

## SECTION 311 - ASPHALT TREATED PERMEABLE BASE

**311.01 Description.** This work includes constructing an asphalt treated permeable base (ATPB) to the lines, grades, and dimensions according to the contract.

**311.02 Materials.** Materials shall meet the following:

Bituminous Material (Asphalt Cement, Grade AR 60) 702.01

The aggregate shall conform to Subsection 703.09 except that the grading requirement shall be:

Sieve Size	Percent Passing by Weight
1"	100
3/4"	90-100
1/2"	35-65
3/8"	20-45
No. 4	0-10
No. 8	0- 5
No. 200	0- 2

ATPB includes a mixture of aggregate and asphalt binder according to the contract.

The Contractor shall add bituminous binder in an amount between 2.0 to 4.0 percent, based on the dry weight of the aggregate, to the mixture as ordered by the Engineer. \*

The Contractor may resolve the asphalt content of the asphalt mixture by the nuclear gage according to Hawaii Test Method HWY-LQ-25. \*

### 311.03 Construction Requirements.

**(A) Preparation of Surface.** The surface shall conform to the compaction and elevation tolerances specified for that surface involved. Also, the surface shall be free of loose or extraneous material.

If the prepared surface is untreated base, subbase, or subgrade, the Contractor shall apply prime coat or other suitable membrane to the surface according to the contract. Prime coat shall conform to Section 408 - Prime Coat. \*

**(B) Storing, Proportioning, Mixing and Transporting.** The Contractor shall store, proportion, and mix the materials for ATPB according to Subsection 401.03(B)(1) - Bituminous Mixing Plant, 401.03(B)(2) - Hauling Equipment, and 401.03(D) - Plant Operation, except : \*

(1) The Contractor need not separate the aggregate into sizes. |

(2) The Contractor shall not use ATPB stored over two (2) hours in \*|  
the work. \*|

**(C) Placing, Spreading, Compacting, and Shaping ATPB.** Placing of ATPB |  
shall conform to Subsections: |

(1) 401.03(B)(3) - Bituminous Pavers, |

(2) 401.03(B)(4) - Rollers, |

(3) the first paragraph of 401.03(E) - Spreading and Finishing, and |

(4) 401.03(F) - Compaction. |

The Contractor shall place ATPB in compacted lifts not exceeding six \*|  
(6) inches. The Contractor shall compact ATPB according to one of the \*|  
following methods: \*|

(1) One complete coverage on each lift with a steel-tired, two (2) |  
axle tandem roller that will produce an operating weight of not more |  
than one hundred and ten (110) pounds per linear inch of steel tire |  
width. Compaction shall begin when the temperature of the base |  
material is less than two hundred fifty (250) degrees Fahrenheit. |  
Also, the Contractor shall complete the compaction before the base \*|  
mixture is less than two hundred (200) degrees Fahrenheit. The \*|  
Contractor shall not cool the ATPB with water. \*|

(2) One complete coverage on each lift with a steel-tired, two (2) |  
axle tandem roller weighing not less than eight (8) tons nor more |  
than twelve (12) tons. Compaction shall begin when the temperature |  
of the base mixture is less than one hundred fifty (150) degrees |  
Fahrenheit. Also, the Contractor shall complete the compaction \*|  
before the base mixture is less than one hundred (100) degrees \*|  
Fahrenheit. The Contractor shall not cool the ATPB with water. \*|

The Contractor may use the vibratory rollers meeting the above |  
requirements provided the vibratory unit is turned off. |

The finished surface of ATPB shall be uniform and shall not vary |  
more than half (1/2) inch above or below the grade according to the |  
contract. |

The Contractor shall exercise care to prevent contamination of ATPB. \*|  
The Contractor shall remove and replace the contaminated ATPB at no cost \*|  
to the State. \*|

The Contractor shall repair the damage to the ATPB promptly at no \*|  
cost to the State and according to the contract. \*|

**(D) Surfaces Not Within Tolerance.** The Contractor shall remove and replace the ATPB with a surface higher than half (1/2) inch above the grade established by the Engineer with ATPB that complies with the contract. If permitted by the Engineer, the Contractor may remove high spots to within specified tolerance by methods that does not produce contaminating fines nor damage the base to remain in place. The Engineer will not permit grinding.

The Contractor shall remove and replace hardened ATPB with a surface lower than half (1/2) inch below grade established by the Engineer with ATPB that complies with the contract. If permitted by the Engineer, the Contractor shall fill the low areas with asphalt concrete conforming to the requirements for the lowest layer of asphalt concrete the Contractor shall place as pavement. The Contractor shall do this as a separate operation before the Contractor places the lowest layer of pavement.

**311.04 Method of Measurement.** The Engineer will measure the ATPB by the ton according to Subsection 109.01 - Measurement of Quantities except the Engineer will not require conversion of ATPB quantity to tonnage based on bulk (dry) specific gravity. There will be no allowance for ATPB placed outside said dimensions.

**311.05 Basis of Payment.** The Engineer will pay for the accepted quantity of ATPB at the contract unit price per ton. The price shall be full compensation for the completed base, including materials, furnishing labors, tools, equipment, and incidentals necessary to complete the work.

The Engineer will consider full compensation for removing and filling low areas with ATPB or filling low areas with asphalt concrete as included in the contract price paid per ton for ATPB. The Engineer will not allow additional compensation.

The Engineer will make payment under:

Pay Item	Pay Unit
Asphalt Treated Permeable Base	Ton