

Part II
Division 32

Exterior Improvements

SECTION 32 12 16

ASPHALT PAVING

1 PART 1 GENERAL

DRAFT

1.1 DESCRIPTION:

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes furnishing and installing asphalt paving on the project site and within the City of Portland right-of-way.
- C. Related work:
 - 1. Section 31 05 12, Site Earthwork.

1.2 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Submit materials certificate to onsite independent testing laboratory which is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.

1.3 QUALITY ASSURANCE:

- A. Reference: State of Maine Department of Transportation Standard Specifications Highways and Bridges, latest revision, hereafter designated as MDOT Specifications.

2 PART 2 PRODUCTS

2.1 MATERIAL:

- A. Bituminous Concrete (roadway, parking and heavy duty pavement) – An approved hot plant mix conforming to MDOT Standard Specifications (latest revision). Use Grading B mix for binder and C mix for surface.
- B. Bituminous Concrete (sidewalks) – An approved hot plant mix conforming to MDOT Standard Specifications (latest revision). Pavement shall be grading B mix for binder and C mix for surface.

3 PART 3 EXECUTION

3.1 INSTALLATION:

- A. The Contractor shall be responsible that gravel is in proper condition to pave before starting work.

- B. Proof roll prepared base material surface to check for areas requiring additional compaction and areas requiring removal and recompaction.
- C. Do not begin paving work until deficient base material areas have been corrected and are ready to receive paving.
- D. Pavement mix for roads and parking areas shall be as herein specified and shall consist of the following courses after compaction:

	<u>Binder Course</u>	<u>Wearing Course</u>
Heavy Duty Pavement:	2.5"	1.5"
Standard Duty Pavement:	2"	1.5"
Sidewalk Pavement	1"	1"

- E. The spreading of bituminous concrete shall be done wherever practicable by an approved mechanical spreader. Place mixture while it is still hot (+250 D.F.). Rolling shall be done as soon as practicable after spreading and in no case after the mixture is cooled. The exposed finished surface shall present a true, smooth plane, free from roller marks, conspicuous joining lines, patches, voids or other imperfections. Where brown spots or other serious imperfections occur they shall be cut down to the base course and replaced by new pavement rather than by attempting to patch the surface. Feathered edge patches will not be permitted.
- F. Apply successive lifts of asphaltic concrete in transverse directions with the surface course placed in the direction of surface-water flow. Place in typical strips not less than 10' - 0" wide.
- G. Make joints between old and new pavements or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Joints at existing street paving and new paving shall be saw cut. Clean contact surfaces and apply tack coat.
- H. Mix placed by hand shall be placed on a steel dump board or wheelbarrow from the truck and then shoveled into place.
- I. Rolling and Compaction
 - 1. The mixture, after being spread, shall be thoroughly compacted by rolling as soon as it will bear the weight of the rollers without undue displacement. Mixture shall be compacted to a minimum of 92% theoretical maximum density. The number, weight and types of rollers and sequences of rolling operations shall be such that the required density and surface are consistently attained while the mixture is in workable condition.
 - 2. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
 - 3. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.
 - 4. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

5. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.
 6. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.
 7. **Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.**
 8. **Do not permit maneuvering of excavating equipment, lifts or other vehicles with tight turning or tracking capabilities on finished surface. Damaged areas shall be restored by Contractor at no additional expense to Owner.**
- J. Stamping the Asphalt: In specified areas, stamping can be performed on a freshly placed asphalt surface when the asphalt is still pliable. Using flexible templates; stamp the pattern into the asphalt using a vibratory plate compactor.

3.1 INSPECTION:

- A. Grade Control: Establish and maintain required lines and elevations.
- B. Thickness: In-place compacted thickness shall not be less than thickness specified on the Drawings. Areas of deficient paving thickness shall receive a tack coat and a minimum one (1) inch overlay; or shall be removed and replaced to the proper thickness, at the discretion of the Owner's Representative and or Owner; until specified thickness of the course is met or exceeded at no additional expense to the Owner.
- C. Surface Smoothness: Testing shall be performed on the finished surface of each asphalt concrete course for smoothness, using 10' - 0" straightedge applied parallel with, and at right angles to centerline of paved area.

The results of these tests shall be made available to the Owner upon request. Surfaces will not be acceptable if exceeding following tolerances for smoothness:

Base Course Surface:	1/4"
Wearing Course Surface:	3/16"

- D. Check surface areas at intervals necessary to eliminate ponding areas. Remove and replace unacceptable paving as directed by Owner's Representative and or Owner.
- E. Compaction: Field density tests for in-place materials shall be performed by examination of field cores in accordance with one of the following standards:
 1. Bulk specific gravity of paraffin-coated specimens: ASTM D-1188.
 2. Bulk specific gravity using saturated surface-dry specimens: ASTM D-2726.
- F. Rate of testing shall be one (1) core per 20,000 square feet of pavement, with a minimum of three (3) cores from heavy-duty areas and three (3) cores from standard-duty areas. Cores shall be cut from areas representative of the project.
- G. Areas of insufficient compaction shall be delineated, removed and replaced in compliance with the specifications at no expense to the Owner. Areas damaged by

construction equipment shall be repaired to satisfaction of Owner at no expense to Owner.

...END OF SECTION 32 12 16

SECTION 32 13 13
CONCRETE PAVING

DRAFT

1 PART 1 GENERAL

1.1 DESCRIPTION:

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes furnishing and installing cast-in-place concrete work including (but not by way of limitation) cast-in-place concrete, reinforcing, accessories, and finishing.
- C. Related work:
 - 1. Section 03 30 00, Cast-in-Place Concrete.
 - 2. Section 31 05 12, Site Earthwork.

1.2 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Submit materials certificate to onsite independent testing laboratory which is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.

1.3 QUALITY ASSURANCE:

- A. Reference: Section 03 30 00, Cast-in-Place Concrete – Part 1.4 Quality Assurance.

2 PART 2 PRODUCTS

2.1 MATERIAL:

- A. All concrete shall meet the requirements as specified in Section 03 30 00, Cast-in-Place Concrete, of these Specifications.

