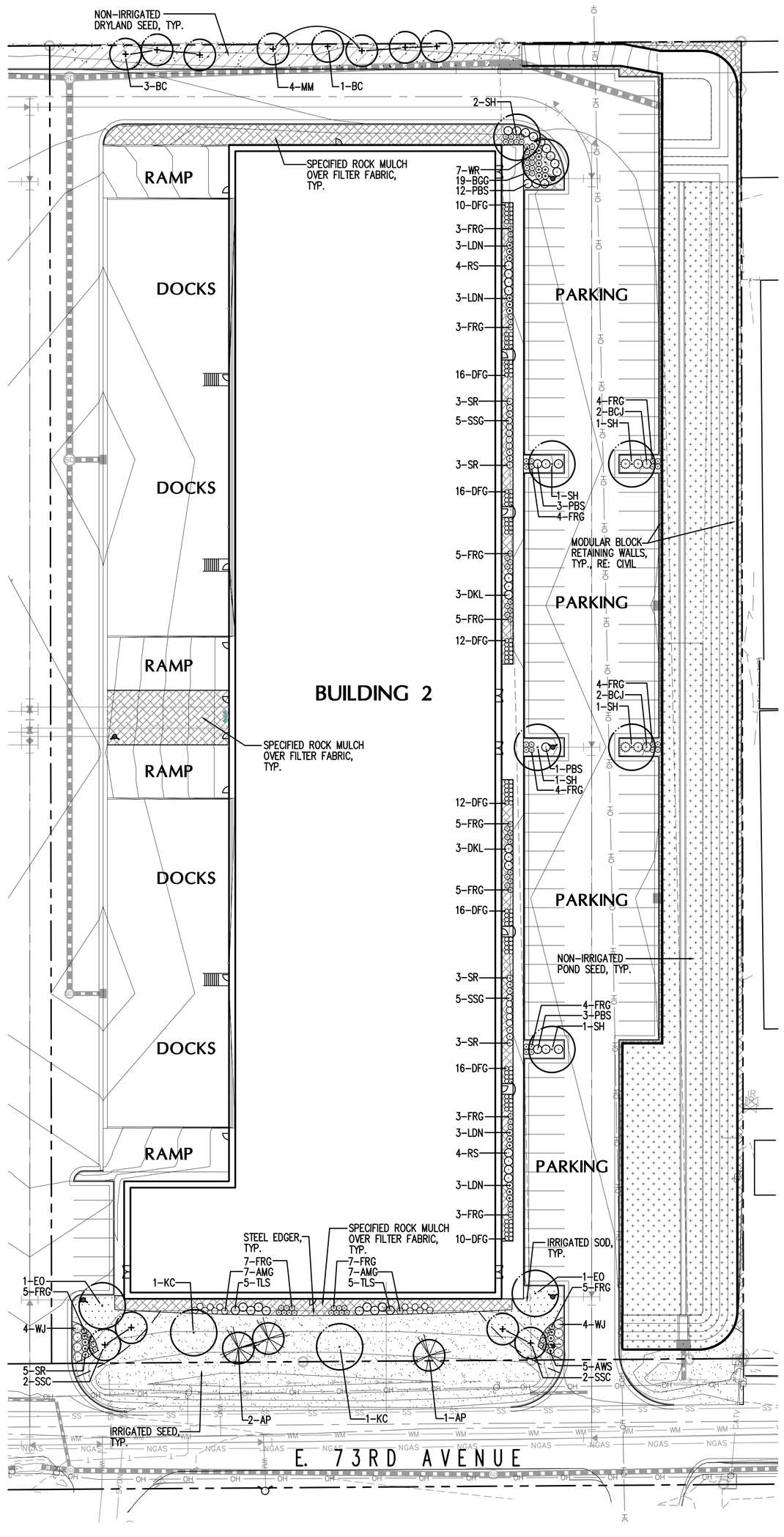
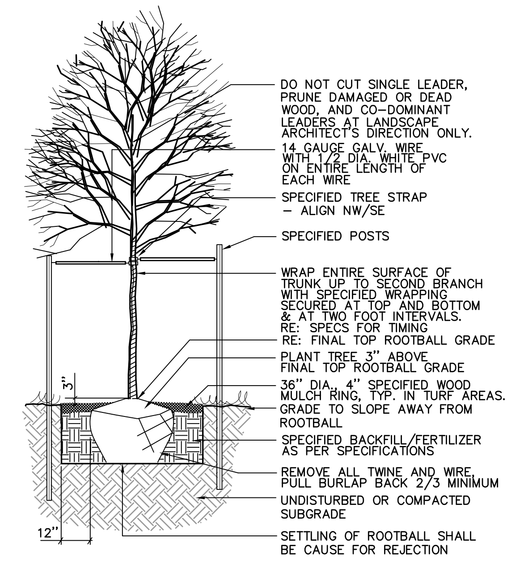
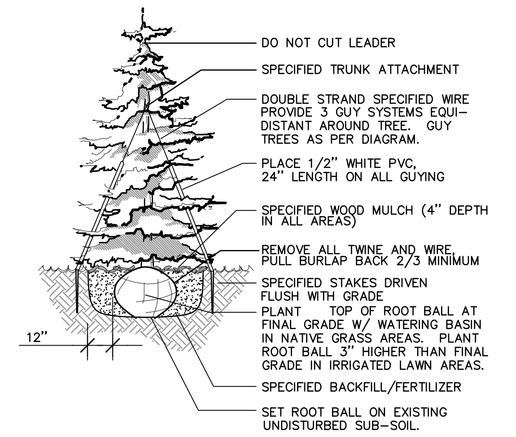
CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT





1 DECIDUOUS TREE PLANTING

N.T.S.

