

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 22 13 Rough Grading.
- .2 Section 31 23 33.01 Excavating, Trenching and Backfilling.
- .3 Section 31 05 17 Aggregate Materials

1.2 REFERENCE DOCUMENTS

- .1 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-148.1 Methods of Testing Geosynthetics
- .2 Canadian Standards Association (CSA):
 - .1 CSA A231.1-06/A231.2-06 Precast Concrete Paving Slabs/Precast Concrete Pavers
 - .2 CAN/CSA-A23.1-09/A23.2-09 Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete.

1.3 SUBMITTALS

- .1 Reference Section 01 33 00 Submittal Procedures.

1.4 QUALITY ASSURANCE

- .1 Installation of paving stone work shall be performed by experienced qualified personnel employed by a company regularly engaged in installation of interlocking paving stones.
- .2 Construct sample mock-up of paving stone area, minimum 3.0 m x 3.0 m or as directed by Departmental Representative on site, to determine joint sizes, lines, colour selection, and laying patterns. Mock-up may be retained as part of finished work if acceptable to Departmental Representative.

1.5 TESTING

- .1 Reference Section 01 45 00 Testing and Quality Control.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver concrete pavers and accessories to site in such a manner that no damage occurs during shipping, handling, and storage. Store in accordance with manufacturer's recommendations.
- .2 Cover bedding and joint sand delivered to site with waterproof covering to prevent exposure to rain or removal by wind. Secure covering in place.
- .3 Coordinate delivery and installation to minimize interference.

Part 2 Products

2.1 CRUSHED GRAVEL GRANULAR BASE

- .1 Reference Section 31 05 17 Aggregate Materials.

2.2 BEDDING AND POLYMERIC JOINT SAND

- .1 Crusher Dust Bedding: Crushed stone or gravel screening: hard durable, crushed stone particles, free from clay lumps, cementations, organic material, frozen material and other deleterious material. Gradations: within limits specified when tested to ASTM C136 and ASTM C117.

Sieve Designation	% Passing
9.5 mm	100
4.75 mm	50-100
2.00 mm	30-65
0.425 mm	10-30
0.075 mm	5-10

- .2 Polymeric Joint Sand Stabilizer: manufactured mixture of graded sand and polymer binder especially formulated for paving stone joints. Apply in accordance with manufacturer's specifications.
- .3 Polymeric Joint Sand Stabilizer: Gator Maxx Sand supplied by Shaw, or approved alternate. Colour shall be 'Grey' or as directed by Project Manager.

2.3 CONCRETE PAVING STONES

- .1 Concrete Paving Stones shall be:
- .1 Model: Mega-Arbel Pavers as Manufactured by: Permacon.
.1 Standard Colour to be approved
OR
- .2 Model: Weathered Slate as Manufactured by: Shaw Brick.
.1 Standard Colour to be approved
OR
- .3 Model: Grand Flagstone as Manufactured by: Rosetta Hardscapes.
.1 Standard Colour to be approved
OR
- .4 Approved Alternate.
- .2 All paving stones shall be sound and free of cracks, chips and defects that would interfere with proper placing of units or impair strength or permanence of construction.

2.4 PAVER EDGE RESTRAINTS

- .1 Paver Edge Restraints: plastic, as indicated on drawings including manufacturer's installation accessories where applicable.
 - .1 Plastic Edge Restraint: rigid and flexible PVC edging restraint, specially designed for paving stones, complete with connectors, pre-manufactured anchoring locations and manufacturer's installation accessories.

Part 3 Execution

3.1 EXAMINATION

- .1 Check and verify that excavation, grading, and subgrade preparation of surfaces to receive paving stones are in compliance with specifications. Verify site grading and elevation requirements.
- .2 Advise Departmental Representative of any unsatisfactory subgrade conditions and subgrades containing organic material, foreign debris or other unsuitable subgrade material that will affect performance of unit pavers. Work shall not commence until deficient subgrades have been corrected and approved by Departmental Representative.
- .3 Confirm that excavation and subgrade preparation extends to rear face of all edge restraints to be installed.
- .4 Verify that subgrade is unfrozen, free of snow, ice and wet conditions.

3.2 SUBGRADE PREPARATION

- .1 Grade and finish subgrade to allow for installation of specified base materials to required depths. Ensure base preparation extends minimum 150 mm beyond edge of pavers and to rear face of edge restraints.
- .2 Remove unsuitable subgrade soil and materials and install approved crushed gravel fill as directed by Departmental Representative.
- .3 Proof-Rolling: contractor shall proof roll prepared subgrade surface to check for unstable areas and areas that require additional compaction. Provide acceptable proof rolling equipment of sufficient mass weight to compact subgrade to 100% Standard Proctor Density. Contractor shall correct deficient and unstable subgrades by removing unsuitable material and placing approved granular fill or other approved material.

3.3 CRUSHER DUST BEDDING COURSE

- .1 Spread and screed bedding sand evenly over granular base course to a uniform and consistent depth of 13 to 25 mm after compaction. Depth of bedding crusher dust layer shall not exceed 25 mm.
- .2 Screed crusher dust to a smooth even surface. Once screeded and levelled to required contours and grades, the crusher dust laying course shall not be disturbed.
- .3 Do not install frozen sand or sand over wet or frozen base.

