

SPECIFICATIONS
FOR
GRADING AND LANDSCAPING
CITY OF EDINA, MINNESOTA
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Revised January 2019

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1.0 **GENERAL**

The General Conditions and the Special Provisions and Conditions as embodied in these Contract Documents will be applied to all work and materials to be furnished and installed under these Specifications.

2.0 **LOCATION**

The grading and landscaping to be constructed and installed under this contract is located in the City of Edina, Hennepin County, Minnesota as shown on the plans and drawings.

3.0 **DESCRIPTION**

This work will consist of the erosion and sediment control, excavation, backfilling, and restoration of existing surface improvements for the purposes of road reconstruction and installing new and/or relocating or adjusting existing underground utilities.

Use of the term "Plans, Specifications and Special Provisions" within this specification will be construed to mean those documents which compliment, modify, or clarify these specifications and are accepted as an enforceable component of the Contract or Contract Documents. All references to MnDOT Specifications will mean the latest published edition of the Minnesota Department of Transportation Standard Specifications for Construction, as modified by any MnDOT Supplemental Specification edition published prior to the date of advertisement for bids. All reference to other Specifications of AASHTO, ASTM, ANSI, AWWA, etc. will mean the latest published edition available on the date of advertisement for bids.

All storm water management/erosion control measures and controlling erosion/establishing vegetation measures will be in accordance with MnDOT 1717, 2573, 2574 and 2575, respectively, Erosion Control Plans, Storm Water Pollution Prevention Plan and any applicable permit requirements.

4.0 **MATERIALS**

A. **Granular Materials**

Granular materials furnished for foundation, bedding, encasement, backfill, or other purposes as may be specified will consist of any natural or synthetic mineral aggregate such as sand, gravel, crushed rock, crushed stone, or slag, that will be so graded as to meet the gradation requirements specified herein for each particular use by the material manufacturer or as indicated in the Plans, Specifications, or Special Provisions.

B. Granular Material Gradation Classification

Granular materials furnished for use in Foundation, Bedding, Encasement, or Backfill construction will conform to the following requirements:

Foundation materials will have 100 percent by weight passing the 1-1/2 inch sieve and a maximum of 10 percent by weight passing the No. 4 sieve.

Backfill materials will consist of existing trench materials, except as otherwise specified in this specification or in the Special Provisions.

Bedding and encasement materials for flexible pipe, where improved pipe foundation is not required, will meet the requirements of MnDOT Specification 3149.2B.1, Granular Borrow, except that 100 percent by weight will pass the one-inch sieve.

A gradation report from an approved Independent Testing laboratory of the proposed granular materials will be furnished to the Engineer before any of the granular materials are delivered to the project. Concrete curb and gutter will be paid for at the contract unit price per linear foot measured along the face of the curb at the gutter line including along the length of concrete driveway aprons. Payment will be compensation in full for all costs incidental to construction, including but not limited to: backfill, expansion fillers, and curing compound.

Granular materials furnished for foundation, bedding, encasement, backfill, or other purposes as may be specified will consist of any natural or synthetic mineral aggregate such as sand, gravel, crushed rock, crushed stone, or slag, that will be so graded as to meet the gradation requirements specified herein for each particular use by the material manufacturer or as indicated in the Plans, Specifications, or Special Provisions.

C. Granular Material Use Designation

Granular materials provided for Foundation, Bedding, Encasement, or Backfill use as required by the Plans, Specifications, and Special Provisions, either as part of the pipe item work unit or as a separate contract item, will be classified as to use in accordance with the following:

Material Use Designation Zone Designation

Granular Foundation --- Placed below the bottom of pipe grade as replacement for unsuitable or unstable soils, to achieve better foundation support.

Granular Bedding --- Placed below the pipe midpoint, prior to pipe installation, to facilitate proper shaping and to achieve uniform pipe support.

Granular Encasement --- Placed below an elevation one foot above the top of pipe, after pipe installation, for protection of the pipe and to assure proper filling of voids or thorough consolidation of backfill.

Granular Backfill --- Placed below the surface base course, if any, as the second stage of backfill, to minimize trench settlement and provide support for surface improvements.

In each case above, unless otherwise indicated, the lower limits of any particular zone will be the top surface of the next lower course as constructed. The upper limits of each zone are established to define variable needs for material gradation and compaction or void content, taking into consideration the sequence of construction and other conditions. The material use and zone designations described above will only serve to fulfill the objectives and will not be construed to restrict the use of any particular material in other zones where the gradation requirements are met.

D. 3" Minus Stabilization Aggregate

3-inch minus aggregate material will meet the gradation as shown in the table below. The material will consist of crushed limestone aggregate or recycled concrete but not bituminous asphalt.