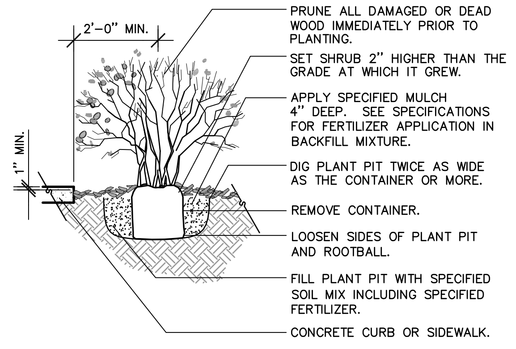


NOTES:

1. INSTALL SPECIFIED MULCH TO DRIPLINE OF TREE WHERE PLANTED IN GRASS AREAS.
2. DO NOT PROVIDE WATER BASIN IN IRRIGATED LAWN AREAS.

2 EVERGREEN TREE PLANTING

N.T.S.

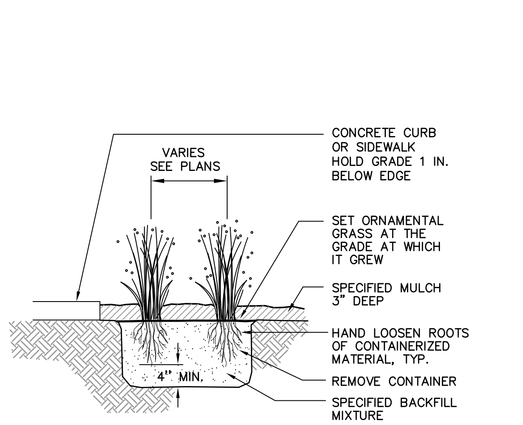


NOTES:

1. ANY BROKEN OR CRUMBLING ROOTBALL WILL BE REJECTED. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
2. HOLD GRADE 1" BELOW EDGE OF WALK OR CURB. THIS DETAIL SHALL ALSO APPLY TO PERENNIAL FLOWERS IN CONTAINER.
3. ALL JUNIPER PLANTS SHOULD BE PLANTED SO TOP OF ROOT MASS OCCURS AT FINISH GRADE OF MULCH LAYER.

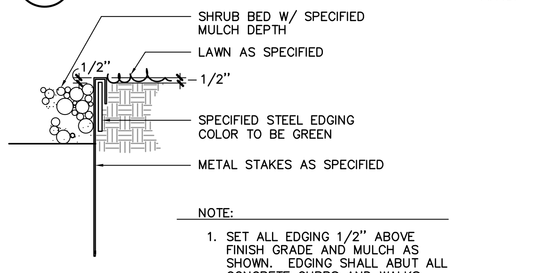
3 SHRUB PLANTING DETAIL

N.T.S.



4 ORNAMENTAL GRASS DETAIL

N.T.S.



NOTE:

1. SET ALL EDGING 1/2" ABOVE FINISH GRADE AND MULCH AS SHOWN. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR AND FLUSH W/ GRADES OF CONCRETE. ALL JOINTS TO BE SECURELY STAKED.

5 STEEL EDGER DETAIL

N.T.S.

LANDSCAPE LEGEND

- New Deciduous Shade Tree
- New Deciduous Ornamental Tree
- New Evergreen Tree
- New Deciduous Shrubs
- New Evergreen Shrubs
- New Ornamental Grasses

GROUNDCOVER LEGEND

- Irrigated Texas Hybrid Sod Variety 'Thermal Blue'
- Irrigated Grass Seed Mix: Re: Specifications
- Non-Irrigated Dryland Grass Seed Mix: Re: Specifications
- Non-Irrigated Pond Seed Mix: Re: Specifications
- Specified 1" Crushed Granite Rock Mulch over Specified Filter Fabric Re: Specifications

LANDSCAPE CALCULATIONS

Required by Adams County Design Guidelines & Performance Standards: Section 4-17: Landscaping

BUILDING 2 SITE AREA	207,116 S.F.
TOTAL BLDG 2 LANDSCAPE AREA	44,478 S.F.
IRRIGATED SOD AREA	(4%) 1,587 S.F.
IRRIGATED SEED AREA	(10%) 4,282 S.F.
NON-IRRIGATED SEED AREA	(51%) 21,763 S.F.
SHRUB AREAS	(5%) 3,487 S.F.
ROCK MULCH AREAS	(30%) 13,359 S.F.
LIVING MATERIALS	(70%) 31,119 S.F.

ALL PERCENTAGES ARE OF TOTAL LANDSCAPE AREA

BUFFERYARDS

LAND USE- INDUSTRIAL (BUFFERYARD B)

NORTH BUFFERYARD (11.5' MIN. WIDTH/330 L.F.)

TREES REQUIRED:	8
TREES PROVIDED:	8

EAST BUFFERYARD (39.5' MIN. WIDTH/628 L.F.)