- .4 Place and screed only enough crusher dust that will be covered with paving units the same day.

3.4 PAVING STONE INSTALLATION

- .1 Overall intent is to use full size paving stone units with minimal cutting where possible.
- .2 Install clean paving stones, tight and level, on undisturbed dry crusher dust base to patterns shown on drawings and in combination with manufacturer's modular pattern.
- .3 Place and align stones true to grade, lines, and layout pattern. String lines shall be used to hold pattern lines true.
- .4 Butt paving stone units together with maximum 3 mm joints. Maintain straight and consistent joint lines during placement of pavers.
- .5 Fill gaps at edge of paved surface with standard edge pavers or paving stone cut to fit. Do not use cut stone pieces smaller than one-third of a full-size paver.
- .6 Cut stones shall fit accurately and neatly. Cutting shall provide a straight even surface without cracks or chips using a double-bladed splitter or a diamond blade masonry saw. When cutting, precision designed paving stone areas a masonry saw shall be used.
- .7 Embed, tamp and level paving units into sand base by compacting with mechanical flat-plate vibrator. Do not vibrate within 1m of unrestrained edges of paving units.
- .8 Vibrate all paving stones laid the same day.
- .9 After initial compaction and when surface is dry, spread and sweep polymeric joint sand into all joints between paving stones. Sweep surface clean of exceed sand. Vibrate sand into joints using flat-plate vibrator until joints are full. Repeat sweeping of joint sand and vibration, as necessary, until joints are filled. Polymeric joint sand shall be applied in accordance with manufacturer's instructions and specifications. Follow all direction.
- .10 Finish Surface: final paving stone surface shall be free of depressions, provide positive drainage, be laid flush with adjacent finished surfaces and shall be true to line and grades.

3.5 EDGE RESTRAINT INSTALLATION

- .1 Install edge restraints true to grade in accordance to manufacturer's recommendations and as indicated on drawings.
- .2 Plastic edge restraint: install PVC paver edge restraint and spike into compacted gravel base through pre-drilled holes in edging according to manufacturer's instructions.
- .3 Submit sample of edge restraint in accordance with Section 01 33 00 Submittal Procedures.

3.6 CLEAN-UP, REPAIR AND PROTECTION

- .1 Broom clean excess sand from finished paving stones and wash free of stains, discolouration, dirt and other foreign debris to provide a clean finished paved surface.
- .2 Remove and replace all loose, chipped, broken, stained or otherwise damaged paving units and stones not laid true to line and grade as directed by Project Manager. Install new stones to comply with specifications. All repairs shall be completed prior to acceptance of work by Project Manager.
- .3 Remove surplus material and debris from site.
- .4 Protect work from damage during subsequent construction activities until project acceptance.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 22 13 – Rough Grading
- .2 Section 31 23 33.01 – Excavation, Trenching and Backfilling
- .3 Section 31 05 17 – Aggregate Materials

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM C136-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .2 ASTM C117-04, Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .3 ASTM D4318-05, Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
 - .4 ASTM D698-07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³).
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Access: allow access to building at all times.
- .2 Scheduling: coordinate paving schedule to minimize interference with normal use of premises.

1.4 SUBMITTALS

- .1 Reference Section 01 33 00 - Submittal Procedures.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Division 1.
- .2 Store crushed stone as and where directed by Departmental Representative.

Part 2 Products

2.1 MATERIALS

- .1 Granular base: in accordance with Section 31 05 17 – Aggregate Materials and 31 23 33.01 – Excavation, Trenching and Backfilling.
- .2 Granular topping: crushed stone.

- .1 Screenings: hard, durable, crushed stone particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- .2 Gradations: within limits specified when tested to ASTM C136 and ASTM C117.

Sieve Designation	% Passing
9.5 mm	100
4.75 mm	50-100
2.00 mm	30-65
0.425 mm	10-30
0.075 mm	5-10

Part 3 Execution

3.1 SUBGRADE

- .1 Ensure subgrade preparation conforms to levels and compaction required, to allow for installation of granular base.

3.2 GRANULAR BASE

- .1 Granular base material thickness: as indicated on drawings and details.
- .2 Spread and compact granular base material in uniform layers not exceeding 100 mm compacted thickness.
- .3 Compact to a density of not less than 95% Standard Proctor Density in accordance with ASTM D698.

3.3 GRANULAR TOPPING

- .1 Place granular topping to compacted thickness as indicated.
- .2 Place material in uniform layers not to exceed 50mm compacted thickness.
 - .1 Compact layer to 95% Standard Proctor Density in accordance with ASTM D698.

3.4 FIELD QUALITY CONTROL

- .1 Inspection and testing of crushed stone paving: carried out by designated testing laboratory.
- .2 Costs of tests in accordance with Section 01 45 00 – Testing and Quality Control.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.

3.6 PROTECTION

- .1 Prevent damage to buildings, landscaping, curbs, sidewalks, trees, fences, roads and adjacent property.
 - .1 Make good all damages incurred.
- .2 Provide access to building at all times. Co-ordinate paving schedule to minimize interference with normal use of premises.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Supply, delivery and installation of standard manufactured catalogue items such as bike repair station, bike wash mounting brackets, and hose brackets.

