATERIAL, AND COMPACTED TO THE SPECIFIED DENSITY. IF PLACEMENT OF BACKFILL MATERIAL CAUSES DAMAGE TO THE GEOTEXTILE, THE DAMAGED AREA SHALL BE REPAIRED IMMEDIATELY. CLEAR THE DAMAGED AREA, PLUS AN ADDITIONAL THREE (3) FEET AROUND THE DAMAGED AREA OF ALL FILL MATERIAL. COVER THE DAMAGED AREA WITH A GEOTEXTILE PATCH AS PREVIOUSLY DESCRIBED IN THE "DAMAGE REPAIR" SECTION HEREIN. REPLACE THE REMOVED SUBBASE MATERIAL, COMPACTING TO THE SPECIFIED DENSITY. ALL SUBSEQUENT SUBBASE PLACEMENT PROCEDURES SHALL BE MODIFIED, AS REQUIRED, TO ELIMINATE FURTHER DAMAGE FROM TAKING PLACE (i.e., INCREASE INITIAL LIFT THICKNESS, DECREASE EQUIPMENT LOADS, ETC.).

METHOD OF MEASUREMENT.

THE GEOTEXTILE SHALL BE MEASURED BY THE NUMBER OF SQUARE YARDS COMPUTED FROM THE PAYMENT LINES SHOWN ON THE PLANS OR FROM PAYMENT LINES ESTABLISHED IN WRITING BY THE ENGINEER. THIS EXCLUDES SEAM OVERLAPS.

EARTHWORK AND SUBBASE ITEMS ARE MEASURED AND PAID SEPARATELY.

BASIS OF PAYMENT.

THE ACCEPTED QUANTITIES OF GEOTEXTILE FABRIC SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD IN PLACE FOR ITEM SPECIAL - SUBGRADE GEOTEXTILE FABRIC.

Designer Note: This item should be considered for all grade, drain and pave projects and/or where complete pavement replacement is proposed. See recommended placement details for the subbase/subgrade-separation/filtration fabric and the underdrain fabric wrap on the Cuyahoga County Engineer's Construction Drawing no. MD-1C. If subgrade stabilization is also required (CBR < 3), Class 1 Geotextiles (AASHTO M 288) shall be specified and the plan note shall be modified accordingly.

CUY-P14

ITEM 451 - REINFORCED CONCRETE PAVEMENT, CLASS QC 1, AS PER PLAN A (11/01/2013)

WHEN THE ABOVE ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 451, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

451.02 – MATERIALS.

THE "CLASS QC 1" CONCRETE SHALL CONFORM TO THE "MODIFICATIONS TO ITEM 499 CONCRETE – GENERAL" AS CONTAINED IN THE "SECTION 400 PROPOSAL NOTES" OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET".

CURING MATERIAL SHALL BE 705.07 (TYPE 2). THE REINFORCING MESH FABRIC SHALL BE 6" X 12" (W8.5 X W4), CONFORMING TO 709.10 AND BP-1.1.

451.09 - JOINTS.

ADEQUATE PRE-APPROVED JOINT SAWING EQUIPMENT AND QUALIFIED OPERATORS SHALL BE PROVIDED/AVAILABLE FROM THE CONTRACTOR TO ASSURE THAT ALL JOINTS ARE SAWED WITHIN THE REQUIRED TIME LIMITS. ADEQUATE ARTIFICIAL LIGHTING FACILITIES FOR NIGHT SAWING SHALL ALSO BE PROVIDED/AVAILABLE. IN ADDITION, IT IS IMPORTANT THAT THE CONTRACTOR HAVE BACKUP JOINT SAWING EQUIPMENT AVAILABLE IN CASE OF MECHANICAL BREAKDOWNS.

(A) LONGITUDINAL JOINT. A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.

LONGITUDINAL BUTT (CONSTRUCTION) JOINTS SHALL BE TIED AS FOLLOWS:

- (1) FOR FORMED CONSTRUCTION, SECURELY FASTEN HOOK BOLTS (OR WIGGLE BOLT ALTERNATES) WITH COUPLINGS TO THE FORM AT THE LONGITUDINAL CONSTRUCTION JOINT AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP -2.1.
- (2) FOR SLIP FORMED CONSTRUCTION, THE METHODS DETAILED/DESCRIBED ON BP-2.1 (TYPE D JOINT) SHALL BE USED UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER.

(B) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT DOWEL BASKET ASSEMBLIES ARE STABLE AND HELD FIRMLY IN PLACE.

(D) CONTRACTION JOINTS. UNLESS OTHERWISE SHOWN ON THE PLANS, CONTRACTION JOINTS SHALL BE TYPICALLY SPACED AT 20' -0" CENTERS. MINOR ADJUSTMENTS IN JOINT SPACING MAY BE REQUIRED TO MEET DRAINAGE STRUCTURE BLOCKOUTS, OTHER SIMILAR PAVEMENT BLOCKOUTS, INTERSECTION JOINT SPACING, ETC. HOWEVER, IN NO CASE SHALL

THE SPACING EXCEED 21' -0" OR TYPICALLY BE LESS THAN 15' -0" (10' -0" MINIMUM). A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.

- (E) CONSTRUCTION JOINTS. PROVIDE A 5/16 +/- 1/16 INCH WIDE BY 1-5/8 INCH DEEP KERFED JOINT OPENING FOR ALL CONSTRUCTION JOINTS.

451.10 - FINISHING.

THE SURFACE SHALL BE CONTINUALLY CHECKED FOR TRUENESS WITH LONG-HANDLED TEN (10) FOOT STRAIGHTEDGES TO ENSURE A SMOOTH RIDING SURFACE. THE STRAIGHTEDGE SHALL BE OPERATED PARALLEL TO THE CENTERLINE AND SHALL BE MOVED FORWARD NO MORE THAN ONE-HALF ITS LENGTH AFTER EACH PASS. IRREGULARITIES SHALL BE CORRECTED BY USING THE STRAIGHTEDGE WITH A SCRAPING MOTION TO REMOVE BUMPS AND EXCESS MORTAR FROM THE SURFACE WHILE THE CONCRETE IS PLASTIC. ALL DISTURBED AREAS SHALL BE STRAIGHTEDGED AGAIN. IF NOT SUITABLY CORRECTED AT THIS TIME (WHILE THE CONCRETE IS PLASTIC), THE CONTRACTOR WILL BE REQUIRED TO SUBSEQUENTLY CORRECT ALL REMAINING SURFACE VARIATIONS FOUND TO BE OUT OF TOLERANCE PER 451.13 AND 451.14, AS DIRECTED BY THE ENGINEER.

UNLESS OTHERWISE SPECIFIED, THE FINAL (TRANSVERSE) SURFACE TEXTURE OF THE PAVEMENT SHALL BE BROOM FINISHED, USING A BROOM OF APPROVED TYPE, NOT LESS THAN 18" IN WIDTH OF BASS OR BASSINE FIBER, NOT MORE THAN FIVE (5) INCHES IN LENGTH. THE STROKES SHALL BE EDGE TO EDGE OF THE SLAB, ONE STROKE PER WIDTH OF BROOM, WITH ADJACENT STROKES SLIGHTLY OVERLAPPED AND CORRUGATIONS APPROXIMATELY 1/16" IN DEPTH. BROOMS SHALL BE WASHED THOROUGHLY AT FREQUENT INTERVALS DURING EACH DAY. ANY COARSE OR LONG BRISTLES THAT CAUSE IRREGULARITIES SHALL BE TRIMMED OR REMOVED.

451.111 - PROTECTION AGAINST RAIN.

IN ORDER THAT THE CONCRETE MAY BE PROPERLY PROTECTED AGAINST THE EFFECTS OF RAIN BEFORE THE CONCRETE IS SUFFICIENTLY HARDENED, THE CONTRACTOR WILL BE REQUIRED TO HAVE AVAILABLE AT ALL TIMES MATERIALS FOR THE PROTECTION OF THE UNHARDENED CONCRETE SURFACE. SUCH PROTECTIVE MATERIALS SHALL CONSIST OF STANDARD COVERING MATERIAL SUCH AS BURLAP OR COTTON MATS, CURING PAPER OR PLASTIC SHEETING FOR THE PROTECTION OF THE PAVEMENT SURFACE. WHEN RAIN APPEARS IMMINENT, ALL PAVING OPERATIONS SHALL STOP, AND ALL AVAILABLE PERSONNEL SHALL BEGIN COVERING THE SURFACE OF UNHARDENED CONCRETE WITH THE PROTECTIVE COVERING.

451.13 – SURFACE SMOOTHNESS.

PAVEMENT SURFACE VARIATIONS SHALL NOT EXCEED 1/4 INCH IN TEN (10) FEET.

451.161 – SEALING CONTRACTION, CONSTRUCTION, AND LONGITUDINAL JOINTS.

PRIOR TO SEALING, THE CONTRACTOR SHALL BEVEL THE EDGES OF ALL CONTRACTION JOINTS USING EITHER A CUTTING OR GRINDING DEVICE ATTACHED TO A SECOND-STAGE SAWING BLADE OR A SEPARATE CUTTING OR GRINDING DEVICE. MODIFY OR CHANGE THE METHOD OF PRODUCING BEVELS WHEN UNSATISFACTORY RESULTS ARE BEING OBTAINED.

AS SOON AS FEASIBLE AFTER COMPLETING SAWING, BUT BEFORE THE PAVEMENT IS OPEN TO CONSTRUCTION EQUIPMENT AND TRAFFIC, SEAL ALL CONTRACTION, CONSTRUCTION AND LONGITUDINAL JOINTS. JUST BEFORE SEALING, THOROUGHLY CLEAN EACH JOINT OF ALL FOREIGN MATERIAL, USING APPROVED EQUIPMENT. ENSURE THE JOINT FACES ARE CLEAN AND DRY WHEN THE SEAL IS INSTALLED.

- (A) CONTRACTION JOINTS AND CONSTRUCTION JOINTS. CONTRACTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH 705.04 JOINT SEALER IN AN ACCEPTABLY NEAT MANNER TO APPROXIMATELY 1/8" TO 1/4" BELOW THE PAVEMENT SURFACE. PLACE THE JOINT SEALER WITH PROPER EQUIPMENT TO OBTAIN A NEAT WORKMANLIKE JOINT, FREE FROM EXCESS AND UNSIGHTLY FILLER.
- (B) LONGITUDINAL JOINTS. LONGITUDINAL JOINTS SHALL BE NEATLY FILLED FLUSH TO THE SURFACE USING 705.04 JOINT SEALER. PLACE THE JOINT SEALER WITH PROPER EQUIPMENT TO OBTAIN A NEAT WORKMANLIKE JOINT, FREE FROM EXCESS AND UNSIGHTLY FILLER.

451.19 – PRICE ADJUSTMENTS.

THE "C. PAVEMENT SMOOTHNESS" ADJUSTMENT IS NOT APPLICABLE TO COUNTY PROJECTS.

Designer Note: This note is to be used for reinforced concrete pavement installations. The "A" at the end of the item description should be deleted unless both the 451 - A.P.P. "A" and 451 - A.P.P. "B" items are utilized in the same contract. Reference BP-1.1, BP-2.1 and BP-2.2 on the Title Sheet. Typically specify "Class QC 1" concrete. Where/if the project MOT requires, specify "Class QC MS" concrete and modify note accordingly.

Where requested/required by the maintaining City/Village, provide 705.11 Preformed Elastomeric Joint Sealer to seal transverse contraction/construction joints and modify the plan note as specified below.