TREES REQUIRED:	N/A*
TREES PROVIDED:	N/A*

PER CODE SECTION 4-17-06-01
* DETENTION POND

STREET FRONTAGE LANDSCAPING

E. 73RD AVENUE- OPTION 1 (292 L.F.)

TREES REQUIRED:	7
SHRUBS REQUIRED:	15
TREES PROVIDED:	9
SHRUBS PROVIDED:	18

PER CODE SECTION 4-17-07-01

OFF ROAD PARKING LOT LANDSCAPING

TOTAL PARKING STALLS	110
PARKING AREA LANDSCAPE	4,012 S.F.
TREES REQUIRED:	11
TREES PROVIDED:	9*

PER CODE SECTION 4-17-06-02
* TWO TREE RELOCATED TO STREET FRONTAGE LANDSCAPING

PLANT LIST

SYM.	COMMON/ BOTANIC NAME	SIZE	COMMENTS
	DECIDUOUS SHADE TREES		
SH	Shademaster Honeylocust Gleditsia triacanthos var. inermis 'Shademaster'	2" cal.	Specimen quality, full crown, B&B, staked
EO	English Oak Quercus robur	2" cal.	Specimen quality, full crown, B&B, staked
KC	Kentucky Coffeetree Gymnocladus dioicus 'Expresso'	2" cal.	Specimen quality, full crown, B&B, staked
	ORNAMENTAL TREES		
SSC	Spring Snow Crabapple Malus sp. 'Spring Snow'	1-1/2" cal.	Specimen quality, full crown, B&B, staked
BC	Black Chokecherry Prunus virginiana	6' ht.	Specimen quality, clump form, B&B, staked
MM	Curly-Leaf Mountain Mahogany Cercocarpus ledifolius	6' ht.	Specimen quality, clump form, B&B, staked
	EVERGREEN TREES		
AP	Austrian Pine Pinus nigra	6'-8' ht.	Specimen quality, full form, B&B, guyed
	DECIDUOUS SHRUBS		
AWS	Anthony Waterer Spirea Spiraea 'Anthony Waterer'	5 gal.	container, 5 canes min. 3' ht., plant 3' o.c.
WR	Winnipeg Parks Shrub Rose Rosa 'Winnepeg Parks'	5 gal.	container, 5 canes min. 2' ht., plant 3' o.c.
SR	Shrub Rose Rosa 'Morden Sunrise'	5 gal.	container, 5 canes min. 4' ht., plant 3' o.c.
LDN	Little Devil Ninebark Physocarpus opulifolius 'Little devil'	5 gal.	container, 5 canes min. 3' ht., plant 3' o.c.
DKL	Dwarf Korean Lilac Syringa meyeri 'Palibin'	5 gal.	container, 5 canes min. 4' ht., plant 4' o.c.
PBS	Pawnee Buttes Sandcherry Prunus Besseyi 'Pawnee Buttes'	5 gal.	container, 5 canes min. 2' ht., plant 4' o.c.
RS	Russian Sage Perovskia atriplicifolia	5 gal.	container, 5 canes min. 4' ht., plant 4' o.c.
TLS	Three-Leaf Sumac Rhus trilobata	5 gal.	container, 5 canes min. 4' ht., plant 4' o.c.
	EVERGREEN SHRUBS		
BCJ	Wilton Juniper Juniperus horizontalis 'Blue Chip'	5 gal.	container, 18"-24" spread, plant 4' o.c.
WJ	Wilton Juniper Juniperus horizontalis 'Wiltonii'	5 gal.	container, 18"-24" spread, plant 4' o.c.
	ORNAMENTAL GRASSES		
DFG	Dwarf Fountain Grass Pennisetum alop. 'Hameln'	1 gal.	container, plant 24" o.c.
BGG	Blue Grama Grass Bouteloua gracilis 'Blonde Ambition'	1 gal.	container, plant 30" o.c.
FRG	Feather Reed Grass Calamagrostis acut. 'Karl Foerster'	1 gal.	container, plant 30" o.c.
SSG	Shenandoah Switch Grass Panicum virgatum 'Shenandoah'	1 gal.	container, plant 36" o.c.
AMG	Adagio Maiden Grass Miscanthus sinensis 'Adagio'	1 gal.	container, plant 36" o.c.

LANDSCAPE NOTES

1. THIS LANDSCAPE ARCHITECTURAL SITE PLAN IS TO BE USED IN CONJUNCTION WITH THE CIVIL, MECHANICAL, ELECTRICAL AND ARCHITECTURAL SITE PLANS TO FORM COMPLETE INFORMATION REGARDING THIS SITE.
2. THE IRRIGATED TURF AREAS, AS WELL AS THE SHRUB/ORNAMENTAL GRASS BEDS, SHALL BE BE ROTOTILLED WITH CLASS 1 ORGANIC COMPOST AT THE RATE OF 4 CUBIC YARDS PER 1,000 SQUARE FEET. THIS PREPARATION SHALL BE THOROUGHLY INCORPORATED INTO THE TOP 6"' OF SOIL.
3. THE NON-IRRIGATED SEEDED AREAS SHALL BE ROTOTILLED WITH CLASS 1 ORGANIC COMPOST AT THE RATE OF 2 CUBIC YARDS PER 1,000 SQUARE FEET. THIS PREPARATION SHALL BE THOROUGHLY INCORPORATED INTO THE TOP 6"' OF SOIL.
4. ALL DECIDUOUS AND EVERGREEN TREES ARE TO BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. ANY PLANT NOT NOT MEETING THE LANDSCAPE ARCHITECT'S APPROVAL WILL BE REJECTED AT ANY TIME PRIOR TO FINAL ACCEPTANCE.
5. ALL TREES TO BE STAKED OR GUYED AS PER PLANT LIST AND DETAILS.
6. ALL TREE AND SHRUB BED LOCATIONS ARE TO BE STAKED OUT ON SITE FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. ALL SHRUB BEDS AND AREAS ADJACENT TO THE BUILDING SHALL BE MULCHED WITH 3" DEPTH SPECIFIED 3/4" CRUSHED GRANITE ROCK MULCH OVER SPECIFIED FILTER FABRIC.
8. ALL MULCH AREAS IN THE BUILDING DRAINAGE BASINS SHALL BE MULCHED WITH 6" DEPTH SPECIFIED 3"-6" ROUNDED RIVER COBBLE ROCK MULCH OVER SPECIFIED FILTER FABRIC.
9. ALL SHRUB BEDS AND MULCH AREAS ARE TO BE CONTAINED WITH STEEL EDGER (NOT REQUIRED AT CURB, WALKS OR BUILDING). STEEL EDGER SHALL BE USED TO SEPARATE COBBLE AND 3/4" ROCK MULCHES.
10. REFER TO SPECIFICATIONS FOR SOD BLEND AND APPLICATION.
11. REFER TO SPECIFICATIONS FOR IRRIGATED AND NON-IRRIGATED GRASS SEED MIXES AND APPLICATION RATES. LANDSCAPE CONTRACTOR SHALL SUPPLY SEALED AND LABELED SEED CONTAINERS OF THE IRRIGATED AND NON-IRRIGATED PRIOR TO PLANTING SEED. SEED PLANTED PRIOR TO APPROVAL SHALL BE CAUSE FOR REJECTION.
12. ALL LANDSCAPE AREAS INCLUDING THE IRRIGATED SEEDING WILL BE WATERED BY AND UNDERGROUND AUTOMATIC IRRIGATION SYSTEM. ALL TURF AREAS LESS THAN 15' IN WIDTH SHALL HAVE LOW-ANGLE SPRAY NOZZLES DESIGNED FOR THE SPECIFIED WIDTH. ALL TURF AREAS GREATER THAN 15' SHALL BE IRRIGATED WITH GEAR-DRIVEN ROTORS WITH LOW-ANGLE NOZZLES. ALL SHRUB BEDS WILL HAVE FULL COVERAGE WITH DRIP NOZZLES ON SEPARATE STATIONS. ALL SPRAY HEADS SHALL BE PRESSURE REDUCING AND DESIGNED TO PREVENT LOW HEAD DRAINAGE. ALL TREES IN SOD/GRASS AREAS WILL HAVE A SEPARATE DRIP SYSTEM SET UP FOR DROUGHT SITUATIONS. THE IRRIGATED ARES SHALL BE ZONED SEPARATELY FROM THE IRRIGATED TURF AREAS. A RAIN SENSOR SHALL BE INSTALLED AS A PART OF THE IRRIGATION SYSTEM. THE LANDSCAPE CONTRACTOR SHALL SUPPLY AN IRRIGATION SYSTEM DESIGN AND SUBMITTALS FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

