1.01 SCOPE:

A. Provide all materials, labor and equipment necessary for finish grading, topsoil preparation, placement, spreading, planter backfill, application of shrubs, groundcover, surface mulch and lawn as indicated protection, maintenance, quarantee, and replacement of plants and related items necessary to complete the work indicated. Work includes coordination with irrigation section to provide watering until final written acceptance for establishing planting.

1.02 RELATED SECTIONS:

A. Section 02750 irrigation

1.03 PLANT MATERIAL: Provide in accordance with species, sizes, and quantities indicated on the Drawings.

1.04 SUBMITTALS: In accordance with the following:

A. Plant material documentation:

1. Within 30 days after award of General Contract, submit documentation that all specified plant materials have been ordered.

2. List suppliers names, addresses, and phone numbers.

3. Submit request for substitution based on plant survivability. Present alternate plant material request to replace and specified plants found to be intolerant of project site conditions. Approval for substitutions shall be based, but not limited to, solar and wind exposure, soil, topography, drainage, saturation, and elevation variations that may be preset at a subject site. These substitutions shall be only upon written approval by the architect.

B. Fertilizers:

1. Submit proposed fertilizers to project superintendent.

C. Surface mulch and Soil Amendments

1. Submit one (1) representative sample and material source, including applicable certifications and analysis to the project superintendent and architect for written approval, a minimum 30 days prior to commencement of construction.

D. Submit a schedule and manufacturer's specifications for all pesticides and herbicide to be employed in the landscape construction process, for written approval prior to commencement of construction.

E. Maintenance Data

1. Submit a year-around maintenance program to be utilized by the Owner's personnel at the cessation of specified guarantee and contracted maintenance periods.

F. Submit license, insurance, and bonding, where applicable to Owner upon request, prior to commencement of construction.

1.05 PROTECTION A. Applicable local lawns and regulations governing or relating to any portion of the word depicted

on these plans are hereby incorporated into and made pert of these specifications, and their provisions shall be carried out by the contractor.

B. The Contractor shall verify, locate and protect all existing utilities and features on and adiacent to the project site prior to and during construction. Contractor shall repair, at their own expense, all damage resulting from their operations or negligence.

C. The Contractor shall obtain all necessary valid licenses, permits, bonds, and insurance, where applicable, and as requested by Owner, to perform the work indicated herein before commencing work, and shall be responsible for coordinating work with all parties involved, including jurisdictional agencies.

D. The Contractor shall use all means necessary to protect the public at all times during the construction process

E. In the event of conflict between pertinent codes, regulations, structural notes, and/or requirements, or the referenced standards of these Specifications, the provisions of the more stringent shall govern.

1.06 QUALITY ASSURANCE

A. Suppliers / Installers Qualifications: Personnel involved in the specified construction shall posses five (5) years minimum experience in landscape construction.

1.07 DELIVERY AND STORAGE: In accordance with the following:

A. Delivery:

1. Protect plants during delivery to prevent damage.

2. Fertilizers to be in original container, each bearing the manufacturer's guaranteed analysis.

3. Pesticides, herbicides and soil furnigants to be in original unopened containers labeled with Environmental Protection Agency and State registration number and manufacturer's uses.

4. Deliver all plants with legible identification nursery labels. a. Label trees and bundles of like shrubs with correct plant name and size, using durable waterproof labels b. State correct plant size. c. Use durable waterproof labels with water resistant ink, which will remain legible for at least 60 days.

1. Protect plants, fertilizers, pesticides, herbicides, and other miscellaneous materials during storage.

1.08 SUBSTITUTIONS

A. Contractor to verify survivability of specified plant material prior to installation. Refer to survivability substitutions outlines under submittals. Upon installation, the contractor shall abide by the guarantee as outlined herein and shall assume responsibility for survivability variables.

