A. **SECTION 02200**

**SITE PREPARATION**

**PART 1 GENERAL**

1.1 RELATED WORK

B. Special Conditions for Water Discharge Management and Environmental Pollution Prevention

C. Section 02300: Earthwork

D. Section 02321: Trenching, Backfilling and Compacting

E. Section 02740: Asphalt Concrete Paving

F. Section 02750: Concrete Paving, Curbs, Headers and Ramps

1.2 REFERENCES

A. Current Caltrans Standard Specifications:

1. Section 15 – Existing Highway Facilities
2. Section 16 – Clearing and Grubbing

B. National Arborists Association: Pruning Standards and Practices

1.3 SITE CONDITIONS

A. General:

1. Clearing work shall not begin until temporary/construction fences, barricades, warning signs and other pedestrian control devices and required perimeter erosion control measures have been installed.

2. All trees, plants, utilities and existing improvements that are not to be removed shall be protected from injury or damage resulting from the Contractor's operation. The Contractor shall replace all damaged landscaping, improvements or utilities in kind. Such repair and/or replacement work shall be considered as included in other items of work, and no additional compensation will be allowed.

B. Salvage Contractor shall take care when removing salvageable material to avoid damaging the material or the adjacent structures that are to remain.
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C. Existing Subsurface Utilities:

1. Contact Underground Service Alert (U.S.A.) at 811 or 1-800-227-2600 a minimum of 48 hours (two working days) prior to excavating to have existing utilities marked.

2. Known existing subsurface facilities are shown on the Plans to help the Contractor avoid damage to essential utilities that must remain in service. The accuracy or completeness of existing utility information cannot be guaranteed.

3. The Contractor shall ascertain the exact location of all underground facilities prior to doing work that may damage such facilities. If the Contractor discovers underground facilities not indicated on the Plans or in a location different from what is indicated on the Plans, the Contractor shall protect such facilities from damage and notify the Project Manager immediately if a conflict exists.

4. Although irrigation lines smaller than 3" in diameter are typically not shown on the Plans, all landscaped areas are served by automatic irrigation systems. Unless otherwise indicated on the Plans, the Contractor shall relocate all irrigation lines, risers, heads, and control wires as required to resolve conflicts with proposed construction. Such repair and/or relocation work shall be considered as included in other items of work, and no additional compensation will be allowed.

5. Excavate by hand, or with excavator and a spotter, at all locations where proposed new lines cross existing utilities, to determine the location/elevation of the existing utility prior to trenching for the new line and to ensure there are no conflicts. Conflicts with existing utilities shall be reported to the project manager immediately. Vacuum excavation is not allowed unless approved by Stanford Utilities.

D. Protection of Existing Trees:

1. All trees greater than or equal to 6 inches in diameter not specifically designated for removal are to remain and shall be protected by erection of a temporary fence or other barrier as approved by the Project Manager. The fence/barrier shall remain in place for the duration of construction. Unless otherwise noted, all trees located more than 3 feet from a utility trench or surfaced area under construction are to remain and shall be protected.

2. Any tree to remain which is damaged or destroyed due to the Contractor's negligence or failure to provide adequate protection shall be replaced by the Contractor. Type and size of replacement tree(s) shall be determined by the Stanford Arborist.

3. The following shall not be permitted:
a. Using trees as support posts, power poles, sign post, anchorage for ropes, guy wires, and power lines, or other similar functions.

b. Disposing of paint, petroleum products, dirty water, soil sterilants, or other deleterious material on or around roots.

c. Excessive water or heat from equipment, utility line construction, or burning of trash under or near shrubs or trees.

d. Unnecessary compaction of root area by movement of construction equipment or storage of equipment, materials, or supplies.

e. Damage to trunk or limbs caused by maneuvering of vehicles or equipment or stacking of materials and equipment.

f. Damage to root system from flooding, erosion, excessive wetting and drying resulting from de-watering and other operations.

**PART 2 PRODUCTS** (Not Used)

**PART 3 EXECUTION**

### 3.1 DEMOLITION, STRIPPING, AND GRUBBING

**A. Demolition**

1. Existing concrete and asphalt concrete paving, concrete curbs and walks shall be sawcut, broken up and removed where shown on the plans for new construction. In addition, the baserock material underneath paved areas shall be removed where no new concrete or asphalt surfacing is to be placed. In areas to receive new paving, existing aggregate base may remain in place unless otherwise specified.