3 PART 3 EXECUTION

3.1 INSTALLATION:

- A. Concrete Pavement and Pads
 - 1. All concrete shall meet the requirements as specified in Section 03 30 00, Cast-in-Place Concrete, of these Specifications.
 - 2. After placement of the gravel base, the surface shall be brought to a smooth, uniform surface by grading and rolling the crushed aggregate base and re-rolled until the surface is true and even.

3. Slabs shall be placed alternately in lengths not to exceed 30 feet, or as directed and shall be separated by an expansion joint of preformed expansion joint filler and sealant 1/3 inch in thickness. The thickness of the slab shall be as shown on the Plans. The sidewalk surface shall be scored 1-3/8 inch deep into block units as shown on the Plans. When a concrete sidewalk is constructed adjacent to a building, fixed or other structures, a 1/2 inch thick preformed joint filler and sealant shall be used between the slab and the structure. Both expansion and control joints are to occur only within score joints.
4. Broom Finish - Broom finish by drawing a stiff-bristled pushbroom with a long handle over a troweled surface. Concrete walks shall receive a medium broom finish. Direction of brooming shall be perpendicular to major direction of pedestrian movement or as directed by the Landscape Architect.
5. Concrete pavement shall be **saw cut** (not tooled) after brooming to insure a well-defined and smooth border.
6. Finished concrete shall be properly cured using a waterproof material, such as Sisal Kraft orange label lapped 6 inch taped. The concrete shall be properly moistened before covering it, and shall be kept tight. Curing shall be a minimum of seven (7) days.

...END OF SECTION 32 13 13

SECTION 32 14 16
BRICK UNIT PAVING

1 PART 1 GENERAL

DRAFT

1.1 DESCRIPTION:

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes furnishing and installing brick pavers and truncated dome pavers.
- C. Related work:
 - 1. Section 31 05 12, Site Earthwork.
 - 2. Section 32 12 16, Asphalt Paving.

1.2 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Product data for brick pavers and truncated dome pavers.

1.3 DELIVERY:

- A. Package, handle, deliver and store access brick pavers and truncated dome pavers at the project site in a manner that will avoid damage.

2 PART 2 PRODUCTS

2.1 MANUFACTURER:

- A. Brick pavers for brick sidewalks listed as follows as provided by Pine Hall Brick Company, distributed by LaChance Brick Company, Gorham, Maine 04038 (207) 839-3301. Product of other manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect and or Owner's Representative.
- B. Truncated dome brick pavers for ADA curb ramps listed as follows as provided by LaChance Brick Company, Gorham, Maine 04038 (207) 839-3301, or equal. Product of other manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect, and or Owner's Representative.

2.2 MATERIAL:

- A. Brick pavers for brick sidewalks shall be Pine Hall Pathway Paver, 4x8, LaChance Brick Company Item # 193623.
- B. Truncated dome brick pavers for ADA curb ramps shall be 4" x 8" x 2 -3/8" thick.

3 PART 3 EXECUTION

3.1 INSTALLATION:

- A. Brick pavers and truncated dome pavers shall be installed in the same manner.
- B. Place two (2) inch bituminous concrete binder course over the specified gravel base. Before installing brick, the Contractor shall thoroughly clean bituminous pad of all dust, dirt and foreign matter.
- C. Place on one (1) inch of 6:1 sand-cement mix over the previously placed two (2) inch bituminous concrete pad. Fit bricks together in the indicated pattern with one-eighth (1/8) inch joints. Fill all joints with a 3:1 sand-cement mixture.

3.2 INSPECTION:

- A. Upon completion of a section of brick, the surface of the brick shall be checked with a straight edge and any irregularities in the surface shall be corrected by relaying.

3.3 CLEAN-UP:

- A. Thoroughly clean all exposed brick surfaces with a solution of detergent and water, using stiff fiber brushes.

...END OF SECTION 32 14 16

SECTION 32 16 00

CURBING

1 PART 1 GENERAL

DRAFT

1.1 DESCRIPTION:

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes furnishing and installing granite and bituminous curbing.
- C. Related work:
 - 1. Section 31 05 12, Site Earthwork.
 - 2. Section 32 12 16, Asphalt Paving.

1.2 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Product data for granite curbing.

1.3 QUALITY ASSURANCE:

- A. Where M.D.O.T. appears it shall be taken to mean The State of Maine Department of Transportation Specifications, Highways and Bridges - Latest Revision.

1.4 DELIVERY:

- A. Package, handle, deliver and store access brick pavers and truncated dome pavers at the project site in a manner that will avoid damage.

2 PART 2 PRODUCTS

2.1 MANUFACTURER:

- A. Granite curbing to be manufactured by John Swenson Granite Co. or approved equal.

2.2 MATERIALS:

- A. Granite curbing
 - 1. Vertical and Sloped Granite Curb: Granite curb shall conform to M.D.O.T. specifications for TYPE I and TYPE V. Curb shall be acceptable granite from approved quarries.
 - 2. Tip-Down, Transition and Bullnose Granite Curb: Miscellaneous Granite Curb Sections shall conform to M.D.O.T. Specification 712.04 (b).
 - 3. All granite curb shall conform to the following standards.

