

RUSH COUNTY COURTHOUSE
SIDEWALK & SITEWORK IMPROVEMENTS

SECTION 32 90 00 - PLANTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Furnish and install all labor, material, and equipment necessary for planting as indicated or implied by the Contract Documents.

B. Related Sections:

1. Division 31 Section "Earthwork".
2. Division 32 Section "Seeding".

1.2 QUALITY ASSURANCE

A. Installer Qualifications:

1. Engage an experienced installer who has completed planting work similar in material, design, and extent to that indicated for this project and with a record of successful landscape establishment.
2. All work described in this Section is to be done by an installer specializing in such work with five (5) documented years of experience in similar work.

B. Refer to Division 31 Section "Earthwork" for topsoil requirements and amendment recommendations to bring soil to optimal condition for growing and maintaining planting.

C. Provide quality, size, genus, species, and variety of trees and shrubs indicated, complying with applicable requirements of ANSI Z60.1-"American Standard for Nursery Stock."

D. Inspection:

1. Furnish plant materials inspected by Architect/Engineer at the growing site and tagged or otherwise approved for delivery.
2. Inspection at growing site does not preclude the right of rejection at the job site.
3. Follow guidelines established by American Association of Nurserymen.

E. Certification:

1. Furnishing plant materials certified to be free from hazardous insects or apparent disease.
2. Furnish certification that plant materials provided are the species specified.

F. Nomenclature:

1. Species shall be true to Botanical and Common Name or Variety.
2. American Joint Committee on Horticulture Nomenclature-Standard Plant Names.
3. U.S.A. Standard for Nursery Stock
4. State Nurserymen's Association.

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1.3 SUBMITTALS

- A. One copy of Certificates of Inspection of regulatory agencies as specified herein.
- B. One copy of each applicable publication.
- C. Maintenance instructions: Prior to the end of maintenance period, furnish three (3) copies of written maintenance instructions to the Architect/Engineer for maintenance and care of installed plants through their full growing season.
- D. Samples:
 - 1. Submit container sample of stone mulch showing a range of color and size for approval.
 - 2. Submit sample of wood mulch for approval.
- E. Qualification data for firms and people specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects with project names and addresses, names and address of Owners, and other information specified.

1.4 PRODUCT HANDLING

- A. Preparation for Delivery:
 - 1. Balled and burlap (B & B) plants:
 - a. Dig and prepare for shipment in manner that will not damage roots, branches, shape, and future development after replanting. All plants shall be dug to retain as many fibrous roots as possible.
 - b. Ball with firm, natural balls of soil of at least minimum size recommended by ANSI 260.1. Broken, loose, or manufactured balls shall be rejected.
 - c. Each plant must be dug such that the trunk flare is visible at the top of the root ball. Plants where the trunk flare is not visible shall be rejected.
 - d. Wrap balls firmly with burlap and stout rope.
 - e. All plants shall be dug immediately before moving unless specified otherwise.
 - f. Immediately before digging, all evergreens shall be sprayed with anti-desiccant spray, applying an adequate film over trunks, branches, twigs and/or foliage.
 - g. All plant material shall be marked to indicate the north side at time of digging.
 - h. Do not print prior to delivery.
 - i. Do not dig or transport after leaf buds are open unless directed by Architect/Engineer. If deciduous trees or shrubs are moved in full-leaf, spray with anti-desiccant at nursery before moving and again two weeks after planting.
 - 2. Potted plants:
 - a. Dig with sufficient root structure and surrounding soil to maintain life.
 - b. Pot shall be of sufficient size to handle root spread.
 - c. Potting soil shall be mixed with humus.
- B. Delivery:
 - 1. Deliver fertilizer to site in original unopened containers bearing manufacturer's guarantee chemical analysis, name, trade name, trademark, and conformance to state law.

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2. Protect during delivery to prevent damage to root balls or dedication of leaves.
3. Notify Architect/engineer of delivery schedule in advance.
4. Each shipment shall be certified by the State and Federal authorities to be free from disease and infestations.
5. All inspection certificates required by law for this reason shall accompany each shipment invoice or order to stock and/on arrival, the certificates shall be filed with the Architect/Engineer.
6. All plants shall be packed, transported, and handled with the utmost care to ensure adequate protection against injury.
7. Remove unacceptable plant material from the job site immediately.