1.2 RELATED SECTION

- .1 Section 03 30 00 – Cast-in-Place Concrete.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for furniture and include product characteristics, performance criteria, physical size, finish and limitations in accordance with Division 01.
- .3 Shop Drawings:
 - .2 Submit shop drawings indicating dimensions, sizes, assembly, anchorage, and installation details for each furnishing specified in accordance with Division 01.
- .4 Submit maintenance data for care and cleaning of site furnishings.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions and in accordance with Division 01.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect furnishings from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse of pallets, crates, padding, packaging materials as specified in Section 01 74 21 Construction/Demolition Waste Management & Disposal.

Part 2 Products

2.1 BIKE REPAIR STATION

- .1 Type: Post mounted bike repair station capable of mounting and providing tools to repair one (1) bike at a time.
- .2 Components:

- .1 Manual Air pump (1).
- .2 Bike mounting arm capable of holding one (1) bike.
- .3 Standard tool repair kit:
 - .1 Philips screwdriver.
 - .2 Flat head screwdriver.
 - .3 2.5, 3, 4, 5, 6, 8mm Allen wrenches.
 - .4 8, 9, 10, 11, 15, 32mm Box wrenches.
 - .5 Headset wrench (1).
 - .6 Pedal wrench (1).
 - .7 Tire levers: two (2).
- .4 Tools are to be tethered to frame using 4mm steel cable
- .3 Dimensions:
 - .1 Main Body: 15x5mm tube.
 - .2 Bike Mount: 38mm sch. 40 pipe, 6mm plate
- .3 Mounting: Embedment.
- .4 Finish: Standard colour to be approved.
- .5 Quantity: One (1).

2.2 BIKE WASHING MOUNT BRACKET (OPTIONAL PRICING ONLY)

- .1 Type: Commercial grade.
- .2 Dimensions: 400-500mm in length.
- .3 Mounting: Wall mounted style.
- .4 Finish: Galvanized.
- .5 Quantity: Two (2).
- .6 Or approved alternate bracket.

2.3 BIKE WASHING STATION HOSE BRACKET (OPTIONAL PRICING ONLY)

- .1 Type: Commercial grade hose bracket capable of holding 7.0m long, 19mm DIA hose (hose by others).
- .2 Dimensions:
 - .1 Height: 350-500mm.
 - .2 Width: 350-500mm.
 - .3 Depth: 150mm max.
- .3 Mounting: Post mounted.

- .4 Finish: Standard colour to be approved.
- .5 Quantity: Two (2).
- .6 Or approved alternate bracket.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for exterior site furnishing installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 PREPARATION

- .1 Locate and protect all utility lines and services.
- .2 Notify and acquire written acknowledgment from utility authorities before beginning installation Work.

3.3 INSTALLTION

- .1 Assemble furnishings in accordance with manufacturer's written recommendations.
- .2 Install furnishing, true, plumb, anchored or firmly supported, as indicated and as directed by Departmental Representative and as per manufacturer's specifications.
- .3 Touch-up damaged finishes to approval of Departmental Representative.

3.4 CLEANING

- .1 Progress Cleaning: leave work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

3.5 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by site furnishings installation.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 22 13 - Rough Grading.
- .2 Section 32 92 19.16 - Hydraulic Seeding.
- .3 Section 32 92 23 - Sodding.
- .4 Section 32 93 10 - Trees, Shrubs and Ground Cover Plantings.

1.2 REFERENCES

- .1 Agriculture and Agri-Food Canada
 - .1 The Canadian System of Soil Classification, Third Edition, 1998.
 - .2 Canadian Council of Ministers of the Environment
 - .1 PN1340-2005, Guidelines for Compost Quality.

1.3 DEFINITIONS

- .1 Compost:
 - .1 Mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner.
 - .2 Compost is processed organic matter containing 40% or more organic matter as determined by Walkley-Black or Loss On Ignition (LOI) test.
 - .3 Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below 25:50), and contain no toxic or growth inhibiting contaminants.
 - .4 Composed bio-solids to: CCME Guidelines for Compost Quality, Category A.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00– Submittal Procedures.
- .2 Quality control submittals:
 - .1 Soil testing: submit certified test reports showing compliance with specified performance characteristics and physical properties as described in Section 01 45 00 Testing and Quality Control.
 - .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 QUALITY ASSURANCE

- .1 Pre-installation meetings: conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements in accordance with Division 01.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Reference Section 01 74 21 Construction/Demolition Waste Management & Disposal.

- .2 Divert unused soil amendments from landfill to official hazardous material collections site approve by Departmental Representative.
- .3 Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

Part 2 Products

2.1 TOPSOIL

- .1 Topsoil shall be imported and amended in accordance with soil test results.
- .2 Topsoil for seeded areas, sodded areas, planting beds and individual planting pits: mixture of particulates, micro-organisms and organic matter which provides suitable medium for supporting intended plant growth.
 - .1 Friable loam shall contain a minimum of 4% organic matter for clay loams and 20% for sandy loams to a maximum of 20% by volume and having a pH of 6.0 to 7.0. Topsoil shall be free of admixture of subsoil, refuse, roots, stumps, sod and stones larger than 25mm.
 - .2 Contain no toxic elements or growth inhibiting materials.
 - .3 Finished surface free from:
 - .1 Debris and stones over 25 mm diameter.
 - .2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
 - .4 Consistence: friable when moist.

