

**SECTION 31 20 00
EARTH MOVING**

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. This section specifies the requirements for furnishing all equipment, materials, labor, tools, and techniques for earthwork including, but not limited to, the following:
1. Site preparation.
 2. Excavation.
 3. Filling and backfilling.
 4. Borrow of "Approved General Fill" for all of the backfill around and on top of the crypts as indicated on Drawing L-800
 5. Grading.
 6. Soil Disposal.
 7. Clean Up.

1.2 DEFINITIONS

- A. Unsuitable Materials:
1. Fills: Topsoil; frozen materials; construction materials and materials subject to decomposition; clods of clay and stones larger than 3 inches; organic material, including silts, which are unstable; and inorganic materials, including silts, too wet to be stable and any material with a liquid limit and/or plasticity index exceeding 40 and 15 respectively. Unsatisfactory soils also include satisfactory soils not maintained within 3 percent of optimum moisture content at time of compaction, as defined by ASTM D 1557.
 2. Existing Subgrade (Except Footing Subgrade): Same materials as 1.2.A.1, that are not capable of direct support of slabs, pavement, and similar items with possible exception of improvement by compaction, proof rolling, or similar methods.
 3. Existing Subgrade (Footings Only): Same as paragraph 1, but no fill or backfill. If materials differ from reference borings and design requirements, excavate to acceptable strata subject to Contracting Officer/Contracting Officer's Representative (CO/COR) approval.
- B. Trench Earthwork: Trenchwork required for utility lines.
- C. Site Earthwork: Earthwork operations required in area outside of a line located 5 feet outside of principal building perimeter and within new construction area with exceptions noted above.
- D. Degree of compaction: Degree of compaction is expressed as a percentage of maximum density obtained by laboratory test procedure. This percentage of maximum density is obtained through use of data provided from results of field test procedures presented in ASTM D1556.
- E. Fill: Satisfactory soil materials used to raise existing grades. In the Construction Documents, the term "fill" means fill or backfill as appropriate.
- F. Backfill: Soil materials or controlled low strength material used to fill an excavation.

- G. Unauthorized excavation: Removal of materials beyond indicated sub-grade elevations or indicated lines and dimensions without written authorization by the CO/COR. No payment will be made for unauthorized excavation or remedial work required to correct unauthorized excavation.
- H. Authorized additional excavation: Removal of additional material authorized by the CO/COR based on the determination by the Government's soils testing agency that unsuitable bearing materials are encountered at required sub-grade elevations. Removal of unsuitable material and its replacement as directed will be paid on basis of Conditions of the Contract relative to changes in work.
- I. Subgrade: The undisturbed earth or the compacted soil layer immediately below granular sub-base, drainage fill, or topsoil materials.
- J. Structure: Buildings, foundations, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Borrow: Satisfactory soil imported from off-site for use as General Fill or backfill.
- L. Drainage course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.
- M. Bedding course: Layer placed over the excavated sub-grade in a trench before laying pipe.
- N. Bedding course shall extend up to the spring line of the pipe.
- O. Sub-base Course: Layer placed between the sub-grade and base course for asphalt paving or layer placed between the sub-grade and a concrete pavement or walk.
- P. Utilities include on-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.
- Q. Debris: Debris includes all materials located within the designated work area not covered in the other definitions and shall include but not be limited to items like vehicles, equipment, appliances, building materials or remains thereof, tires, any solid or liquid chemicals or products stored or found in containers or spilled on the ground.
- R. Contaminated soils: Soil that contains contaminants as defined and determined by the CO/COR or the Government's testing agency.

1.3 RELATED WORK

- A. Materials testing and inspection during construction: Section 01 45 29, TESTING LABORATORY SERVICES.
- B. Safety Requirements: Section 01 00 00, GENERAL CONDITIONS, Article, ACCIDENT PREVENTION.
- C. Protection of existing utilities, fire protection services, existing equipment, roads, and pavements: Section 01 00 00, GENERAL REQUIREMENTS.
- D. Subsurface Investigation: Section 01 00 00, GENERAL REQUIREMENTS, Article, PHYSICAL DATA.
- E. Erosion Control: Section 01 57 19, TEMPORARY ENVIRONMENTAL CONTROLS, and Section 32 90 00, PLANTING.