Add the following paragraph to 451.02 – MATERIALS:

“FURNISH 705.11 PREFORMED ELASTOMERIC JOINT SEALER TO SEAL TRANSVERSE CONTRACTION AND CONSTRUCTION JOINTS.”

Replace the last sentence in 451.09 (D) with the following:

“THE INITIAL SAW CUT SHALL BE 1/8 +/- 1/16 INCH WIDE MEASURED AT THE TIME OF SAWING.”

Replace Section 451.161 in its entirety with the following:

“451.16 SEALING JOINTS.

PRIOR TO SEALING, THE CONTRACTOR SHALL BEVEL THE EDGES OF ALL CONTRACTION JOINTS USING EITHER A CUTTING OR GRINDING DEVICE ATTACHED TO A SECOND-STAGE SAWING BLADE OR A SEPARATE CUTTING OR GRINDING DEVICE. MODIFY OR CHANGE THE METHOD OF PRODUCING BEVELS WHEN UNSATISFACTORY RESULTS ARE BEING OBTAINED.

AS SOON AS FEASIBLE AFTER COMPLETING SAWING, BUT BEFORE THE PAVEMENT IS OPEN TO CONSTRUCTION EQUIPMENT AND TRAFFIC, SEAL JOINTS. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PLACE A TEMPORARY MATERIAL, SUCH AS AN OVERSIZED CLOSED-CELL BACKER ROD, IN CONTRACTION JOINT OPENINGS IMMEDIATELY AFTER SAWING. THE CONTRACTOR MAY USE THE APPROVED TEMPORARY MATERIAL TO PROTECT THE JOINT OPENING DURING USE BY CONSTRUCTION EQUIPMENT NECESSARY TO COMPLETE THE ABUTTING CONCRETE PAVEMENT. UPON COMPLETION OF THE ENTIRE PAVEMENT WIDTH, REMOVE THE TEMPORARY MATERIAL; WIDEN THE CONTRACTION JOINT OPENING WITH A 5/16 +/- 1/16 INCH WIDE BY 1-5/8 INCH DEEP SECONDARY SAW CUT, AND PROPERLY CLEAN AND SEAL IT WITH A CONTINUOUS LENGTH OF 705.11 JOINT SEALER. UNLESS OTHERWISE APPROVED BY THE ENGINEER, THE SECOND SAWING SHALL BE PERFORMED WHEN THE TEMPERATURE IS SEVENTY (70) DEGREES FAHRENHEIT OR ABOVE. JUST BEFORE SEALING, THOROUGHLY CLEAN EACH JOINT OF ALL FOREIGN MATERIAL, USING APPROVED EQUIPMENT. ENSURE THE JOINT FACES ARE CLEAN AND DRY WHEN THE SEAL IS INSTALLED.

- (A) CONTRACTION JOINTS AND CONSTRUCTION JOINTS. SEAL TRANSVERSE CONTRACTION AND CONSTRUCTION JOINTS WITH SEALS CONFORMING TO 705.11 AND IN ONE PIECE WITHOUT FIELD OR FACTORY SPLICE BETWEEN LONGITUDINAL JOINT AND EDGE OF PAVEMENT OR BETWEEN LONGITUDINAL JOINTS OF MULTILANE PAVEMENT. **NO SUBSTITUTES ARE PERMITTED.** THE SEALER MATERIAL WIDTH SHALL BE 9/16 INCH UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

USING AN APPROVED LUBRICANT-ADHESIVE COVERING BOTH SIDES OF THE SEALER, INSTALL SEALS WITH SUITABLE TOOLS WHILE IN A SUBSTANTIALLY FULL COMPRESSED CONDITION AND AT ALL TIMES BE BELOW THE LEVEL OF THE PAVEMENT SURFACE BY APPROXIMATELY 1/4 INCH. DO NOT EXCEED 5 PERCENT ELONGATION DURING INSTALLATION AS DETERMINED BY LENGTH MEASUREMENT MARKS.

- (B) EXPANSION JOINTS. SEAL EXPANSION JOINTS WITH MATERIAL CONFORMING TO 705.04.
- (C) LONGITUDINAL JOINTS. SEAL SAWED OR FORMED LONGITUDINAL JOINTS WITH FILLER CONFORMING TO 705.04. PLACE THE JOINT SEALER WITH PROPER EQUIPMENT TO OBTAIN A NEAT WORKMANLIKE JOINT, FREE FROM EXCESS AND UNSIGHTLY FILLER.”

CUY-P15

ITEM 452 – NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1, AS PER PLAN (11/01/2013)

WHEN THE ABOVE ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 452, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

452.02 – CONSTRUCTION.

MATERIALS.

THE “CLASS QC 1” CONCRETE SHALL CONFORM TO THE “MODIFICATIONS TO ITEM 499 CONCRETE-GENERAL” AS CONTAINED IN THE “SECTION 400 PROPOSAL NOTES” OF THE “CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET”. CURING MATERIAL SHALL BE 705.07 (TYPE 2).

JOINTS.

ADEQUATE PRE-APPROVED JOINT SAWING EQUIPMENT AND QUALIFIED OPERATORS SHALL BE PROVIDED/AVAILABLE FROM THE CONTRACTOR TO ASSURE THAT ALL JOINTS ARE SAWED WITHIN THE REQUIRED TIME LIMITS. ADEQUATE ARTIFICIAL LIGHTING FACILITIES FOR NIGHT SAWING SHALL ALSO BE PROVIDED/AVAILABLE. IN ADDITION, IT IS IMPORTANT THAT THE CONTRACTOR HAVE BACKUP JOINT SAWING EQUIPMENT AVAILABLE IN CASE OF MECHANICAL BREAKDOWNS.

- (A) LONGITUDINAL JOINT. A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.

LONGITUDINAL BUTT (CONSTRUCTION) JOINTS SHALL BE TIED AS FOLLOWS:

- (1) FOR FORMED CONSTRUCTION, SECURELY FASTEN HOOK BOLTS (OR WIGGLE BOLT ALTERNATES) WITH COUPLINGS TO THE FORM AT THE LONGITUDINAL CONSTRUCTION JOINT AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-2.1.
 - (2) FOR SLIP FORMED CONSTRUCTION, THE METHODS DETAILED/DESCRIBED ON BP-2.1 (TYPE D JOINT) SHALL BE USED, UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER.
- (B) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT THE DOWEL BASKET ASSEMBLIES ARE STABLE AND HELD FIRMLY IN PLACE.
- (D) CONTRACTION JOINTS. UNLESS OTHERWISE SHOWN ON THE PLANS, CONTRACTION JOINTS SHALL BE TYPICALLY SPACED AT 15'-0" MAXIMUM CENTERS. MINOR ADJUSTMENTS IN JOINT SPACING MAY BE REQUIRED TO MEET DRAINAGE STRUCTURE BLOCKOUTS, OTHER SIMILAR PAVEMENT BLOCKOUTS, INTERSECTION JOINT SPACING, ETC. HOWEVER, IN NO CASE SHALL THE SPACING EXCEED THE ALLOWABLE MAXIMUM OR BE LESS THAN 10'-0". A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.
- (E) CONSTRUCTION JOINTS. PROVIDE A 5/16 +/- 1/16 WIDE BY 1-5/8 INCH DEEP KERFED JOINT OPENING FOR ALL CONSTRUCTION JOINTS.

FINISHING.

THE SURFACE SHALL BE CONTINUALLY CHECKED FOR TRUENESS WITH LONG-HANDLED TEN (10) FOOT STRAIGHTEDGES TO ENSURE A SMOOTH RIDING SURFACE. THE STRAIGHTEDGE SHALL BE OPERATED PARALLEL TO THE CENTERLINE AND SHALL BE MOVED FORWARD NO MORE THAN ONE-HALF ITS LENGTH AFTER EACH PASS. IRREGULARITIES SHALL BE CORRECTED BY USING THE STRAIGHTEDGE WITH A SCRAPING MOTION TO REMOVE BUMPS AND EXCESS MORTAR FROM THE SURFACE WHILE THE CONCRETE IS PLASTIC. ALL DISTURBED AREAS SHALL BE STRAIGHTEDGED AGAIN. IF NOT SUITABLY CORRECTED AT THIS TIME (WHILE THE CONCRETE IS PLASTIC), THE CONTRACTOR WILL BE REQUIRED TO SUBSEQUENTLY CORRECT ALL REMAINING SURFACE VARIATIONS FOUND TO BE OUT OF TOLERANCE PER 451.13 AND 451.14, AS DIRECTED BY THE ENGINEER.

UNLESS OTHERWISE SPECIFIED, THE FINAL (TRANSVERSE) SURFACE TEXTURE OF THE PAVEMENT SHALL BE BROOM FINISHED, USING A BROOM OF APPROVED TYPE, NOT LESS THAN EIGHTEEN (18) INCHES IN WIDTH OF BASS OR BASSINE FIBER, NOT MORE THAN FIVE (5) INCHES IN LENGTH. THE STROKES SHALL BE EDGE TO EDGE OF THE SLAB, ONE STROKE PER WIDTH OF BROOM, WITH ADJACENT STROKES SLIGHTLY OVERLAPPED AND CORRUGATIONS APPROXIMATELY 1/16" IN DEPTH. BROOMS SHALL BE WASHED THOROUGHLY AT FREQUENT INTERVALS DURING EACH DAY. ANY COARSE OR LONG BRISTLES THAT CAUSE IRREGULARITIES SHALL BE TRIMMED OR REMOVED.

PROTECTION AGAINST RAIN.

IN ORDER THAT THE CONCRETE MAY BE PROPERLY PROTECTED AGAINST THE EFFECTS OF RAIN BEFORE THE CONCRETE IS SUFFICIENTLY HARDENED, THE CONTRACTOR WILL BE REQUIRED TO HAVE AVAILABLE AT ALL TIMES MATERIALS FOR THE PROTECTION OF THE UNHARDENED CONCRETE SURFACE. SUCH PROTECTIVE MATERIALS SHALL CONSIST OF STANDARD COVERING MATERIAL SUCH AS BURLAP OR COTTON MATS, CURING PAPER OR PLASTIC SHEETING FOR THE PROTECTION OF THE PAVEMENT SURFACE. WHEN RAIN APPEARS IMMINENT, ALL PAVING OPERATIONS SHALL STOP, AND ALL AVAILABLE PERSONNEL SHALL BEGIN COVERING THE SURFACE OF UNHARDENED CONCRETE WITH THE PROTECTIVE COVERING.

SURFACE SMOOTHNESS.

PAVEMENT SURFACE VARIATIONS SHALL NOT EXCEED 1/4 INCH IN TEN (10) FEET.

SEALING CONTRACTION, CONSTRUCTION, AND LONGITUDINAL JOINTS.

PRIOR TO SEALING, THE CONTRACTOR SHALL BEVEL THE EDGES OF ALL CONTRACTION JOINTS USING EITHER A CUTTING OR GRINDING DEVICE ATTACHED TO A SECOND-STAGE SAWING BLADE OR A SEPARATE CUTTING OR GRINDING DEVICE. MODIFY OR CHANGE THE METHOD OF PRODUCING BEVELS WHEN UNSATISFACTORY RESULTS ARE BEING OBTAINED.

AS SOON AS FEASIBLE AFTER COMPLETING SAWING, BUT BEFORE THE PAVEMENT IS OPEN TO CONSTRUCTION EQUIPMENT AND TRAFFIC, SEAL ALL CONTRACTION, CONSTRUCTION AND LONGITUDINAL JOINTS. JUST BEFORE SEALING, THOROUGHLY CLEAN EACH JOINT OF ALL FOREIGN MATERIAL, USING APPROVED EQUIPMENT. ENSURE THE JOINT FACES ARE CLEAN AND DRY WHEN THE SEAL IS INSTALLED.