1.09 USE OF HERBICIDES

A. Application of herbicide shall be by an applicator licensed under the applicable State,

1.10 GUARANTEE AND REPLACEMENT: A. Guarantee plant materials and related workmanship on installation, beginning after the date of written approval and acceptance of work for one full calendar year, or one full growing season,

whichever is longer. 1. Replace plant material not surviving or not exhibiting growth and establishment during guarantee period. 2. Correct deficiencies in soil or drainage conditions when attributed to plant damage or losses prior to replacement. 3. Perform all replacement work in accordance with original specifications at no additional cost to Owner. 4. Damage or loss of plant materials due to vandalism, freezing, or acts of neglect by others, is exempt from Contractor's replacement

B. Perform replacement work when requested by project superintendent within fourteen (14) days after notification.

1. Plant replacements subject to seasonal limitations may be performed at a later date when, in the judgement of the Owner/architect, survival of replacements is jeopardized by weather or other considerations. 2. Advise Owner/architect in writing when replacement work is performed. Include specific instructions for immediate care of

PART 2 - PRODUCTS

replacement material

2.01 PLANT MATERIAL:

A. Standards: Meet or exceed the following reference standards for quality, size and condition.

1. ANSI Z 60.1-2014: American Standards for Nursery Stock

B. Plant Names:

1. Plant varieties shall as specified on the plan, and be true to botanical name as listed in the latest edition of "Standardized Plant names", as adopted by the American Joint Committee of Horticulture Nomenclature

C. Plant Stock:

1. Plants shall be fresh, well-foliaged, in prime condition, exhibiting normal, balanced growth patterns. This includes being free of disease, injury, harmful insects, eggs, larvae, seeds, weeds, or roots of detrimental invasive noxious species.

D. Trees shall have a single-leader and not be topped with a branching pattern at 6 ft, height unless otherwise noted. Multiple-trunk trees shall have three (3) or more trunks of roughly equal caliper

E. Plants shall be nursery grown, unless otherwise indicated.

F. Plants are required to be from stock acclimated to the Project Site environment, having been cultivated under similar conditions. No cold storage plants are permitted.

G. Ball and burlapped, or boxed material is required to have a natural ball sufficient to insure survival and healthy, strong growth.

H. Bare root material, if approved by project superintendent/architect, shall have a sufficient root system to insure survival and healthy growth. Bare root material shall only be supplied in dormancy, at seasons specified for health and survivability.

I. Container grown plants are required to have sufficient growth to hold the earth intact when removed from the containers, and shall not be root bound.

2.02 PLANTING SOILS

A. Topsoil is defined as material existing on-site, being a friable surface soil found at a depth in its natural state, of a depth of less than 30". Topsoil shall be free of sticks, sub-soil, clay lumps larger than 2", debris, rocks larger than 1-1/2", turf, weeds, roots, contaminants, or other objectionable material. If existing strippings are of insufficient quality or quantity, provide approved imported topsoil.

2.03 POTTING SOIL MIX

A. Planting soil for annual and perennial areas shall be commercially mixed potting soils for application in flower beds.

2.04 SOIL AMENDMENTS AND FERTILIZERS

A. General: Use brands that conform to applicable State fertilizer laws.

B. Amendments: Textural amendments as per local industry standard landscape soil amendments. The soil amendment product shall originate from clean, 100% organic, recycled plant waste and/or bio-solids formulated for ornamental plant material applications. Product shall be free of hazardous bacteria and pathogens.

C. Fertilizers shall be of commercial grade, uniform in composition, and free flowing as per local industry standard and appropriate for project site.

D. Gro-power or Agriform slow-release planting tablets.

2.05 SURFACE MULCH MATERIAL

A. Free from noxious weeds of pests, and material harmful to plant life. B. As per State and local industry standard for commercial ornamental landscape beds,

for weed and moisture control.

2.06 STAKING MATERIAL

A. Sound Hardwood, nominal 2"x2", 30 inch, 8 and 10 foot lengths. B. Treat with two coats of approved stain preservative not harmful to plant material, mixed 1:1,

color as approved.