C. Inspection:

1. All plants shall be subject to inspection in the nursery before any plants are dug.
2. The Contractor, or his representative, shall accompany the Architect/Engineer on the inspection trips.
3. Expenses of such inspections shall be included in the Bid Price.
4. All plant materials shall be protected by the Contractor until they are inspected and approved by the Architect/Engineer at the site of the project.
5. All rejected materials shall be immediately removed from the site and replaced with acceptable material at no additional cost.
6. The Architect/Engineer, or his representative, shall be the sole judge of the quality and acceptability of plant material.

D. Storage:

1. Balled and burlap plant stock:
 - a. Deliver direct from nursery.
 - b. Heel-in immediately upon delivery, if not to be planted within 24 hours.
 - c. Protect roots of plant materials from drying or other possible injury.
 - d. If planting is delayed more than 6 hours after delivery, set plants in shade, protected from weather and mechanical damage, and keep roots moist. Set balled stock on ground and cover the ball with soil, sawdust, or other acceptable material.
 - e. Do not remove container-grown stock from containers before the time of planting.
 - f. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly wet condition.

E. Handling:

1. Do not drop plants.
2. Do not pick up container or balled plants by stems or trunks.

1.5 JOB CONDITIONS

A. Time of planting:

1. The Contractor shall start their planting when other divisions of this work, including placing the topsoil to finish grade, has progressed sufficiently to permit planting. Planting operations shall be conducted under favorable weather conditions and during normal planting seasons which are suitable with locally accepted practice.

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1.6 SCHEDULING

A. Coordination:

1. Install trees, shrubs, and ground cover plants before lawns are installed, unless specifically directed otherwise.
2. If planting of trees and shrubs occurs in existing lawns or after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

PART 2 - PRODUCTS

2.1 PLANTING MATERIALS

A. Plant List:

1. A complete list of plants, of height, caliper, and other requirements as shown in the Contract Documents. Refer to the Contract Documents.
2. Label at least one tree and one shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.
3. Planting will be specimen quality.

B. Substitutions:

1. No substitutions shall be accepted, except with the written permission of the Architect/Engineer.

C. Quality:

1. All plants shall have normal, well-developed branches and vigorous root systems as recommended by ANSI Z60.1
2. Plants shall be sound, healthy, vigorous and free from defects, disfiguring knots, abrasions at the bark, sunscald injuries, plant diseases, insect eggs, borers, and all other forms of infections.

D. Source of New Planting Materials:

1. All woody plants shall be nursery grown and shall have been growing under the same climatic conditions as the location of this project for at least 2 years prior to the date of planting on this project.

E. Measurements:

1. A plant shall be measured as it stands in its natural position.
2. Stock furnish shall be a fair-average between the minimum and maximum size as specified.
3. Large plants which have been cut back to the specified sizes will not be accepted.
4. Guidelines of the American Association of Nurserymen shall govern handling and balling unless the specifications call for high priority.
5. Plant materials shall be specimen stock.
6. Ground cover plants shall be nursery grown, well established in 2-1/4-inch peat pots.

2.2 PLANTING SOIL FOR LANDSCAPE BEDS

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- A. Depth: Landscape beds shall be backfilled to a depth of 6 inches.
- B. Mix:
 - 1. Landscape beds shall be backfilled with a mixture of 2 parts topsoil and 1 part compost or alfalfa/pine bark mixture as specified herein and as noted on the Drawings.
 - 2. Apply soil amendments and fertilizer in amounts recommended by topsoil analysis.

2.3 PLANTING SOIL FOR TREE PITS/MOUNDS

- A. Mix:
 - 1. Tree pits shall be backfilled with onsite soil. Potting soil, peat moss or wood chips are not needed.
 - 2. Apply soil amendments and fertilizer in amounts recommended by topsoil analysis.

2.4 INORGANIC SOIL AMENDMENTS

- A. Lime:
 - 1. ASTM C602 agricultural limestone containing a minimum 80 percent calcium carbonate equivalent as follows:
 - 2. Class T with a minimum 99 percent passing through No 8 sieve and a minimum 75 percent passing through No 60 sieve.
- B. Aluminum Sulfate: Commercial grade, unadulterated
- C. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.
- D. Sand: Clean, washed, natural or manufactured, free of toxic materials.