- (A) CONTRACTION JOINTS AND CONSTRUCTION JOINTS. CONTRACTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH 705.04 JOINT SEALER IN AN ACCEPTABLY NEAT MANNER TO APPROXIMATELY 1/8" TO 1/4" BELOW THE PAVEMENT SURFACE. PLACE THE JOINT SEALER WITH PROPER EQUIPMENT TO OBTAIN A NEAT WORKMANLIKE JOINT, FREE FROM EXCESS AND UNSIGHTLY FILLER.
- (B) LONGITUDINAL JOINTS. LONGITUDINAL JOINTS SHALL BE NEATLY FILLED FLUSH TO THE SURFACE USING 705.04 JOINT SEALER. PLACE THE JOINT SEALER WITH PROPER EQUIPMENT TO OBTAIN A NEAT WORKMANLIKE JOINT, FREE FROM EXCESS AND UNSIGHTLY FILLER.

PRICE ADJUSTMENTS.

THE PAVEMENT SMOOTHNESS ADJUSTMENT IS NOT APPLICABLE TO COUNTY PROJECTS.

Designer Note: Where approved by the maintaining agency (City/Village), use this note for full depth non-reinforced concrete pavement installations. Reference BP-2.1 and BP-2.2 on the Title Sheet. Typically specify "Class QC 1" concrete. Where/if the project MOT requires, specify "Class QC MS" concrete and modify note accordingly.

Where requested/required by the maintaining City/Village, provide 705.11 Prefomed Elastomeric Joint Sealer to seal transverse contraction/construction joints and modify the plan note as specified below.

Add the following paragraph to the 452.02 – MATERIALS subsection:

"FURNISH 705.11 PREFORMED ELASTOMERIC JOINT SEALER TO SEAL TRANSVERSE CONTRACTION AND CONSTRUCTION JOINTS."

Replace the last sentence in the 452.02 JOINTS (D) subsection with the following:

"THE INITIAL SAW CUT SHALL BE 1/8 +/- 1/16 INCH WIDE MEASURED AT THE TIME OF SAWING."

Replace the 452.02 – SEALING CONTRACTION, CONSTRUCTION, AND LONGITUDINAL JOINTS subsection in its entirety with the following:

"SEALING JOINTS.

PRIOR TO SEALING, THE CONTRACTOR SHALL BEVEL THE EDGES OF ALL CONTRACTION JOINTS USING EITHER A CUTTING OR GRINDING DEVICE ATTACHED TO A SECOND-STAGE SAWING BLADE OR A SEPARATE CUTTING OR GRINDING DEVICE. MODIFY OR CHANGE THE METHOD OF PRODUCING BEVELS WHEN UNSATISFACTORY RESULTS ARE BEING OBTAINED.

AS SOON AS FEASIBLE AFTER COMPLETING SAWING, BUT BEFORE THE PAVEMENT IS OPEN TO CONSTRUCTION EQUIPMENT AND TRAFFIC, SEAL JOINTS. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY PLACE A TEMPORARY MATERIAL, SUCH AS AN OVERSIZED CLOSED-CELL BACKER ROD, IN CONTRACTION JOINT OPENINGS IMMEDIATELY AFTER SAWING. THE CONTRACTOR MAY USE THE APPROVED TEMPORARY MATERIAL TO PROTECT THE JOINT OPENING DURING USE BY CONSTRUCTION EQUIPMENT NECESSARY TO COMPLETE THE ABUTTING CONCRETE PAVEMENT. UPON COMPLETION OF THE ENTIRE PAVEMENT WIDTH, REMOVE THE TEMPORARY MATERIAL; WIDEN THE CONTRACTION JOINT OPENING WITH A 5/16 +/- 1/16 INCH WIDE BY 1-5/8 INCH DEEP SECONDARY SAW CUT, AND PROPERLY CLEAN AND SEAL IT WITH A CONTINUOUS LENGTH OF 705.11 JOINT SEALER. UNLESS OTHERWISE APPROVED BY THE ENGINEER, THE SECOND SAWING SHALL BE PERFORMED WHEN THE TEMPERATURE IS SEVENTY (70) DEGREES FAHRENHEIT OR ABOVE. JUST BEFORE SEALING, THOROUGHLY CLEAN EACH JOINT OF ALL FOREIGN MATERIAL, USING APPROVED EQUIPMENT. ENSURE THE JOINT FACES ARE CLEAN AND DRY WHEN THE SEAL IS INSTALLED.

(A) CONTRACTION JOINTS AND CONSTRUCTION JOINTS. SEAL TRANSVERSE CONTRACTION AND CONSTRUCTION JOINTS WITH SEALS CONFORMING TO 705.11 AND IN ONE PIECE WITHOUT FIELD OR FACTORY SPLICE BETWEEN LONGITUDINAL JOINT AND EDGE OF PAVEMENT OR BETWEEN LONGITUDINAL JOINTS OF MULTILANE PAVEMENT. **NO SUBSTITUTES ARE PERMITTED.** THE SEALER MATERIAL WIDTH SHALL BE 1/2 INCH UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

USING AN APPROVED LUBRICANT-ADHESIVE COVERING BOTH SIDES OF THE SEALER, INSTALL SEALS WITH SUITABLE TOOLS WHILE IN A SUBSTANTIALLY FULL COMPRESSED CONDITION AND AT ALL TIMES BE BELOW THE LEVEL OF THE PAVEMENT SURFACE BY APPROXIMATELY 1/4 INCH. DO NOT EXCEED 5 PERCENT ELONGATION DURING INSTALLATION AS DETERMINED BY LENGTH MEASUREMENT MARKS.

(B) EXPANSION JOINTS. SEAL EXPANSION JOINTS WITH MATERIAL CONFORMING TO 705.04.

(C) LONGITUDINAL JOINTS. SEAL SAWED OR FORMED LONGITUDINAL JOINTS WITH FILLER CONFORMING TO 705.04. PLACE THE JOINT SEALER WITH PROPER EQUIPMENT TO OBTAIN A NEAT WORKMANLIKE JOINT, FREE FROM EXCESS AND UNSIGHTLY FILLER."

CUY-P16

ITEM 451 - REINFORCED CONCRETE PAVEMENT, CLASS QC 1, AS PER PLAN B (11/01/2013)

WHEN THE ABOVE ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 451, AS SET FORTH IN THE CONSTRUCTION AND MATERIALS SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

451.02 - MATERIAL.

THE "CLASS QC 1" CONCRETE SHALL CONFORM TO THE "MODIFICATIONS TO ITEM 499 CONCRETE – GENERAL" AS CONTAINED IN THE "SECTION 400 PROPOSAL NOTES" OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET".

CURING MATERIAL SHALL BE 705.07 (TYPE 2) APPLIED AT THE RATE SPECIFIED IN 305.02. THE REINFORCING MESH FABRIC SHALL BE 6" X 12" (W8.5 X W4), CONFORMING TO 709.10 AND BP-1.1.

451.09 - JOINTS.

ADEQUATE PRE-APPROVED JOINT SAWING EQUIPMENT AND QUALIFIED OPERATORS SHALL BE PROVIDED/AVAILABLE FROM THE CONTRACTOR TO ASSURE THAT ALL JOINTS ARE SAWED WITHIN THE REQUIRED TIME LIMITS. ADEQUATE ARTIFICIAL LIGHTING FACILITIES FOR NIGHT SAWING SHALL ALSO BE PROVIDED/AVAILABLE. IN ADDITION, IT IS IMPORTANT THAT THE CONTRACTOR HAVE BACKUP JOINT SAWING EQUIPMENT AVAILABLE IN CASE OF MECHANICAL BREAKDOWNS.

(A) LONGITUDINAL JOINT. A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.

LONGITUDINAL BUTT (CONSTRUCTION) JOINTS SHALL BE TIED AS FOLLOWS:

- (1) FOR FORMED CONSTRUCTION, SECURELY FASTEN HOOK BOLTS (OR WIGGLE BOLT ALTERNATES) WITH COUPLINGS TO THE FORM AT THE LONGITUDINAL CONSTRUCTION JOINT AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP – 2.1.
- (2) FOR SLIP FORMED CONSTRUCTION, THE METHODS DETAILED/DESCRIBED ON BP-2.1 (TYPE D JOINT) SHALL BE USED, UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER.

(B) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT THE DOWEL BASKET ASSEMBLIES ARE STABLE AND HELD FIRMLY IN PLACE.

(D) CONTRACTION JOINTS. UNLESS OTHERWISE SHOWN ON THE PLANS, CONTRACTION JOINTS SHALL BE TYPICALLY SPACED AT 20' -0" CENTERS. MINOR ADJUSTMENTS IN JOINT SPACING MAY BE REQUIRED TO MEET DRAINAGE STRUCTURE BLOCKOUTS, OTHER SIMILAR PAVEMENT BLOCKOUTS, INTERSECTION JOINT SPACING, ETC. HOWEVER, IN NO CASE SHALL THE SPACING EXCEED 21' -0" OR TYPICALLY BE LESS THAN 15' -0" (10' -0" MINIMUM). A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.

(E) CONSTRUCTION JOINTS. PROVIDE A 5/16 +/- 1/16 WIDE BY 1-5/8 INCH DEEP KERFED JOINT OPENING FOR ALL CONSTRUCTION JOINTS.

451.10 - FINISHING.

THE SURFACE SHALL BE CONTINUALLY CHECKED FOR TRUENESS WITH LONG-HANDLED TEN (10) FOOT STRAIGHTEDGES TO ENSURE A SMOOTH RIDING SURFACE. THE STRAIGHTEDGE SHALL BE OPERATED PARALLEL TO THE CENTERLINE AND SHALL BE MOVED FORWARD NO MORE THAN ONE-HALF ITS LENGTH AFTER EACH PASS. IRREGULARITIES SHALL BE CORRECTED BY USING THE STRAIGHTEDGE WITH A SCRAPING MOTION TO REMOVE BUMPS AND EXCESS MORTAR FROM THE SURFACE WHILE THE CONCRETE IS PLASTIC. ALL DISTURBED AREAS SHALL BE STRAIGHTEDGED AGAIN. IF NOT SUITABLY CORRECTED AT THIS TIME (WHILE THE CONCRETE IS PLASTIC), THE CONTRACTOR WILL BE REQUIRED TO SUBSEQUENTLY CORRECT ALL REMAINING SURFACE VARIATIONS FOUND TO BE OUT OF TOLERANCE PER 451.13 AND 451.14, AS DIRECTED BY THE ENGINEER.

THE FINAL SURFACE TEXTURE SHALL BE IN ACCORDANCE WITH 305.02.

IMPRESSING STATION NUMBERS INTO THE PLASTIC CONCRETE AS SPECIFIED IN 451.10 IS NOT REQUIRED.

451.111 - PROTECTION AGAINST RAIN.

IN ORDER THAT THE CONCRETE MAY BE PROPERLY PROTECTED AGAINST THE EFFECTS OF RAIN BEFORE THE CONCRETE IS SUFFICIENTLY HARDENED, THE CONTRACTOR WILL BE REQUIRED TO HAVE AVAILABLE AT ALL TIMES MATERIALS FOR THE PROTECTION OF THE UNHARDENED CONCRETE SURFACE. SUCH PROTECTIVE MATERIALS SHALL CONSIST OF STANDARD COVERING MATERIAL SUCH AS BURLAP OR COTTON MATS, CURING PAPER OR PLASTIC SHEETING FOR THE PROTECTION OF THE PAVEMENT SURFACE. WHEN RAIN APPEARS IMMINENT, ALL PAVING OPERATIONS SHALL STOP, AND ALL AVAILABLE PERSONNEL SHALL BEGIN COVERING THE SURFACE OF UNHARDENED CONCRETE WITH THE PROTECTIVE COVERING.