2.2 SOIL AMENDMENTS

- .1 Fertilizer: shall be complete commercial specifically blended for promoting root development of newly seeded or sodded areas as recommended in soils test results.
- .2 Sand: washed coarse silica sand, medium to course textured.
- .3 Organic matter: compost Category A in accordance, unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements
- .4 Limestone:
 - .1 Ground agricultural limestone.
 - .2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.
 - .3 Fertilizer: industry accepted standard medium containing nitrogen, phosphorous, potassium and other micro-nutrients suitable to specific plant species or application or defined by soil test.

2.4 SOURCE QUALITY CONTROL

- .1 Advise Departmental Representative of sources of topsoil or manufactured topsoil to be utilized with sufficient lead time for testing.

- .2 Contractor is responsible for amendments to supply topsoil and playfield topsoil mix as specified.
- .3 Soil testing by recognized testing facility for PH, P and K, and organic matter.
- .4 Testing of topsoil will be carried out by testing laboratory designated by Departmental Representative
- .5 Soil sampling, testing and analysis to be in accordance with Provincial standards.

Part 3 Execution

3.1 PREPARATION OF EXISTING GRADE

- .1 Verify that grades are correct.
- .2 If discrepancies occur, notify Departmental Representative and do not commence work until instructed.
- .3 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .4 Remove debris, roots, branches, stones in excess of 50 mm diameter for seed or sod areas.
- .5 Remove soil contaminated with calcium chloride, toxic materials and petroleum products.
- .6 Remove debris which protrudes more than 25mm above surface.
- .7 Dispose of removed material off site.
- .8 Cultivate entire area which is to receive topsoil to minimum depth of 100 mm.
- .9 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.2 PLACING AND SPREADING OF TOPSOIL/PLANTING SOIL

- .1 Place topsoil after Departmental Representative has accepted subgrade.
- .2 Spread topsoil in uniform layers not exceeding 150 mm.
- .3 Spread topsoil as indicated to following minimum depths after settlement.
 - .1 75mm for seeded areas.
 - .2 75mm for sodded areas (swale bottom).
 - .3 450mm for shrub and perennial planting beds.
 - .4 As indicated on drawings and details for individual planting pits.
- .4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.

3.3 SOIL AMENDMENTS

- .1 For planting beds, seed and sod areas: apply and thoroughly mix soil amendments as recommended in soils tests into full specified depth of topsoil.

3.4 FINISH GRADING

- .1 Grade to eliminate rough spots and low areas and ensure positive drainage.
 - .1 Prepare loose friable bed by means of cultivation and subsequent raking.
 - .2 Consolidate topsoil to required bulk density using equipment approved by Departmental Representative.
 - .3 Leave surfaces smooth, uniform and firm against deep footprinting.

3.5 ACCEPTANCE

- .1 Departmental Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

3.6 SURPLUS MATERIAL

- .1 Dispose of materials except topsoil not required off site as directed by Departmental Representative.

3.7 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .2 Section 32 91 19.13 – Topsoil Placement and Grading.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements in accordance with Division 01.
- .2 Scheduling:
 - .1 Schedule hydraulic seeding to coincide with preparation of soil surface.

1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for seed, mulch, tackifier, fertilizer, liquid soil amendments and micronutrients.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.
- .3 Submit in writing 7 days prior to commencing work:
 - .1 Volume capacity of hydraulic seeder in litres.
 - .2 Amount of material to be used per tank based on volume.
 - .3 Number of tank loads required per hectare to apply specified slurry mixture per hectare.
- .4 Samples:
 - .1 Submit 0.5 kg container of each type of fertilizer used.
- .5 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .6 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

1.4 QUALITY ASSURANCE

- .1 Reference Section 01 45 00 – Testing and Quality Control.
- .2 Qualifications:
 - .1 Work shall be carried out by a landscaping company or person with current membership in the Canadian Nursery Landscaping Association (CNLA), unless otherwise approved by the Departmental Representative.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

- .2 Delivery and Acceptance Requirements:
 - .1 Labelled bags of fertilizer identifying mass in kg, mix components and percentages, date of bagging, supplier's name and lot number.
 - .2 Inoculant containers to be tagged with expiry date.
- .3 Storage and Handling Requirements:
 - .1 Store fertilizer and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan in accordance 01 74 21 – Construction/Demolition Waste Management & Disposal.

1.6 WARRANTY

- .1 Contractor hereby warrants that seeding will remain free of defects for 1 full growing season.
- .2 End-of-warranty inspection will be conducted by Departmental Representative.

Part 2 Products

2.1 MATERIALS

- .1 Seed: "Canada pedigreed grade" in accordance with Government of Canada Seeds Act and Regulations.
 - .1 Grass mixture: "Certified", "Canada No. 1 Lawn Grass Mixture" in accordance with Government of Canada "Seeds Act" and "Seeds Regulations".
 - .1 Mixture composition:
 - .1 40% Creeping Red Fescue
 - .2 20% Hard Fescue
 - .3 15% Canada Bluegrass
 - .4 15% Annual Ryegrass
 - .5 5% White Clover
 - .6 5% Red Top Bentgrass
 - .7 Seed rate: 10kg/1000m²
 - .2 Mulch: specially manufactured for use in hydraulic seeding equipment, non-toxic, water activated, green colouring, free of germination and growth inhibiting factors with following properties:
 - .1 Type I mulch:
 - .1 Made from wood cellulose fibre.

