

DIVISION 2 - SITEWORK

SECTION 02010 - SUBSURFACE INVESTIGATION (SOIL REPORT)

1. GENERAL

- 1.1 Geotechnical Investigation (Sub-surface Soils Tests) for the project site has been performed and a report of that investigation (Soil Report) is bound in the project manual.
2. SUBSURFACE INFORMATION
2.1 Log of borings indicates materials penetrated at specific locations. Owner and/or Architect and/or Engineer assume no responsibility for any conclusions or interpretations made by contractor related to information included in the Report.

3. REQUIREMENT

- 3.1 Contractor shall read and otherwise become completely familiar with contents of the Soil Report, including, but not limited to, its recommendations for preparation of subsoil, bases, sub-bases and fill and construction of building foundations and parking surfaces.
3.2 Structural engineer to state applicable data for final design from the Soils Report. Reference Drawings for details.

DIVISION 2 - SITE WORK

SECTION 02110 - SITE CLEARING

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for site clearing work indicated on the Drawings and specified herein.
1.2 WORK INCLUDED BUT NOT INCLUSIVE
1.2.1 Surface debris removal
2 Topsoil stripping and storage
3 Grubbing
4 Tree removal
5 Location and protection of reference points

1.3 RELATED WORK SPECIFIED ELSEWHERE

- 1.3.1 Site grading
2 Excavation for structures
3 Trenching
1.4 REGULATORY REQUIREMENTS
1.4.1 Governing Authorities:
2 Utilities:
2.1 NOT APPLICABLE

3.1 GENERAL

- 3.1.1 Remove trees, grass, weeds, roots, and other vegetation from the area to be excavated, filled or graded. Consult Owner prior to beginning removal of trees and/or shrubs.
3.2 PREPARATION
3.2.1 Verify that existing plant life and features designated to remain are tagged or identified.
3.3 PROTECTION
3.3.1 Protect utilities that remain, bench marks and existing structures from damage or displacement.

3.4 CLEARING

- 3.4.1 Surface Debris:
Remove debris (trash, loose stone, broken concrete, etc.) inside property lines and to back of street curb prior to beginning topsoil stripping.
2 Topsoil Stripping:
3.4.2.1 General
Remove brush, roots, grass, rocks and weeds before stripping.
2 Depth
Remove topsoil to maximum depth of 6 inches in areas indicated on the Drawings as buildings, drives, parking, walks and other paving.
3 Storage

3.4.3 Grubbing:

- 3.4.3.1 General
Remove foundations, trash, stumps, old lumber, structures, etc. located either above, on the surface, or below ground which may interfere with new construction.
2 Depth
Remove obstructions within work area to depth of 6 inches in areas to be covered by buildings and to depth of 24 inches in areas to be planted, seeded or surfaced, unless shown otherwise on the Drawings.
3 Existing Paving
Remove curbs, gutters, drive approaches and paving located within and outside property lines where shown on the Drawings.

3.5 TREE REMOVAL

- 3.5.1 Remove trees and stumps from area to be occupied by new construction and where shown on the Drawings. Do not remove any other trees without instructions from the Owner. Use methods of removal which will prevent injury to persons, damage to property, or injury to adjacent natural growth.

3.6 REFERENCE POINTS

- 3.6.1 Locate bench marks, monuments and other reference points for elevation and location of building. Notify Owner of apparent discrepancies in indicated locations. Protect reference points from dislocation or damage. Replace or repair immediately any points damaged, destroyed or dislocated. Do not proceed with construction until reference points have been reviewed and accepted by the Owner.

3.7 CLEAN-UP

- 3.7.1 Upon completion of work of this Section, remove related debris from premises.

END OF SECTION

DIVISION 2 - SITEWORK

SECTION 02210 - GRADING

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for grading work indicated on the Drawings and specified herein.
1.2 WORK INCLUDED, BUT NOT INCLUSIVE
1.2.1 Rough grading and contouring of site.
2 Finish grading and topsoil.
1.3 RELATED WORK SPECIFIED ELSEWHERE
1.3.1 Site clearing.
2 Excavating, backfilling and compacting.