2.5 ORGANIC SOIL AMENDMENTS

- A. Peat: Sphagnum peat moss, partially decomposed, finely divided or granular texture, with a pH range of 3.4-4.8.
- B. Compost: Well composted, stable and weed free organic matter, pH range of 5.5 to 8; moisture content 35-55 percent by weight; 100 percent passing through 1 inch sieve; not exceeding 0.5 percent inert contaminants and free of substances toxic to humans and plantings.

2.6 FERTILIZER

- A. Bone Meal: Commercial, raw or steamed, finely ground; minimum 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Commercial Fertilizer:

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1. Commercial grade complete fertilizer of neutral character, consisting of fast and slow-release nitrogen 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
2. Composition: 12 percent actual nitrogen, 12 percent phosphorous and 12 percent potassium by weight.

D. Slow-Release Fertilizer:

1. Granular or pelleted fertilizer consisting of 50 percent water insoluble nitrogen, phosphorous, and potassium in the following composition:
2. Composition: 20 percent nitrogen, 10 percent phosphorous and 10 percent potassium by weight.

2.7 GUYING AND STAKING MATERIAL

A. Stakes and Guys:

1. Provide stakes and dead men of sound new hardwood free of knotholes and other defects.
2. Provide wire ties and guys of two-stranded, twisted, pliable galvanized iron wire not lighter than 12 gauge with zinc-coated turnbuckles.
3. Provide not less than 1/2" diameter black plastic hose, cut to required lengths, to protect tree trunks from damage by wires.
4. All other staking methods to be approved by Architect/Engineer prior to installation.
5. Remove stakes and guys no later than 12 months after installation.

B. Wrapping: For fall installations only: breathable fabric tree-wrap not less than 4 inches wide, designed to prevent bore damage and winter splitting.

2.8 WATER

A. Quality: Potable.

2.9 MULCH

- A. Mulch shall be placed to 3" depth as shown on the planting details.
- B. Mulch shall be shredded hardwood bark, free of sawdust and manufactured by the high-pressure water technique

2.10 STONE MULCH

- A. Hard, durable stone, washed free of loam, sand, clay and other foreign substances.
- B. Type: Uncrushed smooth river gravel.
- C. Size: 1" minimum, 1 1/2" maximum.

2.11 SOIL SEPARATION

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- A. MIRAFL-140N-Mirafi, Inc. or approved equal, to separate soil from drainage material.

2.12 ANTI-DESSICCANT

- A. Emulsion type film-forming agent designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions.

2.13 EDGING

- A. Metal:

1. Black painted steel with integral stakes: Sure-loc or approved equal.
2. Edge strips be 1/4 inch by 5 inches deep.
3. Stakes shall be painted steel in the manufacturer's standard gauge and length.

- B. Location:

1. Edging to be installed between lawn areas and planting beds.
2. Install at other locations designated on the Drawings.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Description:

1. Verify final grades have been established prior to beginning planting operations.
2. Planting shall be located where it is shown on the plan.
3. Prior to the excavation of planting areas or plant pits, or placing tree stakes, the Contractor shall ascertain the locations of all utility lines, electric cables, and conduits so that the proper precautions may be taken not to disturb or damage and subsurface improvement. Should there be obstructions; the Contractor shall promptly notify the Architect/Engineer.
4. Before planting, the Contractor shall ascertain that all holes drain, and in any which do not, Contractor shall provide 1 foot diameter French drain of sufficient depth to permit drainage or subsurface drain tile system.
5. After performing top-soil analysis, make all corrections to soil as required to bring the pH value between 6.0 and 7.2.
6. Stake out locations for plants and outline of planting beds on ground prior to installation.
7. Do not begin excavation until the stake out of plant locations and plant beds are acceptable to the Architect/Engineer.
8. Planting beds and planting pits shall be prepared as shown on the Drawings and as noted on this Project Manual. Any damage to paving or other materials shall be removed and replaced at Contractor's expense.

3.2 EXCAVATION FOR PLANTING

- A. Pits and Trenches:

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1. Trench shape: 1:1 slope on sides and flat bottom.
2. Plant pits: circular in shape
3. Make excavations at least two times as wide as the ball diameter and equal to the ball depth.
4. Fill excavations with water and allow to percolate out before planting.

B. Planting Beds:

1. Bring beds to smooth, even surface conforming to established grades after full settlement has occurred.
2. Remove sticks, stones over 1/2 inch in any diameter, rubbish and other extraneous matter.