- .2 Organic matter content: 95% plus or minus 0.5%.
- .3 Value of pH: 6.0.
- .4 Potential water absorption: 900%.
- .2 Type II mulch:
 - .1 Made from newsprint, raw cotton fibre and straw, processed to produce fibre lengths of 15 mm minimum and 25 mm maximum. Greater proportions of ingredients to be straw.
- .3 Tackifier: water dilatable, liquid dispersion.
- .4 Water: free of impurities that would inhibit germination and growth.
- .5 Fertilizer:
 - .1 To Canada "Fertilizers Act" and Regulations.
 - .2 Complete synthetic, slow release with 35% of nitrogen content in water-insoluble form.
- .6 Inoculants: inoculant containers to be tagged with expiry date.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for hydraulic seeding in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed Departmental Representative.

3.2 PROTECTION OF EXISTING CONDITIONS

- .1 Protect structures, signs, guide rails, plant material, utilities and other surfaces not intended for spray.
- .2 Immediately remove any material sprayed where not intended as directed by Departmental Representative.

3.3 PREPARATION OF SURFACES

- .1 Do not perform work under adverse field conditions such as wind speeds over 10km/h, frozen ground or ground covered with snow, ice or standing water.
- .2 Fine grade areas to be seeded free of humps and hollows.
 - .1 Ensure areas are free of deleterious and refuse materials.

- .3 Cultivated areas identified as requiring cultivation to depth of 25mm.
- .4 Ensure areas to be seeded are moist to depth of 150mm before seeding.
- .5 Obtain Consultant's approval of grade and topsoil depth before starting to seed.

3.4 FERTILIZING PROGRAM

- .1 Fertilize during establishment and warranty periods based on test results. Fertilize 4-5 times within the warranty period.

3.5 PREPARATION OF SLURRY

- .1 Measure quantities of materials by weight or weight-calibrated volume measurement satisfactory to Departmental Representative. Supply equipment required for this work.
- .2 Charge required water into seeder. Add material into hydraulic seeder under agitation. Pulverize mulch and charge slowly into seeder.
- .3 After materials are in seeder and well mixed, charge tackifier into seeder and mix thoroughly to complete slurry.

3.6 SLURRY APPLICATION

- .1 Hydraulic seeding equipment:
 - .1 Slurry tank.
 - .2 Agitation system for slurry to be capable of operating during charging of tank and during seeding, consisting of recirculation of slurry and/or mechanical agitation method.
 - .3 Capable of seeding by 50m hand operated hoses and appropriate nozzles.
 - .4 Tank volume to be certified by certifying authority and identified by authorities "Volume Certification Plate".
- .2 Slurry mixture applied per hectare.
 - .1 Seed: grass mixture 245kg.
 - .2 Mulch: Type I and II kg as recommended by supplier.
 - .3 Tackifier: As recommended by supplier.
 - .1 For slopes > 3(h):1(v) double tackifier quantity for better slope stabilization.
 - .4 Water: Minimum 30,000 L.
 - .5 Fertilizer: as recommended by supplier.
 - .6 Lime: as determined by soils test recommendations for turf.
- .3 Apply slurry uniformly, at optimum angle of application for adherence to surfaces and germination of seed.
 - .1 Using correct nozzle for application.
 - .2 Using hoses for surfaces difficult to reach and to control application.

- .4 Blend application 300mm into adjacent grass areas or sodded areas to form uniform surfaces.
- .5 Re-apply where application is not uniform.
- .6 Remove slurry from items and areas not designated to be sprayed.

3.7 CLEANING

- .1 Cleaning: clean in accordance with Section 01 74 11 Cleaning and Section 01 74 21 Construction/Demolition Waste Management & Disposal.
 - .1 Leave work area clean at end of each day.
 - .2 Keep pavement and area adjacent to site clean and free from mud, dirt, and debris at all times.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
 - .1 Clean and reinstate areas affected by Work.
- .3 Waste Management: separate waste materials for reuse, recycling in accordance with Division 1.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
 - .2 Divert unused fertilizer from landfill to official hazardous material collections site approved by Departmental Representative.

3.8 PROTECTION

- .1 Protect seeded areas from trespass until plants are established.
- .2 Remove protection devices as directed by Departmental Representative.

3.9 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Ensure maintenance is carried out under supervision of certified Landscape Maintenance Supervisor.
- .2 Perform following operations from time of seed application until acceptance by Departmental Representative.
- .3 Grass Mixture:
 - .1 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance.
 - .2 Fertilize seeded areas after in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles; water in well.
 - .3 Water seeded area to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.

3.10 ACCEPTANCE

- .1 Seeded areas will be accepted by Departmental Representative provided that:

- .1 Plants are uniformly established. Seeded areas are free of rutted, eroded, bare or dead spots.
- .2 Areas have been fertilized.
- .2 Areas seeded in Fall will achieve final acceptance in the following Spring, one month after start of growing season provided acceptance conditions are fulfilled.