2.1 MATERIALS

- 2.1.1 Subsoil:
Excavated or equal borrow material, graded free of lumps larger than 6 inches, rocks larger than 3 inches, and debris.
2 Topsoil:
Either excavated material from site or imported, friable loam; free of subsoil, roots, grass, weeds, stone, and foreign matter; siltily loam (pH of 5.5 to 7.5, containing minimum of 4 percent and maximum of 25 percent organic matter).

3.1 INSPECTION

- 3.1.1 Verify site conditions and note irregularities affecting work of each phase of this Section. Beginning work of each phase of this Section means acceptance of existing conditions.
3.2 PREPARATION
3.2.1 Rough Grading:
3.2.1.1 General
Identify required lines, levels, contours, and datum.
2 Utilities
Identify known below grade utilities. Stake and flag locations. Identify and protect existing utilities remaining which pass through work area. Notify utility company to remove and/or relocate utilities. Upon discovery of unknown utility or conditions, discontinue affected work; notify Owner.

3.2.2.1 General

- Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove subsoil contaminated with petroleum products.
2 Scarifying
Scarify subgrade to depth of 3 inches where topsoil is required. Scarify in areas where equipment used for grading and spreading topsoil has compacted subsoil.

3.3 PROTECTION

- 3.3.1 Protect trees, shrubs, lawns, and other features to remain as portion of final landscaping. Protect bench marks, existing construction and above or below grade utilities which are to remain. Repair damage at no additional cost to Owner.
3.4 GRADING
3.4.1 Rough:
Cut or fill and machine grade site as shown on the Drawings, to drain as indicated, allowing for thickness of paving subbase and paving. Where fill is required, use suitable excavated clean material, product of cut operation and/or furnish equal borrow if excavated material is not adequate for use. Place fill in horizontal lifts not in excess of 8 inches thick after compaction by rolling and/or tamping. Rough grade to a tolerance of plus or minus one inch.
2 Finish:
3.4.2.1 General
Establish grades by means of grade stakes placed at corners of units of abrupt changes of grade and elsewhere as required.
2 Topsoil
3.4.2.2 General
Provide a 6 inch layer of topsoil, unless shown otherwise on the Drawings. Fine grade areas noted "planting" and in other areas where existing topsoil has been disturbed or otherwise made unusable.
2 Placing:
Use topsoil in relatively dry state. Place during dry weather. Fine grade, eliminating rough or low areas. Maintain uniform profiles, and contours of subgrade. Remove stone, roots, grass, weeds, debris, and foreign material while spreading. Manually spread around trees, plants, buildings, etc. to prevent damage. Lightly compact placed topsoil.

3.4.2.3 Tolerance

- Top of topsoil: plus or minus 1/2 inch.

3.5 CLEAN-UP

- 3.5.1 Upon completion of work of this Section, remove related debris from the premises.

END OF SECTION

DIVISION 2 - SITEWORK

SECTION 02221 - EXCAVATING, BACKFILLING AND COMPACTING FOR STRUCTURES

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for excavating, backfilling and compacting work for structures indicated on the Drawings and specified herein.
1.2 WORK INCLUDED, BUT NOT INCLUSIVE
1.2.1 Excavation for building construction
2 Excavation for parking construction
3 Dewatering excavations
4 Filling and backing for construction
5 Compaction
6 Inspection and Testing

1.3 RELATED WORK SPECIFIED ELSEWHERE

- 1.3.1 Rough and finish grading
2 Excavating, backfilling and compacting for utilities
1.4 SUBSURFACE INVESTIGATION (SOIL REPORT)
1.4.1 Geotechnical Investigation (Sub-surface Soils Tests) for the project site has been performed and a report of that investigation has been completed. A copy of the report will be furnished by the Owner for the information of the Contractor. Owner and/or Architect and/or Engineer assume no responsibility for any conclusions or interpretations made by Contractor related to information included in the Report.

1.5 REFERENCE STANDARDS

- 1.5.1 American Society for Testing Materials (ASTM):
1.6 TEST REPORTS
1.6.1 Submit three copies to Owner.

