

PART 1 GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.
- B. Geotechnical reference documents
 - * 1. "Transbay Tower Geotechnical Data Report," dated June 17, 2013.
 - 2. "Transbay Tower – Lateral Earth Pressures for Shoring Design" prepared by Arup dated March 8, 2013

1.2 SUMMARY

- A. Section includes specifications for earthwork associated with the excavation for the Transbay Tower.
- B. Related Sections:
 - 1. Section 31 23 19 "Dewatering" for dewatering excavations.
 - 2. Section 31 55 00 "Excavation Support System"
- C. Exclusions:
 - 1. Excavation associated with the construction of drilled concrete piers and shafts.
 - 2. Earthwork associated with utility trenches.
 - 3. Earthwork in the public right of way
 - 4. Demolition and removal of existing below grade foundation elements, site improvements, and abandoned utilities.

1.3 REFERENCES

- A. ASTM International:
 - 1. ASTM C131-06 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
 - 2. ASTM C136-06 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
 - 3. ASTM C535-09 Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
 - 4. ASTM D422-63(2007) Standard Test Method for Particle-Size Analysis of Soils
 - 5. ASTM D448-08 - Standard Classification for Sizes of Aggregate for Road and Bridge Construction.
 - 6. ASTM D653-Standard Terminology Relating to Soil, Rock, and Contained Fluids
 - 7. ASTM D1140-00(2006) Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75- μ m) Sieve
 - 8. ASTM D1556-07 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - 9. ASTM D1557-09 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
 - 10. ASTM D2216-05 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
 - 11. ASTM D2419-09 Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
 - 12. ASTM D2487-06e1 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 - 13. ASTM D4253-00(2006) Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
 - 14. ASTM D4254-00(2006)e1 Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density

15. ASTM D4318-05 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 16. ASTM D5195-08 Standard Test Method for Density of Soil and Rock In-Place at Depths Below Surface by Nuclear Methods
 17. ASTM D6938-08a Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
 18. ASTM E329-08 Standard Specification for Agencies Engaged in Construction Inspection and/or Testing
- B. State of California:
1. CAL/OSHA: Title 8, Section 5192, Hazardous Waste Operations and Emergency Response.
- C. Green Book Committee:
1. Greenbook: Standard Specifications for Public Works Construction, Edition 2009.
- D. Standard Specifications of the City and County of San Francisco, Department of Public Works, Bureau of Engineering, (SSDPWSF), dated November 2000.

1.4 DEFINITIONS

- A. Excavation: consists of the removal of material to specified elevations as shown on the Drawings, and the reuse or disposal of materials removed. For the purpose of this Contract, excavation is classified as follows:
1. Excavate the existing fill and in-situ soil to the levels as shown in the Drawings
- B. Earthwork Terminology: Terms used in this Section and not defined herein shall be interpreted in accordance with the definitions given in ASTM D653.
- C. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill upon which the building foundation will be placed.
- D. Fill: CLSM, soil or soil-rock material placed to raise the subgrade, to plug void spaces or to replace over-excavated material.
- E. Imported Materials: Soil material approved by the Owner's Representative and obtained off-site when sufficient approved soil materials are not available from excavations.
- F. Unsuitable Material: Excavated material or material below subgrade elevation in excavated areas which is unsuitable for its planned use as determined by the Owner's Representative. Unsuitable material is further defined as material the Owner's Representative determines to be:
1. Of such nature as to be incapable of being compacted to specified density using ordinary methods at optimum moisture content, or
 2. Too wet to be properly compacted and circumstance prevent suitable in-place drying prior to incorporation into the work.
- G. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions as shown on the Drawings without direction by the Owner's Representative.
- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- I. Train Box Structure: Mud slab, structure foundation and any other element of the train box placed directly on the subgrade.
- J. Testing Agency: Independent testing and inspection organization complying with ASTM E329 and employed by the Owner to perform verification inspection and testing as defined by the relevant ASTM standards and these specifications.
- K. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.

1.5 SUBMITTALS

- A. Submit the following according to Conditions of the Construction Contract and Division 1 Specification Sections.
- B. Name, qualifications and experience of the qualified and competent person who will have full-time, on-site responsibility for earthwork operations.