3.11 MAINTENANCE DURING WARRANTY PERIOD

- .1 Perform following operations from time of acceptance until end of warranty period:
 - .1 Repair and reseed dead or bare spots to satisfaction of Departmental Representative.
 - .2 Fertilize seeded areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 22 13 Rough Grading.
- .2 Section 32 91 19.13 Topsoil Placement and Grading.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Scheduling:
 - .1 Schedule sod laying to coincide with preparation of soil surface.
 - .2 Schedule sod installation when frost is not present in ground.
 - .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements.

1.3 SUBMITTALS

- .1 Reference Section 01 33 00 Submittal Procedures.

1.4 QUALITY ASSURANCE

- .1 Reference Section 01 45 00 – Testing and Quality Control.
- .2 Qualifications:
 - .1 Work shall be completed by a landscaping company or person with current membership and in good standing order with Canadian Nursery Landscaping Association (CNLA), unless otherwise approved by the Departmental Representative.
 - .2 Install approved samples in 1 m² mock-ups and maintain in accordance with maintenance requirements during establishment period.
 - .3 Bio-degradable geotextile fabric.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Storage and Handling Requirements:
 - .1 Store materials in accordance with supplier's recommendations.
 - .2 Replace defective or damaged materials with new.
- .3 Packaging Waste Management: remove for reuse of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 Construction/Demolition Waste Management & Disposal.

Part 2 Products

2.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sod installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

2.2 PREPARATION

- .1 Verify that grades are correct and prepared in accordance with Section 32 91 19.13 - Topsoil Placement and Grading. If discrepancies occur, notify Departmental Representatives and commence work when instructed by Departmental Representative.
- .2 Do not perform work under adverse field conditions such as frozen soil, excessively wet soil or soil covered with snow, ice, or standing water.
- .3 Fine grade surface free of humps and hollows to smooth, even grade, to contours or elevations indicated, to tolerance of plus or minus 8 mm, for Turf Grass Nursery Sod, plus or minus 15mm for Commercial Grade Turf Grass Nursery surface to drain naturally.
- .4 Remove and dispose of weeds; debris; stones 25mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; in location as directed by Departmental Representative.

2.3 SOD PLACEMENT

- .1 Ensure sod placement is done under supervision of certified Landscape Planting Supervisor.
- .2 Lay sod within 24 hours of being lifted if air temperature exceeds 20 degrees C.
- .3 Lay sod sections in rows, joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements.
- .4 Roll sod as directed by Departmental Representative. Provide close contact between sod and soil by light rolling. Use of heavy roller to correct irregularities in grade is not permitted.

2.4 SOD PLACEMENT ON SLOPES AND PEGGING

- .1 Install and secure geotextile fabric in areas indicated, in accordance with manufacturer's instructions.
 - .1 Start laying sod at bottom of slopes.
 - .2 Peg sod on slopes steeper than 3 horizontal to 1 vertical, within 1m of catch basins, within 1m of drainage channels and ditches and swales sloped at greater than 5% to following pattern:

- .1 100 mm below top edge at 200 mm on centre for first sod sections along contours of slope.
- .2 Not less than 3-6 pegs per square metre.
- .3 Not less than 6-9 pegs per square metre in drainage structures. Adjust pattern as directed by Departmental Representative.
- .4 Drive pegs to 20mm above soil surface of sod sections.

2.5 FERTILIZING PROGRAM

- .1 Fertilize during establishment and warranty periods according to fertilizer program agreed to upon by the Contractor and the Departmental Representative with a minimum of three applications.

2.6 CLEANING

- .1 Progress Cleaning: Leave Work area clean at end of each day. Keep pavement and area adjacent to site clean and free from mud, dirt, and debris at all times.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .3 Clean and reinstate areas affected by Work.

2.7 PROTECTION BARRIERS

- .1 Protect newly sodded areas from deterioration with snow fence on rigid frame as directed by Departmental Representative.
- .2 Remove protection 2 weeks after installation or after inspection as directed by Departmental Representative.

2.8 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform following operations from time of installation until acceptance.
 - .1 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.
 - .2 Maintain sodded areas weed free 95%.
 - .3 Fertilize areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.
 - .4 Temporary barriers or signage to be maintained where required to protect newly established sod.

2.9 ACCEPTANCE

- .1 Turf Grass Nursery Sod areas will be accepted by Departmental Representative provided that:
 - .1 Sodded areas are properly established.
 - .2 Sod is free of bare and dead spots.

- .3 Fertilizing in accordance with fertilizer program has been carried out at least once.
- .2 Sodded Commercial Grade Turf Grass Nursery Sod areas will be accepted by Departmental Representative provided that:
 - .1 Sodded areas are properly established.
 - .2 Sod is free of bare or dead spots and extent of weeds apparent in grass is acceptable.
 - .3 Fertilizing in accordance with fertilizer program has been carried out at least once.
- .3 Areas sodded in Fall will be accepted in following Spring one month after start of growing season provided acceptance conditions are fulfilled.
- .4 When environmental conditions allow, all sodded areas showing shrinkage cracks shall be top-dressed and seeded with a seed mix matching the original.
- .5 Areas sodded in Fall will be accepted in following Spring one month after start of growing season provided acceptance conditions are fulfilled.

