

NYCHA Design Department

**Division 31 Earthwork
SECTION 31 20 00
SITE PREPARATION, EXCAVATION AND GRADING**

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

- A. Contractor is referred to the Instructions to Bidders and General Conditions, NYCHA Contracts; the Special Notice to Contractors; the Form of Proposal; the Form of Bid Bond; Division 01 - General Requirements of the Contract Specifications; the Contract Drawings and all Amendments and Addenda thereto; all of which govern the Work of this Section.

1.02 SCOPE

- A. The Contractor shall provide all items, articles, materials, operation, or methods listed, mentioned or scheduled on the Drawings and/or herein, including all labor, materials, equipment and incidentals necessary and required for the completion of site preparation, excavation and grading within the Contract Limit Lines. The Contractor shall be responsible for all excavation.
- C. This Section covers Landscaping Site Preparation, Excavation and Grading.

1.03 DESCRIPTION OF WORK

- A. Work Included: Providing all Site Preparation as shown on the Drawings, and as specified, including, but not necessarily limited to the following:
1. Stripping and stockpiling existing topsoil.
 2. Field location of all proposed site improvements.
 3. Removing above-grade improvements.
 4. Removing below-grade improvements.
- B. Topsoil Stockpile Areas must be approved by the Owner prior to placement of stockpiles.
- C. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.

1.04 RELATED WORK DESCRIBED ELSEWHERE

- A. Section 31 30 00 Earthwork
- B. Section 32 91 19 Topsoil and Placement
- C. Section 32 92 33 Sodding
- D. Section 32 93 00 Plants

1.05 JOB CONDITIONS:

- A. Peripheral areas outside of the contract limit line shall not be disturbed or used for storing materials.

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PART 2 PRODUCTS

2.01 UNAUTHORIZED MATERIALS

- A. Materials and products required for work of this section shall not contain asbestos, polychlorinated biphenyls (PCB) or other hazardous materials identified by the Owner.

2.02 MATERIAL AND EQUIPMENT

- A. As selected by the Contractor.

PART 3 - EXECUTION

3.01 STAKING, LINES AND GRADES

- A. The Contractor shall employ a competent registered engineer or surveyor to lay out the work and to establish all points, lines and grades necessary for the proper execution of the work.
- B. The Contractor shall employ the engineer or surveyor to place a sufficient quantity of stakes so that the location of the walks, pavements and other areas can be clearly determined.
- C. Should any discrepancy be found between points, lines or grades shown on the Drawings and actual conditions found in the field, the Contractor shall immediately notify the Owner of such discrepancy and the contractor shall not proceed with the work affected thereby until he/she has received the necessary instruction from the Owner.
- D. The Contractor shall carefully maintain bench marks, monuments and other reference marks, and, if disturbed or destroyed, replace as directed.
- E. As soon as the work has been staked out, the Owner shall be notified so that his/her representative can approve all staking before construction begins.
- F. The Contractor shall verify all elevations and dimensions of existing conditions, as noted on the Drawings.

3.02 EXCAVATION AND GRADING

A. EXCAVATION

- 1. The Contractor shall exercise great care and use every precaution necessary to preserve and protect property adjacent to the work site. Where any damage or injury is done to such property by or on account of any act, omission or neglect on the part of the Contractor, such damaged or injured property shall be restored in a proper and satisfactory manner or replaced at the expense of the Contractor.
- 2. The Contractor shall prevent all damage to pipes, conduits, wires, cables or structures above or below ground. The Contractor shall so control his/her operations as to prevent damage to trees and shrubs which are to be preserved. Trees shall be protected from injury by a 6 ft. high temporary fence around each tree. The fence shall be heavy pipe frame and chain link fence as specified in the contract drawings. Driving of nails or stringing of wire or rope into or on trees designated to remain is forbidden. No roots or branches greater than two (2) inches in diameter shall be cut without the approval of the Landscape Section, NYCHA Design Department. Where soil over the roots of trees to be preserved has become compacted, it shall be restored by proper cultivation to a condition to

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- permit adequate aeration of the soil. Turf which has become injured shall be satisfactorily restored.
3. Any damage occurring to existing utility lines, or disturbed and damaged seeded, planted or paved areas shall be repaired and restored to their original condition by the Contractor at his/her expense and as directed by the Inspector.
 4. All excavated material suitable for re-use shall be transported to and placed in previously stripped fill areas within the limits of the work as shown on the Drawings. Where material encountered within the limits of the work is considered unsuitable by the Landscape Consultant such material shall be removed below the grade shown on the Drawings and replaced with suitable material. Unstable soil shall be replaced with sand or gravel and shall be thoroughly compacted. The Landscape Consultant shall determine the depth of removal of unstable soil.
 5. During construction, excavation and filling shall be performed in a manner and sequence that will provide drainage at all times. The ground adjacent to all excavation shall be graded to prevent accumulation of water. The Contractor shall remove by pumping or other means as approved by the Owner, any water accumulated in excavation and keep trench dry until the bedding and backfilling are complete. No extra payment will be made for any pumping that may be required.
 6. Prior to the installation of proposed materials, all existing utilities shall be adjusted to meet proposed grades smoothly and evenly.
 7. Swales and drainage ways shall be cut accurately to the cross sections and grades indicated on the drawings.
 8. Trench excavation shall have banks as nearly vertical as practicable and shall be extended sufficiently on each side of walls, footage, piers, etc. to permit setting of forms, installation of sheet piling.
 9. Excavation shall not be done below the grades indicated on the drawings unless so directed by the Owner in writing.
 10. Should the Contractor without authorization, excavate more than shown on the Drawings or specified, such excess excavation will not be paid for as extra work, and the Contractor shall refill the said excavation with suitable material as directed by the Owner.
 11. All footing excavations shall be hand-trimmed.
 12. For paved areas the subgrade shall be prepared to elevations, as shown on the Drawings. For lawn area, the subgrade shall be prepared to 12" below finished grades.
 13. The Contractor shall do all bracing, sheathing, and shoring necessary to perform and protect all excavation as indicated in the drawings, as required for safety, or to conform to governing laws. No extra payment will be made for bracing, sheathing or shoring.
 14. Frost Protection: Do not excavate to the full depth indicated when freezing temperature may be expected unless the footings or slabs can be poured immediately after the excavation has been completed. Protect the bottom of excavated area from frost if placing of concrete is to be delayed.