- C. Submit a work plan that details the excavation and backfill operations for review by the Owner's Representative. The work plan shall include:
 - 1. Proposed sequence of excavation and installation of excavation support system including, where appropriate, locations of cut-off walls, locations, slopes and dimensions of berms and equipment trenches and temporary shoring walls.
 - 2. List of equipment proposed for use, and its intended method of operation.
 - 3. Proposed methods of supporting, working around, and protecting utilities uncovered in the course of work.
 - 4. Contingency Plan: The required actions to be undertaken in the event that displacements reach the Action Trigger Levels. Refer to section 31 50 00 – Excavation Support System for additional requirements.
 - 5. Proposed disposal area for excavated material.
- D. Quality Plan: Refer to Division 1- Quality Control, for submittal requirements. The Quality Plan shall include a schedule of all tests specified to be performed by the Contractor.
- E. Samples: Furnish and deliver samples of fill and backfill materials as selected by the Owner's Representative for testing and analysis.
 - 1. Rock Backfill: Provide a sample (about ½ cubic yard) of the rock backfill.
 - 2. Crushed Rock Backfill: Provide a sample (about ¼ cubic yard) of the crushed rock backfill.
 - 3. Backfill materials: Submit a sample (½ cubic yard) of proposed imported material.
- F. Backfill materials: Submit a delivery ticket with each load of fill material delivered to the Site of the Work showing its source, type, and weight.

1.6 CLOSEOUT SUBMITTALS

- A. Division 1 – Contract Closeout: Requirements for submittals.
- B. Record Drawings: Submit record drawing as specified in Article 3.18 Field Quality Control.

1.7 QUALITY ASSURANCE

- A. Refer to Division 1 - Quality Control, for general requirements.
- B. Codes and Standards: 2010 California Building Code (CBC) with San Francisco Amendments.
- C. Perform Work in accordance with City and County of San Francisco Municipal Code.
- D. The Contractor shall meet the applicable requirements of Division 1 - Quality Control. The Owner shall employ a Testing Agency to supply verification inspection and testing as defined by the relevant ASTM standards and these specifications.

1.8 SUBSURFACE CONDITIONS

- A. Refer to Geotechnical Data Report for borehole location plans, cross-sections, contours of the various strata, and a description of the stratigraphy.
- B. Refer to Division 1 – Hazardous Materials Procedures.

1.9 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt existing utilities serving facilities occupied others except when permitted in writing by the user of the utility and then only after acceptable temporary utility services have been provided.
 - 1. Provide a minimum 72-hours notice to the user and receive written notice to proceed before interrupting any known utility.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide imported soil materials from off-site when sufficient approved soil materials are not available from excavations.
- B. Satisfactory Soil Materials:

1. All soil materials should be free of rock or gravel larger than 3 inches in any dimension, debris, waste, organic matter, frozen materials, vegetation and other deleterious matter.
2. ASTM D2487 soil classification groups SM, GC, and SC may be used if they have a Liquid Limit (LL) less than 30 and a Plasticity Index (PI) of 10 or less as general fill. Imported materials:
 - a. Contains sufficient fines to be relatively impermeable.
 - b. Non-expansive soils with and expansion index of less than 90.
 - c. Water-soluble sulfate content of less than 0.1% by weight.
 - d. Free from chemical or organic substances
- C. Unsatisfactory Soil Materials: ASTM D2487 soil classification groups CL, ML, MH, CH, OL, OH, PT, and any soil material with LL greater than 30, PI greater than 10, and soil with less than 20 % fines.
- D. Backfill and Fill Materials: Satisfactory soil materials.

2.2 CONCRETE MATERIALS

- A. Controlled Low Strength Material (CLSM) shall conform to the requirements specified in Section 31 50 00 Excavation Support System.

PART 3 EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Call the USA North, the Underground Service Alert network, at 8-1-1, or 1-800-227-2600 at least two working days before performing Work.
- C. Request underground utilities to be located and marked within and surrounding construction areas, which should be outlined with white paint or chalk by the Contractor.
- D. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.2 PROTECTION OF WORK

- A. Unfavorable Weather Conditions:
 1. Do not perform excavating, backfilling, and grading work during weather conditions which might damage or be detrimental to the condition of existing ground, in-progress work, or completed work. When the backfilling and grading work are interrupted by rain, do not resume work until the soil is treated in accordance with Article 3.16 TREATMENT OF WET SOILS.
 2. Subgrade shall be free from excess water in all forms and deleterious material when the building foundation is placed.
 3. Backfill material which is too wet for compaction, as determined by the Owner's Representative, shall be left to drain, and be aerated and dried by discing and harrowing or other approved method until the moisture content of the area is uniform and within the specified limits. If backfill material cannot be dried by this method in time to meet the Construction Schedule, remove it and replace with material having the required moisture content for compaction as specified. Backfill material removed may be processed in a stockpile to bring it to the required moisture content and used later.
- B. Prevention of Erosion: Prevent erosion of stockpiles and backfilled and graded areas throughout earthwork operations.