2.1 MATERIALS FOR FILLING AND BACKFILLING

- 2.1.1 General Site and Parking Areas:
Reused excavated or equal borrow material; low expansivity, uniform in grade, free from organic materials, capable of being compacted to 95 percent maximum density at optimum moisture content; ASTM D-698.
2 Building Embankment:
As described on the Structural Drawings, including optimum moisture content, compaction requirements, etc.
3 Granular fill/sand cushion:
Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter; graded in accord with ASTM C136.

3.1 INSPECTION

- 3.1.1 Verify foundation or basement walls are braced to support surcharge forces imposed by backfilling operations and that areas to be backfilled are free of debris, snow, ice, or water, and ground surfaces are not frozen.
3.2 PREPARATION
3.2.1 Excavating:
3.2.1.1 General
Identify required lines, levels, contours, and datum.
2 UTILITIES
Identify known underground utilities. Stake and flag locations. Identify and protect subsoil and aerial utilities. Maintain existing utilities to remain which pass through work area.

3.2.2 Backfilling:

- When necessary, compact subgrade surfaces to density requirements for backfill material. Cut out soft areas of subgrade not readily capable of in-situ compaction. Backfill and compact to density equal to requirements for subsequent backfill material.
3.3 PROTECTION
3.3.1 General:
Provide adequate sheeting, shoring and bracing for excavations to prevent caving or protect personnel, without additional cost to Owner.
2 Landscape Features:
Protect existing trees, shrubs, lawns, rock outcroppings and other features to remain as portion of final landscaping.
3 Construction:
Protect existing trees, shrubs, lawns, rock outcroppings and other features to remain as portion of final landscaping.
4 Utilities:
Protect above and below grade utilities to remain.
5 Excavations:
Grade excavation top perimeter to prevent surface water run-off into excavation. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

3.4 EXCAVATING

- 3.4.1 Excavate subsoil required for building foundations, construction operations, and other work. Machine slope banks to angle of repose or less. Hand trim excavation and leave free of loose material. Remove lumps subsoil, boulders and rock up to 1/3 cu. yd. measured by volume. Compact unexcavated areas under structure bearing surfaces in accord with directions of Owner. Remove excavated material from site.
3.4 EXCAVATING
3.4.1 Excavate subsoil required for piping and other utility work. Cut trenches sufficiently wide to enable installation of utilities and allow inspection. Hand trim excavation and leave free of loose material. Remove lumps subsoil, boulders and rock up to 1/3 cu. yd. measured by volume. Compact unexcavated areas under bearing surfaces in accord with directions of Owner. Remove excess excavated material from site.

3.5 DEWATERING

- 3.5.1 If water condition is present, provide dewatering pumps and pumping as may be required. Maintain dewatering until backfilling is complete and/or water condition no longer exists.
3.6 BACKFILLING AND COMPACTING
3.6.1 General:
Backfill areas to provide contours and elevations shown on the Drawings. Use unfractured materials. Backfill systemically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.
2 Backfilling:
Employ placement methods which will not disturb or damage construction to remain. Backfill against supported foundation walls. Backfill simultaneously on each side of unsupported foundation walls until supports are in place. Slope grade away from building a minimum 2 inches in 10 feet, unless otherwise shown on the Drawings. Make changes in grade gradual. Blend slopes into level areas.

3. Layering and Compacting:

- Maintain optimum moisture content of backfill materials to attain required compaction density. Spread fill over area shown on Structural Drawings in uniform layers; maximum loose depth of 8 inches. Compact as directed on the Structural Drawings.
4 Granular Fill/Sand Cushion:
Spread and compact to requirements shown on the Drawings.

