



October 28, 2022

Stowe STP 0235(14) & NRBC 18GVT11
Smugglers' Notch Parking and Stormwater Improvement Project

Addendum #2

This addendum provides the following:

1. Revised pavement design criteria. Reducing requirement from 65 gyration mix to 50 gyration mix. Shown on revised project plans, Sheet 2.
2. Revised Special Provision for the Bituminous Concrete Pavement, Small Quantity item. Revised specification allows use of Marshall Mix.

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TRAFFIC DATA

VT ROUTE 108	AADT (2021) 1684
POSTED SPEED	
STOWE MM 7.55 - MM 8.63 = 40 MPH	
CAMBRIDGE MM 0.00 - MM 2.72 = 40 MPH	

SUPERPAVE BITUMINOUS CONCRETE PAVEMENT MIXTURE DESIGN CRITERIA	
DESIGN NUMBER OF GYRATIONS	50
PERFORMANCE GRADE ASPHALT BINDER:	SEE TABLE 406.03F

VAOT STANDARDS

B-71a	STANDARD FOR RESIDENTIAL DRIVES	04/07/2020
B-71b	STANDARD FOR COMMERCIAL DRIVES	04/07/2020
C-10	CURBING	02/17/2022
E-1	TREE PLANTING	07/11/2017
E-2	SHRUB PLANTING	07/11/2017
E-3	PERENNIAL GROUND COVERS AND VINES	07/11/2017
E-10	ROLLED EROSION CONTROL PRODUCT, TYPE I	04/07/2020
E-11	CHECK DAM, TYPE I	04/07/2020
E-12	STABILIZED CONSTRUCTION ENTRANCE	04/07/2020
E-14	INLET PROTECTION DEVICE, TYPE II	04/07/2020
E-15	SILT FENCE	04/07/2020
E-121	STANDARD SIGN PLACEMENT CONVENTIONAL ROAD	08/08/1995
E-146	REGULATORY SIGN DETAILS	09/20/1995
E-163	TUBULAR STEEL SIGN POST	04/07/2020
F-20	PLANK RAIL FENCE	03/22/2017
T-1	TRAFFIC CONTROL GENERAL NOTES	04/25/2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08/06/2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08/06/2012
T-30	CONSTRUCTION SIGN DETAILS	02/17/2022
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08/06/2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01/02/2013

PROJECT NAME & NUMBER:
STOWE STP 0235(14) & NBRC 18GVTII

FILE NAME: 625811.idx.dgn PLOT DATE: 10/28/2022
PROJECT LEADER: K. ROBIE DRAWN BY: T. MATTHEWS
DESIGNED BY: T. MATTHEWS CHECKED BY: K. ROBIE
INDEX OF SHEETS SHEET 2 OF 103

NO.	DATE	DESCRIPTION	BY	CK'D
2	10/28/2022	CHANGED DESIGN NUMBER OF GYRATIONS	TAM	KAR

BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY

1. DESCRIPTION. This work shall consist of constructing one or more courses of bituminous mixture on a prepared foundation in accordance with these specifications and the specific requirements of the type of surface being placed, and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the Plans or established by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and the appropriate provisions of Section 406 of the Standard Specifications.

2. MATERIALS. Materials shall meet the requirements of the following Subsections:

Performance-Graded Asphalt Binder702.02
 Emulsified Asphalt, RS-1H or CRS-1H702.04
 Aggregate for Bituminous Concrete Pavement.....704.10

Aggregate shall meet requirements relating to Section 406, where so specified.

The grade of PG asphalt binder used to produce bituminous concrete pavement shall be 70-28. Substitutions will be accepted based on availability where the upper end temperature value is greater than 70°C (158°F) and the lower end temperature value is less than -28°C (18°F).

3. DESIGN MIX TYPES. Design mix types may be substituted based on mix availability. Allowable mix type substitutions will be accepted on a one to one thickness relationship, except as listed in Tables 1 and 2 below.

TABLE 1 – ALLOWABLE 1-1/2” MIX TYPE IVS SUBSTITUTIONS

Design ESALs (millions)	Design	Allowable Substitution	
		406.35 Superpave Bituminous Concrete Pavement	406.25 Bituminous Concrete Pavement ¹
< 0.3	Type IVS	Type III	Type III
0.3 to < 10	Type IVS	Type III	--
¹ Per Section 406.			

TABLE 2 – ALLOWABLE 3-1/2” MIX TYPE IIS SUBSTITUTIONS

Design ESALs (millions)	Design	Allowable Substitution	
		406.35 Superpave Bituminous Concrete Pavement	406.25 Bituminous Concrete Pavement ¹
< 0.3	Type IIS	Type I	Type I
0.3 to < 10	Type IIS	Type I	--
¹ Per Section 406.			

4. COMPOSITION OF MIXTURE.

- (a) Gradation. Gradation shall meet the requirements of Section 406.
- (b) Design Criteria. Design Criteria shall meet the requirements of Section 406.
- (c) Mix Design. Standard mix design will be in accordance with Subsection 406.03B with an n value of 65 gyrations. Allowable substitutions based on pre-existing approved mix designs and/or n values for intended Contract suppliers are listed in Table 3 below. A request for substitutions must be submitted in writing to the Engineer a minimum of 10 working days prior to production. Any substitutions from the standard mix design or mix types as detailed in the Plans shall not result in any increase in cost to the Agency.