KERRY T. SMEESTER 417 Original Date of Licensure 07/20/2021 STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

UNCC UTILITY NOTIFICATION CENTER OF COLORADO

811 Know what's below. Call before you dig.

CALL 811 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES

MEURAN DESIGN GROUP ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

NORTH

0 15 30 60'

SCALE: 1"=30'-0"

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DATE	REMARKS	DATE	REMARKS
02/25/22	BUILDING DEPARTMENT SUBMITTAL		

PA/PM:	kts
DRAWN BY.:	kts
JOB NO.:	22.101

SHEET
L1

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SECTION 32 9000 - LANDSCAPING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Trees.
2. Shrubs.
3. Ground covers.
4. Perennials and Annuals.
5. Turf
6. Topsoil and soil amendments.
7. Fertilizers and mulches (including crusher fines).
8. Stakes and guys.
9. Landscape edging.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Section "Site Clearing".
2. Section "Tree Protection and Trimming".
3. Section "Earthwork".

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Delivery tickets for all bulk materials with Owner's Representative's approval or acknowledgment that materials were received in satisfactory condition.

C. Product certificates signed by manufacturers certifying that their products comply with specified requirements.

1. Manufacturer's certified analysis for standard products, where applicable.

2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

3. Label data and cut sheets substantiating that landscape materials, including all soil amendments, herbicides, and pesticides, comply with specified requirements.

D. Certification of grass seed from seed vendor for each grass seed mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for sod, identifying sod sources, including name and telephone number or supplier.

E. Samples of each of the following:

1. 1 cubic foot of mulch for each mulch type required for Project, in labeled plastic bags, boxes, or buckets.
2. Edging materials and accessories.
3. Weed Barrier.
4. Soil amendments.
5. Staking and guying materials.
6. All items requested by Contractor for Substitution or as an Approved Equal.

F. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

G. Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated.

1. Analysis of existing surface soil for plant growth.
2. Analysis of well and non-potable water sources for watering plant material.

H. Planting schedule indicating anticipated dates and locations for each type of planting.

I. Three (3) sets of maintenance instructions recommending procedures to be established by Owner for maintenance of landscaping during an entire year. Submit before expiration of required maintenance periods.

J. Three (3) copies of a written warranty stating all items included in the warranty, conditions of the warranty, and beginning and ending of warranty period(s).

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on the Project site during times that landscaping is in progress.

B. Testing Agency Qualifications: To qualify for acceptance, an independent testing agency must demonstrate to Landscape Architect's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

C. Provide quality, size, genus, species, and variety of trees and shrubs indicated, complying with applicable requirements of ANSI Z 60.1 "American Standard for Nursery Stock", and all applicable state and local rules and regulations.

D. Inspection: Landscape Architect may inspect plants either at place of growth or at site before planting, for compliance with requirements for name, variety, size and quality.

1. The Landscape Architect reserves the right to reject at any time or place prior to final acceptance all plant materials which in the Landscape Architect's opinion fail to meet specifications. Inspection of materials is primarily for quality, size, and variety, but other requirements are not waived even though visual inspection results in approval. Plants may be inspected where available; however, inspection at the places of supply shall not preclude the right of rejection at the site or at a later time prior to final acceptance. Rejected material shall be removed from the site within 24 hours.

2. The Contractor shall schedule inspection of the plants, at either the supplier or on site, to be completed in one visit. Any further inspection required due to plants being unavailable or rejected as not meeting specifications shall be charged to the Contractor at the current hourly rate for Landscape Architect's personnel performing the inspection.

E. Topsoil Analysis: The contractor shall furnish a soil analysis made by a qualified independent soil-testing agency stating percentages of organic matter, inorganic matter (silt,clay, and sand), deleterious material, pH and mineral and plant nutrient content of topsoil.

1. Report suitability of topsoil for growth of applicable planting material. State recommended quantities of nitrogen, phosphorus, and potash nutrients and any limestone, aluminum sulfate, or other soil amendments to be added to produce a satisfactory topsoil.

F. Measurements: Measure trees and shrubs according to ANSI Z 60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6 inches (150 mm) above ground for trees up to 4-inch (100 mm) caliper size, and 12 inches (300) above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.

G. Pre-installation Conference: Contractor shall attend pre-installation conference at locations specified by Owner's Representative.

H. U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act: Quality Standards for Certified Seed.

1.5 DELIVERY, STORAGE AND HANDLING

A. Packaging Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site. The Landscape Architect reserves the right to inspect containers before or after installation to verify compliance with Specifications.

B. Trees and Shrubs: Deliver nursery stocked or freshly dug trees and shrubs. Do not prune before delivery, except as approved by Landscape Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping and other handling and typing damage. Do not bend or bind-tie trees and shrubs in such a a manner as to destroy natural shape. Provide protective covering during delivery. Plant materials delivered without protective covering may be rejected. Do not drop trees and shrubs during delivery. Label at least one (1) tree and one (1) shrub of each variety with a securely attached waterproof tag bearing a legible plant name. Remove all tags and flagging as directed by Landscape Architect.