A. Water shall be available to site by Owner's source. Cost of water shall be borne by Owner.

2.08 LAWN SEED / SOD

A. Base bid shall include seed for all lawn areas. Add/Alternate bid proposal shall include replacing seeded lawn with sod, as specified

B. Seed shall be commonly used local seed mix appropriate for project site. Mixture shall be sufficient to establish a thick, full, thriving lawn at Project Site.

C. Sod type shall be commonly used local sod appropriate for conditions shown on plan and will establish a thick, consistent, thriving lawn. Sod shall be commercially grown, and seed mixture shall be as per industry standard for Project Site, and supplied to site, palletized as per local

2.09 TREE WRAP

A. Tree wrap shall be 4 inches wide, commercial paper wrap, as shown on detail, Clarks or equal,

2.10 EROSION NETTING

A. Jute- smolder resistant erosion control netting with staples.

2.11 ROOT BARRIERS

A. Root barriers, as manuf. By Deep Root, Tree Root Barriers; 345 Lorton Ave. Suite 305 Burlingame, California 94010; (Voice Phone: 1-800-458- 7668; Fax (458)-344-9380), or approved equal. Provide as a Add/Alternate in bid proposal.

2.12 WEED BARRIERS

A. Woven non-biodegradable cloth mat commonly used by local industry for weed control. Provide as a Add/Alternate in bid proposal.

2.13 MISCELLANEOUS MATERIALS

A. Miscellaneous materials required for a complete, proper, and healthful landscape installation shall be included in landscape construction as per directives of contractor, or local authorities. Submit any miscellaneous materials for written approval prior to commencement of construction, and as a Add/Alternate in bid proposal.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify installation conditions as satisfactory to receive work specified in this section, and as approved in writing by project superintendent, Commencement of construction constitute contractors' acceptance of conditions as satisfactory.

B. Field Measurements: Verify horizontal and vertical limits of construction. Verify field layout with limits specified on drawing. Notify project superintendent/architect of conflicts and discrepancies prior to commencement of construction. Adjust conditions only upon approval of project superintendent/architect.

3.02 SCHEDULING AND COORDINATION

A. Coordinate works schedule where cooperation with other trades or contracts is required. Contractor shall be responsible for timely performance of specified work.

3.03 PROTECTION OF EXISTING TREES AND SHRUBS

A. Provide temporary fencing, barricades, and guards as necessary or required to protect trees and shrubs which are to remain from damage above and below grade. Erect as directed by project

B. Maintain existing grade within drip line of trees unless otherwise indicated on the Drawing and approved by the project superintendent.

C. Where trenching for utilities is required within drip lines, tunnel under or around roots by hand digging or boring. Do not cut main lateral roots or tap roots over one inch diameter; cut smaller roots which interfere with installation of new work. Cut roots with sharp pruning instruments; do not break or chop.

D. Equipment and construction materials shall not be stored or placed within tree drip-lines or protection areas. Mixing and disposal of all construction products such as cement products, solvents, paint etc. and construction debris shall not occur within tree drip-lines or protection areas. 3,04 WEED ERADICATION AND CONTROL

A. Remove grasses, vines, invasive weed growth, and roots by herbicide application. Apply

only under acceptable climatic conditions per local BMP and manufacturer's specifications.

B. Control achieved by working soil approvable for annual weed types only.

3.05 PLANTING AREA PREPARATION

A. General: Site preparation includes soil preparation in planting areas and any finish grading necessary or incidental to planting operations. Work within the drip line of preserved trees or shrubs shall be done by manual methods only.

B. Subgrade:

1. After planting areas have been brought to required subgrade, reviewed and approved by project superintendent, rip subgrade to a depth of 12 inches at 12 inches on center, in two perpendicular 90 degree passes, to thoroughly scarify subgrade.

2. Remove concrete, asphalt, and rocks larger than 1-1/2", or debris encountered or generated by this operation.

1. Conditions and quality of rough grade shall be inspected and approved by project

C. Rough Grade Inspection

superintendent prior to the commencement of specified landscape work.