- F. Site preparation: Section 31 23 19, DEWATERING, and Section 02 41 00, DEMOLITION.
- G. Paving sub-grade requirements: Section 32 12 16, ASPHALT PAVING.

1.4 CLASSIFICATION OF EXCAVATION

- A. Unclassified Excavation: Removal and disposal of pavements and other man-made obstructions visible on surface; utilities, and other items including underground structures indicated to be demolished and removed; together with any type of materials regardless of character of material and obstructions encountered.
- B. Rock Excavation:
 - 1. Trenches and Pits: Removal and disposal of solid, homogenous, interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposit that cannot be excavated with a late-model, track-mounted hydraulic excavator; equipped with a 42 inch wide, short-tip-radius rock bucket; rated at not less than 138 hp flywheel power with bucket-curling force of not less than 28,090 lbf and stick-crowd force of not less than 19,000 lbf; measured according to SAE J-1179. Trenches in excess of 10 feet wide and pits in excess of 30 feet in either length or width are classified as open excavation.
 - 2. Open Excavation: Removal and disposal of solid, homogenous, interlocking crystalline material firmly cemented, laminated, or foliated masses or conglomerate deposits that cannot be dislodged and excavated with a late-model, track-mounted loader; rated at not less than 210 hp flywheel power and developing a minimum of 48,510 lbf breakout force; measured according to SAE J-732.
 - 3. Other types of materials classified as rock are unstratified masses, conglomerated deposits and boulders of rock material exceeding 1 cubic yard for open excavation, or 3/4 cubic yard for footing and trench excavation that cannot be removed by rock excavating equipment equivalent to the above in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted.
 - 4. Definitions of rock and guidelines for equipment are presented for general information purposes only. The Contractor is expected to use the information presented in the Geotechnical Engineering Report to evaluate the extent and competency of the rock and to determine both quantity estimations and removal equipment and efforts.

1.5 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Furnish to CO/COR:
 - 1. Contactor shall furnish resumes with all personnel involved in the project including Project Manager, Superintendent, and on-site Engineer. Project Manager and Superintendent should have at least 3 years of experience on projects of similar size.

2. Contractor shall furnish the qualifications for the Independent Geo-Technical Engineer and Testing Laboratory intended for use on the project, with documentation as to experience and appropriate licensure, for the review, modification and approval of the CO/COR.
3. Soil samples. (In addition to the samples required for the independent Testing Lab analysis, a sample of each of the same materials, 5-10 lbs. in weight each, shall be provided in labeled containers which shall be provided to the Cemetery Operations for storage until the project is completed.
4. Soil Samples for analysis by approved Independent Testing Lab and Geotechnical Engineer, as applicable:
 - a. Classification in accordance with ASTM D2487 for each on-site or borrow soil material proposed for General Fill, backfill, engineered fill, or structural fill.
 - b. Laboratory compaction curve in accordance with ASTM D 1557 for each on site or borrow soil material proposed for fill, backfill, engineered fill, or structural fill. In addition, the Laboratory testing shall be performed for the material to be placed on top of the preplaced crypts demonstrating compliance with the soil classification as well as conformance with the Liquid limits and Plasticity Index values indicated in these specifications. Only materials that comply with these standards shall be used for the backfill on top of the preplaced crypts.
 - c. Provide soil samples
 - c. Test reports for compliance with ASTM D 2940 requirements for subbase material.
 - d. Pre-excavation photographs and videotape in the vicinity of the existing structures to document existing site features, including surfaces finishes, cracks, or other structural blemishes that might be misconstrued as damage caused by earthwork operations.
 - e. The Contractor shall submit a scale plan daily that defines the location, limits, and depths of the area excavated.

