

SECTION 02190 - SITEWORK/EXCAVATION

PART I - GENERAL

1.01 DESCRIPTION

- A. The extent of site work is shown on drawings.
- B. Site work includes but is not limited to:
 - 1. Demolition (if required) of existing structures, walks & pavements, utilities and miscellaneous improvements.
 - 2. Site clearing of trees, irrigation, topsoil stripping, clearing and grubbing.
 - 3. Earthwork; preparation of subgrade for building slabs, foundations walks, drainage fill, structural fill and backfilling.
 - 4. Termite Control - Provide site treatment for termite control in those geographic locations where termites are present.
- C. Identify location of above ground & below ground remediation equipment.
- D. Sub Surface Conditions
 - 1. Owner has explored sub-surface conditions by having authorized the making of test borings and test pits on site. Refer to geo-technical report prepared by S. W. Cole Engineering, Inc, dated 2/06/09.

Conflicts in the information contained in these specifications and the recommendations of the soils engineer shall be brought to the attention of the architect prior to work proceeding.
 - 2. Owner and Architect make no representations regarding character or extent of soil or other sub-surface conditions and/or utilities which may be encountered during work. Subsoil formations, including water levels, included in reports have been interpolated from completed borings, correctness of which is not guaranteed.
 - 3. Bidder shall make his own deductions of sub-surface conditions which may affect methods or cost of construction. Bidder may request written permission to make investigations of the existing soil for whatever purposes he may desire.
 - A. Boring Locations
 - 1. Refer to geo-technical report prepared by S. W. Cole Engineering, Inc, dated 2/06/09.
 - 2. Bidder shall visit the site and make such investigations as may be deemed necessary for proper execution of the Contract.
- E. Supplemental site specifications may be provided by Civil Engineer.
- F. Contractor to obtain all required local and state permits that are required for removing soil from the site or filling of the site.

1.02 QUALITY ASSURANCE.

- A. Severe slope, ramps or steps shall not be permitted at Walgreens' store at front, sides, or rear of building. Maximum permitted slope on site shall be 1:20 (5%). Minimum permitted slope on site

shall be 1.5% to insure positive drainage. Maximum entrance slab slope up to doorway shall not exceed 2.0%.

- B. Testing: Employ at Landlords expense testing laboratory to perform soil and quality control testing as required. Copies of test reports to be submitted to Walgreens Construction Department, Project Manager, upon request.
1. Soil reports of actual unconfined compressive strength of each strata tested. Verify soil/fill bearing capacity conforms to design requirements. Perform one test at each column pad and per each 50 ft. of foundation.
 2. Field density tests. Perform one test per each 2,500 sq. ft. per lift of fill.
 3. Trench Backfill: Perform at least one test per each 100 lineal feet of trench. Recompact and retest density and compaction of any trench installed after building pad testing has been performed.
 4. Foundation wall backfill inside and outside shall have compaction tests made ever 50ft. Tests shall be performed on each 12" lift.
 5. Provide subgrade modulus tests, one for each 2,500 square feet of pavement placed on natural soils.
 6. Optimum moisture/maximum density tests. Perform one test per each type soil and each 1,000 cu. Yds of material.
 7. Final building pad verification letter, submitted by the Geotechnical Engineer at the completion of grading operations, summarizing satisfactory completion of all tests performed prior to slab placement.
- C. Warranty/Termite Control: Furnish written warranty certifying that soil poisoning treatment will prevent infestation of termites for five years from date of treatment. Provide installer certification that three application have been applied as required. Submit certification to Walgreens Construction Department. Project Manager.
1. Contractor will pretreat soil and repair/replace any damage caused by infestation.
- D. The Contractor will coordinate with an Independent Laboratory, as selected and paid for by the Owner, to perform inspection, sampling, and testing. Services include but are not limited to:
1. Employment of Testing Laboratory shall in no way relieve Contractor of his obligation to perform work in accordance with contract.
- E. LABORATORY DUTIES LIMITATIONS OF AUTHORITY
1. Perform inspection, sampling and testing of materials and methods of construction.
 - a. Comply with specified standards; ASTM, other recognized authorities, and as specified.
 - b. Ascertain compliance with requirements of Contract Documents.
 2. Promptly notify the Owner's Authorized Representative and Contractor, of irregularities or deficiencies of work which are observed during performances of services.
 3. Promptly submit 5 copies of reports of inspection and tests to the Owner's Authorized Representatives including:

- a. Date issued
 - b. Testing laboratory name and address
 - c. Name and signature of inspector
 - d. Date of inspection of sampling
 - e. Record of temperature and weather
 - f. Date of test
 - g. Identification of product and specification section
 - h. Location in project
 - i. Type of inspection or test
 - j. Observations regarding compliance with Contract Documents
4. The Testing Laboratory is not authorized to:
- a. Release, revoke, alter, or enlarge on, requirements of Contract Document
 - b. Approve or accept any portion of work
 - c. Perform any duties of the Contractor

1.03. JOB CONDITIONS

- A. Existing Utilities: Locate, disconnect, cap and remove existing utilities within the site.
 - 1. Make arrangements as required to relocate/re-route those utilities serving others off-site and on-site tenants.

