

CITY OF ODESSA
STANDARD SPECIFICATIONS

ITEM 23
FLEXIBLE BASE (CALICHE)

23.1 DESCRIPTION

This item shall consist of a base course for surface course or for other base courses; shall be composed of caliche and stone materials; and shall be constructed herein specified in one or more courses in conformity with the typical sections shown on plans and to the lines and grades as established by the Engineer.

23.2 MATERIAL

The material shall be obtained from approved sources. It shall consist of argillaceous limestone, calcareous or calcareous clay particles, with or without stone, conglomerate, gravel, sand or other granular materials. The material shall be approved by the Engineer at the source. All the acceptable material shall be screened and the oversize shall be crushed and returned to the screened material in such a manner that a uniform product will be produced. The processed material, when properly slaked and tested by standard laboratory methods, shall meet the following requirements:

1. Gradation

The gradation of the crushed stone flexible base material shall meet the following limits when tested by ASTM C136:

<u>Sieve Size</u>	<u>Percent Passing</u>
1-3/4"	100
7/8"	65-90
3/8"	50-70
No. 4	35-55
No. 40	15-30
No. 200	0-16

Base thickness shall be as designed with minimum 6" on local streets and minimum 8" on all others. The foregoing base thicknesses shall apply to new construction; however, in the case of the repairing or patching of any street, a base thickness of at least 12" is required.

2. Los Angeles Abrasion

The coarse aggregate of the crushed stone flexible base material shall have a percentage of wear not to exceed 50 when tested in accordance with ASTM C131.

3. Liquid Limit and Plasticity Index

The portion of the crushed stone flexible base material passing the No. 40 sieve after slaking and washing shall have a liquid limit not to exceed 45, a plasticity index not to exceed 12, and a linear shrinkage not to exceed 8.5% when tested in accordance with ASTM D423 and D424.

23.3 MATERIAL SOURCES

Should the Contractor elect to procure the specified material from local pits, the material shall be secured from sources approved by the Engineer. These pits, as utilized, shall be opened up in such a manner as to immediately expose the vertical faces of all of the various strata of acceptable material and unless otherwise directed, the materials shall be secured (by blasting if necessary) in successive vertical cuts extending through all of the exposed strata. Preliminary information on the source of crushed stone base material shall be submitted to the Engineer 30 days prior to use for evaluation of the quality with respect to the material requirements. This information shall consist of suitable test data covering the specified requirements and should be evidence of the current material production. This data will not be used for blanket approval of the source, but will be used to issue an initial acceptance, if indicated by the test results.

Stockpiling of material shall be designated as to location, height, width and made up of a certain amount of layers as determined by the Engineer.

23.4 CONSTRUCTION METHODS

A. Preparation of Subgrade

The street or roadbed shall be excavated and shaped in conformity with the typical sections shown on plans and to the lines and grades as established by the Engineer. All unstable or otherwise objectionable material shall be removed from subgrade and replaced with approved material. All holes, ruts and depressions shall be filled with approved material and if required, the subgrade shall be thoroughly wetted with water and reshaped and rolled to the extent directed in order to place the subgrade in a n acceptable condition to receive the base material. The surface of the subgrade shall be finished true to line and grade as established and in conformity with the typical section shown on plans. Any deviation in excess of ½ inch in cross section and in a length of 16 feet measured longitudinally shall be corrected by loosening, adding, or removing material, reshaping and compacting by sprinkling and rolling.

Sufficient subgrade shall be prepared in advance to insure satisfactory prosecution of the work. Material excavated in the preparation of the subgrade shall be utilized in the construction of adjacent shoulders, parkways and slopes, or otherwise disposed of as directed, and any additional material required for the completion of the shoulders, parkways, and slopes shall be secured from sources indicated on plans or designated by the Engineer.

B. First Course

Immediately before placing the base material, the subgrade shall be checked as to conformity with grade and section.

The material shall be delivered in approved vehicles of a uniform capacity and it shall be the charge of the Contractor that the required amount of specified material shall be delivered in each 100-foot station. Material deposited upon the subgrade shall be spread and shaped the same day. In the event inclement weather or other unforeseen circumstances render impractical the spreading of the material during the first 24 hour period, the material shall be scarified and spread as directed by the Engineer. The material shall be sprinkled and shall then be bladed, dragged and shaped to conform to typical sections as shown on the plans. All areas and "nests" of segregated coarse or fine material shall be corrected or removed and replaced with well graded material, as directed by the Engineer. If additional binder is considered desirable or necessary after the material is spread and shaped, it shall be furnished and applied in the amount directed by the Engineer. Such binder material shall be carefully and evenly incorporated with the material in place by scarifying, harrowing, brooming or by other approved methods. This course shall then be sprinkled as required and rolled as directed until a uniform compaction is secured. Throughout this entire operation, the shape of the course shall be smooth and in conformity with the typical sections shown on plans and to the established lines and grades. In that area on which pavement is to be placed, any deviation in excess of 1/4" in cross section and in a length of 16 feet measured longitudinally, shall be corrected by loosening, adding, or removing material, reshaping and recompacting by sprinkling and rolling. All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the areas affected, adding suitable material as required, reshaping and recompacting by sprinkling and rolling.

The utilization of traffic to compact and bind the base course or courses is an essential part of the contract and is of prime importance to the satisfactory completion of the work. As directed by the Engineer, each course shall be opened to traffic, and the Contractor shall direct and distribute the traffic uniformly over the entire width of the course. During the period traffic is being directed over the course, the surface shall be satisfactorily maintained by the use of a sufficient number of approved blades, drags, and such other equipment as is required and these operations shall continue until the base course is sufficiently compacted and bound to permit the application of the next course.

C. Succeeding Courses

Construction methods shall be the same as prescribed for the first course.

All traffic allowed on the completed base shall comply with State and local laws governing traffic on highways and streets.

23.5 MEASUREMENT

Work and accepted material as prescribed for this item shall be measured by the square yard of completed and accepted base course of the required thickness and number of courses.

23.6 PAYMENT

The work performed and material furnished as prescribed by this item for “Flexible Base” will be paid for at the unit price bid, which price shall be full compensation for shaping and fine grading the roadbed; for furnishing all materials; for all royalty and freight involved; for loosening or blasting; for excavation, screening and crushing; for loading all materials; for hauling and delivering on the work; for spreading, blading, dragging, shaping and finishing; for all manipulations, sprinkling and rolling; for all labor, tools, equipment and incidentals necessary to complete the work.

ADDENDA FOR ASSESSMENT PAVING PROJECTS ONLY:

MEASUREMENT

Work and accepted material as prescribed for this item shall not be measured separately. Measurement of work and accepted material as prescribed for this item shall be included in the measurement for “pavement”, and not other payment shall be made for flexible base.