DIVISION 2
SITework

02200 EXCAVATION, GRADING, AND BACKFILL

PART 1 – GENERAL

1.1 WORK
A. Provide all related materials, equipment, and labor required to complete the work specified.
B. All excavation, trenching, compaction, backfill, and landscaping shall be as listed in the Scope and as specified herein.

1.2 QUALITY OF WORK
A. Provide experienced, well-trained workers competent to complete the work as specified.
B. All work shall comply with governing building and safety codes.

1.3 SUBMITTALS
A. Depending on the Scope, an erosion control permit maybe required. Contractor is required to obtain all required permits from the City of Milwaukee DCD Development Center (809 N. Broadway, 1st Floor) prior to starting any work.
B. Contractor shall contact Diggers Hotline at 414-259-1181, or visit the Diggers Hotline website at www.diggershotline.com to request that the site be marked for underground utilities a minimum of three business days prior to starting any excavation work.
C. When work involves excavation of public property, i.e. water or sewer connections, underground electrical lines, etc., the Contractor shall obtain all required permits and approvals from the City of Milwaukee Department of Public Works, Milwaukee Water Works, and/or WE energies prior to starting any work.

1.4 PRECONSTRUCTION AND PREPARATION
A. Examine and verify that job conditions are satisfactory for speedy and acceptable work.
B. Confirm there is no conflict between this work and work of other trades.
C. Confirm that the work of other trades that must precede this work has been completed.

PART 2 – MATERIALS

2.1 FILL
A. Fill materials shall be:
   • Uniform.
   • From an approved source.
   • Clean, free of debris or organic matter.

PART 3 – EXECUTION

3.1 PREPARATION
A. Protection:
   • Contact Diggers Hotline at least three business days prior to starting excavation work.
   • Protect overhead lines from damage by trucks and cranes.
   • If utility lines are damaged, they shall be repaired or replaced at the Contractor’s expense.
   • Existing utilities that will interfere with construction shall be relocated.
   • Provide all necessary shoring and bracing as required by site conditions.
   • Provide temporary drains and/or pumps to remove ground and rain water.
B. Contractor shall put in place all necessary erosion control measures as required by State and local building codes.
3.2 GRADING AND EXCAVATION

A. Grade and excavate to lines, grades, and elevations as listed in the Scope and as specified herein.
B. Grading for slabs shall be level and not crowned toward center portion of slab.
C. Topsoil shall be placed at a depth of no less than 6 inches.
   • Topsoil shall be clean, free of rock and debris.
   • Topsoil removed from building perimeter shall be removed from the site and properly disposed of by the Contractor. Do not reuse this topsoil.

3.3 EXCAVATION

A. Excavate areas required to complete the work as listed in the Scope, and as specified herein.
   • Footings shall be excavated to a depth of 4 feet below finished ground elevation.
   • Footing size shall be as required by building code.
B. Excavation control:
   • Contact the Department of Neighborhood Services construction inspector at 286-2513 for all necessary inspections prior to pouring footing concrete.
   • Keep footing and foundation trenches uniform in width and direction.
   • Clean excavations of debris and loose dirt, and keep clean before pouring concrete.
   • Immediately remove dirt, rock, or other debris that spills onto paving or planting areas.
   • Take frequent measurements to prevent over-excavation.
   • Provide temporary drainage as necessary to prevent ponding, erosion, or spillover.

3.4 SITE MAINTENANCE DURING EXCAVATION AND GRADING

A. Control excavation dust:
   • With water spray.
   • Through controlled demolition.
   • Using and installing approved barriers.
   • No dust shall be allowed to blow onto the neighboring property.
B. Cleaning:
   • Do frequent and thorough cleanups.
   • Identify potentially harmful substances that might be uncovered during excavation.
   • Handle potentially harmful substances strictly according to governing regulations.
   • Contact the Milwaukee Health Department Lead Section at 286-5033 when suspected lead soil hazards will be disturbed.
   • Excavation and grading work shall be in compliance with Section 01810 Lead Dust Hazards and as directed by Milwaukee Health Department.
   • Suspected hazardous substances shall be removed from the site as per the governing regulations.

3.5 BACKFILL AND COMPACTION

A. Before backfilling:
   • All inspections must be completed and approved.
   • Drains, drain tile, etc. shall be installed, inspected, and approved.
   • All exterior waterproofing has been completed, inspected, and approved.
   • Exterior foundation insulation has been installed (if required).
   • All formwork shall be removed.
   • All trash and debris shall be removed.
B. Perform backfill and compaction in a systematic pattern, to assure complete and consistent work.
   • If any over excavation accidentally occurs, correct it with well-compacted backfill.
   • Fill and thoroughly compact holes from root and stump removal pits.
   • Do not allow any debris to be mixed with the fill.
C. Protect foundation and retaining walls during backfilling.
   • Brace foundation or retaining walls to prevent damage from backfilling.
   • Do not allow damage to waterproofing or wall insulation board from backfilling.
3.6 SUBGRADE PREPARATION FOR PAVING

A. Provide graded slopes as required for:
   • Positive pavement slopes as required for driveways, patios, garages, walks, etc.
   • Backfill in layers, and thoroughly compact trenches or pits beneath paving.
   • Install base course firmly, and wet it down prior to concrete application.

3.7 SURFACE DRAINAGE

A. Provide drainage catchers for roof water as well as surface runoff.
B. Provide surface storm drainage free of impediments to smooth drain flow.
   • Continuous
   • No narrow restrictions
   • No barriers
   • No sharp changes in direction
   • No sharp drops in grade
   • No level areas or depressions
C. Provide erosion control measures as required by State and local building codes.

3.8 REPAIR AND CLEANUP

A. Repair or replace work not in compliance with the Scope or these Specifications.
   • Repairs shall be made at the direction of the Inspector.
   • Repairs shall be made at the Contractor’s expense.
B. Contractor is responsible for removal of all debris and excess material from site.
C. Landscape disturbed areas as indicated in the Scope and as specified in Section 02900 Landscaping.