PART II - PRODUCTS

2.01 MATERIALS

- A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups, GW, GP, GM, SM, SW and SP. On sites where specific conditions cause any of the listed soils to be unsatisfactory, the Soils Engineer shall specify alternate satisfactory materials and provide Walgreens Project Architect a written explanation.
- B. Subbase Material: Provide CA-6, naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed fine aggregate conforming to ASTM D-2940-03 with at least 95% passing a 1-1/2 inch sieve and not more than 8% passing a No. 200 sieve.
- C. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D448, Size 57, with 100% passing a 1- 1/2 " sieve and not more than 5% passing a No. 8 sieve.
- D. Backfil, Fill, and Subbase Materials: Satisfactory soil materials free of clay, rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable and other deleterious matter. No recycled pavement, concrete, brick, or other building materials shall be used except by specific written approval of the Owner, Architect, or Walgreens.

2.02. SOIL TREATMENT

- A. All solutions must be environmentally friendly. Consult the structural pest control regulatory agency of your State prior to use of any product. Provide a solution of one of the following. Fuel oil is not permitted as a diluent. Mix with water at the manufacturers prescribed rate for the conditions encountered.
1. Permethrin; 36.8% combined with 63.2% inert ingredients in water emulsion.
 2. Bifenthrin; 25.1% combined with 74.9% inert ingredients in water emulsion.
 3. Cypermethrin; 24.8% combined with 75.2% inert ingredients in water emulsion.

Acceptable manufacturers: Dragnet ® SFR, Biflex ® TC, Prevail ® FT manufactured by FMC Corporation. Durban TC manufactured by Dow AgroSciences.

PART III - EXECUTION

3.01 SITE CLEARING

- A. Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to remain.
1. Completely remove stumps, roots, and other debris protruding through ground surface.
 2. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, meeting compaction requirements, unless further excavation or earthwork is indicated.
- B. Removal of Improvements: Remove existing above-grade and below grade improvements necessary to permit construction including abandoned underground piping or conduit interfering with construction. Fill resulting excavations with satisfactory materials meeting compaction requirements.

3.02. EXCAVATION

- A. Earth Excavation includes excavation of pavements and obstructions visible on ground surface; underground structures, utilities and other items indicated to be demolished and removed; together with earth and other materials encountered.
- B. Excavation for Structures: Conform to elevations and dimensions shown. For footings and foundations extend excavation below frost line and do not disturb bottom of excavation.
- C. Excavation for Pavements: Cut surface to comply with cross-section, elevations and grades as shown.
- D. Excavation for Trenches: Grade bottoms of trenches as required/indicated, notching under pipe bells to provide solid bearing for entire pipe.
- E. Shoring/Bracing: Provide shoring, bracing required to support adjoining soils, buildings, etc.
- F. Pumping: Keep excavations, and entire subgrade area free of water. Do not operate any system that will loosen existing soils or cause the subsoils to be removed or shifted from their original position.

3.03 COMPACTION

- A. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density for soils exhibiting a well-defined moisture density relationship

(cohesive soils) in accordance with ASTM D 1557; or in accordance with ASTM D 4253, for soils which not exhibit a well-defined moisture-density relationship (cohesionless soils).

1. Structures, Foundation Wall Backfill, Building Slabs and Steps, Pavements: Compact each layer at 90% maximum density for cohesive material or 95% relative density for cohesionless material.
2. Lawn or Unpaved Areas: Compact each layer at 85% maximum density for cohesive soils and 90% relative density for cohesionless soil.
3. Walkways and under curbs: Compact each layer at 90% maximum density for cohesive material or 95% relative density for cohesionless material.
4. Trenches: Compact fill to conform to requirements of area in which trench is installed.

3.04 BACKFILL AND FILL

- A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
 1. In excavations, use satisfactory excavated or borrow material.
 2. Under Landscaped areas, use satisfactory excavated or borrow materials.
 3. Under walks and pavements, use subbase material, or satisfactory excavated or borrow material, or combination of both.
 4. Under steps, use subbase material.
 5. Under building slabs, use drainage fill material.
 6. Under piping and conduit, use subbase material where subbase is indicated under piping or conduit; shape to fit bottom 90 degrees of cylinder.
 7. Around foundation drainage systems, use drainage fill.

3.05 GRADING:

- A. General: Uniformly grade areas, including adjacent transition areas. Smooth finished surface, compact with uniform levels or slopes between points where elevations are indicated and existing grades.
- B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding.
- C. Grading Surface of Fill under Building Slabs: Grade smooth, free of voids, compacted as specified, to required elevation.
- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum of relative density for each area classification.

3.06 TERMITE CONTROL TREATMENT

- A. Apply treatment in strict compliance with manufacturers written instructions. Do not disturb treated areas. Provide a blue "spray indicator" mixed with termiticide to indicate treated areas.
- B. Apply treatment in three applications.

1. First Application: pre-treat general slab areas and around utility entry points.
 2. Second Application: pre-treat against exterior foundation walls, beneath sidewalks and driveways.
 3. Third Application: treat adjacent to exterior walls after landscaping is complete.
- C. Reapply treatment to areas disturbed by construction activity following application.
- D. Treat foundation walls and areas under building slabs. Termiticide must come in contact with the foundation wall. Applying the termiticide to the outer surface of foundation insulation boards of protection boards is not acceptable.

END OF SECTION