PART 1 - GENERAL

1.01 SECTION INCLUDED

A. Excavating trenches, holes, and pits for constructing the work.

B. Backfilling and compaction pipeline or underground structure from bedding to subgrade or finish grade elevations.

1.02 RELATED SECTIONS

A. Division 00 – Contract General Conditions.

B. Section 01 40 00 – Testing and Inspections

C. Section 01 50 00 – Temporary Facilities.

D. Section 31 11 00 - Clearing of Work Site for Site Improvements.

E. Section 31 14 00 – Soil Materials.

F. Section 31 20 00 – Earthwork: Excavation, Filling, and Grading.

G. Section 33 40 00 – Storm Drainage Improvements.

H. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specifications sections, apply to the work of this section.

1.03 REFERENCES

A. ASTM D 1557.

1.04 COORDINATION

A. Coordinate work with Owner’s Construction Manager and other personnel.

B. Contractor to contact Utility companies, USA Dig (811), and others prior to starting excavation work onsite.

1.05 EXISTING UTILITIES

A. The Engineer has indicated on the plans the location of all known existing utility facilities within the work area. The location of said facilities shall be considered approximate only, until exposed by the Contractor. Contractor responsible for reviewing as-builts provided during bid phase, and hold a job walk prior to excavation to review said documents with crews performing the work with Owner’s Construction Manager.

B. Protect all existing utility improvement lines during the backfill process.

PART 2 - PRODUCTS

2.01 FILL MATERIALS

A. Backfill with native, suitable materials.
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TRENCH EXCAVATION BACKFILL

PART 3 - EXECUTION

3.01 REPARATION

A. Protect all improvements not authorized for removal.
B. Maintain and protect above and below grade utilities to remain.
C. Comply with all provisions of the Construction Safety Orders and General Safety Orders of the California Division of Industrial Safety, as well as all other applicable regulations as they pertain to the protection of workers from the hazard of caving ground in excavations.

3.02 EXCAVATION

A. Excavate soil required to locate existing utilities and install the work, use hand method as necessary in congested area.
B. Employ equipment and methods appropriate to the work site.
C. Cut trenches just wide enough to enable installation and proper backfill and do not interfere with 45 degree bearing splay of foundations. When excavating through tree roots, cut roots by hand.
D. Excavate trenches to provide the minimum cover required.
E. Excavate trenches, pits, or holes bottoming in hardpan to a minimum of 6 inches below the grade for the bottom of the pipe and any couplings.
F. In all trenches or excavation sites where a firm foundation is not encountered, such as soft, spongy, or otherwise unsuitable material, remove the material to a minimum of 12 inches, or to a depth determined by the Engineer, below the bottom of the proposed pipe or structure.
G. Stockpile excavated material to be returned to trench adjacent thereto in location, which will not be detrimental to existing improvements, or pedestrian or vehicular traffic. Remove unsuitable or excess materials not being used, from site and legally dispose of material.

3.03 BACKFILLING

A. Backfill from bottom of the trench to pipe grade with Type B and C soil.
B. After installation of pipes and appurtenances then backfill of pipe with bedding material.
C. Backfill trenches above pipe bedding material and to within 6 inches of finish subgrade with Type A, B, & C soils. Compact all soil backfill not exceeding 8 inches in uncompacted thickness. Maintain optimum moisture content of fill materials.
D. Backfill final 6 inch thickness to finish subgrade in areas to receive concrete, asphalt-concrete, aggregate base, or other non-vegetative surface improvement, with Type B or C soils.
E. Backfill final 6 inch thickness to finish subgrade in areas to receive sod, other vegetation, or bare soil with Type A soil.
F. Obtain 85 percent relative compaction of backfill from bottom of backfill to a level of 2 feet below finish subgrade, and obtain minimum of 95 percent relative compaction of backfill in
SECTION 31 23 00

TRENCH EXCAVATION BACKFILL

Top 2 feet below finish subgrade, in areas to receive concrete, asphalt-concrete, aggregate base, or other non-vegetative surface improvement.

G. Obtain minimum of 85 percent relative compaction of backfill in areas to receive sod, other vegetation, or bare soil.

3.04 TOLERANCES

A. Top surface of Backfilling Under Paved or Concrete Areas: Plus or minus 0.05 feet from required elevations.

B. Top Surface of General Backfilling: As required surface to match adjacent improvements or ground.

3.05 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 40 00.

B. Compaction testing will be performed in accordance with ASTM D 1557.

C. If tests indicate work does not meet specified requirements, re-compact, and re-test. Costs for re-test are the sole responsibility of the Contractor.

3.06 PROGRESS AND PROSECUTION

A. At any given time during this project the Contractor shall not excavate more area than what can be backfilled within 2 days of opening, and ALL areas shall be backfilled prior to holidays and/or weekends.

END OF SECTION