- a. All granite curb shall be basically light gray in color, free from seams and other structural imperfection or flaws which would impair its structural integrity, and of a smooth splitting appearance. Natural color variation characteristic of the deposit from which the curbing is obtained will be permitted.
- b. The exposed face shall be smooth quarry split to an approximately true plane having no projections or depressions which will cause over one (1) inch to show between a two (2) foot straight-edge and the face when the straight-edge is placed as closely as possible on any part of the face.
- c. If projections on the face are more than that specified they shall be dressed off. The top and bottom lines of the face shall be pitched off to a straight line and shall not show over one (1) inch between stone and straight-edge when straight-edge is placed along the entire length of the top and bottom lines and when viewed from a direction at right angles to the plane of the face, and for the top line only not over (1) inch when viewed from a direction in the plane of the face. The ends shall be square to the length at the face and so cut that when placed end to end as closely as possible, no space shall show in the joint at the face of over 3/8 inch, except that where the edging is to be used on a curve having a radius of ten (10) feet or less, the ends of the stones shall be so cut as to provide a finished joint at the face section of not more than 1/2 inch. The arras formed by the intersection of the plane of the face with the plane of the end joint shall not vary from the plane of the face more than 1/4 inch. Drill holes not more than 3-1/2 inches in length and 1/2 inch in depth will be permitted. The sides shall not be broken under the square more than four (4) inches and the side adjacent to the grass shall not project over one (1) inch.
- d. Dimension Tolerance:

Minimum Length	2 feet
Maximum Length	8 feet
Thickness	4 inches
Width of Face	12 inches

B. Bituminous Concrete Curb (Cape Cod Curb): An approved hot plant mix conforming to curb mix specifications (MDOT Standard Specifications - latest edition).

3 PART 3 EXECUTION

3.1 INSTALLATION:

A. Granite Curb

- 1. Contractor shall install, backfill and protect all granite curb in accordance with M.D.O.T. Subsection 609.03 and as detailed on the Drawings. Provide approved granite tip-down curbs at all curb end sections. Provide approved granite transition curb where curb type and or material changes occur.
- 2. Contractor shall coordinate with the City of Portland inspections for re-use of salvaged granite curbing.

- B. Bituminous Concrete Cape Cod Curb: Place curb by machine in locations and as detailed on the Drawings and conforming with section 609.04 a, b & e bituminous curb (MDOT Standard Specification).

3.2 PROTECTION:

- A. The Contractor shall be responsible to protect and repair as necessary all vertical and sloped granite curbing disturbed during construction at no expense to Owner. Provide temporary barriers at all radius locations where truck entry would impact curbing.
- B. The Contractor shall be responsible to protect all bituminous curb after installation until cooled and hardened. Areas subject to impact from vehicle and or construction equipment shall be protected until completion of project. Damaged curbing shall be replaced upon direction of Owner's Representative and or Project Engineer.

...END OF SECTION 31 16 00

SECTION 32 17 23
PAVEMENT MARKINGS

1 PART 1 GENERAL

DRAFT

1.1 DESCRIPTION:

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes pavement paint markings.

1.2 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Product data for pavement paint.

2 PART 2 PRODUCTS

2.1 MATERIAL:

- A. The paint shall be a non-bleeding, quick drying, alkyd petroleum base paint suitable for traffic-bearing surfaces and shall meet FS TTP-85E and mixed in accordance with manufacturer's instructions before application.

3 PART 3 EXECUTION

3.1 INSTALLATION:

- A. Immediately before applying the pavement marking paint to the pavement, the surface shall be dry and entirely free from dirt, grease, oil or other foreign matter which would reduce the bond between the paint and the pavement. The surface shall be thoroughly cleaned by sweeping and blowing, if required, to remove all dust, dirt and loose materials. Areas which cannot be satisfactorily cleaned by sweeping and blowing shall be scrubbed with water, as directed, after which the surface shall be allowed to dry prior to painting.
- B. Apply two (2) coats of paint at manufacturer's recommended rate without the addition of thinner with a maximum of 125 square feet per gallon. Apply with mechanical equipment to produce uniform straight edges. At sidewalk curbs and crosswalks, use a straightedge to ensure a uniform, clean, and straight stripe.

...END OF SECTION 32 17 23

SECTION 32 31 00
FENCES AND GATES

1 PART 1 GENERAL

DRAFT

1.1 DESCRIPTION

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section includes furnishing and installing:
 - 1. Chainlink fence
 - 2. Solid wood fence
 - 3. Monumental Iron Works Ornamental Picket Fencing and Accessories
 - 4. Monumental Iron Works Ornamental Picket Swing Gate
- C. Related work:
 - 1. Section 04 22 00, Unit Masonry.
 - 2. Section 31 05 12, Site Earthwork.
 - 3. Section 32 12 16, Asphalt Paving.

1.2 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Changes in specification may not be made after the bid date.
 - 2. Shop Drawings: Layout of fence and gates with dimensions, details, and finishes of component accessories and post foundations.
 - 3. Product Data: Manufacturer's catalogue cuts indicating material compliance and specified options.
 - 4. Samples: If requested, samples of materials are available (e.g. finials, post caps, and accessories).

1.3 DELIVERY

- A. Package, handle, deliver and store access fencing at the project site in a manner that will avoid damage.

1.4 REFERENCES

- A. ANSI/ASTM A123 - Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- B. ANSI/ASTM F567 - Installation of Chain-Link Fence.
- C. ASTM A116 - Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.

- D. ASTM A120 – Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless, for Ordinary Uses.
- E. ASTM A153 – Zinc Coating (Hot Dip) on Iron and Steel Hardware.
- F. ASTM A392 – Zinc-Coated Steel Chain-Link Fence Fabric.
- G. ASTM A428 – Weight of Coating on Aluminum-Coated Iron or Steel Articles.
- H. ASTM A491 – Aluminum-Coated Steel Chain Link Fence Fabric.
- I. ASTM C569 – Steel, Carbon (0.15) Maximum Percent), Hot-rolled Sheet and Strip Commercial Quality.
- J. ASTM C94 – Ready Mixed Concrete.
- K. ASTM F573 – Residential Zinc-Coated Steel Chain Link Fence Fabric.
- L. ASTM F668 – Poly (Vinyl Chloride) (PVC) Coated Steel Chain Link Fence Fabric.
- M. Chain Link Fence Manufacturers Institute (CLFMI) – Product Manual.
- N. FS FF-F-191 – Fencing Wire and Post Metal (and Chain Link Fence Fabric and Accessories).

1.5 SPECIAL WARRANTY:

- A. Ornamental Fence: Provide manufacturer's standard limited warranty that its ornamental fence system is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of 15 years from the date of purchase.
- B. Ornamental Gate: Provide manufacturer's standard limited warranty that its ornamental gate is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of 1 year from the date of purchase.