1.6 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):

D448-12	Standard Classification for Sizes of Aggregate for Road and Bridge Construction
D1556/D1556M-15e1.....	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
D1557-12e1.....	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2700 kN m/m ³))
D2167-15	Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method

- D2487-11Standard Classification of Soil for Engineering Purposes (Unified Soil Classification System)
- D2940/D2940M-15.....Standard Specifications for Graded Aggregate Material for Bases or Subbases for Highways or Airports
- D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- C. Society of Automotive Engineers (SAE):
- J732-92..... Specification Definitions - Loaders
- J1179-02..... Hydraulic Excavator and Backhoe Digging Forces

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide borrow soil material when sufficient satisfactory soil materials are not available from excavations.
- B. Fills (**Except for on top of and around the preplaced crypts - See "Approved General Fill"**):
1. On-site soils located within the stockpiles described in The Robert B. Balter Company's Geotechnical Evaluation / Stockpile Evaluation Report National Cemetery of the Alleghenies, dated April 19, 2016 (see attached Appendix B), are suitable for reuse as controlled fill, as long as the material is free of rock or gravel larger than 3 inches in any dimension and free of debris, waste, frozen materials, vegetation, and other deleterious matter and are of optimal moisture content. The specific location of the available soil shall be defined as being within 40 horizontal feet of each boring / test pit that was performed as part of the evaluation. The use of and placement of the fill shall meet all requirements specified within the Report.
 2. On-site excavated soils located within the limit of construction are suitable for reuse as controlled fill, as long as the material is free of rock or gravel larger than 3 inches in any dimension and free of debris, waste, frozen materials, vegetation, and other deleterious matter, and are within 3% of optimal moisture content. The use of and placement of the fill shall meet all requirements specified within the Geotechnical Evaluation Report Appendix, dated November 24th, 2015. Coal may not be used onsite as fill.
 3. Imported material from off-site sources shall be in compliance with ASTM D2487 Soil Classification Groups GW, GP, GM, SW, SP and SM, or any combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter. Material approved from off-site sources shall have a minimum dry density of 110 pcf, a maximum Plasticity Index of 15, and a maximum Liquid Limit of 40.
- C. "Approved General Fill" as referenced on Drawings L-800 and L-801 (around and on top of the preplaced crypts): Material in compliance with ASTM Soil Classification Groups GW, GP, GM, SW, SP and SM, or any combination of these groups; free of rock or gravel larger than 1 inch in any

dimension, debris, waste, frozen materials, vegetation, and other deleterious matter. To be approved, this soil must have 35% or less of fines (passing a 200 sieve). Material for backfill on top of and around the preplaced crypts, as indicated on the drawing L-800 as "Approved General Fill, SHALL NOT be from on-site sources. Off-site borrow location(s) only shall be used for this material. The soils from the offsite borrow location(s) must be tested and approved by the independent testing lab before any materials for this use are allowed on the site. The soils when tested must meet the specifications described herein above as well as having tested and verified Plasticity Index (PI) of 15 or below and the Liquid Limit (LL) of 30 or below. If either the PI or LL are above the 15 and 30 values respectively, the soil is NOT acceptable as "Approved General Fill" Whenever the soil conditions change, or appear to have changed, as observed by the Independent Lab/Geo Technical firm, the soil must be retested to verify it is still in compliance with this specification. Any truck loads that are deemed as potentially not in conformance shall be segregated until retesting has been complete to verify whether it is acceptable or not.

- D. Engineered Fill: Naturally or artificially graded mixture of compliance with ASTM D2487 Soil Classification Groups GW, GP, GM, SW, SP, SM, SC, and ML, or any combination of these groups, or as approved by the Engineer or material with at least 90 percent passing a 1 1/2- inch sieve and not more than 12 percent passing a No. 200 sieve, per ASTM D2940;.
- E. Bedding: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940; except with 100 percent passing a 1 inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1 1/2- inch sieve and 0 to 5 percent passing a No. 8 sieve.
- G. Granular Fill:
 - 1. Under concrete slab, crushed stone or gravel graded from 1 inch to No. 4, per ASTM D2940.
 - 2. Bedding for sanitary and storm sewer pipe, crushed stone or gravel graded from 1/2 inch to No. 4, per ASTM D2940.
- H. Aggregate Subbase: Material conforming to PennDOT Standard Specifications for Type 2A Base Course.
- I. Drainage Aggregate and Crushed Stone: Non-expansive crushed aggregate conforming to AASHTO No. 57 gradation requirements, or approved equal.
- J. Stone Fill: Material conforming to PennDOT Standard Specifications for Class R-4 Rock.
- K. Stone Between Crypts: Rounded washed stone ONLY no crushed stone is allowed. Rounded washed stone shall pass a 3/8" sieve, and shall have 0% passing a #8 sieve. Stone shall be demonstrated to be self-compacting when placed (swept) into the allowed gap between crypts set into the 3' wide plots as indicated on L-800. Refer to Section 03 48 21 PREPLACED CONCRETE BURIAL CRYPTS for additional information.