3.3 SEQUENCING AND SCHEDULING

- A. Comply with the requirements of Division 1 - Progress Schedule for schedule preparation, revision, and submittal.

3.4 STAKING AND GRADES

- A. The primary project control is indicated on the Drawings. Contractor to submit to the Owner's Representative a list of existing monuments and benchmarks which are to be used as controls.

- B. The Contractor shall be responsible for the correct location of the work and shall comply with requirements of Section 01 10 50 Survey and Control.
- C. The Contractor shall perform surveys in accordance with the requirements of Division 1 - Survey and Control of the following:
 - 1. Initial survey of original ground.
 - 2. Final surveys when excavations and fills are completed.

3.5 SUBSURFACE EXTRACTION

- A. When subsurface facilities are encountered during excavation which interfere with new construction, and such facilities are not indicated on the Drawings, notify the Owner's Representative who will determine corrective action.
- B. Set aside carefully for the Owner's Representative's inspection any objects of apparent archaeological or historic interest.

3.6 EXISTING UTILITIES

- A. Verify on the Site of the Work the locations and elevations of all existing utilities and services. Excavation within 18 inches of the utility lines shall be performed by hand.
- B. Utility lines encountered but not indicated on the Drawings shall be left undisturbed and immediately reported to the Owner's Representative. The Owner's Representative will inform the utility owner, who shall be permitted free access to examine the line.
- C. Utility lines indicated on the Drawings as abandoned, or not indicated on the Drawings but subsequently determined by the Owner's Representative or utility owner to be abandoned, shall be removed sufficiently to accommodate the work and have their ends sealed. During demolition of abandoned utilities, ensure that live utilities connected to the abandoned utilities, if any, are not damaged. Removal and sealing of abandoned utilities indicated on the drawings will not be paid for separately, but will be deemed included in the Contract prices for Earthwork. Removal and sealing of abandoned utilities not indicated on the Relocation of Utilities Project drawings will be paid for as Extra Work.
- D. Support, work around, and protect all active utility lines. This work will not be paid for separately if the utility lines are indicated on the Drawings but will be deemed included in the Contract prices for Earthwork. Supporting, working around, and protecting lines not indicated on these drawings will be paid for as Extra Work.
- E. If an active utility line is found to require relocation or repair, the Contractor shall permit the utility owner access to work on the line, if so required by the Owner's Representative, and upon receiving 24 hours notice. If the Contractor is requested to undertake the relocation or repair and agrees to do so, such relocation or repair will be paid for as Extra Work. However, if repairs are made necessary by fault of the Contractor as determined by the Owner's Representative in consultation with the utility owner, such repairs, whether made by the utility owner or Contractor, shall be at the Contractor's expense.

3.7 EXCAVATION – GENERAL REQUIREMENTS

- A. Explosives: Do not use explosives.
- B. Excavation is unclassified and includes excavation to subgrade elevations indicated regardless of character of materials and obstructions encountered.
- C. Sequence of excavation and the installation of bracing elements shall be incorporated into the design of the shoring support system.
- D. Throughout excavation, support, work around, and protect all utilities and underground structures encountered, unless these are to be removed. In case of doubt, obtain the Owner's Representative's direction before proceeding.
- E. The bottoms of excavations shall be level CLSM or firm earth undisturbed or compacted in accordance with Article 3.15, clean and free from loose material, debris, and foreign matter.
- F. Handle groundwater, from whatever source, in accordance with requirements of Section 31 23 19 Dewatering.
- G. Remove from bottom of excavation material found unacceptable by the Owner's Representative including large stones and debris. Fill all resulting hollows with CLSM, crushed stone or clean structural backfill as approved by the Owner's Representative. Compact as specified herein.
 - 1. Over-excavation shall be filled in the same manner.

- H. Over-excavation and its backfill ordered by the Owner's Representative will be paid for at Unit Price. Unauthorized over-excavation and its backfill shall be at the expense of the Contractor.
- I. Boulders encountered at the Site that are too large to be handled conveniently in one piece shall be broken by drilling, wedging, or other mechanical means. Blasting shall not be employed. Sound rock, broken to specified size, may be employed as rock backfill.
- J. On vertical surfaces of soil mix shoring walls, scarify high areas and fill in cavities exceeding 1" deep with patching cement to provide a reasonably uniform surface over which protection board, installed in a later contract, will span without buckling.