2.10 MAINTENANCE DURING WARRANTY PERIOD

- .1 Perform following operations from time of acceptance until end of warranty period:
 - .1 Water sodded areas as required intervals to obtain optimum soil moisture conditions to depth of 100mm.
 - .2 Repair and resod dead or bare spots to satisfaction of Departmental Representative.
 - .3 Fertilize areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 31 22 13 Rough Grading.
- .2 Section 32 91 19.13 Topsoil Placement and Grading.

1.2 REFERENCES

- .1 Definitions:
 - .1 Mycorrhiza: association between fungus and roots of plants. This symbiosis, enhances plant establishment in newly landscaped and imported soils.
- .2 Reference Standards:
 - .1 Agriculture and Agri-Food Canada (AAFC).
 - .1 Plant Hardiness Zones in Canada-2000.
 - .2 Canadian Nursery Landscape Association (CNLA)
 - .1 Canadian Standards for Nursery Stock-2006 8th Edition, or latest edition.
 - .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Scheduling: obtain approval from Departmental Representative of schedule 7 days in advance of shipment of plant material.
- .2 Schedule to include:
 - .1 Quantity and type of plant material.
 - .1 Shipping dates.
 - .2 Arrival dates on site.
 - .3 Planting Dates.

1.4 SUBMITTALS

- .1 Reference Section 01 33 00 Submittal Procedures.

1.5 QUALITY ASSURANCE

- .1 Reference Section 01 45 00 – Testing and Quality Control.
- .2 Qualifications:
 - .1 Landscape Contractor: shall be a Member in Good Standing of Canadian Nursery Landscape Association (CNLA).

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Protect plant material from frost, excessive heat, wind and sun during delivery.
 - .2 Protect plant material from damage during transportation:
 - .1 Delivery distance is less than 30 km and vehicle travels at speeds under 80 km/h, tie tarpaulins around plants or over vehicle box.
 - .2 Delivery distance exceeds 30 km or vehicle travels at speeds over 80 km/h, use enclosed vehicle where practical.
 - .3 Protect foliage and root balls using anti-desiccants and tarpaulins, where use of enclosed vehicle is impractical due to size and weight of plant material.
 - .3 Storage and Handling Requirements:
 - .1 Immediately store and protect plant material which will not be installed within 1 hour in accordance with supplier's written recommendations and after arrival at site in storage location approved by Project Manager.
 - .2 Protect stored plant material from frost, wind and sun and as follows:
 - .1 For bare root plant material, preserve moisture around roots by heeling-in or burying roots in sand or topsoil and watering to full depth of root zone.
 - .2 For pots and containers, maintain moisture level in containers. Heel-in fibre pots.
 - .3 For balled and burlapped and wire basket root balls, place to protect branches from damage. Maintain moisture level in root zones.
 - .3 Store and manage hazardous materials in accordance with manufacturer's written instructions.

1.7 WARRANTY

- .1 All plant material shall have a 12 month warranty period.
- .2 Contractor hereby warrants that plant material as itemized on plant list will remain free of defects for 1 full growing season, providing adequate maintenance has been provided.
- .3 End-of-warranty inspection will be conducted by Departmental Representative.
- .4 The Departmental Representative reserves the right to extend Contractor's warranty responsibilities for an additional one (1) year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.

Part 2 Products

2.1 PLANT MATERIALS

- .1 Type of root preparation, sizing, grading and quality: comply with Canadian Standards for Nursery Stock, latest edition.
 - .1 Source of plant material: grown in Zone 5a in accordance with Plant Hardiness Zones in Canada.
 - .2 Plant material must be planted in zone specified as appropriate for its species.
 - .3 Plant material in location appropriate for its species.
 - .4 Plant material: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
 - .5 Trees: with straight trunks, well and characteristically branched for species.
 - .6 Bare root stock: nursery grown, in dormant stage, not balled and burlapped or container grown.

2.2 WATER

- .1 Free of impurities that would inhibit plant growth.

2.3 STAKES

- .1 T-bar, steel, 40 x 40 x 5 x 2440 mm.

2.4 GUYING WIRES

- .1 Guy wire to be:
 - .1 Woven polyester material tie strap.
 - .2 Width to be 19mm.
 - .3 Break strength to be min 400kg.
 - .4 Lock stitch with rounded weave

2.5 ANCHORS

- .1 Wood:
 - .1 Type 1: 38 x 38 x 460 mm.

2.6 MULCH

- .1 Bark chip: varying in size from 25 to 50 mm in diameter, from bark of coniferous trees.

2.7 FERTILIZER

- .1 Synthetic commercial type as recommended by soil test report for trees, shrubs and ground cover plantings.
 - .1 Ensure new root growth is in contact with mycorrhiza.
 - .2 Use mycorrhiza as recommended by manufacturer's written recommendations.

2.8 SOURCE QUALITY CONTROL

- .1 Obtain approval from Departmental Representative of plant material prior to planting.