451.13 – SURFACE SMOOTHNESS.

PAVEMENT SURFACE VARIATIONS SHALL NOT EXCEED 1/4 INCH IN TEN (10) FEET.

451.161 – SEALING CONTRACTION, CONSTRUCTION, AND LONGITUDINAL JOINTS.

PRIOR TO SEALING, THE CONTRACTOR SHALL BEVEL THE EDGES OF ALL CONTRACTION JOINTS USING EITHER A CUTTING OR GRINDING DEVICE ATTACHED TO A SECOND-STAGE SAWING BLADE OR A SEPARATE CUTTING OR GRINDING DEVICE. MODIFY OR CHANGE THE METHOD OF PRODUCING BEVELS WHEN UNSATISFACTORY RESULTS ARE BEING OBTAINED.

AS SOON AS FEASIBLE AFTER COMPLETING SAWING, BUT BEFORE THE PAVEMENT IS OPEN TO CONSTRUCTION EQUIPMENT AND TRAFFIC, SEAL ALL CONTRACTION, CONSTRUCTION AND LONGITUDINAL JOINTS. JUST BEFORE SEALING, THOROUGHLY CLEAN EACH JOINT OF ALL FOREIGN MATERIAL, USING APPROVED EQUIPMENT. ENSURE THE JOINT FACES ARE CLEAN AND DRY WHEN THE SEAL IS INSTALLED.

- (A) CONTRACTION JOINTS AND CONSTRUCTION JOINTS. CONTRACTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH 705.04 JOINT SEALER IN AN ACCEPTABLY NEAT MANNER TO APPROXIMATELY 1/8" TO 1/4" BELOW THE PAVEMENT SURFACE.
- (B) LONGITUDINAL JOINTS. LONGITUDINAL JOINTS SHALL BE NEATLY FILLED FLUSH TO THE SURFACE WITHOUT EXCESS USING 705.04 JOINT SEALER.

451.19 – PRICE ADJUSTMENTS.

THE "C. PAVEMENT SMOOTHNESS" ADJUSTMENT IS NOT APPLICABLE TO COUNTY PROJECTS.

Designer Note: This note is to be used for reinforced concrete base on newly constructed composite pavement installations. For rehab construction see "Item 255-Full Depth Pavement Removal and Rigid Replacement, Class QC MS (Class QC FS), As Per Plan. The "B" at the end of the item description should be deleted unless both the 451 - A.P.P. "A" and 451 - A.P.P. "B" items are utilized in the same contract. Reference BP-1.1, BP-2.1 and BP-2.2 on the Title Sheet. Typically specify "Class QC 1" concrete. Where/if the project MOT requires, specify "Class QC MS" concrete and modify note accordingly.

CUY-P17

ITEM 305 – CONCRETE BASE, CLASS QC 1, AS PER PLAN (11/04/2013)

WHEN THE ABOVE ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 305, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY EXCEPT AS MODIFIED HEREIN.

305.02 – CONSTRUCTION.

MATERIALS.

THE "CLASS QC 1" CONCRETE SHALL CONFORM TO THE "MODIFICATIONS TO ITEM 499 CONCRETE-GENERAL" AS CONTAINED IN THE "SECTION 400 PROPOSAL NOTES" OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET". CURING MATERIAL SHALL BE 705.07 (TYPE 2).

JOINTS.

ADEQUATE PRE-APPROVED JOINT SAWING EQUIPMENT AND QUALIFIED OPERATORS SHALL BE PROVIDED/AVAILABLE FROM THE CONTRACTOR TO ASSURE THAT ALL JOINTS ARE SAWED WITHIN THE REQUIRED TIME LIMITS. ADEQUATE ARTIFICIAL LIGHTING FACILITIES FOR NIGHT SAWING SHALL ALSO BE PROVIDED/AVAILABLE. IN ADDITION, IT IS IMPORTANT THAT THE CONTRACTOR HAVE BACKUP JOINT SAWING EQUIPMENT AVAILABLE IN CASE OF MECHANICAL BREAKDOWNS.

- (A) LONGITUDINAL JOINT. A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.

LONGITUDINAL BUTT (CONSTRUCTION) JOINTS SHALL BE TIED AS FOLLOWS:

- (3) FOR FORMED CONSTRUCTION, SECURELY FASTEN HOOK BOLTS (OR WIGGLE BOLT ALTERNATES) WITH COUPLINGS TO THE FORM AT THE LONGITUDINAL CONSTRUCTION JOINT AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-2.1.
 - (4) FOR SLIP FORMED CONSTRUCTION, THE METHODS DETAILED/DESCRIBED ON BP-2.1 (TYPE D JOINT) SHALL BE USED, UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER.
- (B) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT THE DOWEL BASKET ASSEMBLIES ARE STABLE AND HELD FIRMLY IN PLACE.
 - (D) CONTRACTION JOINTS. UNLESS OTHERWISE SHOWN ON THE PLANS, CONTRACTION JOINTS SHALL BE TYPICALLY SPACED AT 15'-0" MAXIMUM CENTERS. MINOR ADJUSTMENTS IN JOINT SPACING MAY BE REQUIRED TO MEET DRAINAGE STRUCTURE BLOCKOUTS, OTHER SIMILAR PAVEMENT BLOCKOUTS, INTERSECTION JOINT SPACING, ETC. HOWEVER, IN NO CASE SHALL THE SPACING EXCEED THE ALLOWABLE MAXIMUM OR BE LESS THAN 10'-0". A 5/16 +/- 1/16 INCH JOINT WIDTH SHALL BE PROVIDED IN ALL CASES.
 - (E) CONSTRUCTION JOINTS. PROVIDE A 5/16 +/- 1/16 WIDE BY 1-5/8 INCH DEEP KERFED JOINT OPENING FOR ALL CONSTRUCTION JOINTS.

FINISHING.

THE SURFACE SHALL BE CONTINUALLY CHECKED FOR TRUENESS WITH LONG-HANDLED TEN (10) FOOT STRAIGHTEDGES TO ENSURE A SMOOTH RIDING SURFACE. THE STRAIGHTEDGE SHALL BE OPERATED PARALLEL TO THE CENTERLINE AND SHALL BE MOVED FORWARD NO MORE THAN ONE-HALF ITS LENGTH AFTER EACH PASS. IRREGULARITIES SHALL BE CORRECTED BY USING THE STRAIGHTEDGE WITH A SCRAPING MOTION TO REMOVE BUMPS AND EXCESS MORTAR FROM THE SURFACE WHILE THE CONCRETE IS PLASTIC. ALL DISTURBED AREAS SHALL BE STRAIGHTEDGED AGAIN. IF NOT SUITABLY CORRECTED AT THIS TIME (WHILE THE CONCRETE IS PLASTIC), THE CONTRACTOR WILL BE REQUIRED TO SUBSEQUENTLY CORRECT ALL REMAINING SURFACE VARIATIONS FOUND TO BE OUT OF TOLERANCE PER 451.13 AND 451.14, AS DIRECTED BY THE ENGINEER.

PROTECTION AGAINST RAIN.

IN ORDER THAT THE CONCRETE MAY BE PROPERLY PROTECTED AGAINST THE EFFECTS OF RAIN BEFORE CONCRETE IS SUFFICIENTLY HARDENED, THE CONTRACTOR WILL BE REQUIRED TO HAVE AVAILABLE AT ALL TIMES MATERIALS FOR THE PROTECTION OF THE UNHARDENED CONCRETE SURFACE. SUCH PROTECTIVE MATERIALS SHALL CONSIST OF STANDARD COVERING MATERIAL SUCH AS BURLAP OR COTTON MATS, CURING PAPER OR PLASTIC SHEETING FOR THE PROTECTION OF THE PAVEMENT SURFACE. WHEN RAIN APPEARS IMMINENT, ALL PAVING OPERATIONS SHALL STOP, AND ALL AVAILABLE PERSONNEL SHALL BEGIN COVERING THE SURFACE OF UNHARDENED CONCRETE WITH THE PROTECTIVE COVERING.

SEALING CONTRACTION, CONSTRUCTION, AND LONGITUDINAL JOINTS.

PRIOR TO SEALING, THE CONTRACTOR SHALL BEVEL THE EDGES OF ALL CONTRACTION JOINTS USING EITHER A CUTTING OR GRINDING DEVICE ATTACHED TO A SECOND-STAGE SAWING BLADE OR A SEPARATE CUTTING OR GRINDING DEVICE. MODIFY OR CHANGE THE METHOD OF PRODUCING BEVELS WHEN UNSATISFACTORY RESULTS ARE BEING OBTAINED.

AS SOON AS FEASIBLE AFTER COMPLETING SAWING, BUT BEFORE THE PAVEMENT IS OPEN TO CONSTRUCTION EQUIPMENT AND TRAFFIC, SEAL ALL CONTRACTION, CONSTRUCTION AND LONGITUDINAL JOINTS. JUST BEFORE SEALING, THOROUGHLY CLEAN EACH JOINT OF ALL FOREIGN MATERIAL, USING APPROVED EQUIPMENT. ENSURE THE JOINT FACES ARE CLEAN AND DRY WHEN THE SEAL IS INSTALLED.

- (A) CONTRACTION JOINTS AND CONSTRUCTION JOINTS. CONTRACTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH 705.04 JOINT SEALER IN AN ACCEPTABLY NEAT MANNER TO APPROXIMATELY 1/8" TO 1/4" BELOW THE PAVEMENT SURFACE.
- (B) LONGITUDINAL JOINTS. LONGITUDINAL JOINTS SHALL BE NEATLY FILLED FLUSH TO THE SURFACE WITHOUT EXCESS USING 705.04 JOINT SEALER.

Designer Note: Where approved by the maintaining agency (City/Village), use this note for full depth non-reinforced concrete base on newly constructed composite pavement sections. For rehab construction see "Item 255 – Full Depth Pavement Removal and Rigid Replacement, Class QC MS (Class QC FS), As Per Plan". Reference BP-2.1 and BP-2.2 on the Title Sheet.

CUY-P18

ITEM 411 - STABILIZED CRUSHED AGGREGATE, AS PER PLAN (06/15/2005)

MATERIAL FOR THIS ITEM SHALL BE LIMITED TO CRUSHED CARBONATE STONE.

Designer Note: Include this note on County projects where Item 411 is used.

CUY-P19

ITEM 617 – COMPACTED AGGREGATE, AS PER PLAN (08/08/2005)

MATERIAL FOR THIS ITEM SHALL BE LIMITED TO CRUSHED CARBONATE STONE.

Designer Note: Include this note on County projects where Item 617 – Compacted Aggregate is used.

CUY-P20

PROFILE AND ALIGNMENT (01/04/1999)

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL (HAVE A UNIFORM THICKNESS OF ____ INCHES) (VARY IN THICKNESS FROM ____ INCHES AT THE CROWN TO ____ INCHES AT THE PAVEMENT EDGE) (BE AS SHOWN ON THE TYPICAL SECTIONS).

Designer Note: Use this note on resurfacing projects where the profile and alignment are not shown on the plan. Appropriately edit for each specific project. CUY-P20 is County version of L&D Manual Note P102.

ITEM SPECIAL – REINFORCED PAVEMENT FABRIC (11/04/2013)

DESCRIPTION.