3.7 TESTING

- 3.7.1 Employ and pay for, as part of Contract Price, the services of an Owner-acceptable independent testing laboratory to test fill and backfill materials and their degree of compaction in place, and the optimum moisture content of both on-site and proposed borrow prior to placing and compacting. Perform not less than one compaction test for each 3,000 sq. ft. of surface for each layer of fill under building and not less than one compaction test for each 5,000 sq. ft. of surface for each layer of fill or undisturbed earth to remain on area of site to be covered by paving, walks or traffic approaches; ASTM D1556.
3.8 CLEAN-UP
3.8.1 Upon completion of work of this Section, remove related debris from the premises.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02225 - EXCAVATING, BACKFILLING AND COMPACTING FOR UTILITIES

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for excavating, backfilling and compacting work for utilities indicated on the Drawings and specified herein.
1.2 WORK INCLUDED, BUT NOT INCLUSIVE
1.2.1 Excavation for trenches
2 Dewatering Excavations
3 Backfilling
4 Compacted base and compacted fill.
1.3 RELATED WORK SPECIFIED ELSEWHERE
1.3.1 Rough and finish grading
2 Excavating, backfilling and compacting for structures
1.4 SUBSURFACE INVESTIGATION (SOIL REPORT)
1.4.1 Geotechnical Investigation (Sub-surface Soils Tests) for the project site has been performed and a report of that investigation has been completed. A copy of the report will be furnished by the Owner for the information of the Contractor. Owner and/or Architect and/or Engineer assume no responsibility for any conclusions or interpretations made by Contractor related to information included in the Report.

1.5 REFERENCE STANDARDS

- 1.5.1 American Society for Testing Materials (ASTM):
1.6 TEST REPORTS
1.6.1 Submit three copies Owner.

2.1 MATERIALS FOR BACKFILLING

- 2.1.1 General Use:
Reused excavated or equal borrow material; low expansivity, uniform in grade, free from organic materials, capable of being compacted to 95 percent maximum density at optimum moisture content; ASTM D-698.
2 Sand:
Natural river or bank sand; free of silt, clay, loam, friable or soluble materials, and organic matter; graded in accord with ASTM C136.

3.1 INSPECTION

- 3.1.1 Verify that areas to be backfilled are free of debris, snow, ice, or water, and ground surfaces are not frozen.
3.2 PREPARATION
3.2.1 Identify required lines, levels, contours, and datum. When necessary, compact subgrade surfaces to density requirements for backfill material.
3.3 PROTECTION
3.3.1 General:
Provide adequate sheeting, shoring and bracing for excavations to prevent caving or protect personnel, without additional cost to Owner.
2 Landscape Features:
Protect existing trees, shrubs, lawns, rock outcroppings and other features to remain as portion of final landscaping.
3 Construction:
Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.

3.4 UNEXPECTED CONDITIONS:

- Notify Owner of unexpected subsurface conditions and discontinue work in affected area until notification to resume work.
5 Excavations:
Grade excavation top perimeter to prevent surface water run-off into excavation. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

3.5 EXCAVATING

- 3.5.1 If water condition is present, provide dewatering pumps and pumping as may be required. Maintain dewatering until backfilling is complete and/or water condition no longer exists.
3.6 BACKFILLING AND COMPACTING
3.6.1 General:
Support pipe, conduit, etc. during placement and compaction of bedding fill. Backfill trenches to provide contours and elevations shown on the Drawings. Use unfractured materials. Backfill systemically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.

3.7 DEWATERING

- 3.7.1 If water condition is present, provide dewatering pumps and pumping as may be required. Maintain dewatering until backfilling is complete and/or water condition no longer exists.
3.8 CLEAN-UP
3.8.1 Upon completion of work of this Section, remove related debris from the premises.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02231 - GRANULAR SUB-BASE (CRUSHED STONE)