- L. Sand: Material conforming to PennDOT Standard Specifications for Type A, Cement Concrete Sand.
- M. Filter Fabric: Material conforming to PennDOT Standard Specifications for Class 1, Subsurface Drainage, geotextile.

PART 3 - EXECUTION

3.1 SITE PREPARATION

- A. Clearing: Clear within limits of earthwork operations as shown. Work includes removal of trees, shrubs, fences, foundations, incidental structures, paving, debris, trash, and other obstructions. Remove materials from Cemetery Property.
- B. Grubbing: Remove stumps and roots 3 inch and larger diameter. Undisturbed sound stumps, roots up to 3 inch diameter, and nonperishable solid objects a minimum of 3 feet below subgrade or finished embankment may be left. Cemetery Projects: do not leave material within burial profile up to 8 feet below finished grade.
- C. Trees and Shrubs: Trees and shrubs, not shown for removal, may be removed from areas within 15 feet of new construction and 7.5 feet of utility lines when removal is approved in advance by CO/COR. Remove materials from Cemetery Property. Trees and shrubs, shown to be transplanted, shall be dug with a ball of earth and burlapped in accordance with latest issue of, "American Standard for Nursery Stock" of the American Association of Nurserymen, Inc. Transplant trees and shrubs to a permanent or temporary position within two hours after digging. Maintain trees and shrubs held in temporary locations by watering as necessary and feeding semiannually with liquid fertilizer with a minimum analysis of 5 percent nitrogen, 10 percent phosphorus, and 5 percent potash. Maintain plants moved to permanent positions as specified for plants in temporary locations until conclusion of contract. Box, and otherwise protect from damage, existing trees and shrubs which are not shown to be removed in construction area. Immediately repair damage to existing trees and shrubs by trimming damaged areas, including roots, in accordance with Section 32 90 00 - PLANTING, subsection 3.9 PRUNING. Do not store building materials closer to trees and shrubs, that are to remain, than farthest extension of their limbs.
- D. Stripping Topsoil: Strip topsoil from within limits of earthwork operations as specified. All stripped topsoil shall be either directly removed from the portion of the Cemetery site westerly of the Interstate, or stockpiled temporarily until it is moved to the Cemetery spoils area on the Easterly side of the interstate and spread as directed by the Cemetery operations. None of the topsoil removed from the construction areas shall be used on these improvements as constructed. All topsoil shall be imported from approved locations where the topsoil has been tested and verified to meet or exceed the specifications in Section 32 90 00 Planting.
- E. Concrete Slabs and Paving: Score deeply or saw cut to insure a neat, straight cut, sections of existing concrete slabs and paving to be removed where excavation or trenching occurs. Extend pavement section to be removed a minimum of 12 inches on each side of widest part of trench excavation and insure final

score lines are approximately parallel unless otherwise indicated. Remove material from Cemetery Property.