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING A REINFORCED PAVEMENT FABRIC COMPOSITE BETWEEN THE PROPOSED ASPHALT CONCRETE PAVEMENT LAYERS AS SHOWN ON THE PLANS; ALL IN ACCORDANCE WITH THESE SPECIFICATIONS, THE MANUFACTURER’S RECOMMENDATIONS AND AT THE DIRECTION OR APPROVAL OF THE ENGINEER.

MATERIALS.

THE REINFORCED PAVEMENT FABRIC (COMPOSITE FABRIC) SHALL BE CONSTRUCTED WITH A NONWOVEN PAVING FABRIC CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS COMPOSED OF AT LEAST 85 PERCENT OF POLYOLEFINS OR POLYESTERS BY WEIGHT, WHICH ARE RESISTANT TO CHEMICAL ATTACK, MILDEW, AND ROT; AND A WOVEN POLYESTER OR FIBERGLASS GRID. COMPOSITE FABRIC SHALL MEET THE FOLLOWING PHYSICAL REQUIREMENTS:

PROPERTY	SPECIFICATION	UNIT	TEST METHOD
PAVING FABRIC:			
GRAB TENSILE STRENGTH	90 MIN. *	LBS.	ASTM D 4632
ULTIMATE ELONGATION	≥ 50*	%	ASTM D 4632
ASPHALT RETENTION	0.20**	GAL./SQ. YD.	ASTM D 6140
MELTING POINT	> 300	°F	ASTM D 276
GRID:			
ULTIMATE TENSILE STRENGTH (MD/XD)	275 MIN. *	LBS./IN.	ASTM D 6637
ULTIMATE TENSILE ELONGATION (MD/XD)	≤ 3*	%	ASTM D 6637
TENSILE STRENGTH @ 2% STRAIN	140 MIN. *	LBS./IN.	ASTM D 6637
MELTING POINT	***		
GRID/FABRIC:			
MASS PER UNIT AREA	10 MIN.	OZ./SQ. YD.	

* MINIMUM AVERAGE ROLL VALUES (MARV) IN THE WEAKER PRINCIPLE DIRECTION.

** ASPHALT REQUIRED TO SATURATE REINFORCED PAVEMENT FABRIC ONLY. ASPHALT RETENTION MUST BE PROVIDED IN MANUFACTURER CERTIFICATION. PRODUCT ASPHALT RETENTION PROPERTY MUST MEET THE MARV VALUE PROVIDED BY THE MANUFACTURER CERTIFICATION. VALUE DOES NOT INDICATE THE ASPHALT APPLICATION RATE REQUIRED FOR CONSTRUCTION.

*** THE WOVEN GRID MUST BE THERMALLY STABLE AT TEMPERATURES UP TO 325 °F.

MD = MACHINE DIRECTION; XD = TRANSVERSE (CROSS) DIRECTION.

THE COMPOSITE FABRIC SHALL NOT BE EXPOSED TO ULTRAVIOLET RADIATION FOR MORE THAN 7 DAYS. THE FABRIC WIDTH SHALL GENERALLY BE BETWEEN 60 INCHES AND 90 INCHES AND FURNISHED IN ROLLS BETWEEN 60 YARDS AND 110 YARDS IN LENGTH DEPENDING ON THE MANUFACTURER.

ACCEPTABLE MATERIAL PRODUCTS ARE “GLASSGRID CG50 COMPO GRID” AS MANUFACTURED BY SAINT GOBAIN TECHNICAL FABRICS, “MIRAFI FGC50 PAVING GRID” AS MANUFACTURED BY TENCATE GEOSYNTHETICS NORTH AMERICA, “STAR GRID G+PF PAVING GRID” AS MANUFACTURED BY LUCKENHAUS TECHNICAL FABRICS, INC., OR PRE-APPROVED EQUAL.

UNLESS OTHERWISE RECOMMENDED/REQUIRED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER, THE ASPHALT SEALANT SHALL BE **PG64-22** ASPHALT BINDER MEETING THE REQUIREMENTS OF 702.01.

BEFORE THE COMPOSITE FABRIC IS PLACED, CERTIFICATION SHALL BE FURNISHED IN ACCORDANCE WITH 101.03 (CERTIFIED TEST DATA) OF THE CUYAHOGA COUNTY ENGINEER’S GENERAL PROVISIONS. THE ENGINEER MAY REQUIRE SAMPLING FOR TESTING PURPOSES AS DIRECTED BY THE LABORATORY.

EQUIPMENT.

THE CONTRACTOR SHALL PROVIDE EQUIPMENT FOR HEATING AND APPLYING THE ASPHALT SEALANT MATERIAL. HEATING EQUIPMENT AND DISTRIBUTORS SHALL MEET THE REQUIREMENTS OF ODOT ITEM 407.

THE MECHANICAL LAYDOWN EQUIPMENT SHALL BE MOUNTED ON A FOUR-WHEELED VEHICLE THAT IS CAPABLE OF DRIVING OVER THE COMPOSITE FABRIC WHILE IT IS BEING INSTALLED TO CONTROL THE TENSION ON THE MATERIAL. THE LAYDOWN MACHINE SHALL BE EQUIPPED WITH CLUTCHES TO ADJUST THE ROLL TENSION AND BROOMS TO SMOOTH OUT WRINKLES DURING INSTALLATION. MANUAL LAYDOWN MAY ONLY BE USED IN AREAS INACCESSIBLE TO THE LAYDOWN MACHINE. FABRIC TRACTOR, TRUCK WITH FABRIC APPLICATOR OR ASPHALT SEALANT DISTRIBUTOR WITH A FABRIC APPLICATOR ON THE BACK ARE EXAMPLES OF ACCEPTABLE LAYDOWN EQUIPMENT.

CONSTRUCTION DETAILS

1. SURFACE PREPARATION. THE INTERMEDIATE COURSE SHOULD BE ALLOWED TO SUFFICIENTLY COOL PRIOR TO INSTALLATION OF THE COMPOSITE FABRIC. PER 401.14 OF THE SPECIFICATIONS, THE INTERMEDIATE COURSE SURFACE TO BE TREATED SHALL BE KEPT CLEAN AND MAINTAINED FREE OF ALL DUST, MUD, CLAY LUMPS, VEGETATION, OR OTHER FOREIGN MATERIAL BEFORE THE ASPHALT SEALANT MATERIAL IS APPLIED. CARE SHALL BE EXERCISED TO PREVENT SUCH MATERIAL FROM BECOMING MIXED WITH THE NEW SURFACE.
2. WEATHER. ON THE DAY OF INSTALLATION, AMBIENT AIR AND PAVEMENT TEMPERATURES SHOULD BE AT LEAST 45° F AND RISING PRIOR TO THE PLACEMENT OF THE ASPHALT SEALANT AND THE COMPOSITE FABRIC. THE ASPHALT SEALANT AND COMPOSITE FABRIC SHALL NOT BE PLACED DURING UNSUITABLE WEATHER CONDITIONS, SUCH AS RAIN, SNOW, STRONG WINDS OR WHEN OTHERWISE DETERMINED UNSUITABLE BY THE ENGINEER.
3. CONTRACTOR'S SCHEDULE. WHENEVER POSSIBLE, THE CONTRACTOR SHOULD SCHEDULE THE WORK SUCH THAT THE AMOUNT OF TACK COAT AND FABRIC PLACED IN A SINGLE DAY CAN BE COVERED BY THE ENSUING ASPHALT CONCRETE OVERLAY ON THE SAME DAY; ALL IN ACCORDANCE WITH THESE SPECIFICATIONS AND AS RECOMMENDED BY THE MANUFACTURER AND/OR DIRECTED/APPROVED BY THE ENGINEER.
4. APPLICATION OF ASPHALT SEALANT. THE APPLICATION OF THE ASPHALT SEALANT SHALL CONFORM TO THE APPLICABLE PORTIONS OF ODOT ITEM 407. THE ASPHALT SEALANT SHALL BE UNIFORMLY SPRAYED OVER THE AREA TO BE COVERED BY THE COMPOSITE FABRIC AT A RATE OF 0.23 TO 0.30 GALLON PER SQUARE YARD AND/OR AS RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

THE QUANTITY APPLIED WILL VARY WITH THE SURFACE CONDITION OF THE INTERMEDIATE COURSE (DEGREE OF POROSITY, FOR EXAMPLE) AND DEPEND ON THE SPECIFIC REQUIREMENTS OF THE MANUFACTURER. THE FABRIC ALONE, UNDER HEAT OF THE OVERLAY, WILL ABSORB ABOUT 0.20 GALLON PER SQUARE YARD. WITHIN INTERSECTIONS OR OTHER ZONES WHERE VEHICLE BRAKING IS COMMON PLACE, THE APPLICATION MAY NEED TO BE REDUCED AS RECOMMENDED BY THE MANUFACTURER. THE SEALANT SHALL BE APPLIED TO AN AREA TWO TO SIX INCHES WIDER THAN THE WIDTHS OF THE FABRIC BEING PLACED, BUT RESTRICTED TO THE AREA OF IMMEDIATE FABRIC LAYDOWN. APPLICATION SHALL BE BY DISTRIBUTOR WITH HAND SPRAYING ALLOWED ONLY WHERE THE DISTRIBUTOR CANNOT BE USED. ASPHALT SPILLS SHALL BE CLEANED FROM THE ROAD SURFACE TO AVOID FLUSHING AND POSSIBLE MOVEMENT AT THESE ASPHALT RICH AREAS.

THE ASPHALT MATERIAL USED AS A SEALANT SHALL HAVE A DISTRIBUTOR TANK TEMPERATURE OF BETWEEN 300 DEGREES AND 350 DEGREES FAHRENHEIT. APPLICATION TEMPERATURE IS NOT CRITICAL AFTER THE ASPHALT IS SPRAYED ON THE PAVEMENT. IF THE FABRIC IS TO BE OVER-SPRAYED, DISTRIBUTOR TANK TEMPERATURES SHOULD NOT EXCEED 325 DEGREES FAHRENHEIT TO AVOID DAMAGE TO THE FABRIC.

5. COMPOSITE FABRIC PLACEMENT. THE COMPOSITE FABRIC SHALL BE PLACED ON THE ASPHALT SEALANT AS SOON AS PRACTICAL AND BEFORE THE TACKINESS OF THE SEALANT IS LOST. THE COMPOSITE SHALL BE PLACED AS SMOOTHLY AS POSSIBLE TO AVOID WRINKLES. IT SHALL BE UNROLLED SO THAT THE SOFT SIDE IS UNWOUND INTO THE SEALANT AND THE GRID SIDE IS UP, THUS PROVIDING OPTIMUM BOND BETWEEN FABRIC AND ASPHALT CONCRETE PAVEMENT DURING THE CONSTRUCTION PROCESS. WRINKLES SEVERE ENOUGH TO CAUSE "FOLDS" SHALL BE SLIT AND LAID FLAT. SMALL WRINKLES WHICH FLATTEN UNDER COMPACTION ARE NOT DETRIMENTAL TO PERFORMANCE. THE COMPOSITE SHALL BE BROOMED OR SQUEEGEED TO REMOVE AIR BUBBLES AND MAKE COMPLETE CONTACT WITH THE INTERMEDIATE COURSE SURFACE AS RECOMMENDED BY THE FABRIC MANUFACTURER. THE FABRIC SHALL BE LAID STRAIGHT, WITHIN THE SEALANT AREA. MODERATE CURVES CAN BE NEGOTIATED BY STRETCHING THE FABRIC ON THE OUTSIDE OF THE CURVE BY ADJUSTING THE DRAG ON THE BRAKES OF THE LAYDOWN EQUIPMENT. OTHERWISE, THE FABRIC MUST BE CUT AND REALIGNED TO MINIMIZE WRINKLES AND FOLDING ON CURVES. TRANSVERSE JOINTS SHALL BE "SHINGLED" IN THE DIRECTION OF PAVING.