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for granular sub-base work indicated on the Drawings and specified herein.
1.2 WORK INCLUDED, BUT NOT INCLUSIVE
1.2.1 Compacted crushed stone sub-base under parking and driveway paving.
1.3 INTENT
1.3.1 It is the intent of these specifications to provide a completed course of compacted stone free from loose or segregated areas, of uniform density, well bound for its full depth and with a smooth surface suitable for placing subsequent paving courses. Contractor is responsible to regulate sequence of work, to use proper amount of lime, maintain the work and rework as necessary to meet above requirements.
1.4 APPROVAL OF SUBCONTRACTOR
1.4.1 Subcontractor for work of this section shall be approved in writing by paving subcontractor.
1.5 REFERENCE STANDARDS
1.5.1 American Society for Testing Materials (ASTM):
2.1 MATERIALS
2.1.1 Course Stone:
Crushed, natural stone; free of shale, clay, friable materials and debris; graded in accord with ASTM C136 within following limits:
2.1.1.1 Content by weight:
2.1.1.1.1 Sieve Size Percent Passing
2.1.1.1.2 Content by weight:
2.1.1.1.1.1 2.1.1.1.1.1 Calcium Hydroxide (Active Lime); MIN 90%
2.1.1.1.1.2 Calcium Oxide (Unhydrated Lime); MAX 5%
2.1.1.1.1.3 Free Water; MAX 4%
2.1.2 Type "F"
Commercial lime slurry; pumpable suspension of solids in water; solids portion of mixture consisting primarily of hydrated lime.
2.1.2.1 Content by Weight:
2.1.2.1.1 "Solids" hydrate
Alkalinity; MN 97%
2.1.2 Water:
City tap water.
2.2 EQUIPMENT
2.2.1 Sited for purpose intended. Maintain equipment in good operating condition.
2.3 MIX
2.3.1 Contractor employ and pay for, as part of contract price, the services of an Owner-acceptable independent testing laboratory to determine mix required to achieve a plasticity index of 15 or less and to comply with requirements specified hereinafter. Include type and quantity of lime, application rates, equipment types, placing and mixing procedures, and curing. 6% lime content by volume is minimum requirement of these specifications.

2. Backfilling:

- Employ placement methods which will not disturb or damage construction to remain.
3.6.3 Laying and Compacting:
Maintain optimum moisture content of backfill materials to attain required compaction density. Place fill in uniform layers; maximum loose depth of 8 inches. Compact to density required for structural conditions under construction and to existing subsoil conditions for landscaped or open areas.

3.7 TESTING

- 3.7.1 Employ and pay for, as part of Contract Price, the services of an Owner-acceptable independent testing laboratory to test fill and backfill materials and their degree of compaction in place, and the optimum moisture content of both on-site and proposed borrow prior to placing and compacting. Perform not less than one compaction test for each 30-feet of trench for each layer of fill under building, and not less than one compaction test for each 50 feet of trench for each layer of fill or undisturbed earth to remain on areas of site to be covered by paving; ASTM D1556.
3.8 CLEAN-UP
3.8.1 Upon completion of work of this Section, remove related debris from the premises.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02243 - LIME SOIL STABILIZATION

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for lime stabilized paving sub-base work indicated on the drawings and specified herein.
1.2 WORK INCLUDED BUT NOT INCLUSIVE
1.2.1 In place lime stabilized sub-base under parking and driveway paving.
1.3 RELATED WORK SPECIFIED ELSEWHERE
1.3.1 Subgrade cutting and/or filling and compaction.
1.4 INTENT
1.4.1 It is the intent of these specifications to provide a completed course of treated material containing a uniform lime mixture, free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth and with a smooth surface suitable for placing subsequent paving courses. Contractor is responsible to regulate sequence of work, to use proper amount of lime, maintain the work and rework as necessary to meet above requirements.
1.5 REFERENCE PUBLICATIONS AND STANDARDS
1.5.1 American Society for Testing Materials (ASTM)
2 American Association of State Highway Officials (AASHTO)
1.6 SUBMITTALS
1.6.1 Submit manufacturer's certificate indicating that lime to be furnished meets specified requirements.

2.1 MATERIALS

- 2.1.1 Lime:
One of the following based on "Mix" determined for use:
2.1.1.1 Type "A"
Hydrated lime; dry powder consisting of calcium hydroxide or a mixture of calcium hydroxide and small amounts of calcium oxide, magnesium oxide and magnesium hydroxide.
2.1.1.1.1 Content by weight:
2.1.1.1.1.1 2.1.1.1.1.1 Calcium Hydroxide (Active Lime); MIN 90%
2.1.1.1.1.2 Calcium Oxide (Unhydrated Lime); MAX 5%
2.1.1.1.1.3 Free Water; MAX 4%
2.1.2 Type "F"
Commercial lime slurry; pumpable suspension of solids in water; solids portion of mixture consisting primarily of hydrated lime.
2.1.2.1 Content by Weight:
2.1.2.1.1 "Solids" hydrate
Alkalinity; MN 97%
2.1.2 Water:
City tap water.