- F. Lines and Grades: Registered Professional Land Surveyor or Registered Civil Engineer, specified in Section 01 00 00, GENERAL REQUIREMENTS, shall establish lines and grades.
1. Grades shall conform to elevations indicated on plans within the tolerances herein specified. Generally grades shall be established to provide a smooth surface, free from irregular surface changes. Grading shall comply with compaction requirements and grade cross sections, lines, and elevations indicated. Where spot grades are indicated the grade shall be established based on interpolation of the elevations between the spot grades while maintaining appropriate transition at structures and paving and uninterrupted drainage flow into inlets.
 2. Locations of existing and proposed elevations indicated on plans, except spot elevations, are approximate from a site survey that measured spot elevations and subsequently generated existing contours and spot elevations. Proposed spot elevations and contour lines have been developed utilizing the existing conditions survey and developed contour lines and may be approximate. Contractor is responsible to notify CO/COR of any differences between existing elevations shown on plans and those encountered on site by Surveyor/Engineer described above. Notify CO/COR of any differences between existing or constructed grades, as compared to those shown on the plans.
 3. Subsequent to establishment of lines and grades, Contractor will be responsible for any additional cut and/or fill required to ensure that site is graded to conform to elevations indicated on plans.
 4. Finish grading is specified in Section 32 90 00, PLANTING.
- G. Disposal: All materials removed from the property shall be disposed of at a legally approved site, for the specific materials, and all removals shall be in accordance with all applicable Federal, State and local regulations. No burning of materials is permitted onsite.

3.2 EXCAVATION

- A. Shoring, Sheet piling and Bracing: Shore, brace, or slope, its angle of repose or to an angle considered acceptable by the CO/COR, banks of excavations to protect workmen, banks, adjacent paving, structures, and utilities.
1. Design of the temporary support of excavation system is the responsibility of the Contractor.
 2. Construction of the support of excavation system shall not interfere with the permanent structure and may begin only after a review by the CO/COR.
 3. Extend shoring and bracing to a minimum of 5 feet below the bottom of excavation.
 4. Shore excavations that are carried below elevations of adjacent existing foundations.
- B. Excavation Drainage: Operate pumping equipment, and/or provide other materials, means and equipment as required to keep excavation free of water and subgrade dry, firm, and undisturbed until approval of permanent work has been received from CO/COR. Approval

by the CO/COR is also required before placement of the permanent work on all subgrades.

- C. Subgrade Protection: Protect subgrades from softening, undermining, washout, or damage by rain or water accumulation. Reroute surface water runoff from excavated areas and not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches. When subgrade for foundations has been disturbed by water, remove disturbed material to firm undisturbed material after water is brought under control. Replace disturbed subgrade in trenches with concrete or material approved by the CO/COR.

D. Proofrolling:

1. After rough grade has been established in cut areas and prior to placement of fill in fill areas under building and pavements, proofroll exposed subgrade with a fully loaded dump truck to check for pockets of soft material.
2. Proofrolling shall consist of at least two complete passes with one pass being in a direction perpendicular to preceding one. Remove any areas that deflect, rut, or pump excessively during proof rolling, or that fail to consolidate after successive passes to suitable soils and replaced with compacted fill. Maintain subgrade until succeeding operation has been accomplished.

E. Trench Earthwork:

1. Utility trenches (except sanitary and storm sewer):
 - a. Excavate to a width as necessary for sheeting and bracing and proper performance of the work.
 - b. Grade bottom of trenches with bell holes scooped out to provide a uniform bearing.
 - c. Support piping on undisturbed earth unless a mechanical support is shown.
 - d. Length of open trench in advance of piping laying shall not be greater than is authorized by CO/COR.
2. Storm sewer trenches:
 - a. Trench width below a point 6 inches above top of pipe shall be 24 inches minimum plus diameter of the pipe. Width of trench above that level shall be as necessary for sheeting and bracing and proper performance of the work.
 - b. Bed bottom quadrant of pipe on undisturbed soil or granular fill.
 - 1) Undisturbed: Bell holes shall be no larger than necessary for jointing. Backfill up to a point 12 inches above top of pipe shall be clean earth placed and tamped by hand.
 - 2) Stone Fill: Depth of fill shall be a minimum of 6 inches below pipe to 12 inches above top of pipe. Place and tamp fill material by hand.
 - c. Place and compact as specified remainder of backfill using acceptable excavated materials. Do not use unsuitable materials.
 - d. Use stone fill for bedding where rock or rocky materials are excavated.