LONGITUDINAL JOINTS SHALL BE MADE BY OVERLAPPING THE FABRIC TWO TO FOUR INCHES. TRANSVERSE JOINTS SHALL BE MADE BY OVERLAPPING THE FABRIC FOUR TO SIX INCHES. ADDITIONAL SEALANT (ABOUT 0.20 GAL. PER SQ. YD.) MAY BE REQUIRED AT THE JOINT OVERLAPS. THE ADDITIONAL SEALANT FOR TRANSVERSE JOINTS MAY BE APPLIED BY HAND SPRAYING OR WITH MOP AND BUCKET IF EXTREME CARE IS TAKEN TO NOT EXCEED THE SPECIFIED RATE.

TO ENHANCE THE BOND OF THE FABRIC WITH THE INTERMEDIATE PAVEMENT COURSE AND TO SMOOTH OUT ANY WRINKLES OR FOLDS IN THE FABRIC, THE CONTRACTOR MAY BE REQUIRED TO PNEUMATICALLY ROLL THE FABRIC AFTER IT IS PLACED.

PLACEMENT OF THE COMPOSITE FABRIC IS TYPICALLY LIMITED TO THE MAIN LINE PAVEMENT AND SHALL ONLY BE INSTALLED BETWEEN THE PROPOSED INTERMEDIATE COURSE AND SURFACE COURSE PAVEMENT LAYERS. DO NOT PLACE THE FABRIC ONTO THE EXISTING PAVEMENT SURFACES AT "GUTTER FINISH" OR "BUTT JOINT" LOCATIONS, OR AT ANY LOCATIONS WHERE THE PROPOSED SURFACE COURSE OVERLAY IS LESS THAN ONE AND ONE HALF (1-1/2) INCHES.

A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE ON SITE TO SUPERVISE THE INITIAL COMPOSITE FABRIC INSTALLATION OPERATIONS AND AT ANY OTHER TIME DURING THE COMPOSITE FABRIC PLACEMENT DEEMED NECESSARY BY THE ENGINEER.

6. TREATMENT OF THE APPLIED COMPOSITE FABRIC PRIOR TO THE ASPHALT CONCRETE SURFACE COURSE. IT IS UNNECESSARY TO TACK COAT THE COMPOSITE FABRIC PRIOR TO PLACEMENT OF THE OVERLAY UNLESS THERE ARE CIRCUMSTANCES SUCH AS DELAY OF OVERLAY, DUST ACCUMULATION OR UNDER-APPLICATION OF SEALANT WHICH WOULD MAKE TACK COATING DESIRABLE. IF A TACK COAT IS REQUIRED, EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.02 TO 0.05 GALLON PER SQUARE YARD RESIDUAL ASPHALT. PLACEMENT OF THE ASPHALT CONCRETE OVERLAY SHALL CLOSELY FOLLOW COMPOSITE FABRIC LAYDOWN. IN THE EVENT THAT THE SEALANT BLEEDS THROUGH THE FABRIC BEFORE THE ASPHALT CONCRETE IS PLACED, IT MAY BE NECESSARY TO BLOT THE SEALANT BY SPREADING SAND OR ASPHALT CONCRETE OVER THE AFFECTED AREAS. THIS WILL PREVENT ANY TENDENCY FOR CONSTRUCTION EQUIPMENT TO PICK UP THE COMPOSITE FABRIC WHEN DRIVING OVER IT.
7. TRAFFICKING THE COMPOSITE FABRIC WILL BE PERMITTED FOR EMERGENCY AND LIMITED CONSTRUCTION EQUIPMENT ONLY BUT IS TO BE AVOIDED WHERE POSSIBLE. CONSTRUCTION TRAFFICKING SHALL BE LIMITED TO REQUIRED ASPHALT PLACEMENT EQUIPMENT. CARE SHALL BE TAKEN TO AVOID TEARING OR DEBONDING THE FABRIC INTERLAYER. TURNING AND BRAKING OF THE PAVEMENT EQUIPMENT/VEHICLES SHOULD BE AVOIDED. WHERE/IF NECESSARY, ANY TURNING OR BRAKING OF THE PAVING EQUIPMENT/VEHICLES SHALL BE GRADUAL TO AVOID MOVEMENT OR DAMAGE TO THE COMPOSITE FABRIC. QUICK STOPS AND SHARP TURNS MAY DAMAGE THE MATERIAL.

IF RAIN PRIOR TO THE OVERLAY SHOULD CAUSE A BLISTERED APPEARANCE AND SOME BOND LOSS THROUGHOUT THE MEMBRANE, IT SHOULD BE CORRECTED BY PNEUMATIC ROLLING UNTIL ADHESION IS RESTORED.

DAMAGED OR OTHERWISE UNACCEPTABLY PLACED COMPOSITE FABRIC, AS DETERMINED BY THE ENGINEER, SHALL BE REMOVED AND REPLACED (INCLUDING FRESH TACK COAT) AT THE CONTRACTOR'S EXPENSE.

8. ASPHALT CONCRETE SURFACE COURSE. THE ASPHALT CONCRETE OVERLAY OPERATIONS SHALL CONFORM TO ODOT ITEM 401 EXCEPT THAT THE MIXTURE SHALL BE DELIVERED TO THE PAVER AT A TEMPERATURE OF 275 DEGREES TO 300 DEGREES FAHRENHEIT. TEMPERATURE OF THE MIX SHALL IN NO CASE EXCEED 325 DEGREES FAHRENHEIT. MAINTAIN A MINIMUM LIFT THICKNESS OF ONE AND A HALF INCHES OF SURFACE COURSE OVER THE COMPOSITE FABRIC AT ALL TIMES.

UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, CONDUCT DENSITY GAUGE QUALITY CONTROL TESTING ON THE ASPHALT CONCRETE SURFACE COURSE MAT ACCORDING TO ODOT SUPPLEMENT 1055 REGARDLESS OF THE NUMBER OF LANES OR THE LENGTH OF CONTINUOUS PAVING.

INSTALLER QUALIFICATIONS.

1. THE INSTALLER SHALL HAVE A MINIMUM OF 5 YEARS OF SUCCESSFUL EXPERIENCE IN THE INSTALLATION OF REINFORCED PAVEMENT FABRIC. THE EXPERIENCE SHALL BE SIMILAR IN SIZE AND SCOPE TO THE INSTALLATION REQUIRED FOR THIS PROJECT. DOCUMENTATION OF THE INSTALLER'S EXPERIENCE AND REFERENCES SHALL BE PROVIDED AFTER THE CONTRACT AWARD AND NO LATER THAN THE PRE-CONSTRUCTION MEETING.

DOCUMENTATION SHALL INCLUDE THE MANUFACTURER'S CERTIFICATION THAT THE INSTALLER IS TRAINED ON THE BEST METHOD(S) TO INSTALL THE COMPOSITE FABRIC.
2. THE INSTALLER SHALL HAVE SUITABLY EXPERIENCED PERSONNEL AND A MANAGEMENT CAPABILITY SUFFICIENT TO EXECUTE THE WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
3. THE INSTALLER'S SUPERVISOR SHALL HAVE A MINIMUM OF 5 YEARS EXPERIENCE IN THE INSTALLATION OF REINFORCED PAVEMENT FABRIC SIMILAR IN SIZE AND SCOPE TO THIS PROJECT. THE CONTRACTOR SHALL ENSURE THAT THE SUPERVISOR IS ON SITE FOR THE ENTIRE DURATION OF THE WORK.

METHOD OF MEASUREMENT.

THE ACCEPTED COMPOSITE FABRIC PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AND AS DIRECTED WILL BE MEASURED BY THE SQUARE YARD OF PAVEMENT COVERED BY THE COMPOSITE FABRIC. LAPS IN COMPOSITE FABRIC WILL NOT BE MEASURED.

BLOTTING THE SEALANT, SPREADING SAND OR ASPHALT CONCRETE OVER THE MEMBRANE TO PREVENT TIRES FROM STICKING TO THE SEALANT OR PULLING UP THE FABRIC. ROLLING TO RESTORE BOND, APPLICATION OF THE ASPHALT SEALANT (TACK COAT), OR ANY SUBSEQUENT APPLICATION OF AN EMULSIFIED ASPHALT MATERIAL THAT MAY BE REQUIRED, WILL NOT BE MEASURED FOR DIRECT PAYMENT BUT SHALL BE CONSIDERED AN INCIDENTAL AND NECESSARY PART OF THE CONSTRUCTION INVOLVED AND THE COST THEREFORE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE COMPOSITE FABRIC ITEM.

BASIS OF PAYMENT.

THE ACCEPTED QUANTITIES OF THE REINFORCED PAVEMENT FABRIC COMPOSITE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL – REINFORCED PAVEMENT FABRIC, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS (INCLUDING ASPHALT SEALANT), TOOLS, EQUIPMENT AND

INCIDENTALS FOR DOING ALL THE WORK INVOLVED IN FURNISHING AND PLACING THE COMPOSITE FABRIC COMPLETE IN PLACE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	REINFORCED PAVEMENT FABRIC

Designer Note: This item may be considered for use on County sponsored resurfacing projects. Typically limited to concrete pavement non-polymer modified asphalt overlays. Assume 0.25 gal per sq. yd. of fabric for estimating purposes.

CUY – P22

ITEM SPECIAL – HYBRID GEOSYNTHETIC PAVING MAT (11/04/2013)

DESCRIPTION.

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING A HYBRID GEOSYNTHETIC PAVING MAT BETWEEN THE PROPOSED ASPHALT CONCRETE LAYERS AS SHOWN ON THE PLANS; ALL IN ACCORDANCE WITH THESE SPECIFICATIONS, THE MANUFACTURER’S RECOMMENDATIONS AND AT THE DIRECTION OR APPROVAL OF THE ENGINEER.

MATERIALS.

THE HYBRID GEOSYNTHETIC PAVING MAT SHALL MEET THE REQUIREMENTS OF ASTM D 7239 (TYPE I). ACCEPTABLE MATERIAL PRODUCTS ARE “GLASPAVE 25” AS MANUFACTURED BY SAINT GOBAIN TECHNICAL FABRICS, “TRUEPAVE ENGINEERED PAVING MAT” AS MANUFACTURED BY OWEN CORNING COMPOSITE MATERIALS, LLC., OR PRE-APPROVED EQUAL.

UNLESS OTHERWISE RECOMMENDED/REQUIRED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER, THE ASPHALT SEALANT SHALL BE **PG 64-22** ASPHALT BINDER MEETING THE REQUIREMENTS OF 702.01. IN NO CASE SHALL CUTBACKS, EMULSIONS OR MATERIAL USING SOLVENTS BE USED.

BEFORE THE PAVING MAT IS PLACED, CERTIFICATION SHALL BE FURNISHED IN ACCORDANCE WITH 101.03 (CERTIFIED TEST DATA) OF THE CUYAHOGA COUNTY ENGINEER’S GENERAL PROVISIONS. ALL SAMPLING/TESTING AND/OR CERTIFICATION SHALL BE IN ACCORDANCE WITH ASTM D 7239. THE “WORKMANSHIP, FINISH AND APPEARANCE”, “PRODUCT MARKING”, “PACKAGING AND PACKAGE MARKING” AND “SUPPLEMENTARY REQUIREMENTS” OF ASTM D 7239 ALSO APPLY.

EQUIPMENT.