2.2 EQUIPMENT

- 2.2.1 Sited for purpose intended. Maintain equipment in good operating condition.
2.3 MIX
2.3.1 Contractor employ and pay for, as part of contract price, the services of an Owner-acceptable independent testing laboratory to determine mix required to achieve a plasticity index of 15 or less and to comply with requirements specified hereinafter. Include type and quantity of lime, application rates, equipment types, placing and mixing procedures, and curing. 6% lime content by volume is minimum requirement of these specifications.

3.1 INSPECTION

- 3.1.1 Verify compacted subgrade is dry and ready to receive work of this section. Verify gradients and elevations of base are correct. Beginning of installation means acceptance of existing conditions.
3.2 PLACING STONE
3.2.1 Spread stone material over prepared subgrade to total compacted thickness shown on the drawings. Place stone in 3 inch layers and compact. Level surfaces to elevations and gradients indicated. Add small quantities of sand to stone mix as appropriate to assist compaction. Perform hand comping in areas inaccessible to compaction equipment.
3.3 CLEAN-UP
3.3.1 Upon completion of work of this section, remove related debris from premises.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02231 - GRANULAR SUB-BASE (GVL)

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for granular sub-base work indicated on the drawings and specified herein.
1.2 WORK INCLUDED, BUT NOT INCLUSIVE
1.2.1 Compacted gravel sub-base under parking and driveway paving.
1.3 INTENT
1.3.1 It is the intent of these specifications to provide a completed course of compacted gravel free from loose or segregated areas, of uniform density, well bound for its full depth and with a surface suitable for placing subsequent paving courses. Contractor is responsible to regulate sequence of work, to use proper amount of lime and rework as necessary to meet above requirements.
1.4 APPROVAL OF SUBCONTRACTOR
1.4.1 Subcontractor for work of this section shall be approved in writing by paving subcontractor.
1.5 REFERENCE STANDARDS
1.5.1 American Society for Testing Materials (ASTM):
2.1 MATERIALS
2.1.1 GVL Gravel, Type "B"; State of Illinois Standards.
PART II - PRODUCTS
PART III - EXECUTION

3.1 INSPECTION

- 3.1.1 Verify compacted subgrade is dry and ready to receive work of this section. Verify gradients and elevations of base are correct. Beginning of installation means acceptance of existing conditions.

3.2 PLACING STONE

- 3.2.1 Spread stone material over prepared subgrade to total compacted thickness shown on the drawings. Place stone in 3 inch layers and compact. Level surfaces to elevations and gradients indicated. Add small quantities of sand to stone mix as appropriate to assist compaction. Perform hand comping in areas inaccessible to compaction equipment.
3.3 CLEAN-UP
3.3.1 Upon completion of work of this section, remove related debris from premises.

END OF SECTION

DIVISION 2 - SITE WORK

3.3 CLEAN-UP

- 3.3.1 Upon completion of work of this Section, remove related debris from premises.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02243 - LIME SOIL STABILIZATION

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for lime stabilized paving sub-base work indicated on the drawings and specified herein.
1.2 WORK INCLUDED BUT NOT INCLUSIVE
1.2.1 In place lime stabilized sub-base under parking and driveway paving.
1.3 RELATED WORK SPECIFIED ELSEWHERE
1.3.1 Subgrade cutting and/or filling and compaction.
1.4 INTENT
1.4.1 It is the intent of these specifications to provide a completed course of treated material containing a uniform lime mixture, free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth and with a smooth surface suitable for placing subsequent paving courses. Contractor is responsible to regulate sequence of work, to use proper amount of lime, maintain the work and rework as necessary to meet above requirements.
1.5 REFERENCE PUBLICATIONS AND STANDARDS
1.5.1 American Society for Testing Materials (ASTM)
2 American Association of State Highway Officials (AASHTO)
1.6 SUBMITTALS
1.6.1 Submit manufacturer's certificate indicating that lime to be furnished meets specified requirements.

