SECTION 02230 - GRAVEL BASE COURSES

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

A. Documents affecting Work of this Section include, but are not necessarily limited to, The CONDITIONS OF THE CONTRACT General Conditions, Supplementary Conditions, Addenda and all Sections of Division 1, which are hereby made a part of this Section.

B. Coordinate Work with that of other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of the Work.

C. The "Standard Specifications" referred to herein is the book entitled *"Standard Specifications, Highways and Bridges"* published by the State of Maine Department of Transportation (latest date), and Supplemental Specifications in Force, excluding the following portions thereof:

Division 100, Sections l02 through l09 numerical index of payment items included in each section.

Those Sections of the aforementioned Standard Specifications which are cited herein are applicable to the Work of this Contract as they may be modified, amplified or added to by this Section.

1.02 DESCRIPTION OF WORK:

A. Provide labor, materials, equipment and services necessary for proper and complete installation of the gravel subbase and base courses for pavement, sidewalk, and concrete slab areas, as indicated on the Drawings and herein specified:

1. Preparation of subgrade, including installation of geotextile where required at concrete slabs, etc.

2. Gravel subbase course.

3. Gravel base course.

4. Materials and compaction testing as required.

1.03 QUALITY ASSURANCE:

A. General: Comply with requirements of Division 1 Sections for Submittals and Quality Control.

B. Codes and Standards: The Work under this Section shall conform to the following, except as may be modified herein:

1. American Society for Testing and Materials (ASTM), Standard Specifications and Methods of Testing.

2. State of Maine, Department of Transportation, *Standard Specifications,* Latest Edition.

1.04 SUBMITTALS:

A. General: Comply with requirements of Division 1 Sections for Submittals and Quality Control.

B. Furnish samples, test reports, and materials certifications as required for gravel base and sub-base.

C. Test Results:

1. Mechanical analysis (ASTM D421) and moisture-density curve (ASTM D1557M) test results for gravel subbase and base courses.

2. Field Density test results (ASTM D2922).

C. Submit product specification literature for geotextile fabric for slab subgrades.

1.05 PRODUCT HANDLING:

A. Store materials properly to prevent damage, deterioration and inclusion of foreign matter. Aggregates shall be stockpiled in a well drained location.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Geotextile at Concrete Slab subgrades: Heavy-duty woven polypropylene stabilization fabric; Mirafi 600X.

B. Gravel Subbase: Clean gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3-inch sieve shall meet the grading requirements of MDOT *Standard Specifications* Section 703.06(b), Type D, as presented below:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1/4 in.	25 - 70
No. 40	0 - 30
No. 200	0 - 7

Aggregate for subbase shall not contain particles of rock which will not pass the 6-inch square mesh sieve.

C. Crushed Aggregate Base: Screened or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3-inch sieve shall meet the grading requirement of Maine DOT *Standard Specifications*, Section 703.06(a), Type A, as presented below:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
1/2 in.	45 - 70
1/4 in.	30 - 55
No. 40	0 - 20
No. 200	0 - 5

Type A aggregate for base shall not contain particles of rock which will not pass the 2-inch square mesh sieve.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION FOR PAVEMENTS:

A. Form, shape and roll subgrade to conform to subgrade elevations and cross-section of finished pavement. Roller: ten-ton minimum weight in all open areas; suitable equipment in confined spaces.

B. Remove stones greater than 4" from subgrade to l2" depth. Fill depressions with suitable material. When surface areas become impervious due to concentrations of fines, lightly scarify and recompact. In severe cases, remove such material and replace with suitable soil as directed.

C. Compact subgrade to 92% of maximum laboratory density (ASTM-D 2922). Shape to smooth surface free of irregularities. Protect from damage by proper construction of drainage swales as shown and directed, prior to placement of gravel subbase.

D. At concrete slab locations as detailed, and/or as directed by the Geotechnical Engineer, install geotextile fabric on subgrade, prior to placing subbase gravel.

3.02 INSPECTION AND TESTING:

A. Prior to placement of any subbase gravel, the Geotechnical Engineer/Engineer shall inspect and approve the subgrade.

B. See Item 1.04 of this Section for required tests and test reports.

C. Refer to Section 02220-Excavation, Backfill and Compaction, SS 3.14 for general standards and locations for testing. The Geotechnical Engineer or his representative will designate specific locations for testing.

3.03 GRAVEL SUBBASE:

A. On prepared and approved subgrade, construct gravel subbase to conform to details on Drawings and these Specifications; note differing depth requirements for roadway versus parking areas or

sidewalk. Gravel shall consist of sound gravel particles free of thin shale, clay or organic material, with no stone over 6" in size, with gradation as specified in SS 2.01 B.

B. Construct subbase in one course when depth required is 8 in. or less, and two or more courses when depth required is over 8 in. Compact each course to 95% of maximum laboratory density. Course thicknesses required are after compaction.

C. Conform construction methods to MDOT *Standard Specifications*, Section 304.03 and 304.04, and these Specifications.

3.04 CRUSHED AGGREGATE BASE:

A. On compacted subbase, construct crushed aggregate base to lines and grades to conform with details on Drawings and these Specifications. Material shall be as specified in SS 2.01 C. Coordinate base course with concrete or granite curb installation where present.

B. Construct base in one course when depth required is 6 in. or less, and two or more courses when depth required is over 6 in. Compact each course to 95% of maximum laboratory density. Thickness required is after final compaction.

C. Construction methods shall conform to MDOT Standard Specifications, Section 304.03, 304.04 and 304.05, and these Specifications.

END OF SECTION