C. Sod: Harvest, deliver, store and handle sod according to the requirements of the American Sod Producers Association's (ASPA) "Specifications for Turfgrass Sod Materials and Transplanting/Installing." Protect Sod from drying and breaking.

D. Seed: Deliver seed in original sealed, labeled and undamaged containers. The Landscape Architect will inspect containers before or after installation to verify compliance with specifications.

E. Handle balled and burlapped stock by the root ball.

F. Deliver trees, shrubs, ground covers and plants after preparations for planting have been completed and install immediately. If planting is delayed more than 6 hours after delivery, set planting materials in shade, protect from weather and mechanical damage, and keep roots moist.

1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
2. Do not remove container-grown stock from containers before time of planting.
3. Water root systems of trees and shrubs stored on site with a fine mist spray. Water as often as necessary to maintain root systems in a moist condition.

1.6 PROJECT CONDITIONS

A. Utilities: Determine location of above grade and underground utilities and perform work in a manner which will avoid damage. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned. Contractor shall be responsible for utility locating, repair of utilities damaged by Contractor, and establishment of grade controls.

B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.

C. Clearing and Grubbing: Applies to all contract work areas which have vegetation or weed growth of 2 inch height or greater, and which are designated to be topsoiled, amended, seeded, sodded and/or planted under this Contract.

1.7 COORDINATION AND SCHEDULING

A. Coordinate installation of planting materials during normal planting seasons for each type of plant material required.

B. Plant trees and shrubs after final grades have been accepted and prior to planting turf and native grasses, unless authorized by Owner's Representative.

1.8 WARRANTY

A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Warrant the following living planting materials for a period of one (1) year after date of Final Acceptance, against defects including death and unsatisfactory growth, except for defects resulting form lack of adequate maintenance, neglect, or abuse by Owner, abnormal weather conditions unusual for warranty period, or incidents that are beyond Contractor's control.

1. Trees.
2. Shrubs.
3. Ground covers, vines and perennials.
4. Sodded and Seeded areas

C. Replace planting materials that are excessively pruned, more than 25 percent dead, or in an unhealthy or declining condition immediately upon notice from the Owner's Representative.

D. All plants shall be true to name and meet all conditions of these specifications. Any plant which is not true to name as indicated by form, leaf, flower or fruiting characteristics shall be replaced at the Contractor's expense.

E. Seeded areas shall be accepted on the basis of having uniform grass growth over all the seeded areas. Acceptable uniform grass growth shall be defined as when scattered bare spots, not greater than one square foot, do not exceed 5% of the seeded area.

F. Inadequate or improper maintenance by the Owner shall not be cause for replacement, provided the Contractor shall have submitted a letter or report to the Owner on improper or inadequate maintenance practices and recommended remedial actions.

G. The warranty shall not be enforced should any plant die due to vandalism after final acceptance.

1.9 TREE, SHRUB, GROUND COVER AND PLANT MAINTENANCE

A. Maintain trees, shrubs, ground covers and plants by pruning, cultivating, watering, winter watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damage tree wrappings. Maintain trees and shrubs for the following period:

1. Maintenance Period: 12 months following Final Acceptance.

1.10 TURF GRASS MAINTENANCE

A. Begin maintenance of turf grasses immediately after each area is planted and continue until acceptable turf is established, but for not less than the following period.

1. Maintenance period: 12 months following Final Acceptance

B. Maintain and establish turf areas by watering, fertilizing, weeding, mowing, trimming, replanting and other operations. Roll, regrade and replant bare or eroded areas and re-mulch to produce a uniformly smooth turf.

1.11 GRASS SEED MAINTENANCE

A. Maintain grass seed areas by regrading, reseeding and mulching as required to insure erosion control and complete seed coverage. Begin maintenance of grasses immediately after each area is planted and continue maintenance for not less than the following periods:

1. Maintenance period: 12 months following Final Acceptance

PART 2 – PRODUCTS

2.1 PLANT MATERIALS

A. General: Furnish nursery-grown trees and shrubs conforming to ANSI Z 60.1, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully-branched, healthy, vigorous stock free of disease, insects, eggs, larvae, girdling, and defects such as sun scald, injuries, abrasions and disfigurement.

B. Grade: Provide trees and shrubs of sizes and grades conforming to ANSI Z 60.1 for types of trees and shrubs required. Trees and shrubs of any larger size may be used if acceptable to Landscape Architect with a proportionate increase in size of roots and balls.

C. Label each plant with securely attached waterproof tag bearing legible designations of botanical and common name.

D. Label at least one (1) plant each variety and caliper with a securely attached waterproof tag bearing legible designation of botanical and common name.

E. All plants shall be the species designated on the Drawings. No substitutions will be accepted without the prior written approval of the Landscape Architect. Contractor must provide proof of non-availability.

2.2 TREES

A. Shade Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, conforming to ANSI Z 60.1 or type of trees required.

1. Branching Height: ½ of tree height.

B. Small Trees: Small upright ir spreading type, branched ir pruned naturally according to species and type, and with relationship of caliper, height, and branching recommemded by ANSI Z 60.1, and stem form as designated on Drawings.

C. Evergreen Trees: Specimen XXX quality, well balanced, coniferous evergreens, of type, height, spread, and shape required, conforming to ANSI Z 60.1

D. Provide balled and burlapped trees.

E. All deciduous trees of one species used in formal rows or groupings shall exhibit cultural uniformity, i.e. "matched" in height, crown width and shape, height to first branch, and trunk taper. For this reason it is desired that these trees be produced by a single grower.

2.3 SHRUBS

A. Form and Size:

1. Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z 60.1 for type, shape, and height of shrub. Root development shall be sufficient to hold soil in the shape of the container when removed, but without visible circling roots.
2. Normal quality, well-balanced, broadleaf evergreens, of type, height, spread, and shape required, conforming to ANSI Z 60.1.