3.8 MAINTENANCE OF EXCAVATIONS AND SLOPES

- A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.
- B. Excavate and remove material within the limits of excavation which is unstable and constitutes potential slides, and material which comes into excavations for any reason including from shoring wall installation.
- C. Maintain slopes until completion of excavation or backfilling between slope and structure. Promptly repair slides, slipout, washouts, settlements, and subsidences which occur by any reason, and refinish the slope to the indicated lines and grades or as otherwise determined by the Owner's Representative.

3.9 SUBGRADE PREPARATION

- A. Subgrade preparation shall comprise all those operations necessary to bring the soil to an acceptable condition. It shall include rough grading, removal, and disposal of unsuitable material, and its replacement with approved fill, fine grading, and compaction. It may also include scarifying and harrowing if these operations are determined by the Owner's Representative to be required.
- B. Scarifying and discing, if ordered by the Owner's Representative, shall consist of the following operations:
 - 1. Loosening the soil to a depth of at least 6 inches.
 - 2. Bringing the loosened material to a finely divided condition.
 - 3. Removing rocks larger than 3 inches in diameter and all debris.
 - 4. Bringing the moisture content to optimum by adding water, by adding and blending suitable dry material, or by drying existing material.
 - 5. Fine grading to required line, grade, and contour to the specified tolerances.
- C. Upon completion of the foregoing operations, compact the soil in accordance with Article 3.15 COMPACTION.

3.10 APPROVAL OF SUBGRADE

- A. Notify the Owner's Representative when excavations have reached required subgrade.
- B. Reconstruct subgrades damaged by rain, accumulated water, or construction activities, as directed by the Owner's Representative.

3.11 PROTECTION OF SUBGRADE

- A. Immediately upon reaching subgrade, the Contractor shall install a 4 inch thick mud slab of lean concrete mix or CLSM to protect the subgrade.
- B. Approval of the condition of the subgrade shall be obtained from the Owner's Representative prior to installation of the mud slab.

3.12 STORAGE OF SOIL MATERIALS

- A. Refer to Section 01 13 50 – Hazardous Materials Procedures for removal of hazardous materials.
- B. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable imported materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent wind-blown dust. Do not store within drip line of building trees or buildings
- C. Establish material stockpiles on the Site of the Work only in locations where they will not create unsafe conditions or interfere with the progress of the work, and only as approved by the Owner's Representative. Offsite stockpiling, if necessary, shall be the responsibility of the Contractor.

- D. Remove excess excavated material from site immediately.

3.13 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
 1. Acceptance of construction below finish grade.
 2. Removal of trash and debris from excavation.
 3. Removal of temporary shoring, bracing, and sheeting except for pin piles, dewatering pipes and other items required in the Drawings and Specifications.
- B. Notify the Owner's Representative at least 72 hours prior to the start of backfill operations and obtain the Owner's Representative's approval of samples of the material intended to be used.

3.14 FILL

- A. Preparation: Remove debris, wet and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
- B. When the Owner's Representative determines that the subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required to reach suitable material (as determined by the Owner's Representative), pulverize, moisture-condition or aerate soil and recompact to the required density.
- C. Place fill material in layers in accordance with Article 3.15 COMPACTION to required elevations as shown on the Drawings.

3.15 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials on all sides of structures to required elevations. Place fill uniformly along the full length of each structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than 95 percent maximum dry density according to ASTM D1557.

3.16 TREATMENT OF WET SOILS

- A. Fill or native soil materials with moisture content well above optimum moisture content (as determined by the Owner's Representative) shall require drying and aeration prior to compaction, At Contractor's option, or if drying and aeration are not feasible, remove the top 12-inch of wet soil and replace with a 12-inch thick mat of gravel, maximum top size 3".

3.17 TOLERANCES

- A. Excavate to level +/- 1 inch of the elevations indicated on the Drawings.
- B. Construct final subgrade to +/- 0.5 inch of the elevations indicated on the Drawings.
- C. Maintain the moisture content of fill material as it is being placed within +/- 2 percent of its optimum moisture content as determined by the specified laboratory test.

3.18 FIELD QUALITY CONTROL

- A. The Owner shall employ a Testing Agency to supply verification inspection and testing as defined by the relevant ASTM standards and these specifications.
 1. The Testing Agency shall employ a Geotechnical Engineer registered in the State of California who shall exercise continuous supervision of the entire earthwork inspection and testing program.
 2. Testing Agency shall conduct inspections and tests as required by these specifications and interpret the results of the tests. Testing Agency shall summarize their finding in inspection and testing reports signed and sealed by their Geotechnical Engineer. Reports shall identify any findings that are not in compliance with requirements of the project specifications.
 3. Contractor shall provide access for Testing Agency so that inspection and testing can be accomplished.