D. Finish Grading

1. Verify that rough grade in landscape areas is sufficiently below proposed final grade for planting beds and lawn areas to allow for placement of topsoil mix. Refer to grading plans for finish grade references. Verify that grades provide positive drainage at all landscape areas, and slope away from structures at a minimum of 2% slope. Verify that final grades are set one inch below paved areas in lawn areas if sod is to be installed.

E. Topsoil Installation

1. Bed Areas: Place six inches, evenly over planting areas to receive shrubs and ground covers. Rototill in two lifts, each to a depth of four to six inches to incorporate topsoil into subgrade.

2. Lawn Areas: Place three inches evenly over areas to receive lawn. Rototill to a depth of four to six inches to incorporate topsoil into subgrade.

F. Soil Amendment and Fertilizer Application: Apply and thoroughly mix by rototilling to a 6 inch depth the following proportions of materials over each 1000 sq./ft. of area:

1. Planting Bed

a. 3 inch layer soil amendment.

b. Fertilizers as required per local industry standard and appropriate for project site.

2. Lawn Areas

a. 2 inch layer soil amendment.

b. Fertilizers as required per local industry standard and appropriate for project site.

3. Annual Color Beds

a. 6" Layer of commercial potting soil mix prepared for annual flowers.

b. Apply 10 lbs 16-16-16 fertilizer per 1000 sq.ft. thoroughly incorporated into potting soil layer.

4. Backfill soil mix for all tree and shrub plantings

3.06 PLANTING TREES AND SHRUBS

a. To each cubic yard of excavated planting soil backfill, thoroughly mix 1/3 cubic yard of soil amendment.

b. Planting tablets, quantity and placement per manufacturer's specifications.

A. Planting holes shall be excavated twice the diameter of the tree and shrub root ball. In heavy clay soils or if a hard pan layer occurs, auger to a free draining medium and backfill with amended

backfill. As shown on drawing detail B. Plant upright and face to give best appearance or relationship to plants and structures.

C. Loosen or remove twine binding and burlap from around root crown of each ball. Do not remove burlap or baskets from under balls.

D. Place and compact backfill soil mixture carefully to avoid injury to roots and fill all voids. E. When hole is nearly filled, completely saturate soil, and allow water to soak away.

2. Provide a 2" high soil water ring at base of each tree, remove at end of contract period

F. Stake or guy trees immediately after planting. Refer to planting details.

1. Fill holes to established finish grade and surface mulch depth

3.07 SURFACE MULCH INSTALLATION A. Mulch planting bed areas with approved surface mulch at minimum 2" depth, or at depth as

dictated by site conditions. B. At areas exhibiting steep slopes, (3:1 or steeper), or areas exhibiting the threat of erosion or settlement due to site or soil conditions, place erosion netting as approved, and install as per

required by local jurisdiction, within 2 days after planting, specified by local industry standards, and

3.08 WEED BARRIER

3.09 ROOT BARRIER

A. When dictated by site conditions and accepted as common local industry standard practice, install weed barriers as per manufacturer's specifications.

A. When within 6' of curbs, walks, etc; or as required by local jurisdiction. Install Root Barrier

as per manufacturer's specifications.

3.10 LAWN INSTALLATION

manufacturer's specifications.

A. Manual Seeded Lawn Installation 1. Contractor shall roll prepared seedbed with 200 lb. water filled roller to firm seedbed. Remove rocks, clumps, or debris at surface. Lightly rake to scarify surface.

2. Contractor shall apply and rototill fertilizers and amendments

before spreading seed. 3. Contractor shall apply specified grass seed per seed specification for a full lawn. Apply 1/8" peat or fine mulch cover to maintain moisture throughout germination.

4. The Contractor shall protect and maintain the seeded are by fencing, watering, feeding, reseeding, mowing and repairing as necessary, through and including two mowings, or as long as necessary to establish a thick, uniform stand of grass acceptable to the project superintendent/architect.

B. Hydro-Mulch Seed Lawn Installation 1. Contractor shall roll prepared seedbed with 200 lb. water filled roller to firm seedbed.