B. Provide container-grown shrubs.

2.4 GROUND COVERS, PERENNIALS, AND VINES

A. Provide ground covers and plants established and well rooted in removable containers or integral peat pots and with not less than the minimum number and length of runners required by ANSI Z 60.1 for the pot size indicated.

2.5 GRASS MATERIALS

A. Grass Seed: Fresh, clean, dry, new crop seed complying with the Association of Official Seed Analysis "Rules for Testing Seeds" for purity and germination tolerances.

1. Seed Mixture: Provide seed of grass species and varieties proportions by weight, and minimum percentages of purity and germination as indicated:

a. Irrigated Grass Seed:

1. Provide the following mixture for Irrigated Grass Seed Mix: from Arkansas Valley Seed, Inc., 1 (303) 320-7500:

Grass Seed Variety	% Mix.	Rates
Western Wheatgrass 'Arriba'	12%	4.0
Thick Spike Wheatgrass 'Critana'	18%	6.0
Sideoats Grama 'Vaughn'	12%	4.0
Little Bluestem 'Camper'	16%	5.4
Prairie Sandreed 'Goshen'	12%	4.0
Blue Grama 'Bad River'	25%	8.5
Sand Dropseed	5%	1.6

* Application Rate: 35 lbs.PLS/acre

b. Non-Irrigated Dryland Grass Seed:

1. Provide the following mixture for Non-Irrigated Dryland Grass Seed Mix: from Arkansas Valley Seed, Inc., 1 (303) 320-7500:

Grass Seed Variety	% Mix.	Rates
Alkali Sacaton	7%	2.1
Blue Grama 'Hachita'	10%	3.0
Alkali Grass	3%	0.9
Sideoats Grama 'Butte'	25%	7.5
Sodar Streambank Wheatgrass	3%	0.9
Inland Saltgrass	17%	5.1
Western Wheatgrass 'Arriba'	20%	6.0
Buffalograss 'Sharp's Improved'	15%	4.5

* Application Rate: 30 lbs.PLS/acre

c. Non-Irrigated Detention Pond Grass Seed:

1. Provide the following mixture for Non-Irrigated Detention Pond Grass Seed Mix: from Arkansas Valley Seed, Inc., 1 (303) 320-7500:

Grass Seed Variety	% Mix.	Rates
Sand Bluestem (Andropogon hallii)	14%	3.5
Sideoats Grama (Bouteloua curtipendula)	10%	3.0
Prairie Sandreed (Calamovilfa longifolia)	10%	3.0
Indian Ricegrass (Oryzopsis hymenoides)	10%	3.0
Switchgrass (Panicum virgatum)	16%	4.0
Western Wheatgrass (Pascopyrum smithii)	10%	3.0
Little Bluestem (Schizachyrium scoparium)	10%	3.0
Alkali Sacaton (Sporobolus airoides)	10%	3.0
Sand Dropseed (Sporobolus cryptandrus)	10%	3.0

* Application Rate: 28.5 lbs.PLS/acre

2. Quantity of bulk seed required to provide the specified PLS shall be calculated from purity and germination percentage rates listed on the lot tag of seed actually purchased using the following formulas:

Purity % multiplied by Germination % = PLS%

Lbs. PLS specified/1000 SF(acre) + Bulk Lbs. Req./1000 SF(Acre)
PLS

B. Sod: Certified turfgrass sod complying with ASPA specifications for machine cut thickness, size, strength, moisture content, and mowed height, and free of weeds and undesirable native grasses. Provide viable sod of uniform density, color, and texture of the following turfgrass species, strongly rooted and capable of vigorous growth and development when planted.

1. Sod shall be Colorado grown Texas Hybrid 'Thermal Blue' or approved equal complying with applicable State and Federal codes. Submit cut sheets for approval.
acid.
2. Sod which has dried out, or with soil which breaks, tears or crumbles away will not be accepted. Sod shall be kept moist, protected from the sun, heat and wind in transport and after delivery. Prior to cutting, the sod shall be evenly mown for a blade length at least 1 inch but not more than 2 inches.

2.6 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7.0, 4 percent organic material minimum, free of stones 1 inch or larger in any dimension, refuse, plants or their roots, sticks, noxious weed seeds, salts, sterilants, or other material which would be detrimental to plant growth. Topsoil shall have salts of less than 2 mmhos/cm and a sodium absorption ratio of less than 12.

1. Topsoil Source: Reuse surface soil stockpiled on the site. Verify suitability of surface soil to produce topsoil meeting requirements and amend when necessary.

2.7 SOIL AMENDMENTS

A. A1 Organics "Biocomp", Class 1, as supplied by A1 Organics , Golden, Colorado, (303) 384-9232.

2.8 FERTILIZER

A. Superphosphate: Commercial, phosphate mixture, soluble; minimum of 20 percent available phosphoric

B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea-form, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency. Cost of fertilizer will be paid on a direct time and materials basis.

C. Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous and potassium in amounts recommended in soil reports from a qualified soil testing agency. Cost of fertilizer will be paid on a direct time and materials basis.

2.9 MULCHES

A. Organic Mulch: Organic mulch, free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of the following:

1. Type: Western Red Cedar Wood Mulch as supplied by Direct Landscape Supply, Englewood, Colorado, (303) 781-2270; Wes Moser & Sons, Inc., Ft. Lupton, Colorado (303) 659-9663; or an approved equal. DO NOT PLACE FILTER FABRIC UNDER WOOD MULCH.

B. Rock Mulch: Hard, durable stone, washed free of loam, sand, clay and other foreign substances, of following type, size range, and color:

1. Type: "Grey Granite" 3/4" Granite supplied by Pioneer Sand and Gravel (303) 340-1440 or approved equal. Submit samples to Owner's Representative for approval prior to installation.