4. Contractor shall correct deficiencies in the work that inspections and laboratory test reports have indicated to be not in compliance with these requirements. Any tests that may be necessary to reconfirm any noncompliance of original work, and as may be necessary to show compliance of corrected work, shall be at the Contractor's expense.
 5. The verification testing and inspection conducted by the Testing Agency does not relieve the Contractor of the responsibility for conducting their own quality control to ensure the requirements of the construction documents have been met.
 6. Testing Agency shall review the following Contractor Submittals:
 - a. Samples of fill and backfill material.
- B. Inspection and Testing by the Testing Agency:
1. Excavating, conditioning, filling, and compacting procedures shall be carried out under the inspection of the Testing Agency, who will perform appropriate field and laboratory tests to evaluate the suitability of fill material, the proper moisture content for compaction, and the degree of compaction achieved. Fill that does not meet the specified requirements shall be removed or recompacted until the requirements are satisfied.
 2. The Contractor shall provide soil samples as requested by the Owner's Representative from locations selected by the Owner's Representative.
 3. Tests by the Testing Agency:
 - a. Density Tests: Compacted fill shall be tested to verify compliance with the specified requirements in accordance with ASTM D2922 or other approved test methods. Frequency of tests will be determined by the Owner's Representative based on the Contractor's work plan.
 - b. Moisture Content Tests: Compacted fill shall be tested to verify compliance with specified requirements in accordance with ASTM D3017 or other approved test methods.
- C. Whenever acceptance of the Owner's Representative is required by these Specifications, the Contractor shall notify the Owner's Representative at least 24 hours prior to commencing any phase of earthwork.
1. No phase of the work shall proceed until the prior phase of work has been accepted by the Owner's Representative.
 2. Work shall not be covered up or continued until acceptance of the Owner's Representative has been obtained.
 3. The Owner's Representative shall give written notice of conformance with the Specifications upon completion of grading.
- D. No deviations from the contract documents shall be made without specific and written acceptance of the Owner's Representative.
- E. The Contractor shall follow clarification and interpretation memoranda prepared by the Owner's Representative.
- F. The Owner's Representative's review of the Contractor's performance does not include review of the Contractor's safety measures.
- G. Record Drawings:
1. Maintain on the Site of the Work a set of layout drawings and record on them the following data neatly and legibly:
 - a. Initial survey of original ground.
 - b. Elevations, locations, and dimensions of any uncovered piles, pile caps, footings, or other building foundation elements that are not indicated on the Drawings.
 - c. Lines, elevations, sizes, and identities, if determined, of active and abandoned utilities uncovered and not indicated on the Drawings.
 - d. Old footings, walls, vaults, manholes, and other objects not indicated on the Drawings and deemed by the Owner's Representative as worthy of record.
 - e. Final surveys when excavations and fills are completed.
 2. Permit the Owner's Representative access to these drawings throughout the course of the work and submit to the Owner's Representative upon completion of the Work.

3.19 PROTECTION

- A. Protection of Persons and Property
 - 1. Refer to Division 1 - Construction Facilities and Temporary Controls and Division 1 - Protection of Property.
- B. Protecting Excavated Areas:
 - 1. Provide additional support to the shoring wall, or submit calculations to demonstrate the shored condition is adequate to the Owner's Representative, if:
 - a. Material is stockpiled within 50 feet of excavations, or
 - b. Equipment and vehicles whose operating weight exceeds 250 psf are parked closer than 50 feet to the edge of the excavation, or
 - c. Outrigger or wheel loads in excess of 16,000 lbs are parked closer than 50 feet to the edge of the excavation.
 - 2. Protect newly excavated areas from traffic and erosion. Keep free of trash and debris. Protection of sloped faces within the area being excavated is the responsibility of the Contractor.
 - 3. Install berms along tops of the slopes to prevent runoff water from entering excavation and eroding the slope faces. Water should not be allowed to pond on the top of the excavation or to flow towards it.
 - 4. Provide minimum one row of 2x12 pressure treated Douglas Fir timber lagging at the top of the shoring wall along the entire length of the wall alignment to prevent loose materials from falling into the excavation.
- C. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace material to depth directed by the Owner's Representative, reshape and recompact optimum moisture content to the required density.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.
- B. Refer to Division 1 – Hazardous Materials Procedures for disposal of hazardous materials.

END OF SECTION