3.3 PLANTING

A. General:

1. Center plant in pit or trench on unexcavated or compacted soil.
2. Plant so that the north side of the plant as marked faces north.
3. Set plant plumb and hold rigidly in position until soil has been tamped firmly around balls or roots.
4. Use planting mix as specified for backfill.
5. Place sufficient planting soil (compacted) under plant to bring top of root ball 1 inch above surrounding grade.
6. When the pit is 2/3 filled, water thoroughly and allow water to soak away before placing the remainder of the backfill.
7. If settling of the backfill occurs after watering, add more backfill to bring to finish grade up to top of root ball.

B. Bindings:

1. Remove all bindings and burlap from top 1/3 of root ball. If plant is shipped with a wire basket, cut the wire basket into four places and fold down into the planting hole. All balls with frayed roots shall be cut off cleanly.
2. After soil settles, fill pit with planting soil, water, and leave pit surface even with finished grade of surrounding ground.

C. Watering Basin:

1. Construct a soil berm, 3 inches above finish grade, forming a watering basin with a level bottom around each deciduous and evergreen tree.
2. Size: Greater than diameter of ball or spread of roots if bare rooted.
3. All water basins shall be removed prior to final inspection.

D. Balled Plants (B & B):

1. Center plant in pit on unexcavated or compacted soil.
2. Plant top of root ball 1" higher than surrounding grade.
3. Cut burlap or ropes, wires, and other wrapping materials.
4. Do not pull wrapping from under the ball.
5. Do not plant if the ball is cracked or broken before or during the planting process.

3.4 MULCHING

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A. General:

1. Mulch tree rings and landscape beds within three (3) days after planting.
2. Cover watering basin or bed evenly to depth shown on the Drawings.
3. Water thoroughly immediately after mulching.

3.5 WRAPPING, GUYING AND STAKING TREES

- A. Install tree wraps if fall installation. Wrap fabric from the bottom up with sufficient overlap to cover all bark. Apply from trunk flare to first branch. Remove mid-April.
- B. Guy and stake any leaning trees. All trees may be staked if the site is exceptionally windy, otherwise, installed on an as needed basis.
- C. At end of warranty period, remove all guying and staking material from site, unless otherwise directed by Architect/Engineer.

3.6 PRUNING AND REPAIR

A. Description:

1. Do not heavily prune plants at the time of planting.
2. Prune only crossover limbs, co-dominant leaders, and broken or dead branches.
3. No plants shall be pruned or clipped prior to delivery except at the permission of the Architect/Engineer.
4. Broken or badly bruised branches shall be removed with a clean cut.
5. All pruning shall be done to trees during planting operations shall promptly be treated as required in accordance with recognized horticultural practices and the instructions of the Architect/Engineer

3.7 CLEANING

A. Description:

1. Sweep and wash paved surfaces.
2. Immediately clean spills from paved and finished surface areas.
3. Remove debris and excess materials from the project site.

3.8 WARRANTY AND MAINTENANCE

- A. Begin maintenance immediately after each area is landscaped and continue until acceptable landscape is established, but not less than 60 days after date of Substantial Completion.
1. If full maintenance period has not elapsed before the end of planting season, continue maintenance during the next planting season.
 2. Maintenance includes watering, fertilizing, weeding, trimming, replanting, and other operations to provide a healthy landscape.
 3. Keep planting saucers and beds free of weeds, grass, and other undesired vegetation growth.

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- B. Begin warranty period after date of Substantial Completion and continue for a period of one full year.
1. The Warranty specified in this section does not deprive the Owner of other rights he may have in these specifications.
 2. The Warranty period for new landscape areas shall be for one full year after date of Substantial Completion against defects including death and unsatisfactory growth except for defects resulting from Owner abuse or neglect or incidents beyond Contractor's control.
 3. The replacement plants under this warranty shall be granted for one full year from the date of installation and acceptance.
 4. The Contractor shall, at no cost to the Owner, repair damage done to walks, buildings, roads, and other plants or lawns during plant replacement.

3.9 FINAL INSPECTION AND ACCEPTANCE

- A. Description:
1. Request final inspection in writing for acceptance at least 10 days before the end of the warranty period.
 2. At the end of the warranty period on the completed landscape and on written notice from the Contractor, the Architect/Engineer will, within 15 days of such written notice, inspect the landscape to determine if a satisfactory planting has been produced. If a satisfactory landscape has not been established, another inspection will be made after written notice from the Contractor that the landscape is ready for inspection following the next growing season.

END OF SECTION 32 90 00