TABLE 3 – ALLOWABLE SPECIFICATION SUBSTITUTIONS

Design ESALs (millions)	Design	Acceptable Specification Substitution	
	Superpave Bituminous Concrete Pavement (Gyrations)	Bituminous Concrete Pavement ¹ (75 Blow)	Med. Duty Bituminous Concrete Pavement ¹ (50 Blow)
< 0.3	50	✓	✓
0.3 to < 10	65 ²	✓	--
¹ Per Section 406. ² Standard mix design specification.			

(d) Quality Acceptance.

- (1) General. Acceptance sampling and testing will be conducted in accordance with the Agency’s Quality Assurance Program as approved by FHWA. Bituminous concrete mixtures designated under these specifications will be sampled a minimum of once per day of production or 500 tons (sublot), or other sublot size deemed appropriate, and evaluated by the Agency for each mix type (each mix design) in accordance with the following acceptance guidelines.
- (2) Acceptance Guidelines. Temperature of the bituminous mixture shall be tested using the Verified Thermometer test method and PG Asphalt Binder content determined from the batch slip. Gradation shall be tested in accordance with AASHTO T 30. Mixture volumetric properties (air voids and VMA) shall be calculated in accordance with Subsections 406.03A(b) or 406.03B(b), as appropriate.
- (3) Non-Compliant Material.
 - a. Rejection by Contractor. The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material at no expense to the Agency. Any such new material will be sampled, tested, and evaluated for acceptance.

- b. Pay Adjustment. For any non-compliant material outside the production testing tolerances contained in Table 406.03G, the representative material (sublot) shall be assessed a mixture pay adjustment according to the equation below and Table 4 Mixture Pay Adjustment.

$$\text{Dev.} = \frac{PT+OT}{PT}$$

Dev. = Sample deviation from the allowed tolerance

PT = Production tolerance (taken from Table 406.03G, e.g. 1.0 for air voids)

OT = Out of tolerance value (taken from sample report)

TABLE 4 – MIXTURE PAY ADJUSTMENT

Criteria	Mixture Pay Factor (PF _M)			
	Dev. ≤ 1.0	1.0 < Dev. ≤ 1.5	1.5 ≤ Dev. ≤ 2.0	Dev. > 2.0
AIR Voids	0	-0.05	-0.25	Remove
VMA	0	-0.05	-0.25	Remove
Aggregate passing No. 200 sieve	0	-0.05	-0.25	Remove
Aggregate larger than No. 200 sieve	0	-0.05 applied for each sieve out of tolerance	-0.10 applied for each sieve out of tolerance	Remove if any sieve out of tolerance
Filler/AC Ratio	See note 2	See note 2	See note 2	See note 2

1. Deductions will be applied per the table above in conjunction with the testing tolerances as contained in Table 406.03G JOB MIX FORMULA PRODUCTION TOLERANCES.

2. A pay factor of -0.05 will be applied and coupled with any other applicable deduction in any case that the filler/asphalt ratio is outside the criteria as contained in Table 406.03B or Table 406.03E

3. The total deduction to be applied to any mix will be the sum total of all applicable deductions as contained in the table above.

- (e) Boxed Samples. If Agency plant inspectors are not available for daily testing and inspection functions, then box samples will be taken by the Engineer at the project site to afford verification of mixture volumetrics/properties. Boxed samples will be processed and results reported to the Engineer within ten working days of being received at the testing facility.

Gradation shall be tested in accordance with AASHTO T 30. Maximum Specific Gravity shall be tested in accordance with AASHTO T 209. Boxed samples will be assessed a mixture pay adjustment factor of 0.000.

5. COMPACTION. Special Provision (Bituminous Concrete Pavement, Small Quantity) will be analyzed for density according to the procedure specified below.

The density of the compacted pavement shall be at least 92.0%, but not more than 97.0%, of the corresponding daily average maximum specific gravity for each mix type (each mix design) of bituminous mix placed during each day.

The Contractor shall, prior to performing any paving operations, submit to the Engineer for approval the proposed rolling pattern and compaction equipment to be used on the project. Random investigative cores will be taken on the first day's production of any pavement course to verify effectiveness of the proposed rolling pattern and equipment.

Pending results of the investigative cores, necessary adjustments to the proposed rolling pattern and/or equipment shall be made by the Contractor to achieve densities as directed by the Engineer.

6. METHOD OF MEASUREMENT. The quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) to be measured for payment will be the number of tons for a lot of mixture (each type) complete in place in the accepted work (Q) as determined from the weigh tickets.

7. BASIS OF PAYMENT. The measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) will be paid for at the Contract unit price per ton. Payment shall be full compensation for furnishing, mixing, hauling, and placing the material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The costs of furnishing testing facilities and supplies at the plant will be considered included in the Contract unit price of Special Provision (Bituminous Concrete Pavement, Small Quantity).

The costs of obtaining, furnishing, transporting, and providing the straightedges required by Subsection 406.16, will be paid for under the appropriate Section 631 pay item included in the Contract.

The costs associated with obtaining samples for acceptance testing will be incidental to the cost of Special Provision (Bituminous Concrete Pavement, Small Quantity).

When not specified as items in the Contract, the costs of cleaning and filling joints and cracks, sweeping and cleaning existing paved surfaces, the emulsified asphalt applied to tack these surfaces, and tacking of manholes, curbing, gutters, and other contact surfaces will not be paid for directly, but will be incidental to Special Provision (Bituminous Concrete Pavement, Small Quantity).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.680 Special Provision (Bituminous Concrete Pavement, Small Quantity)	Ton