THE CONTRACTOR SHALL PROVIDE EQUIPMENT FOR HEATING AND APPLYING THE ASPHALT SEALANT MATERIAL. HEATING EQUIPMENT AND DISTRIBUTORS SHALL MEET THE REQUIREMENTS OF ODOT ITEM 407.

THE MECHANICAL LAYDOWN EQUIPMENT SHALL BE MOUNTED ON A FOUR-WHEELED VEHICLE THAT IS CAPABLE OF DRIVING OVER THE PAVING MAT WHILE IT IS BEING INSTALLED TO CONTROL THE TENSION ON THE MATERIAL. THE LAYDOWN MACHINE SHALL BE EQUIPPED WITH CLUTCHES TO ADJUST THE ROLL TENSION AND BROOMS TO SMOOTH OUT WRINKLES DURING INSTALLATION. MANUAL LAYDOWN MAY ONLY BE USED IN AREAS INACCESSIBLE TO THE LAYDOWN MACHINE.

CONSTRUCTION DETAILS.

1. SURFACE PREPARATION. THE INTERMEDIATE COURSE SHOULD BE ALLOWED TO SUFFICIENTLY COOL PRIOR TO INSTALLATION OF THE HYBRID GEOSYNTHETIC PAVING MAT. PER 401.14 OF THE SPECIFICATIONS, THE INTERMEDIATE COURSE SURFACE TO BE TREATED SHALL BE KEPT CLEAN AND MAINTAINED FREE OF ALL DUST, MUD, CLAY LUMPS, VEGETATION, OR OTHER FOREIGN MATERIAL BEFORE THE ASPHALT SEALANT MATERIAL IS APPLIED. CARE SHALL BE EXERCISED TO PREVENT SUCH MATERIAL FROM BECOMING MIXED WITH THE NEW SURFACE.
2. WEATHER. ON THE DAY OF INSTALLATION, AMBIENT AIR AND PAVEMENT TEMPERATURES SHOULD BE AT LEAST 45°F AND RISING PRIOR TO PLACEMENT OF THE ASPHALT SEALANT AND THE HYBRID GEOSYNTHETIC PAVING MAT. THE ASPHALT SEALANT AND PAVING MAT SHALL NOT BE PLACED DURING UNSUITABLE WEATHER CONDITIONS, SUCH AS RAIN, SNOW, STRONG WINDS OR WHEN OTHERWISE DETERMINED UNSUITABLE BY THE ENGINEER.
3. CONTRACTOR’S SCHEDULE. WHENEVER POSSIBLE, THE CONTRACTOR SHOULD SCHEDULE THE WORK SUCH THAT THE AMOUNT OF TACK COAT AND PAVING MAT PLACED IN A SINGLE DAY CAN BE COVERED BY THE ENSUING ASPHALT CONCRETE OVERLAY ON THE SAME DAY; ALL IN ACCORDANCE WITH THESE SPECIFICATIONS AND AS RECOMMENDED BY THE MANUFACTURER AND/OR DIRECTED/APPROVED BY THE ENGINEER.
4. APPLICATION OF ASPHALT SEALANT. THE HYBRID GEOSYNTHETIC PAVING MAT OPTIMUM TACK COAT (ASPHALT SEALANT) APPLICATION RATE (TYPICALLY 0.15 TO 0.20 GAL./SQ.YD.) AND TEMPERATURE SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND SHALL CONFORM TO ALL APPLICABLE PORTIONS OF ODOT ITEM 407; ALL AT THE DIRECTION/APPROVAL OF THE ENGINEER. THE PLACING OF THE TACK COAT (ASPHALT SEALANT) SHALL BE BY A MOTORIZED DISTRIBUTOR (SPREADER) CAPABLE OF ADJUSTING APPLICATION RATES BY 1/10TH OF A GALLON. THE DISTRIBUTOR MUST BE CAPABLE OF APPLYING A PROPER FAN OF TACK COAT FROM EACH VALVE ON THE

DISTRIBUTOR BAR FOR THE FULL WIDTH OF THE HYBRID GEOSYNTHETIC PAVING MAT PLUS A MINIMUM OF FOUR INCHES EACH SIDE FOR OVERLAPPING JOINTS. THE DISTRIBUTOR SHALL APPLY A UNIFORM APPLICATION OF TACK COAT AT THE REQUIRED APPLICATION RATE PRIOR TO INSTALLATION OF THE HYBRID GEOSYNTHETIC PAVING MAT.

AT LOCATIONS INACCESSIBLE TO THE DISTRIBUTOR, TACK COAT (ASPHALT SEALANT) MAY BE APPLIED WITH A SQUEEGEE OR HAND WAND SPRAYER, HOWEVER, THIS METHOD MUST BE MINIMIZED. AT ALL TIMES TRAFFIC SHALL NOT DRIVE ON THE TACK COAT (ASPHALT SEALANT). IT IS BEST PRACTICE TO PLACE THE ASPHALTIC CONCRETE SURFACE COURSE MIX ON TO THE HYBRID GEOSYNTHETIC PAVING MAT THE SAME DAY THE MAT IS APPLIED. REGULAR VEHICULAR TRAFFIC SHALL BE KEPT OFF THE MAT.

5. HYBRID GEOSYNTHETIC PAVING MAT INSTALLATION. THE HYBRID GEOSYNTHETIC PAVING MAT SHALL BE PLACED ON THE ASPHALT SEALANT AS SOON AS PRACTICAL AND BEFORE THE TACKINESS OF THE SEALANT IS LOST. TYPICAL MECHANICAL INSTALLATION SHALL BE BY A FABRIC TRACTOR, TRUCK WITH FABRIC APPLICATOR OR AN ASPHALT SEALANT DISTRIBUTOR (SPREADER) WITH FABRIC APPLICATOR ON THE BACK. THE MECHANICAL APPLICATOR SHOULD BE CAPABLE OF HANDLING THE FULL WIDTH OF THE PRODUCT ROLL(S). THE PRODUCT MAY BE INSTALLED BY HAND WHERE CERTAIN AREAS REQUIRE SPECIALLY CUT SECTIONS AND/OR ARE INACCESSIBLE TO MECHANICAL LAYDOWN EQUIPMENT. THE MAT SHALL BE BROOMED OR SQUEEGEED TO ENSURE GOOD CONTACT WITH THE APPLIED TACK COAT (ASPHALT SEALANT) REMOVING ALL AIR BUBBLES . IF WRINKLES OCCUR DURING INSTALLATION THEY NEED TO BE REPAIRED BY SLITTING THE WRINKLE, LAPPING IN THE DIRECTION OF THE PAVER AND PRESSING INTO THE TACK COAT (ASPHALT SEALANT) TO ENSURE ADHESION. THE HYBRID GEOSYNTHETIC PAVING MAT SHALL BE OVERLAPPED FOUR TO SIX INCHES IN THE TRANSVERSE DIRECTION AND TWO TO FOUR INCHES IN THE LONGITUDINAL DIRECTION OF THE PAVING OPERATION. ALL OVERLAPS SHALL BE TACKED TOGETHER WITH THE ASPHALT SEALANT.

PLACEMENT OF THE HYBRID GEOSYNTHETIC PAVING MAT IS TYPICALLY LIMITED TO THE MAINLINE PAVEMENT AND SHALL ONLY BE INSTALLED BETWEEN THE PROPOSED INTERMEDIATE COURSE AND SURFACE COURSE PAVEMENT LAYERS. DO NOT PLACE THE PAVING MAT ONTO THE EXISTING PAVEMENT SURFACES AT "GUTTER FINISH" OR "BUTT JOINT" LOCATIONS, OR AT ANY LOCATIONS WHERE THE PROPOSED SURFACE COURSE OVERLAY IS LESS THAN ONE AND ONE HALF (1-1/2) INCHES.

A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE ON SITE TO SUPERVISE THE INITIAL HYBRID GEOSYNTHETIC PAVING MAT INSTALLATION OPERATIONS AND AT ANY OTHER TIME DURING THE PAVING MAT PLACEMENT DEEMED NECESSARY BY THE ENGINEER.

6. TREATMENT OF THE APPLIED HYBRID GEOSYNTHETIC PAVING MAT PRIOR TO THE ASPHALT CONCRETE SURFACE COURSE. IT IS UNNECESSARY TO TACK COAT THE PAVING MAT PRIOR TO PLACEMENT OF THE OVERLAY. PLACEMENT OF THE ASPHALT CONCRETE OVERLAY SHALL CLOSELY FOLLOW PAVING MAT LAYDOWN. IN THE EVENT THAT THE SEALANT BLEEDS THROUGH THE PAVING MAT BEFORE THE ASPHALT CONCRETE IS PLACED, IT MAY BE NECESSARY TO BLOT THE SEALANT BY SPREADING SAND OR ASPHALT CONCRETE OVER THE AFFECTED AREAS. THIS WILL PREVENT ANY TENDENCY FOR CONSTRUCTION EQUIPMENT TO PICK UP THE PAVING MAT WHEN DRIVING OVER IT.
7. TRAFFICKING THE HYBRID GEOSYNTHETIC PAVING MAT WILL BE PERMITTED FOR EMERGENCY AND LIMITED CONSTRUCTION EQUIPMENT ONLY BUT IS TO BE AVOIDED WHERE POSSIBLE. CONSTRUCTION TRAFFICKING SHALL BE LIMITED TO REQUIRED ASPHALT PLACEMENT EQUIPMENT. CARE SHALL BE TAKEN TO AVOID TEARING OR DEBONDING THE PAVING MAT INTERLAYER. TURNING AND BRAKING OF THE PAVEMENT EQUIPMENT/VEHICLES SHOULD BE AVOIDED. WHERE/IF NECESSARY, ANY TURNING OR BRAKING OF THE PAVING EQUIPMENT/VEHICLES SHALL BE GRADUAL TO AVOID MOVEMENT OR DAMAGE TO THE HYBRID GEOSYNTHETIC PAVING MAT. QUICK STOPS AND SHARP TURNS MAY DAMAGE THE MATERIAL.

IF RAIN PRIOR TO THE OVERLAY SHOULD CAUSE A BLISTERED APPEARANCE AND SOME BOND LOSS THROUGHOUT THE MEMBRANE, IT SHOULD BE CORRECTED BY PNEUMATIC ROLLING UNTIL ADHESION IS RESTORED.

DAMAGED OR OTHERWISE UNACCEPTABLY PLACED HYBRID GEOSYNTHETIC PAVING MAT, AS DETERMINED BY THE ENGINEER, SHALL BE REMOVED AND REPLACED (INCLUDING FRESH TACK COAT) AT THE CONTRACTOR'S EXPENSE.

8. ASPHALT CONCRETE SURFACE COURSE. THE ASPHALT CONCRETE OVERLAY OPERATIONS SHALL CONFORM TO ODOT ITEM 401. MAINTAIN A MINIMUM LIFT THICKNESS OF ONE AND A HALF INCHES OF SURFACE COURSE OVER THE HYBRID GEOSYNTHETIC PAVING MAT AT ALL TIMES.

UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, CONDUCT DENSITY GAUGE QUALITY CONTROL TESTING ON THE ASPHALT CONCRETE SURFACE COURSE MAT ACCORDING TO ODOT SUPPLEMENT 1055 REGARDLESS OF THE NUMBER OF LANES OR THE LENGTH OF CONTINUOUS PAVING.

INSTALLER QUALIFICATIONS.