2 PART 2 PRODUCTS

2.1 MANUFACTURER:

- A. Chainlink Fence: Acceptable manufacturers subject to compliance with requirements, provide products of one of the following:
 - 1. Allied Tube and Conduit Corporation
 - 2. Anchor Fence, Inc.
 - 3. United States Steel
 - 4. Acme Fence Company

Product of other manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect and or Owner's Representative.

- B. Solid Wood Fence listed as follows as provided by Katahdin Cedar Fence and distributed by E. A. Burns' Fencing, Inc., 14 Rochester Street, P.O. Box 395, Westbrook, ME 04098 (800) 327-5057. Fax: (207) 854-3636 Website: www.burnsfencing.com. Product of other

manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect and or Owner's Representative.

- C. Monumental Iron Works Ornamental Picket Fencing and Accessories listed as follows as provided by Master Halco Inc., 400 W. Metropolitan Drive, Suite 400, Orange, CA 92868. Phone: (800) 229-5615. Fax: (714) 385-0107. Website: www.fenceonline.com. Product of other manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect and or Owner's Representative.
- D. Monumental Iron Works Ornamental Picket Swing Gate listed as follows as provided by Master Halco Inc., 400 W. Metropolitan Drive, Suite 400, Orange, CA 92868. Phone: (800) 229-5615. Fax: (714) 385-0107. Website: www.fenceonline.com. Product of other manufacturers may be considered subject to compliance with the requirements as judged by the Landscape Architect and or Owner's Representative.

2.2 MATERIALS:

A. Chainlink Fence:

- 1. Fabric
 - a. No. 9 ga. (0.148"± 0.005") finished size galvanized steel wires, 2" mesh, with both top and bottom salvages twisted and knuckled.
 - b. Furnish one-piece fabric widths for fencing.
 - c. Temporary construction fence fabric may be salvaged fence, 6 ft. min. height with max. 2" mesh.
- 2. End, Corner and Pull Posts: Galvanized steel, minimum sizes and weights as follows:
 - a. Over 4'-0" Fabric Height: 2.875" OD pipe, 5.79 lbs./lin. ft.
 - b. Temporary fence post shall be of adequate size to support fabric for duration of construction.
- 3. Line Posts: Galvanized steel, with exposed portions finished, minimum sizes and weights as follows:
 - a. 4'-0" to 8'-0" Fabric Height: 2.375" OD steel pipe, 3.65 lbs./lin. ft., or 2.25" x 1.875" H-sections 2.64 lbs./lin. ft.
- 4. Top Rail: Rails: 1.66" OD pipe, 2.27 lbs./ft. or 1.625" x 1.25" roll-formed sections, 1.35 lbs./ft.; galvanized steel, manufacturer's longest lengths.
- 5. Couplings: Expansion type, approximately 6" long, for each joint.
- 6. Attaching Devices: Provide means for attaching top rail securely to each corner, pull and end post.
- 7. Sleeves: Galvanized steel pipe not less than 6" long and with inside diameter not less than ½" greater than outside diameter of pipe. Provide steel plate closure welded to bottom of sleeve of width and length not less than 1" greater than outside diameter of sleeve.

8. Tension Wire: 7 gauge galvanized steel, coated coil spring wire, located at bottom of fabric.
 9. Wire Ties: 11 gauge galvanized steel.
 10. Post Brace Assembly: Manufacturer's standard adjustable brace at end and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric. Use same material as top rail for brace, and truss to line posts with 0.375" diameter rod and adjustable tightener.
 11. Post Tops: Galvanized steel, weather tight closure cap for each tubular post. Furnish caps with openings to permit passage of top rail.
 12. Stretcher Bars: Galvanized steel, one piece lengths equal to full height of fabric, with minimum cross-section of 3/16" x 3/4". Provide one stretch bar for each end post, and two for each corner and pull post.
 13. Stretch Bar Bands: Manufacturer's standard.
 14. Portland Cement: ASTM C150.
 15. Aggregates: ASTM C33.
 16. Water: Clean
 17. Non-shrink, Non-metallic Grout: Premixed, factory-packaged, non-corrosive, non-staining, non-gaseous, exterior grout complying with CE CRD-C621.
 18. Finish
 - a. Framing: Galvanized steel, ASTM A120 or A123, with not less than 1.8 oz. Zinc/sq. ft. of surface.
 - b. Hardware and Accessories: Galvanized, ASTM A153 with zinc weights in accordance with Table I.
 19. Temporary Fence: Temporary site construction fencing shall be salvaged 6 ft. height Fence: chain link fabric, post and rail supports, tension wire and gate(s). Use of temporary fence is at discretion of Contractor.
- B. Solid Wood Fence shall be a total of eight (8) feet in height, white cedar fence. Posts shall be white cedar 5x5. All Cedar shall be Grade #1.
- C. Ornamental Metal Picket Fence shall be Monumental Iron Works, Imperial B style. Height varies, see plans.
1. Pickets: Galvanized square steel tubular members manufactured per ASTM A-924/A-924M, having a 45,000 psi (310 MPa) yield strength and hot-dip galvanized per ASTM A653/A653M with a G90 zinc coating, 0.90 oz/ft² (0.27 kg/M²). Picket Size 3/4" (19 mm). Pickets are spaced 3-15/16" maximum (100 mm) face to face. Pickets are attached to rails at the factory using industrial drive rivets.
 2. Rails: 1-1/2" (38mm) x 1-3/8" (35mm) x 1-1/2" (38mm), 11 gauge [0.120" (3.05mm)] thick galvanized steel "U" channel per ASTM A-653/A-653M, having a

50,000 psi (344 MPa) yield strength and G90 zinc coating, 0.90 oz/ft² (0.27 kg/M²).