- G. Site Earthwork: Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation. Excavation shall be accomplished as required by drawings and specifications. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, complying with OSHA requirements, and for inspections. Remove subgrade materials that are determined by CO/COR as unsuitable, and replace with acceptable material. If there is a question as to whether the remaining subgrade material is unsuitable or not, the Contractor shall obtain samples of the material, under the direction of the CO/COR, and the materials shall be examined by an independent testing laboratory for soil classification to determine whether it is unsuitable or not. When unsuitable remaining subgrade material is encountered and removed, contract price and time will be adjusted in accordance with Articles, DIFFERING SITE CONDITIONS, CHANGES and CHANGES-SUPPLEMENT of the GENERAL REQUIREMENTS as applicable. Adjustments to be based on volume in cut section only.
- a. Provide a smooth transition between adjacent existing grades and new grades.
 - b. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
 - c. Slope grades to direct water to prevent ponds from forming where not designed. Finish subgrades to required elevations within the following tolerances:
 - 1) Lawn or Unpaved Areas: Plus or minus 1 inch.
 - 2) Walks: Plus or minus 1 inch.
 - 3) Pavements: Plus or minus 1/2 inch.

3.3 FILLING AND BACKFILLING

- A. General: Do not fill or backfill until all debris, water, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation. For fill and backfill, use excavated materials and borrow meeting the criteria specified herein, as applicable. Borrow will be supplied at no additional cost to the Government. Do not use unsuitable excavated materials.
- B. Backfill around and on top of the preplaced crypts: When the crypt fields are completed and approved to allow placement of "Approved General Fill" in the space between the crypt and the sides of the excavation, the "Approved General Fill" from the approved borrow site(s) may be brought to the site and offloaded in preparation of the backfill operation. The trucks bringing "Approved General Fill" will be allowed to enter the site and dump nearby the crypt excavation, only following verification that the load has come from the approved borrow location, that has had the soils tested and approved by the Independent Testing Lab as meeting the physical parameters, soil classification, acceptable PI and LL values and specified gradation (especially the maximum percentage of fines indicated in Paragraph 2.1.C. When "Approved General Fill" is to be

- brought to the site, the Contractor shall ensure that the representative from the Independent Lab / Geotechnical Engineering firm is present. The Independent Lab shall initiate procedures to verify that the materials arriving at the site are from the approved borrow site and that the materials loaded meet the specifications for the "Approved General Fill". If this cannot be done, or if there is any question that the material might not meet the specifications due to real or perceived changes in the soil, the Independent Representative shall stop the placement of the material and shall segregate the load(s) so they can be tested. Samples shall then be taken, and the soils retested, at no cost to the Government, so the material can be approved or not for use as the "Approved General Fill" to be placed on and around the crypts. It is the Contractor's responsibility to provide information that demonstrates that each load of borrow material to be used as "Approved General Fill" meets the specifications.
- C. Placing: Place materials in horizontal layers not exceeding 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers and then compacted. Place backfill and fill materials evenly to required elevations. Place no material on surfaces that are muddy, frozen, or contain frost.
- D. Compaction: Compact with approved tamping rollers, sheepfoot rollers, pneumatic tired rollers, steel wheeled rollers, vibrator compactors, or other approved equipment (hand or mechanized) well suited to soil being compacted.. Moisten or aerate material as necessary to provide moisture content that will readily facilitate obtaining specified compaction with equipment used. Compact soil to not less than the following percentages of maximum dry density, according to ASTM D1557 as specified below:
1. Fills, Embankments, and Backfill
 - a. Under proposed structures, building slabs, steps, and paved areas, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material in accordance with ASTM D1557 95 percent.
 - b. Curbs, curbs and gutters ASTM D1557 95 percent.
 - c. Under Sidewalks, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material in accordance ASTM D1557 95 percent.
 - d. Landscaped areas, top 16 inches, ASTM D1557 85 percent.
 - e. Landscaped areas, below 16 inches of finished grade, ASTM D1557 90 percent.
 2. Natural Ground (Cut or Existing)
 - a. Under building slabs, steps and paved areas, top 6 inches, ASTM D1557 95 percent.
 - b. Curbs, curbs and gutters, top 6 inches, ASTM D1557 95 percent.
 - c. Under sidewalks, top 6 inches ASTM D1557 95 percent.