- .2 Imported plant material must be accompanied with necessary permits and import licenses. Conform to Federal, Provincial or Territorial regulations.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for planting installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 PRE-PLANTING PREPARATION

- .1 Proceed only after receipt of written acceptability of plant material from Departmental Representative.
- .2 Remove damaged roots and branches from plant material.
- .3 Apply anti-desiccant to conifers and deciduous trees in leaf in accordance with manufacturer's instructions.
- .4 Locate all site services and protect services and utility lines.
- .5 Notify and acquire written acknowledgment from utility authorities before beginning excavation of planting pits for trees and shrubs.
- .6 Temporary Erosion and Sedimentation Control:
 - .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties, streets and walkways.
 - .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 EXCAVATION AND PREPARATION OF PLANTING BEDS

- .1 Establishment of sub-grade for planting beds in accordance with Section 31 22 13 - Rough Grading.
- .2 Preparation of planting beds in accordance with Section 32 91 19.13 - Topsoil Placement and Grading.

.3 For individual planting holes and planting beds:

- .1 Stake out locations and obtain approval from Departmental Representative prior to excavating.
- .2 Excavate to depth and width as indicated.
- .3 Remove subsoil, rocks, roots, debris and toxic material from excavated material that will be used as planting soil for trees and individual shrubs. Dispose of excess material under direction of Departmental Representative.
- .4 Scarify sides of planting hole.
- .5 Remove water which enters excavations prior to planting. Notify Departmental Representative if water source is ground water.

3.4 PLANTING

.1 For bare root stock, place 50mm backfill soil in bottom of hole.

- .1 Plant trees and shrubs with roots placed straight out in hole.
- .2 For jute burlapped root balls, cut away top one third of wrapping and wire basket without damaging root ball.
 - .1 Do not pull burlap or rope from under root ball.
- .3 For container stock or root balls in non-degradable wrapping, remove entire container or wrapping without damaging root ball.
- .4 Plant vertically in locations as indicated.
 - .1 Orient plant material to give best appearance in relation to structure, roads and walks.
- .5 For trees and shrubs:
 - .1 Backfill soil in 150 mm lifts.
 - .1 Tamp each lift to eliminate air pockets.
 - .2 When two thirds of depth of planting pit has been backfilled, fill remaining space with water.
 - .3 After water has penetrated into soil, backfill to finish grade.
- .6 For ground covers, backfill soil evenly to finish grade and tamp to eliminate air pockets.
- .7 Water plant material thoroughly.
- .8 After soil settlement has occurred, fill with soil to finish grade.

3.5 TREE SUPPORTS

- .1 Install tree supports as indicated.
- .2 Use 2 stakes or anchors for deciduous trees and use 3 anchors for evergreens.

- .1 Use guy wire as per manufacturer's specifications
- .2 Install anchors at equal intervals about tree as indicated on drawings.
- .3 Saw tops off wooden anchors which extend in excess of 100 mm above grade or as directed by Departmental Representative.
- .3 After tree supports have been installed, remove any broken branches with clean, sharp tools.

3.6 **MULCHING**

- .1 Ensure soil settlement has been corrected prior to mulching.
- .2 Spread mulch as indicated.

3.7 **MAINTENANCE DURING ESTABLISHMENT PERIOD**

- .1 Perform following maintenance operations from time of planting to acceptance by Departmental Representative.
 - .1 Water to maintain soil moisture conditions for optimum establishment, growth and health of plant material without causing erosion.
 - .1 For evergreen plant material, water thoroughly in late fall prior to freeze-up to saturate soil around root system.
 - .3 Remove weeds monthly or as required.
 - .4 Replace or respread damaged, missing or disturbed mulch.
 - .5 For non-mulched areas, cultivate as required to keep top layer of soil friable.
 - .6 If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Departmental Representative prior to application.
 - .7 Remove dead or broken branches from plant material.
 - .8 Keep guy wires in proper repair and adjustment.
 - .9 Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.

3.8 **MAINTENANCE DURING WARRANTY PERIOD**

- .1 From time of acceptance by Departmental Representative to end of warranty period, perform following maintenance operations.
 - .1 Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.
 - .2 Reform damaged watering saucers.
 - .3 Remove weeds monthly or as required.
 - .4 Replace or respread damaged, missing or disturbed mulch.

- .5 For non-mulched areas, cultivate monthly to keep top layer of soil friable.
- .6 If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Departmental Representative prior to application.
- .7 Apply fertilizer in early spring as indicated by soil test recommendations.
- .8 Remove dead, broken or hazardous branches from plant material.
- .9 Keep tree supports in proper repair and adjustment.
- .10 Remove tree supports at end of warranty period.
- .11 Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.

3.9 CLEANING

- .1 Progress Cleaning: leave work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .3 Waste Management: separate waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management & Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.
 - .2 Divert discarded burlap, wire and plastic plant containers materials from landfill to plastic recycling facility approved by Departmental Representative.
 - .3 Dispose of unused fertilizer at official hazardous material collection site approved by Departmental Representative.
 - .4 Dispose of unused anti-desiccant at official hazardous material collections site approved by Departmental Representative.
 - .5 Divert unused wood and mulch materials from landfill to facility approved by Departmental Representative.

3.10 CLOSEOUT ACTIVITIES

- .1 Submit maintenance reports for trees, shrubs, and other plantings.

END OF SECTION