1. THE INSTALLER SHALL HAVE A MINIMUM OF 5 YEARS OF SUCCESSFUL EXPERIENCE IN THE INSTALLATION OF HYBRID GEOSYNTHETIC PAVING MAT. THE EXPERIENCE SHALL BE SIMILAR IN SIZE AND SCOPE TO THE INSTALLATION REQUIRED FOR THIS PROJECT. DOCUMENTATION OF THE INSTALLER'S EXPERIENCE AND REFERENCES SHALL BE PROVIDED AFTER THE CONTRACT AWARD AND NO LATER THAN THE PRE-CONSTRUCTION MEETING.

DOCUMENTATION SHALL INCLUDE THE MANUFACTURER'S CERTIFICATION THAT THE INSTALLER IS TRAINED ON THE BEST METHOD(S) TO INSTALL THE HYBRID GEOSYNTHETIC PAVING MAT.

2. THE INSTALLER SHALL HAVE SUITABLY EXPERIENCED PERSONNEL AND A MANAGEMENT CAPABILITY SUFFICIENT TO EXECUTE THE WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
3. THE INSTALLER'S SUPERVISOR SHALL HAVE A MINIMUM OF 5 YEARS EXPERIENCE IN THE INSTALLATION OF HYBRID GEOSYNTHETIC PAVING MAT SIMILAR IN SIZE AND SCOPE TO THIS PROJECT. THE CONTRACTOR SHALL ENSURE THAT THE SUPERVISOR IS ON SITE FOR THE ENTIRE DURATION OF THE WORK.

METHOD OF MEASUREMENT.

THE ACCEPTED HYBRID GEOSYNTHETIC PAVING MAT PLACED IN ACCORDANCE WITH THESE SPECIFICATIONS AND AS DIRECTED WILL BE MEASURED BY THE SQUARE YARD OF PAVEMENT COVERED BY THE HYBRID GEOSYNTHETIC PAVING MAT. LAPS IN HYBRID GEOSYNTHETIC PAVING MAT WILL NOT BE MEASURED.

BLOTTING THE SEALANT, SPREADING SAND OR ASPHALT CONCRETE OVER THE MEMBRANE TO PREVENT TIRES FROM STICKING TO THE SEALANT OR PULLING UP THE PAVING MAT, ROLLING TO RESTORE BOND, AND APPLICATION OF THE ASPHALT SEALANT (TACK COAT) WILL NOT BE MEASURED FOR DIRECT PAYMENT BUT SHALL BE CONSIDERED AN INCIDENTAL AND NECESSARY PART OF THE CONSTRUCTION INVOLVED AND THE COST THEREFORE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF THE PAVING MAT ITEM.

BASIS OF PAYMENT.

THE ACCEPTED QUANTITIES OF THE HYBRID GEOSYNTHETIC PAVING MAT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL – HYBRID GEOSYNTHETIC PAVING MAT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS (INCLUDING ASPHALT SEALANT), TOOLS, EQUIPMENT AND INCIDENTALS FOR DOING ALL THE WORK INVOLVED IN FURNISHING AND PLACING THE HYBRID GEOSYNTHETIC PAVING MAT COMPLETE IN PLACE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	HYBRID GEOSYNTHETIC PAVING MAT

Designer Note: This item may be considered for use on County sponsored resurfacing projects of any type.

CUY-P23

ITEM 254 – PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN (09/29/2003)

THE CONTRACTOR SHALL SCHEDULE HIS/HER OPERATIONS SUCH THAT THE PROPOSED ASPHALT CONCRETE INTERMEDIATE COURSE IS PLACED WITHIN SEVEN (7) DAYS OF THE PAVEMENT PLANING.

Designer Note: Typically use this note on resurfacing projects requiring pavement planing. For recycled asphalt pavements, the subsequent asphalt pavement course should be placed within ten (10) days.

CUY-P24

ITEM 609 – CURB, TYPE _____, AS PER PLAN (11/04/2013)

THE "CLASS QC 1" OR "CLASS QC MISC." CONCRETE SHALL CONFORM TO THE "MODIFICATIONS TO ITEM 499 CONCRETE – GENERAL" AS CONTAINED IN THE "SECTION 400 PROPOSAL NOTES" OF THE "CUYAHOGA COUNTY ENGINEER SPECIFICATION BOOKLET".

Designer Note: Typically use this note for all concrete curb items. Specifically list each curb type required in the plan note heading. If CUY-R11 and/or CUY-R12 plan notes are used and said note(s) cover all concrete curb used for the project, this note is not required.

CUY-P25

ITEM 407 – TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE, AS PER PLAN
ITEM 407 – TACK COAT, TRACKLESS TACK, SURFACE COURSE, AS PER PLAN (11/04/2013)

407.01 DESCRIPTION.

THE WORK DESCRIBED UNDER THIS SPECIFICATION IS TO BE PERFORMED PRIOR TO THE PLACEMENT OF THE INTERMEDIATE OR SURFACE COURSE AS REQUIRED FOR PREPARING AND TREATING THE SURFACE WITH AN NTSS-IHM TRACKLESS TACK PRODUCED BY BLACKLIDGE EMULSIONS, INC. ALL REQUIREMENTS OF THE ITEM 407 TACK COAT SPECIFICATION IN THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE MET EXCEPT AS MODIFIED HEREIN:

407.02 MATERIALS.

MATERIALS SHALL CONFORM TO THE FOLLOWING TYPICAL PHYSICAL PROPERTIES:

<u>PARAMETER</u>	<u>TEST METHOD</u>	<u>MIN.</u>	<u>MAX.</u>
SAYBOLT FUROL VISCOSITY, SFS @ 25° C	ASTM D88	15	100
STORAGE STABILITY, 24 HRS, %	ASTM D244	-	1
STORAGE STABILITY, 5 DAYS, %	ASTM D244	-	5
RESIDUE BY DISTILLATION, %	ASTM D244	50	-
OIL DISTILLATE, %	ASTM D244	-	1
SIEVE TEST, %	ASTM D244	-	0.3

TEST ON RESIDUE:

PENETRATION @ 25°C	ASTM D5	-	20
SOFTENING POINT RANGE DEG C	ASTM D36	65	-
SOLUBILITY, %	ASTM D2042	97.5	-
ORIGINAL BINDER DSR @ 82°C			
G*/SIN δ, 10 RAD/SEC	AASHTO T111	1	-

NOTE: SUPPLY CERTIFIED TEST DATA TO THE ENGINEER SHOWING THE MATERIAL SUPPLIED WAS TESTED FOR AND MEETS THE PROPERTIES LISTED ABOVE. PRODUCT SHOULD NOT CONTAIN FILLER SUCH AS CLAY, ETC.

407.03 EQUIPMENT.

SEE MANUFACTURER'S REPRESENTATIVE FOR CORRECT DISTRIBUTOR SETTINGS.

NOTE: THIS PRODUCT (NTSS-IHM) IS NOT COMPATIBLE WITH CATIONIC EMULSIONS (CRS, CQS, CMS, CSS, EC). ALL EQUIPMENT SHOULD BE THOROUGHLY CLEANED IF CATIONIC EMULSION WAS PREVIOUSLY PRESENT. IF PRODUCT IS TO BE STORED FOR AN EXTENDED PERIOD OF TIME, PRIOR TO APPLICATION, THE MATERIAL SHOULD BE AGITATED OR GENTLY CIRCULATED PRIOR TO USE.

407.04 WEATHER LIMITATIONS.

DO NOT APPLY THE ASPHALT MATERIAL IF THE SURFACE TEMPERATURE IS BELOW THE MINIMUM PLACEMENT TEMPERATURE FOR THE COURSE TO BE PLACED, AS SPECIFIED IN 401.06. NOTE: SUBJECT TO DAMAGE IF FROZEN. KEEP FROM FREEZING.

407.05 PREPARATION OF SURFACE.

ENSURE THAT THE SURFACE IS THOROUGHLY CLEAN AND DRY WHEN THE ASPHALT MATERIAL IS APPLIED. REMOVE MATERIAL CLEANED FROM THE SURFACE AND DISPOSE OF, AS DIRECTED BY THE ENGINEER.

407.06 APPLICATION OF ASPHALT MATERIAL.

UNIFORMLY APPLY THE ASPHALT MATERIAL WITH A DISTRIBUTOR PER THE REQUIREMENTS OF 407.06 EXCEPT AS NOTED. DILUTION IS NOT PERMITTED.

ALL NOZZLES AND SPRAY PATTERNS SHOULD BE IDENTICAL TO ONE ANOTHER ALONG THE DISTRIBUTOR SPRAY BAR. THE ANGLE OF THE NOZZLE SHOULD BE A 15 TO 30 DEGREE ANGLE TO THE SPRAY BAR AXIS TO MAXIMIZE OVERLAP OR AS RECOMMENDED BY THE NOZZLE MANUFACTURER. CONTACT THE MANUFACTURER'S REPRESENTATIVE FOR REQUIRED SPRAY NOZZLE SIZE AND DISTRIBUTOR AND NOZZLE SETTINGS.

APPLY PRODUCT AT AN AVERAGE RATE OF 0.04 TO 0.08 GALLON PER SQUARE YARD. RECOMMENDED APPLICATION TEMPERATURE IS 160°F TO 180°F. DO NOT EXCEED 180°F.

THE REQUIREMENT TO CONFORM TO 702.13 IS NOT APPLICABLE.

THE ENGINEER AND MANUFACTURER'S REPRESENTATIVE WILL APPROVE THE RATE OF APPLICATION, TEMPERATURE, DISTRIBUTOR SETTINGS AND AREAS TO BE TREATED BEFORE APPLICATION OF TACK COAT. THE ENGINEER WILL DETERMINE THE ACTUAL APPLICATION IN GALLON PER SQUARE YARD BY A CHECK ON THE PROJECT. THE APPLICATION IS CONSIDERED SATISFACTORY WHEN THE ACTUAL RATE IS WITHIN ±10% OF THE REQUIRED RATE AND THE MATERIAL IS APPLIED UNIFORMLY WITH NO VISIBLE EVIDENCE OF STREAKING OR RIDGING.

407.07 METHOD OF MEASUREMENT.

THE ENGINEER WILL VERIFY TRACKLESS TACK COAT BY THE NUMBER OF GALLONS OF UNDILUTED ASPHALT MATERIAL APPLIED.

407.08 BASIS OF PAYMENT.

THE ACCEPTED QUANTITY OF TRACKLESS TACK COAT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER GALLON FOR ITEM 407 - TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE, AS PER PLAN OR ITEM 407 - TACK COAT, TRACKLESS TACK, SURFACE COURSE, AS PER PLAN WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS FOR DOING ALL WORK INVOLVED IN FURNISHING AND PLACING THE ASPHALT MATERIAL.

ITEM	UNIT	DESCRIPTION
407	GALLON	TACK COAT, TRACKLESS TACK, INTERMEDIATE COURSE, AS PER PLAN
407	GALLON	TACK COAT, TRACKLESS TACK, SURFACE COURSE, AS PER PLAN

Designer Note: These items are applicable for use with most projects, except for those involving cationic emulsions (which are associated with certain types of recycling processes, for instance). Note that the Item 407 – Tack Coat, Trackless Tack, Surface Course, As Per Plan item is typically associated with the heavier application rate to be applied first onto planed surfaces, bases, etc. The Item 407 – Tack Coat, Trackless Tack, Intermediate Course, As Per Plan item is typically applied at a lighter rate onto the proposed intermediate course prior to paving the final surface course. For estimating purposes, it is recommended that a rate of 0.08 gallon/square yard is used for Item 407 – Tack Coat, Trackless Tack, Surface Course, As Per Plan while a rate of 0.04 gallon/square yard is used for Item 407 – Tack Coat, Trackless Tack, Intermediate Course, As Per Plan.