3.4 GRADING

- A. General: Uniformly grade the areas within the limits of this section, including adjacent transition areas. Smooth the finished surface within specified tolerance. Provide uniform levels or slopes between points where elevations are indicated, or between such points and existing finished grades. Provide a smooth transition between abrupt changes in slope.
- B. Cut rough or sloping rock to level beds for foundations. In pipe spaces or other unfinished areas, fill low spots and level off with coarse sand or fine gravel.
- C. Place crushed stone or gravel fill under concrete slabs on grade, tamped, and leveled. Thickness of fill shall be 6 inches unless otherwise shown.
- D. Finish subgrade in a condition acceptable to CO/COR at least one day in advance of paving operations. Maintain finished subgrade in a smooth and compacted condition until succeeding operation has been accomplished. Scarify, compact, and grade subgrade prior to further construction when approved compacted subgrade is disturbed by Contractor's subsequent operations or adverse weather.
- E. Grading for Paved Areas: Provide final grades for both subgrade and base course to +/- 0.25 inches of indicated grades.

3.5 DISPOSAL OF UNSUITABLE AND EXCESS EXCAVATED MATERIAL

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Cemetery property.
- B. Place excess excavated materials suitable for fill and/or backfill on site where directed.
- C. Remove from site and dispose of any excess excavated materials after all fill and backfill operations have been completed.
- D. Segregate all excavated contaminated soil designated by the CO/COR from all other excavated soils, and stockpile on site on two 6 mil polyethylene sheets with a polyethylene cover. A designated area shall be selected for this purpose. Dispose of excavated contaminated material in accordance with State and Local requirements.
- E. Coal encountered may not be reused onsite. Coal encountered during excavation shall be removed and legally disposed of off-site. Prior to coal removal Jeffery Kohut from Pennsylvania Department of Environmental Protection (DEP) shall be contacted; (814) 242-5971. At the conclusion of coal removal activities the Contractor shall notify DEP of the volume of coal removed and the fate of the coal. See attached Incidental Coal Extraction Authorization from DEP.

3.6 CLEAN UP

- A. Upon completion of earthwork operations, clean areas within contract limits, remove tools, and equipment. Provide site clear, clean, free of debris, and suitable for subsequent construction operations. Remove all debris, rubbish, and excess material from Cemetery Property.

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February 11, 2015

Mr. David Martino
U.S. Department of Veterans Affairs
425 I Street Northwest
Suite 6W.417C
Washington, DC 20001

RE: US Department of Veterans Affairs
National Cemetery of the Alleghenies Phase II Expansion
Incidental Coal Extraction Authorization
Cecil Township
Washington County

Dear Sir:

The Department of Environmental Protection (Department) has reviewed your proposal, dated January 13, 2015, for the removal of incidental coal during site excavation and preparation activities at the above-referenced construction project. This proposal was submitted by The LA Group on your behalf.


Your request for approval of incidental coal extraction (ICE) is approved since it meets the requirements of Chapters 86.6(a)(3) and (4) of the mining regulations. The ICE should be conducted in accordance with the plans that were submitted to the Department for review and approval.

Please provide the Department with written notification of the volume of coal removed and the fate of the coal at the conclusion of coal removal activities.

The Department reserves the right to conduct inspections of your project area and to initiate enforcement action for failure to comply with any applicable Department regulations. The Mine Conservation Inspector for your project is Jeffrey T. Kohut. Please contact Mr. Kohut at (814) 242-5971 prior to the commencement of coal removal activities.

Should you have any questions concerning this letter, please contact Mr. Richard H. Palmer at 724-925-5520.

Sincerely,


Joseph F. Leone, P.E.
District Mining Manager
District Mining Operations

cc: Douglas B. Heller, PE – The LA Group (40 Long Alley, Saratoga Springs, NY 12866)

New Stanton District Office
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