2.10 WEED CONTROL BARRIERS

A. Non-woven Fabric: Spunbound Polyester fabric, 3.7 oz per sq. yd., minimum permeability of 160 gal. Per min. ft./2; Polyspun XL supplied by Direct Landscape Supply, Englewood, Colorado, 303-781-2270, or an approved equal. DO NOT PLACE FILTER FABRIC UNDER WOOD MULCH.

2.11 STAKES AND GUYS

A. Upright Stakes: 8 foot x 2 inch diameter wolmanized lodge pole pine.

B. Tie Wire: 12-gauge galvanized wire. All guy and tie wires shall be covered with 1 inch diameter PVC pipe, white.

C. Tree Collar Strap: Minimum 2 inch wide non-stretch webbing with grommets for attachment of wire between strap and stake.

2.12 LANDSCAPE EDGING

A. Steel Edging: Ryerson steel edging w/ roll-top, 4 inch depth, 3/16 inch thick, with line stakes and splicer stakes as recommended by manufacturer, or approved equal. Color: Green.

2.13 MISCELLANEOUS MATERIALS

A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's instructions.

B. Pre-Emergent Herbicide: Treflan as manufactured by Elanco Company, or an approved substitution.

C. Trunk-Wrap Tape: Two (2) layers of crinkled paper cemented together with bituminous material, 4 inches (102 mm) wide minimum, with stretch factor of 33 percent.

D. Herbicides and Pesticides: EPA registered and approved, of type recommended by manufacturer.

E. Landscape Boulders: Select existing salvaged boulders chosen for unique appearance and character. Boulder size, location, and number are representative only and may vary. Approve boulder size range, and number with Landscape Architect prior to installation.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of work of this Section do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 FINISH AND FINE GRADING

A. Tillable Soil: Mechanically rip or disk subsoil in all areas to be planted to a minimum depth of 6 inches prior to placing topsoil and soil amendments.

B. Positive Surface Drainage: Finish and fine grade the project area to establish an even and well matched gradient over the entire surface. Provide positive surface drainage, with no depressions, settling, or irregularities in the finished grade.

C. Transitional Areas: At an transitional point or line where one plane intersects another, such as from a sloping area or berm to a level area, a smooth and gentle transition shall be made. There shall be no abrupt changes in grade unless specifically noted otherwise. Match the grades of new work with existing areas outside the project area.

3.3 SOIL TESTING

A. The contractor shall perform soil tests 30 days prior to mobilizing for landscape construction.

B. Soil testing shall be provided by Colorado Analytical Laboratory, 240 Main Street, Brighton, CO 80601 (303)659-2313, or an approved testing facility. Soil shall be tested for soluble salts and nutrient levels. Testing facility shall provide interpretation of results and recommendation for soil amendments for each type of planting.

C. Soil test shall be performed for all stockpiled topsoil. Provide a seperate test for each 50 cubic yards of topsoil.

D. Soil test shall be performed for all imported topsoil. Provide a seperate test for each 50 cubic yards of topsoil.

E. Deficient nutrients shall be corrected with the addition of appropriate fertilizer and amendment materials. The contractor shall submit a change order request for all additional materials that are recommended but are not included in this Specification.

3.4 PREPARATION

A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas and secure Landscape Architect's acceptance before the start of planting work. Make adjustments as directed.

3.5 WEED CONTROL

A. In areas that have been regraded and/or have existing weed growth, weed control measures appropriate to the amount of growth and/or species shall be provided. Submit weed control plan to Owner's Representative for approval.

B. Clear and grub, apply preemergent herbicide, and/or apply post emergent herbicide as necessary to eliminate weeds. Do not proceed with Landscape work until weed growth has been controlled.

3.6 PLANTING SOIL PREPARATION

A. Clean topsoil of roots, plants, sod, stones, lumps and other material harmful to plant growth and the appearance of a smooth finish grade.

B. Spread topsoil evenly over entire project area to be planted, seeded or sodded.

1. Spread a minimum of 4 inches of topsoil.

C. Spread amendments and fertilizers at rates indicated:

1. Annual and Perennial Beds: Install Planter Mix 8 inches deep.

2. Seeded, Sodded, Shrub and Ground Cover Beds: Provide not less than the following quantities of specified amendments:

Sod, Natures Choice Seed Areas, Shrub Beds, and Groundcover Beds
a. Specified Organic Matter: 4 Cubic Yards/1000 SF
b. Commercial Fertilizer: (20-10-5): 10 lbs./1000 SF
c. Superphosphate: 10 lbs./1000 SF

Irrigated, Non-Irrigated, and Pond Grass Seed Areas
a. Specified Organic Matter: 2 Cubic Yards/1000 SF
b. Commercial Fertilizer: As per Suplier's Recomendation
c. Superphosphate: As per Supplier's Recomendation

3.7 EXCAVATION FOR TREES AND SHRUBS

A. Planting Pits: Excavate with vertical sides and with bottom of excavation slightly raised at center to assist drainage. Roughen sides of planting pit.

1. Balled and Burlapped Trees and Shrubs: Excavate approximately 3 times as wide as ball diameter. The depth of the plant pit shall be 2 inches less than the depth of the ball in well drained soils and 4 inches less than the ball depth in poorly drained soils.

2. Container-Grown Trees and Shrubs: Excavate approximately 3 times as wide as ball diameter. The depth of all plant pits shall be 1 inch less than depth of ball.

3. Where drain tile is shown or required under planted areas, excavate to top of porous backfill over tile.

B. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavation.

C. Drainage: Notify Owner's Representative if subsoil conditions evidence water seepage or retention in tree or shrub pits.

1. Fill the pit with water and allow it to completely drain before planting occurs.
2. If water does not drain out of pit within 24 hours, notify Owner's Representative.

3.8 PLANTING TREES AND SHRUBS

A. Set balled and burlapped stock plumb and in center of pit with top of ball raised above adjacent finish grades as indicated.

B. Remove pallets, if any, before setting. Do not use planting stock if ball is croked or broken before or during planting operation.

2. Place backfill around ball in layers, tamping to settle backfill and eliminate voids and air pockets. When pit is approximately ½ backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing and tamping final layer of backfill.

