

**Item No. 211S
Recycling Existing Aggregate**

211S.1 Description

This item governs: (1) breaking up existing asphalt pavement surfaces, (2) salvaging and placing existing broken up asphalt surface and flexible base materials on an existing subgrade and (3) compacting the courses in conformity with typical sections indicated in the Drawings, directions of the Engineer or designated representative and requirements herein specified.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text and accompanying tables, the inch-pound units are given preference followed by SI units shown within parentheses.

211S.2 Submittals

The submittal requirements of this specification item may include:

- A. Source, gradation and test results for the recycled existing material, and
- B. Field density test results for in-place compacted recycled aggregate layers.

211S.3 Materials

Materials required for use under this specification item shall conform to the following specification items as applicable:

Description of Activity	Item No.
Street Excavation	110S
Hydrated Lime and Lime Slurry	202S
Lime Treatment for Materials in Place	203S
Portland Cement Treatment for Materials in Place	204S
Flexible Base (Crushed Stone)	210S
Asphalts, Oils and Emulsions	301S
Emulsified Asphalt Treatment	310S
Two Course Surface Treatment	320S
Hot Mix Asphaltic Concrete Pavement	340S

211S.4 Construction Methods

The existing roadway right of way shall be cleared of any vegetation or contaminants that would be in the path of the recycling equipment. The existing asphaltic concrete surface shall be scarified, loosened and broken up and pulverized in place into 1 inch (25 mm) maximum size pieces. The salvaged asphaltic concrete surface materials will be removed prior to scarifying the underlying existing base material. The Contractor shall make any necessary provision to prevent contamination of the asphaltic material during and after

removal. When the existing pavement consists only of a surface treatment, it will not be necessary to remove the surface treatment before scarifying the underlying existing base material.

The existing base, with or without an existing asphaltic concrete pavement, shall be cleaned of all objectionable materials by blading, brooming or other approved methods, prior to scarifying. After cleaning, the existing material shall be scarified for its full width and depth, unless otherwise shown on the Drawings. In no case shall the underlying subgrade be disturbed. Unless otherwise shown on the Drawings, the materials shall be broken into particles of no more than 2½ inches (63 millimeters) in largest dimension.

All salvaging operations, including temporary stockpiling or windrowing, shall be conducted in such a manner as not to interfere with traffic, proper drainage or the general requirements of the Work. All material shown on the Drawings to be salvaged shall be kept reasonably free of soil from the subgrade or roadbed during the salvaging operation. The scarified material shall be removed from the roadbed using equipment approved by the Engineer or designated representative. The salvaged material may be placed in temporary stockpiles or windrows until sufficient subgrade has been prepared to receive the material.

Prior to replacing the salvaged material, the subgrade shall be constructed and shaped to conform to the typical sections as shown on the Drawings or as established by the Engineer or designated representative. This work shall be done in accordance with the provisions of Standard Specification Item 201S, "Subgrade Preparation".

Prior to replacing the salvaged material, when shown on the Drawings and when directed by the Engineer or designated representative, the Contractor shall proof roll the roadbed in accordance with Standard Specification Item 236S, "Proof Rolling". Soft spots, unstable or spongy areas shall be undercut, backfilled with suitable material and compacted by approved methods.

The salvaged base material shall be mixed, spread and shaped to conform to the typical sections shown on the Drawings. However, in no case, shall the underlying subgrade be disturbed. New base material and/or salvaged asphaltic materials, when shown on the Drawings to be mixed with the scarified base materials, shall be placed on the existing scarified material, and uniformly incorporated.

Unless shown otherwise on the Drawings, each lift of salvaged material shall be sprinkled as required and compacted to the extent necessary to provide not less than 98 percent density as determined by TxDOT Test Method Tex-113-E. Field density determination shall be made in accordance with TxDOT Test Method Tex-115-E

If the reworked base material, due to any reason or cause, loses the required stability, density or finish before placement of the next lift of the reworked base material, placement of the next course of material or prior to acceptance of the project, it shall be recompacted and refinished at the Contractor's expense. All initial testing will be paid for by the City of Austin. All retesting shall be paid for by the Contractor.

211S.5 Measurement

Recycled aggregate will be measured by the cubic yard (cubic meters: 1 cubic meter equals 1.307 cubic yards), or by the square yard (square meter: 1 square meter equals 1.196 square yards) of the thickness indicated on the Drawings, complete in place.

211S.6 Payment

This item will be paid for at the contract unit bid price for "Recycling Existing Aggregate". The unit bid price shall include full compensation for all work herein specified, including: scarifying, loosening and breaking up the existing asphaltic surface and base materials; removing, saving, loading, hauling and stockpiling materials; placing of salvaged materials with or without additional base materials; all water required and all equipment, tools, labor and incidentals necessary to complete the work. Any new materials required shall be paid under their respective items listed above, but the pulverizing of new and old materials shall be incidental to complete the work.

Payment will be made under:

- Pay Item No. 211S-A:** Recycling Existing Aggregate - Per Cubic Yard.
- Pay Item No. 211S-B:** Recycling Existing Aggregate - ____ In. Per Square Yard.

End

<u>SPECIFIC</u> CROSS REFERENCE MATERIALS
Specification 211S, "Recycling Existing Aggregate"

City of Austin Standard Specifications

<u>Designation</u>	<u>Description</u>
Item No. 110S	Street Excavation
Item No. 201S	Subgrade Preparation
Item No. 202S	Hydrated Lime and Lime Slurry
Item No. 203S	Lime Treatment for Materials in Place
Item No. 204S	Portland Cement Treatment For Materials in Place
Item No. 210S	Flexible Base
Item No. 236S	Proof Rolling
Item No. 301S	Asphalts, Oils, and Emulsions
Item No. 310S	Emulsified Surface Treatment
Item No. 320S	Two Course Surface Treatment
Item No. 340S	Hot Mix Asphaltic Concrete Pavement

Texas Department of Transportation: Manual of Testing Procedures

<u>Designation</u>	<u>Description</u>
Tex-113-E	Laboratory Compaction Characteristics and Moisture-Density Relationship of Base Materials and Cohesionless Sand
Tex-115-E	Field Method for Determination of In-Place Density of Soils & Base Materials

RELATED CROSS REFERENCE MATERIALS

City of Austin Standard Specifications

<u>Designation</u>	<u>Description</u>
Item No. 101S	Preparing Right of Way
Item No. 102S	Clearing and Grubbing
Item No. 104S	Removing Portland Cement Concrete
Item No. 111S	Excavation
Item No. 230S	Rolling (Flat Wheel)
Item No. 232S	Rolling (Pneumatic Tire)
Item No. 307S	Tack Coat

Texas Department of Transportation: Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

<u>Designation</u>	<u>Description</u>
Item No. 204	Sprinkling
Item No. 210	Rolling (Flat Wheel)
Item No. 211	Rolling (Tamping)
Item No. 213	Rolling (Pneumatic Tire)
Item No. 300	Asphalts, Oils and Emulsions
Item No. 301	Asphalt Antistripping Agents
Item No. 345	Asphalt Stabilized Base (Plant Mixed)

Texas Department of Transportation: Manual of Testing Procedures

<u>Designation</u>	<u>Description</u>
Tex-103-E	Determination of Moisture Content of Soil Materials
Tex-114-E	Laboratory Compaction Characteristics & Moisture Density Relationship of Subgrade & Embankment Soil