B. STRIPPING AND STOCKPILING OF TOPSOIL

1. Topsoil shall be stripped to its full depth from work areas. All stripped topsoil shall be transported and deposited in storage piles in a manner that will insure minimum loss from erosion. Storage areas shall be designated by the Inspector. Topsoil shall be kept separated from other excavated materials. Topsoils shall contain no admixture of refuse or any material toxic to plant growth, and shall be reasonably free from subsoil and stump, roots, brush, stones, clay lumps or similar objects larger than two inches in greatest diameter. When topsoil is within the area of the spread of branches of trees and shrubs to be saved, no topsoil shall be stripped unless otherwise directed.
2. After all stripping has been done, excavation of every description and of whatever substance encountered within the Contract Limit Lines shall be performed to the lines and grades indicated on the Drawings, or as directed by the Owner.

C. TRENCHED LAWN AREAS

1. The Contractor shall excavate lawn areas to be trenched as shown on the Drawings. Existing topsoil in these areas is to be removed and placed aside prior to actual regrading. The Contractor shall excavate the trenched area sufficiently so that the finished grade after replacement of topsoil, shall conform to the dimensions on the Drawing; center line depth of the trenches shall be 12" lower than the perimeter of the trench. The entire lawn area shall slope gradually from all existing fixed elevations such as adjacent pavements, toward the new trenched area where the slope shall become more pronounced and where excess run off water shall be allowed to collect.

D. GRADING

1. The Contractor shall subgrade and fine grade all areas to the proper depth as required by the work as hereinafter specified. Subgrade is defined as the establishment of a subsurface by cutting or filling the existing grade to a definite depth below finished grade. Finished grades are shown on the Drawings by contours or spot elevations. Fine grading is defined as the leveling of the subgrade surface of all debris or foreign matter other than earth or sand by raking or other approved methods. All accumulated debris shall be disposed of off the Site. Subgrade shall be thoroughly compacted to uniform even bearing condition.
2. Clean material excavated under this contract may be stockpiled on the site for use as fill as needed. All fill from stockpile or furnished shall be clean earth or sand free of debris and foreign matter. All debris, foreign matter and excess excavation shall be removed from the site immediately and disposed of legally.
3. The Contractor shall make a careful inspection of the site to apprise him/herself of the amount of grading necessary.
4. It will be the responsibility of the Contractor to grade in either cut or fill within the available tolerance to obtain the necessary subgrade. The tolerance in no case will exceed 2" above or below the desired subgrade elevation in grass and/or planting area. No tolerance will be allowed on subgrades or foundation bottom grades prepared for paving, walls, and site structures.

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5. Uniformly smooth grading of all areas including excavated and filled sections and adjacent transition areas shall be accomplished. The finished surface shall be reasonably smooth, compacted and free from irregular surface changes.
6. Finished grades not otherwise indicated shall be uniform or sloped between points where levels are given or between such points and existing finished grades, except that the surface shall be rounded at abrupt changes in the slopes. Care shall be exercised in grading all flat areas so as to prevent low spots and water pockets.

3.05 FILLING AND BACKFILLING

- A. In areas of fill, stripping operations shall be completed before filling is commenced. All vegetation such as roots, brush, heavy sods, heavy growth of grass, and all decayed vegetable matter, rubbish and unsuitable material within the areas shall be removed before filling. In no case will such objectionable material be allowed to remain in or under the fill areas.
- B. Fills or embankments herein designated as fills, shall be constructed at the locations and to the lines and grades indicated on the Drawings. Suitable material removed from the excavation shall be used in forming the fill. All material shall be free from roots and other organic material, trash and frozen material. Stones larger than 2" shall not be permitted in the upper 6" of fill.
- C. Fill material shall not be placed on frozen ground.
- D. Deposit fill and backfill in layers not exceeding 6" beneath pavements and other surfacing, and 12" beneath planted areas, compacting each layer by rolling with a two-wheel, 10-ton roller where possible, (except grass areas) or lighter roller of same type where conditions will not permit use of a heavier roller. Where rolling is impossible, proper compaction shall be obtained by use of hand or pneumatic tampers or by puddling, as directed by the Landscape Consultant. Density of each layer of fill shall be at least 95% of maximum density except for the top layer under pavements and other surfacing which shall be compacted to 98% of maximum density.
- E. Rocks and masonry materials may be used for general filling if all voids are filled with earth, except for the top 8" of fill below finish grades.
- F. All excavated material not suitable for filling and backfilling shall be removed (from the site) at the Contractor's expense.

3.06 PROTECTION OF EXISTING UTILITIES

- A. The existence and location of underground utilities are not guaranteed and shall be investigated and verified in the field by the Contractor before starting work. Excavation in the vicinity of existing utilities shall be carefully done by hand.
- B. The Contractor shall be held responsible for any damage to and for maintenance and protection of existing utilities.
- C. No utilities shall be adjusted or altered in any way without the direct approval of the Owner. Any utilities encountered must immediately be called to the attention of the Owner.

END OF SECTION