3. Posts: Galvanized square steel tubular members manufactured per ASTM A-653/A-653M having a 45,000 psi (310 MPa) yield strength and G90 zinc coating, 0.90 oz/ft². Posts are coated with zinc on the inside and outside. **(Posts that are zinc coated on the outside and painted on the inside are unacceptable).**

Minimum post size 2-1/2" (63.5 mm), having 14 gauge wall thickness [0.080" (2.03 mm)]

4. Rail Brackets: Pro-Arc™ Rail Brackets (see section 2.04 A).
5. Finish: All pickets, rails, posts, fittings and accessories are polyester powder coated individually after drilling and layout, to ensure maximum corrosion protection. **(Coating of assembled sections is unacceptable).** All ferrous components are given a 4-stage "Power Wash" pre-treatment process that cleans and prepares the galvanized surface to assure complete adhesion of the finish coat. All metal is a polyester resin based powder coating applied by the electrostatic spray process, minimum 2.5 mils. The finish is then cured in a 450⁰F (232⁰C) (metal temperature) oven for 20 minutes. Standard Color – Black
6. Accessories:
 - a. Rail Brackets: Pro-Arc™ brackets die cast of zinc (ZAMAK #3 Alloy) per ASTM B86-83Z 33521. Ball and socket design capable of 30° swivel (up/down - left/right). Bracket to fully encapsulate panel rail ends for complete security (no substitution).
 - b. Industrial Drive Rivets: Of sufficient length to attach factory assembled panel rail ends to Pro-Arc brackets in a secure, non-rattling position. Rivet to have a minimum of 1100 lbs. (4894 N) holding power and a shear strength of 1500 lbs. (6674 N).
 - c. Ornamental Picket Fence Accessories: Provide indicated items required to complete fence system. Galvanize each ferrous metal item in accordance with ASTM B695 and finish to match framing.
 - d. Post Caps: Formed steel, cast of malleable iron or aluminum alloy, and weather tight closure cap.

Provide one Ball style post cap for each post.

7. Setting Material: Concrete, minimum 28 day compressive strength of 3000 psi (20 MPa).

D. Ornamental Metal Picket Swing Gate Fence shall be Monumental Iron Works, Imperial B style, height five (5) feet.

1. Gate Frames: Fabricate ornamental picket swing gate using galvanized steel members, ASTM A-924/A-924M, structural quality steel, 45,000 psi (310 MPa) tensile strength, and ASTM A-653/A-653M hot-dip galvanized G90 coating. Frame members welded using stainless steel. Weld to form rigid one-piece unit. (No substitution) Minimum size vertical uprights, 2" (50 mm) square 13 gauge [0.095" (2.324 mm) wall thicknesses.

2. Ornamental Picket Infill: "U" channel rails, formed from hot rolled, structural steel, 1-3/8" (35 mm) wide x 1-1/2" (38 mm) deep, 11 gauge [0.120" (3.05 mm)] wall thickness. Pickets galvanized steel, 3/4" (19 mm) square tube 16 gauge with accessories to match fence.
3. Bracing: Diagonal adjustable length truss rods on gates provided to prevent sag.
4. Hardware Materials: Galvanized steel or malleable iron shapes to suit gate size.
5. Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° (3.14 rad).
6. Latch: Capable of retaining gate in closed position and have provision for padlock.
7. Gate Posts: Square members, ASTM A924/A924M, structural quality steel 45,000 psi (310 MPa) tensile strength, with galvanized G90 coating.

Minimum post size 3-1/2" (88.9 mm), having 12 gauge wall thickness [0.106" (2.64 mm)]
8. Finish: All pickets, welded frames, posts, fittings and accessories are polyester powder coated individually after drilling and layout, to ensure maximum corrosion protection. **(Coating of assembled gate is unacceptable)**. All ferrous components are given a 4-stage "Power Wash" pre-treatment process that cleans and prepares the galvanized surface to assure complete adhesion of the finish coat. All metal is a polyester resin based powder coating applied by the electrostatic spray process, minimum 2.5 mils. The finish is then cured in a 450°F (232°C) (metal temperature) oven for 20 minutes. Standard Color – Black
9. Setting Material: Concrete, minimum 28 day compressive strength of 3000 psi (20 MPa).

3 PART 3 EXECUTION

3.1 EXAMINATION:

- A. Verify areas to receive fencing are completed to final grades and elevations.
- B. Ensure property lines and legal boundaries of work are clearly established.

3.2 INSTALLATION:

A. Chainlink Fence:

1. Comply with recommended procedures and instructions of fencing manufacturer. Provide secure, aligned installation with line posts spaced at 10'-0" o.c. maximum.
2. Grade Set Posts: Drill, air drive, or hand excavate using post hole digger in firm undisturbed or compacted soil.
3. Excavate hole for each post to minimum diameter recommended by fence manufacturer but not less than four times largest cross-section of post. Excavate

hole depths approximately 3" lower than post bottom with bottom of posts set not less than 36" below finish grade surface.

4. Center and align posts in holes 3" above bottom of excavation.
5. Concrete Mixing: Mix materials to obtain concrete with minimum 28-day comprehensive strength of 2,500 psi; 1" maximum size aggregate, maximum 3" slump, and 2-4% entrained air.
6. Place concrete around end posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations. Extend concrete footing 2" above grade and trowel to crown to shed water.
7. Sleeve Set Posts: Anchor posts by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink, non-metallic grout, mixed and placed to comply with grout manufacturer's directions.
8. Top Rails: Run rail continuously, bending to form radius for curved runs. Provide expansion couplings as recommended by manufacturer.
9. Center Rails: Provide center rails where indicated. Install in one piece between posts and flush with post on fabric side, using special offset fittings where necessary.
10. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.
11. Tension Wire: Install tension wires through post cap loops before stretching fabric and tie to each post cap with not less than 6 ga. galvanized wire. Fasten fabric to tension wire using 11 ga. galvanized steel hog rings spaced 24" o.c.
12. Fabric: Leave approximately 2" between finish grade and bottom salvage. Pull fabric taut and tie to posts, rails and tension wires. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.
13. Stretcher Bars: Secure at end, corner, pull, and gate posts by threading through or clamping to fabric at 4" o.c., and secure to posts with metal bands spaced at 15" o.c.
14. Tie Wires:
 - a. Use U-shaped wire, conforming with diameter of pipe to which attached, clasping pipe and fabric firmly when ends twisted at least two full turns. Bend ends of wire to minimize hazard to persons or clothing.
 - b. Tie fabric to line posts with wire ties spaced 12" o.c. Tie fabric to rails and braces with wire ties spaced 24" o.c. Tie fabric to tension wires with hog rings spaced 24" o.c.
 - c. Manufacturer's standard procedure will be accepted if of equal strength and durability.

15. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
 16. Temporary site construction fencing shall be installed at discretion of Contractor. Post shall be air driven to appropriate depth to support fence for duration of construction. The general Contractor shall be responsible for maintaining temporary fence.
- B. Solid Wood Fence:
1. Contractor shall place and install fence in locations as shown on the Drawings. Fence posts shall be installed and set into compacted subgrade and backfilled with gravel.
 2. Fence panels shall be attached to posts as recommended by manufacturer.
- C. Ornamental Metal Picket Fence:
1. Install fence in accordance with manufacturer's instructions.
 2. Space posts uniformly at 7'8-3/4" maximum face to face unless otherwise indicated.
 3. Post Installation
 - a. Set posts in masonry wall 12" minimum below top of wall cap.
 - b. Set posts in existing concrete 12" minimum below surface elevation. Install with non-expanding mortar.
 4. Rails are attached to posts by means of rail brackets. Rail brackets are attached to posts using a 1/4" bolt and lock nut. Rails are attached to brackets using 1/4" industrial drive rivets.
 5. Surface mount (wall mount) posts with mounting plates where indicated. Fasten with lag bolts and shields.
 6. Check each post for vertical and top alignment, and maintain in position during placement and finishing operation. Align top rails of gate with fencing along Congress Street.
 7. Align fence panels between posts. Firmly attach Pro-Arc rail brackets to posts with 1/4" (6 mm) bolt and lock nut, ensuring panels and posts remain plumb.
 8. Rails to be attached to masonry pier or posts as indicated on plans.
 9. Install post caps and other accessories to complete fence.

D. Ornamental Metal Picket Swing Gate Fence

1. Install gate posts in accordance with manufacturer's instructions.
2. Concrete Set Posts: Drill hole in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than nominal outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around post in a continuous pour. Trowel finish around posts and slope to direct water away from posts. Place bituminous pavement over concrete to finish.
 - a. Gate Posts and Hardware: Set stops, sleeves and other accessories into concrete.
3. Install gates plumb, level and secure for full opening without interference.
4. Attach hardware by means, which will prevent unauthorized removal.
5. Adjust hardware for smooth operation.

3.3 CLEANING:

- A. Clean up debris and unused material, and remove from site.

...END OF SECTION 32 31 00

SECTION 32 90 00

PLANTING

1 PART 1 GENERAL

1.1 DESCRIPTION:

- A. Bidding requirements, conditions of the contract and pertinent portions of sections in Division One of these specifications, apply to the section as fully as though repeated herein.
- B. Work under this section shall include all labor, materials, services, equipment and accessories necessary to furnish and install trees, shrubs, and turf in accordance with the specifications and applicable Drawings.
- C. Related work:
 - 1. Section 31 05 12, Site Earthwork.
 - 2. Section 12 93 00, Site Furnishings

1.2 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Tests specified in this Section shall be paid for by the Contractor. **Certifications required must be submitted to the Landscape Architect and or Owner's Representative for approval before use of materials on the site.**
- C. The **Contractor shall be required to take representative soil samples of the topsoil** to be provided from several locations (on-site) in the area(s) under consideration for testing. Imported topsoil shall also require test results prior to placement. Tests shall be made by a State Commercial Soil Testing Laboratory using methods approved by the Association of Official Agricultural Chemist or the State Agricultural Experiment Station, or by the University of Maine at Orono. Testing shall include chemical balance (pH) **as well as organic content. The required pH level shall be between 6.6-7.3% and the organic content shall be between 6.5-8%.**
- D. The Contractor shall provide testing data for composted soil amendment if required to supplement the required minimum organic content.
 - 1. Handle bicycle racks with sufficient care to prevent any scratches or damage to the finish.
- E. The Contractor shall provide the Dealer's Guarantee Statement for grass seed mix.

1.3 QUALITY ASSURANCE:

- A. Provide plants which are true to name. Tag one of each bundle or Lot with the name and size of plants and shall conform to ANSI Z260.1 - Nursery Stock, latest edition, of the American Association of Nurserymen, Inc.

- B. Workmanship: Perform work in accordance with the best standards of practice for Landscape work and under the continual supervision of a competent foreman capable of interpreting the Drawings and Specifications.
- C. Submit documentation to Landscape Architect of Record within twenty-five (25) days after award of contract stating that plant material is available. Any and all substitutions due to unavailability must be requested in writing prior to confirmation of ordering.
- D. Plants shall be subject to review and approval of Landscape Architect of Record at place of growth or upon delivery for conformity to specifications. Such approval shall not impair the right of review and rejections during progress of the work. Submit written request for review of plant material at place of growth or project location to Landscape Architect of Record. Notification for on-site inspection shall be a minimum of 48 hours before inspection. Written request shall state the place of growth and quantity of plants to be reviewed. Landscape Architect of Record reserves the right to refuse review at this time if, in his judgment, sufficient quantity of plants is not available for review. Review shall be for character and form.
- E. Certificate of Acceptability: Inspection of the work covered by this Section to determine completion of the work involved will be made at the conclusion of the Maintenance Period upon written notice requesting such inspection submitted by the Landscape Contractor at least ten (10) days prior to the anticipated date. The condition of turf and plantings will be noted and determination made by the Landscape Architect whether maintenance shall continue.

1.4 GUARANTEE:

- A. Turf and plantings shall be guaranteed for one (1) full year after certification of acceptability by the Landscape Architect and shall be alive and in satisfactory growth at the end of the guarantee period, except for damage resulting from causes beyond the responsibility of the Contractor. The Contractor shall provide the Owner with a written guarantee upon certification of acceptability. For plant material in question at the end of the guarantee, the Landscape Architect, Owner and Contractor shall determine a reasonable extension of the guarantee period.