2.1 MATERIALS

- 2.1.1 Lime:
One of the following based on "Mix" determined for use:
2.1.1.1 Type "A"
Hydrated lime; dry powder consisting of calcium hydroxide or a mixture of calcium hydroxide and small amounts of calcium oxide, magnesium oxide and magnesium hydroxide.
2.1.1.1.1 Content by weight:
2.1.1.1.1.1 2.1.1.1.1.1 Calcium Hydroxide (Active Lime); MIN 90%
2.1.1.1.1.2 Calcium Oxide (Unhydrated Lime); MAX 5%
2.1.1.1.1.3 Free Water; MAX 4%
2.1.2 Type "F"
Commercial lime slurry; pumpable suspension of solids in water; solids portion of mixture consisting primarily of hydrated lime.
2.1.2.1 Content by Weight:
2.1.2.1.1 "Solids" hydrate
Alkalinity; MN 97%
2.1.2 Water:
City tap water.

2.2 EQUIPMENT

- 2.2.1 Sited for purpose intended. Maintain equipment in good operating condition.
2.3 MIX
2.3.1 Contractor employ and pay for, as part of contract price, the services of an Owner-acceptable independent testing laboratory to determine mix required to achieve a plasticity index of 15 or less and to comply with requirements specified hereinafter. Include type and quantity of lime, application rates, equipment types, placing and mixing procedures, and curing. 6% lime content by volume is minimum requirement of these specifications.

3.1 INSPECTION

- 3.1.1 Verify compacted subgrade is dry and ready to receive work of this section. Verify gradients and elevations of base are correct. Beginning of installation means acceptance of existing conditions.
3.2 PLACING STONE
3.2.1 Spread stone material over prepared subgrade to total compacted thickness shown on the drawings. Place stone in 3 inch layers and compact. Level surfaces to elevations and gradients indicated. Add small quantities of sand to stone mix as appropriate to assist compaction. Perform hand comping in areas inaccessible to compaction equipment.
3.3 CLEAN-UP
3.3.1 Upon completion of work of this section, remove related debris from premises.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02231 - GRANULAR SUB-BASE (GVL)

1.1 SCOPE OF WORK

- 1.1.1 Furnish labor, materials, services, equipment and appliances required for granular sub-base work indicated on the drawings and specified herein.
1.2 WORK INCLUDED, BUT NOT INCLUSIVE
1.2.1 Compacted gravel sub-base under parking and driveway paving.
1.3 INTENT
1.3.1 It is the intent of these specifications to provide a completed course of compacted gravel free from loose or segregated areas, of uniform density, well bound for its full depth and with a surface suitable for placing subsequent paving courses. Contractor is responsible to regulate sequence of work, to use proper amount of lime and rework as necessary to meet above requirements.
1.4 APPROVAL OF SUBCONTRACTOR
1.4.1 Subcontractor for work of this section shall be approved in writing by paving subcontractor.
1.5 REFERENCE STANDARDS
1.5.1 American Society for Testing Materials (ASTM):
2.1 MATERIALS
2.1.1 GVL Gravel, Type "B"; State of Illinois Standards.
PART II - PRODUCTS
PART III - EXECUTION

3.1 INSPECTION

- 3.1.1 Verify compacted subgrade is dry and ready to receive work of this section. Verify gradients and elevations of base are correct. Beginning of installation means acceptance of existing conditions.

3.2 PLACING STONE

- 3.2.1 Spread stone material over prepared subgrade to total compacted thickness shown on the drawings. Place stone in 3 inch layers and compact. Level surfaces to elevations and gradients indicated. Add small quantities of sand to stone mix as appropriate to assist compaction. Perform hand comping in areas inaccessible to compaction equipment.
3.3 CLEAN-UP
3.3.1 Upon completion of work of this section, remove related debris from premises.

END OF SECTION