2. Existing asphalt concrete surfacing and underlying base to be reused onsite (as indicated on the drawings) shall be pulverized to meet requirements for backfill or base material and used as base material.

   a. The depth of ripping shall be such that no material below the existing base will be included to contaminate the recycled asphalt concrete and base.

   b. The equipment used for recycling shall leave an undisturbed plane at a uniform depth below the pavement surface shown on the typical cross sections. Precautions shall be taken to avoid forming furrows of loosened...
material below this plane and to obtain a uniform condition for the full width of the recycled area.

3. Existing abandoned underground utilities which conflict with the new construction, shall be cut off and capped (or plugged with mortar) or completely removed. Existing active underground utilities which conflict with the new construction, shall be relocated as indicated on the Plans or as directed by the Project Manager.

4. Existing concrete structures or portions of structures conflicting with the new construction shall be relocated or removed as directed by the Project Manager. In all other areas, existing concrete structures or portions of structures below grade shall be removed to a depth of at least 3 feet below finished grade and broken in a manner that will prevent water entrapment.

5. Explosives shall not be used.

B. Stripping:

1. Existing topsoil shall be stripped to a depth of 6" (or deeper where directed by the Project Manager) as necessary to remove all vegetation, organic matter, or other objectionable material in those areas to be graded.

2. Topsoil not containing vegetation shall be stockpiled on-site for later use as topsoil backfill to the extent needed for the project.

C. Grubbing:

1. In unpaved areas, where existing vegetation has been removed as shown on the drawings, neatly cut and remove all roots greater than one inch in diameter, to a depth of one foot

2. In areas to be paved, neatly cut and remove all encountered roots to a depth of at least two feet below finished grade.

D. Excavation Around Trees to Remain:

1. Where trenching for utilities is required within drip lines, tunneling under and around roots shall be by hand digging. Main lateral roots and tap roots shall not be cut.

2. Where excavation for new construction is required within the drip line of trees, hand excavation shall be employed to minimize damage to root systems. Roots shall be relocated in backfill areas wherever possible. If large main lateral roots are encountered, they shall be exposed beyond excavation limits as required to bend and relocate without breaking.
3. If encountered immediately adjacent to the location of new construction and relocation is not practical, roots shall be cut approximately 6 inches back from new construction. Project Manager approval is required to cut roots greater than ¾ inches in diameter.

4. Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or roots shall be packed with wet peat moss or 4 layers of wet untreated burlap and temporarily supported and protected from damage until permanently relocated and covered with backfill.

5. Branching structure shall be thinned in accordance with National Arborists Association "Pruning Standards and Practices" to balance loss to root system caused by damage or cutting of root system. Thinning shall not exceed 30% of existing branching structure.

3.2 TREE TRIMMING

A. Contractor shall advise Project Manager of all trees (roots or branches) that are in the way of his work or operations.

B. Tree branches which extend over the line of construction and which hang within 12 feet of finished grade shall be trimmed by the Stanford Grounds Department, and is not considered contract work.

3.3 FILLING AND BACKFILLING

A. Pits or depressions resulting from the above operations shall be filled and compacted prior to performing any earthwork.

B. Material to be used for filling shall be select on-site or imported fill material approved by the Project Manager.

C. Fill material shall be compacted to 90% maximum density. Relative compaction will be tested in accordance with Section 02300 “Earthwork”.

3.4 DISPOSAL

A. All non-hazardous debris, site strippings, and objectionable material becomes the property of the Contractor and shall be removed and disposed of in a legal manner off the Owner's property.

B. Contractor shall ensure optimal diversion of construction waste materials generated by the Work from landfill disposal.
C. Disposal shall be performed as promptly as possible after removal of the material and shall not be left until the final clean-up period.

D. Contractor shall use the University’s recycling and waste hauler, Peninsula Sanitary Service, Inc., to remove construction and demolition recyclables and waste from project unless material is hauled off campus in end dump type vehicles (non-debris box) or the Contractor has the means to haul it themselves using their own equipment. Subcontracting is not permitted.

E. If Contractor is using its own forces or a company other than the University’s recycling and waste hauler, the Contractor is required to report construction and demolition recycling and disposal tonnages and destinations to Construction Manager for proper reporting to government agencies. The report for tracking and reporting shall have, at a minimum, the following information:

**Stanford Project Construction Waste Disposal and Recycling Report**

Name of person completing form: _____________________________

<table>
<thead>
<tr>
<th>Date</th>
<th>Ticket No.</th>
<th>Landfill/Vendor</th>
<th>Container size, cy</th>
<th>Net weight, tons</th>
<th>Material type</th>
<th>Project</th>
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Submit completed form to Peninsula Sanitary Service.

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