2 PART 2 PRODUCTS

2.1 MATERIALS:

- A. Topsoil - The Contractor shall furnish and place topsoil to give the specified depths. The Contractor shall furnish and place 18 inches of loam in all shrub beds, and 6 inches under all turf areas. Topsoil mix shall be placed in all tree and shrub pits as shown on the Drawings. Natural loam topsoil shall be of uniform quality, free from hard clods, still clay, hard pan sods, stones over ¾ inches and undesirable inorganic materials. The Owner and/or Landscape Architect reserves the right to reject on or after delivery any materials which do not, in his or her opinion, meet these Specifications.
- B. Additives:
 - 1. Humus - Ground or shredded peat that has been stockpiled at least one year prior to use, or commercial bagged peat.

2. Manure - Well-rotted unleached stable manure with no more than 25% straw, shavings, or sawdust content. A mixture of one (1) cubic yard of peat humus or peat moss and 100 lbs. of commercial dehydrated-bagged manure such as Bovung or Spurigon may be used.
 3. Mulch for Plants - Well-rotted **(black)** shredded pine bark as approved by the Landscape Architect.
 4. Lime - Commercial ground lime with no less than 85% total carbonates, 50% passing a 100 mesh sieve and 90% passing a 200 mesh sieve as approved by the Landscape Architect. Coarser material will be accepted provided that specific rates of application increased proportionately.
 5. Compost soil amendment – Acceptable compost for “compost manufactured topsoil” shall conform to EPA Chapter 40 CFR 503 (pathogen, metals and vector attraction reduction) as well as applicable state regulations.
- C. Commercial Fertilizer
1. Seeding - 19-26-5 dust free homogenous granular material such as Scotts Pro-Turf Starter Fertilizer or an approved equal (application rate as recommended by manufacturer).
 2. Sodding - 10-6-4 with 50% nitrogen derived from urea form, such as Agway Turfwood Special Premium or an approved equal (application rate as recommended by manufacturer).
 3. Super phosphate - 0-20-0 in unopened bags with manufacturer analysis printed on the bag.
- D. Plant Materials - Furnish plants shown and specified on the Drawings and listed in the plant materials list. Discrepancies between the number of plants shown on the Drawings and the number listed in the plant list shall not be grounds for additional remuneration for the Contractor. Plants shall be nursery grown, typical of their species or variety and have a normal habit of growth. Any plant with broken, damaged, or badly bruised branches, trunks, or root balls shall be rejected.
1. Sizes: Plants larger than specified in the plant list may be used if approved by the Landscape Architect but use of such plants shall not increase the contract price. If the use of the larger plants is approved, the spread of roots or ball of earth shall be increased in proportion to the size of the plants.
 2. Substitutions: In the event that trees, shrubs or other plant material specified in the plant list are impossible or unreasonably difficult to obtain, the Contractor shall immediately notify the Landscape Architect to discuss appropriate substitutions. No substitutions of plant material may be made without the approval of the Landscape Architect.

E. Grass Seed

1. Grass Seed mixtures shall be fresh, clean, new crop seed. Seed may be mixed by an approved method on the site, or may be mixed by the dealer. If the seed is mixed on the site, each variety shall be delivered in the original containers which shall bear the dealer's guaranteed statement of the composition of the mixture and the percentage of purity of each variety. The Dealer's Guarantee Statement shall be delivered to the Landscape Architect.

2. Grass seed mixture for Lawn Areas shall be of the following types of seed:

Park Mix by Allen, Sterling & Lothrop or approved equal

35%	Kentucky Bluegrass 85/80
20%	Creeping Red Fescue
15%	Chewings Fescue
15%	Perennial Ryegrass
15%	Ryegrass

F. Sod - Sod shall be well-established turf of even thickness consisting of a Bluegrass blend, 90% Bluegrass and 10% Fescue. Sod shall be as provided by Winding Brook Sod Farm, Lyman, Maine or approved equal.

3 PART 3 EXECUTION

3.1 INSTALLATION:

A. Pre-Plant Weed Control

1. If live perennial weeds exist on site at the beginning of work, spray with a non-selective systemic contact herbicide, as recommended and applied by an approved licensed landscape pest control advisor and applicator. Leave sprayed plants intact for at least fifteen days to allow systemic kill or as directed by advisor.
2. Maintain site weed free until final acceptance by Owner utilizing mechanical, manual and/or chemical treatment.
3. Project Planting Beds adjacent to seeded lawn areas from over spray of seed mix. Germinating grass shall be removed before planting and mulching of beds. Contractor shall be responsible for removal of grass and or weeds after installation of plant material during maintenance period.

B. Planting of Trees and Shrubs

1. Plants must be located by the Contractor and approved by the Landscape Architect before pits are dug. The Contractor shall notify the Landscape Architect at least 48 hours prior to scheduling installation of plant material. Locations as shown on the Drawings may be varied due to existing conditions.
2. Preparation of Soil - Manure, peat humus and super phosphate additives shall be incorporated into topsoil by placing the additives over topsoil piles and turning piles at least 3 times or until thoroughly mixed. (Refer to planting detail).