Remove rocks, clumps, or debris at surface. Lightly rake to scarify surface. 2. Hydro mulch slurry distribution shall be a minimum 25 psi and a minimum capacity of 2000 gallons and shall be operated so as to reach all seeded areas without tracking through prepared seedbed. Slurry mix shall be as per manufacturer's specifications. Apply tackifier as conditions

3. Roll or float seeded areas to provide a smooth even surface. Apply the following

hydro-mulching slurry mixture at the following rates: Seed Mix: As specified for a full lawn installation. Fertilizer: Required as per local industry standard. Hydro-Mulch Medium: As per local industry standard.

Tackifier: As per slope and topography application.

and topography requires

C. Sod Lawn Installation 1. Contractor shall roll prepared bed with 200 lb. water-filled roller. Remove debris and

finish grade until sod bed shows a smooth consistent surface. 2. Do final hand and machine raking to fill and level all holes and depressions resulting from rolling. Leave final grades 1-1/2" minimum below adjacent paved surfaces. Crown all areas for positive drainage and to alleviate pooling and puddling. Remove all stones and stick debris from sod bed.

3. Sod shall be local industry standard sod, showing a consistent leaf texture with a rich green year-round coloration, exerting no signs of infestations, diseases or weeds.

4. Lay sod as per Grower's recommendation.

3.11 MISCELLANEOUS MATERIALS

5. The Contractor shall protect and maintain the sodded lawn until acceptance.

A. Where applicable, or if local conditions require, install approved miscellaneous materials for a complete and vital ornamental landscape installation. Install new, per local codes, and as per manufacturer's specifications.

3.12 CLEAN UP

A. Remove all excess waste material daily. When planting in an area is completed, clean the area of debris, soil piles, containers, etc.

B. Blend all planting area grades into existing grades at perimeter of site. C. Prune all broken branches on all trees and shrubs.

D. Sweep and wash "spotlessly" clean all building, walls walks, pavement, parking lots, and

lighting. Limit use of water for washing only as absolutely necessary. E. Restore site perimeter, clean up existing debris, prune/shape existing plantings.

3.13 CONTRACT PERIOD MAINTENANCE

immediately after planting and continue until date of final written approval. Continue base bid maintenance for 60 days after final written approval.

A. Establishment Period: Upon completion, but prior to written acceptance, begin maintenance

B. Maintenance Plantings:

1. Irrigation - Monthly monitor and adjustments

2. Semi-annual winterization and start-up when required. 3. Reset soil settlement and plants to proper grade.

4. Maintain bed areas weed-free.

5. Miscellaneous pruning as needed.

6. Monitor plant establishment.

7. Adjust tree stakes or guys.

8. Maintain mulch cover. 9. Coordination with plant guarantee specification.

10. Monthly reports to Architect of site conditions. Lawns:

2. Re-seed eroded or bare areas at or before 21 days after original

seeding date. 3. Mow grass at a 1-1/2 inch height when any portion attains a 3 inch height. Verify sufficient surface dryness to minimize tracking. Re-seed or repair if necessary. Allow

1. Monitor and adjust irrigation during establishment period, and per seasonal

clippings to remain.

4. Fertilize as required.

5. Remove weeds and re-seed if necessary.

6. Power edge to define seeded lawn at first mowing Continue with seasonal mowing.

3.14 YEARLY MAINTENANCE CONTRACT

A. Provide yearly maintenance as separate line item bid number. B. General: Furnish all labor, materials, equipment and supervision necessary to complete all work set forth in the specifications for a period of twelve (12) full months from the date of final acceptance of

the landscape construction. C. Guarantee: The contractor shall take full responsibility for the monitoring of maintenance operations. Losses of plant materials due to neglect of improper maintenance procedures will be replaced or remedied at no additional cost to owner.

D. Areas not included in this contract:

1. Damage due to vandalism, acts of God, accidents or other causes not directly attributable to the contractor

2. Pruning of trees over 15 feet.

E. Scope of Work:

1. Work schedule for project site: Schedule of maintenance work tasks will be provided for record purposes. Weekly reports to be submitted at the end of each month with payment requests.