C. Set container-grown stock plumb and in center of pit or trench with top of gall raised above adjacent finish grades as indicated.

1. Carefully remove containers so as not to damage root balls.

2. Place backfill around ball in layers, tamping to settle backfill and eliminate voids and air pockets. When pit is approximately ½ backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing and tamping final layer of backfill.

C. Dish and tamp top of backfill to form a 3-inch (75 mm) high mound around the rim of the pit. Do not cover top of root ball with backfill.

D. Wrap trees with trunk-wrap tape. Start at base of trunk and spiral cover trunk to height of first branch. Overlap wrap, exposing half the width, and securely attach without causing girdling. Inspect tree trunks for injury, improper pruning, and insect infestation and take corrective measures required before wrapping.

1. No tree shall be wrapped after May 21 nor before November 1.
2. All deciduous trees shall be wrapped by November 15. Remove tree wrap by May 15.
3. Contractor shall be responsible for wrapping and unwrapping trees during the warranty period.

3.9 TREE AND SHRUB PRUNING

A. Prune, thin remove injured or dead branches, and shape trees and shrubs as directed by Landscape Architect.

3.10 TREE AND SHRUB GUYING AND STAKING

A. Upright Staking and Tying: Stake trees of 2- through 5- inch (50 through 125 mm) caliper and Evergreen trees up to 8 foot height. Stake trees of less than 2 inch (50 mm) caliper only as required to prevent wind tip-out. Use a minimum of 2 stakes of length required to penetrate at least 18 inches (450 mm) below bottom of backfilled excavation and to extend at least 72 inches (1800 mm) above grade. Set vertical stakes and space to avoid penetrating balls or root masses. Support trees with 2 strands of tie wire fed through white PVC pipe and tree collar grommets. Allow enough slack to avoid rigid restraint of tree. Twist ends of wire and trim off excess.

B. Guying and Staking: Guy and stake evergreen trees exceeding 8 feet and deciduous trees more than 5 inch caliper unless otherwise indicated. Securely attach no fewer than 3 guys to stakes 30 inches (760 mm) long, driven to grade. Feed guy wire through white PVC pipe to hose chafing guard.

C. Cover tie and guy wires with 1 inch white PVC Pipe.

3.11 PLANTING GROUND COVER AND PLANTS

A. Space ground cover and plants as indicated.

B. Dig holes large enough to allow spreading of roots, and backfill with planting soil. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

3.12 MULCHING

A. Mulch backfilled surfaces of pits, planted areas, non-irrigated zones and other areas indicated.

B. Pre-Emergent Herbicide: Apply pre-emergent herbicide to all shrub bed areas at the rate recommended by the manufacturer. Do not apply to annual, perennial or ground cover areas.

C. Weed Control Barriers: Install weed control barriers according to manufacture's recommendations, before mulching. Completely cover area to be mulched, lapping and pinning edges a minimum of 6 inches.

D. Mulch: Apply the following average thickness of mulch and finish level with adjacent finish grades. Do not place mulch against trunks or stems.

1. Thickness: Wood Mulch- 4 inches (100 mm)
2. Thickness: Crushed Granite Rock Mulch- 3 inches (75 mm)
3. Thickness: Rounded River Cobble Rock Mulch- 6 inches (150 mm)

E. Mulch tree rings in turf and native grass areas with 4 inch depth specified organic mulch.

F. Mulch evergreen trees in turf out to dripline with 4 inch depth specified organic mulch.

3.13 INSTALLATION OF EDGING

A. Steel Edging: Install steel edging where indicated according to manufacturer's recommendations. Anchor with steel stakes spaced approximately 30 inches (760 mm) apart, driven below top elevation of edging.

3.14 SEEDING

A. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage. Deliver seed to job site in the original unopened containers and submit the certified labels to the Landscape Architect.

B. Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast at double the rate and rake 0.25 inch to 0.5 inch into the soil.

C. Apply 1.5 tons of certified weed free native hay per acre mechanically crimped into the soil in combination with an organic mulch tackifier.

D. Due to high faller rates, hydromulching and/or hydroseeding will not be allowed.

3.15 SODDING NEW LAWNS

A. Lay sod within 24 hours of stripping. Do not lay sod if dormant or if ground is frozen.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod' do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work topsoil into minor cracks between pieces of sod' remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across angle slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegsspaced as recommended by sod manufacturer, but not less than 2 anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within 2 hours of planting. During the first week water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches (38mm) below the sod.

3.16 INSTALLATION OF MISCELLANEOUS MATERIALS

A. Apply antidesiccant using power spray to provide an adequate film over trunks, branches, stems, twigs and foliage.

1. When deciduous trees or shrubs are moved in full-leaf, spray with antidesiccant at nursery before moving and again 2 weeks after planting.

3.15 MAINTENANCE

A. Watering: Provide and maintain temporary piping, hoses and irrigation equipment to convey water from sources, and to keep grasses uniformly moist to a depth of 4 inches (100 mm).

1. Water turf at the minimum rate of 1 inch (25 mm) per week.

B. Mow turf grass as needed to ensure grass does not exceed four inches in height. Do not mow when grass is wet. Remove no more than 40 percent of grass leaf growth in initial or subsequent mowings. Do not delay delay mowing until grass blades bend over and become matted.

C. Post fertilization. Apply fertilizer to lawn after first mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 1 lb per 1000 sq. ft. (0.5 kg per 100 sq. m) of turf area.

3.16 CLEANUP AND PROTECTION

A. During landscaping, keep pavements clean and work area in an orderly condition.

B. Protect landscaping from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

3.17 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash and debris, and legally dispose of it off the Owner's property.

END OF SECTION 032 9000

NERRY T. SMEESKER
417
02/22/2022
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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civil engineering
900 S Broadway, Suite 320
Denver, CO 80209
P 720.865.2626

meuran
designgroup
site design
landscape architecture
site planning
700 colorado boulevard, suite 131
denver, colorado 80206
303.512.0549 www.meuran.com

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BUILDING 2
1161 E 73RD AVE.
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