3. Staking and guying: Trees shall be staked at the time of planting as shown on the typical section of Tree Planting Detail.
 4. Pruning and Mulching:
 - a. Remove all dead wood and/or suckers and all broken or badly bruised branches. All pruning shall conform to standards established by the National Arborist Association. Trees damaged during installation shall be removed and replaced at the direction of Project Landscape Architect and or Owner's Representative.
 - b. Immediately after planting operations are completed, cover all tree and shrub pits with three (3) inch layer of specified mulch. The limit of this mulch for trees shall be the area of the pit and for shrubs in beds, the entire area of the shrub bed. Mulch depth shall not exceed (3) inches.
 5. Watering
 - a. The Contractor shall be responsible for thoroughly watering all plant material upon installation.
 - b. Watering shall be monitored on a daily basis when temperatures exceed 70 degrees. The depth of moisture in all tree and shrub plantings shall be adequate to prevent wilting.
 - c. Watering (as required) of plant material shall continue for the duration of the maintenance period until certification of acceptability.
- C. Loaming and Seeding
1. Conduct planting operations under favorable weather conditions. Areas not required to be developed otherwise shall be seeded to turf.
 2. Compost Manufactured Topsoil – The soil (source material) shall be free of lumps, plants, weeds, roots and other debris over 2 inches in any dimension and free of stones over inch in any dimension. The organic compost shall be uniformly incorporated into the loam source by rolling and tumbling, by a front-end loader or by processing in a mixing plant. The material shall be mixed sufficiently to produce a homogenous soil, free of lumps and clods. In addition to the requirements for the compost amendment, the Contractor shall provide documentation that the recommended rate of fertilizer, per the testing analysis, has been applied to lawn areas prior to seeding.
 3. Prior to placing loam, scarify subgrade areas; remove all rocks over two (2) inches and debris; and set grade stakes as necessary. Place topsoil evenly over all areas to be loamed to a minimum thickness of six (6) inches. Hand rake to remove clods, lumps, brush, roots, and stones over ¾ inches in diameter. Hand roll to show depressions and uneven grades. Regrade as necessary to obtain smooth, even grades. Surplus topsoil shall become the property of the Contractor and shall be removed off the site.
 4. Apply additives (lime, fertilizer, compost etc.) as per the recommendation of the testing lab. Apply additives and harrow into top two (2) inches of the seedbed.

5. Sow seed specified by use of a mechanical spreader at the rates specified. Rake lightly in; roll with 200 lb. roller and water with a fine spray. Avoid spreading of grass seed mix in all designated planting beds.
6. Following compaction, apply a one- (1) inch layer of straw to hasten germination.
7. Full even growth in all areas must be guaranteed. The maintenance period shall continue after seeding and until the lawns are certified acceptable by the Landscape Architect. A minimum uniform catch of turf meeting 80% shall be required.
8. Repair damage resulting from erosion, gullies, washouts or other similar causes if such damage occurs before certification of acceptability of turf and planting by the Landscape Architect.
9. Sod - After all grading has been completed, the soil shall be irrigated within 12-24 hours before laying the sod. Sod shall not be laid on soil that is dry and powdery.
10. The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered to promote a uniform growth and strength. Care shall be exercised to insure that the sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which cause air drying of the roots.
11. The Contractor shall water sod immediately after installation to prevent drying during progress of the work. It shall then be thoroughly irrigated to a depth sufficient that the underside of the new sod pad and soil immediately below the sod is thoroughly wet.
12. Rolling of the sod shall be required to properly join sod to the bed after the sod is installed and twenty-four (24) to forty-eight (48) hours after initial watering. The Contractor shall roll the required area with a roller which weights seventy-five (75) to one hundred (100) pounds per square foot of roller width. The completed sod surface shall be true to finish grades as shown on plans and even and firm at all points.
13. Watering
 - a. First and Second Week - The Contractor shall provide all labor and arrange for all watering necessary for establishment of the turf. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first and second week and in sufficient quantities to maintain moist soil to a depth of at least four (4) inches. Watering should be done during the heat of the day to help prevent wilting.
 - b. Watering shall continue to be the responsibility of the Contractor until such time as the Owner or project Landscape Architect has certified acceptance of lawn areas.

3.2 MAINTENANCE:

- A. General - Maintenance shall begin immediately after each portion of seed and each plant is planted and shall continue in accordance with the following:

1. Lawns: The Contractor shall be responsible for establishing a uniform stand of the specified seed and until a Certification of Acceptability is received. No bare spots shall be allowed. After the seed has started, all areas and parts of areas that fail to show a uniform stand of grass, for any reason whatsoever, shall be seeded or sodded repeatedly until all areas are covered with a satisfactory growth of grass. The Contractor shall be responsible for the first two (2) mowings.
2. New Plantings: Protect and maintain new planting until the end of the lawn maintenance period, or, if installed after the lawn maintenance period, until installation of planting is certified acceptable by the Landscape Architect. Maintenance shall include watering, spraying and dusting for insect and fungal control, mulching, tightening and repairing guys, replacement of sick or dead plants, resetting plants to proper grades or upright position, and restoration of planting saucer, and all other care needed for proper growth and maintenance of the plants. Planting completed after the lawn preparation shall provide proper protection to lawn areas. Any damage resulting from planting operations shall be promptly repaired.
3. Spraying and Dusting: During the maintenance and guarantee periods, the Contractor shall do all seasonal spraying and/or dusting of trees and shrubs as required.
4. Protection: Planting areas and plants shall be protected against trespassing and damage of any kind. If any plants become damaged or injuries occur, they shall be treated or replaced as directed.
5. Damage: Damage resulting from erosion, gullies, washouts, or other causes shall be repaired by filling with topsoil, tamping, re-fertilizing, and sodding by the Contractor at his own expense if such damage occurs prior to certification of acceptability of turf and plantings by the Landscape Architect.
6. Responsibility: The Contractor's responsibility for maintenance shall cease at the time of certification of acceptability by the Landscape Architect. During the guarantee period, the Contractor shall be held responsible for making replacements, but no maintenance shall be required, other than spraying and dusting.

3.3 REPLACEMENT:

- A. At the end of the guarantee period, inspection will be made by the Landscape Architect upon written notice requesting such inspection and shall be submitted by the Contractor at least ten (10) days before the anticipated date. Any plant required under this Contract that is dead or not in satisfactory condition, as determined by the Landscape Architect, shall be removed from the site. These, and any other plants missing due to the negligence of the Contractor, shall be replaced with plants of the same type and size as originally specified. Replanting shall be done as soon as conditions permit, but during the normal planting season. Plant items in accordance with these specifications.

3.4 CLEANUP:

- A. The Landscape Contractor shall remove all debris, construction equipment, excess fill, rocks, and other excess material caused by his work, from the site upon completion of his portion of the work.

...END OF SECTION 32 90 00