F. Landscape maintenance foreman: Landscape foreman to be experienced in landscape maintenance procedures and be familiar with irrigation and maintaining plant materials.

2. Requirements: Be responsible for landscape maintenance procedures for a twelve month period. Furnish necessary permits and licenses required to maintain and guarantee the

landscape in a healthy, attractive, and growing condition for the length of the maintenance

G. Submittals

1. Schedule of visits: Landscape contractor to submit site visit schedule to owner's representative based on landscape maintenance outline. Schedule maintenance work so it will not interfere with normal business activities.

2. Watering Schedule: Submit watering schedule to owner's

for proper operation and coverage.

representative for approval.

owner's representative prior to application of pesticide/herbicide. 4. Annual flower planting: Submit proposed flower planting scheme for each area to owner's

3. Pesticide/herbicide applicator: Submit license of pesticide/herbicide applicator to

representative for approval prior to planting. H. Execution:

a. Turn on: System will be activated no later than April 15th and checked

3. Mulch: Maintain mulch in even uniform appearance. Rake and groom.

any damage caused by girdling and rubbing of staking material.

b. Turn off (where applicable): System to remain in operation through first hard frost, or November 15th, whichever comes first. System will be deactivated by shutting off mainline and time clock. System to blown out each fall. All drain lines shall be opened.

2. Watering Requirements: Monitor the water requirements of the turf, plant and bed areas to

avoid over or under watering and make the necessary adjustments to the watering schedule.

4. Plant Materials: Reset plants to proper grade and upright position Tree stakes and guys to be inspected and adjusted as required. Install additional stakes or guys as required. Repair

5. Project Site: Landscape contractor shall maintain site in a neat and orderly appearance. Debris and trash as a result of his work shall be removed from the site as soon as possible.

Pruning: a. Prune plants as required to promote proper growth and development following accepted horticultural practices. Trim groundcover to maintain uniform height and

appearance. Trim off walks, buildings, other plants, etc. b. Maintain shrubs with natural growth habits and forms, Remove lower limbs of trees that interfere with pedestrian or vehicular traffic.

7. Spraying: Applicator to be licensed as required by state to perform spraying tasks. Submit

license to owner's representative before proceeding with spraying operations. Contractor shall perform monthly inspections to detect problem areas.

a. Post Emergence Herbicide: Spray to control various broad leafed weeds, i.e. Clover, dandelions,

control annual and perennial weeds

c. Pre-Emergence Herbicide: Apply to inhibit the germination of perennial and annual weed seeds.

b. Spray Weeds: Spray weeds with a systemic translocated herbicide to

unwanted vegetation. Follow manufacturer's recommendations when using herbicides. 9. Fertilizing: Minimum of 4 applications for lawn area and 2 applications for shrub and groundcover areas. Submit fertilization schedule.

8. Weeding: Planting areas shall be cultivated to keep weeds, grass and other undesirable

vegetation out of planting areas. Planting areas and gravel areas to be kept free of

10. Turf Mowing: Reel or rotary mower. Mow turf areas at intervals not to exceed 7 days during

walkways. Chemical edging and trimming may be used at fence lines, road shoulders,

active growing season. Maintain cutting height of 2 inches during driest months and 1-1/2 inches during wetter months. 11. Edging: Maintain neat and uniform appearance at lawns/shrub borders and at

around trees, etc; if appropriate.

12.Leaf Removal: Remove leaves from all planting and lawn areas and collected

13.Blow Walks: Clean all hard surfaces, i.e.; walks, entries, etc; of landscape debris. 14. Police Landscape Areas: Remove all trash debris, etc, from landscape areas.

15.Irrigation Repair: Damage caused during normal maintenance of irrigation system will be repaired at no cost to the owner

Sweeping of parking lot is under separate contract.

END OF SECTION 02950

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DATE 8/28/2015 **REVISED DATE**