Sieve	Percent Passing (%)
3 inch	100
2 inch	90-60
1 inch	80-45
3/4 inch	55-30
#200	3-12

E. Piling

Piling will be constructed in accordance with the provisions of MnDOT Specification 2452 and special plan details relating to piling.

F. Geotextile Fabric

Geotextile fabric will meet the requirements of MnDOT Specification 3733 and be used as required by the Plans, Specifications, and Special Provisions.

5.0 AGGREGATE BASE

The provisions of MnDOT 2211 are supplemented and/or modified with the following:

Aggregate base material will be Class 5, 100% crushed quarry limestone, or recycled aggregate base that meets the Class 5 specification indicated in MnDOT Table 3138-4 and the Plan, or as otherwise approved by the Engineer.

Add the following at the end of Section 2211.3C, Placing and Compacting:

In conjunction with the construction, blade-mixing the material will be required as necessary to produce a substantially uniform gradation and moisture content.

The method of compaction for Aggregate Base, will be the Quality Compaction Method as defined by MnDOT 2105.3.F.2.

The Contractor will produce a reclaimed aggregate base by pulverizing the existing bituminous pavement utilizing machine (cold) process to provide a blended aggregate mixture of existing bituminous and aggregate and/or approved granular subgrade material. The pulverizing operation will produce an aggregate base Class 5 material meeting the provisions of MnDOT Table 3138-4. A Class 5 specifications with maximum bitumen content of 3.5 percent by mass (weight) will be allowed per Table 3138-2. The pulverizing operation will be performed to the thickness through the entire depth of bituminous and gravel base. The Contractor will need to make judgment on what that depth should be as field conditions may vary from soil boring reports. The machine speed will be controlled to produce the required aggregate blend. Excessive oversized particles will be removed by the Contractor. The line and grade will be controlled to minimize incorporating undesirable sub grade materials into the reclaim aggregate base. The reclaimed material will be compacted to provide a temporary driving surface.

“Full Depth Reclamation,” per square yard (SY) will include all labor and equipment to pulverize together the existing bituminous and gravel base in a single operation in place. When reclaiming operations are not feasible as determined by the Engineer due to a lack of existing gravel base or other suitable sub grade material, the Contractor will suspend reclaiming operations and remove and salvage the existing pavement by milling. Whichever method is used, the work will be measured on the square yard basis and paid for at the bid unit price for Full Depth Reclamation. All associated work items will be considered incidental. Contractor will provide for periodic gradation testing of reclaimed aggregate base material as directed by the Engineer at

the sole expense of the Contractor. Removal or reclaiming of bituminous curbing if present, will be considered incidental to this item

“Reclaim Aggregate Base Class 5 Salvaged and Placed (CV)” per cubic yard (CY) will include all labor and equipment for excavating, handling, transporting, stockpiling, placing, shaping and compacting. All work will be considered a single operation and incidental.

Excess reclaimed aggregate base not incorporated with the project as indicated in other sections will become the property of the Contractor and be disposed of offsite. All excess reclaim material will be used before importing Class 5 material to the project.

Priorities for the use of reclaimed aggregate material will be determined in the field by the engineer. Typical priorities include:

1. Maintenance of roadway
2. Roadway aggregate base
3. Driveway aggregate base
4. Sidewalk aggregate base
5. Shared use path aggregate base

Reclaimed aggregate material will only be used for driveway aggregate base if it has been strictly verified to meet the Class 5 specification indicated in MnDOT Table 3138-4 gradation.

6.0 EXCAVATION AND EMBANKMENT

The provisions of MnDOT 2105 are supplemented and/or modified with the following:

All excavation will be classified as "Common Excavation" unless otherwise stated in the bid proposal.

Construction Requirements On local streets where Full Depth Reclamation is required, the subgrade shall be exposed (either full width or in half width increments as approved by the Engineer) to allow for test rolling and subgrade preparation. If directed by the Engineer, subgrade excavation work shall be performed.

Unsuitable subgrade areas may occur randomly throughout project area and will be located by Engineer during test rolling. Area and depth of actual subgrade excavation shall be determined in the field by the Engineer.

All subgrade excavation will be backfilled with granular material, 3” minus stabilization aggregate, or other suitable material as directed by the Engineer. The backfill will be placed in accordance with MnDOT 2105.3.F.2, Quality Compaction.

All embankments will be completed before any excess suitable material is disposed of.

During construction, all excavations will be maintained in such a condition that they will be well drained at all times. Temporary ditches or gutters will be constructed when necessary to maintain drainage and avoid damage to the roadway. No excavated materials will be placed or stockpiled in such a manner as to restrict free surface drainage of the sub grade or base courses.

A. 2105.3.I Disposition of Excavated Material

The Contractor will dispose of all excess excavated material at the disposal areas as designated on the plans. The disposal areas will be kept leveled and suitable for dumping by the Contractor. If no disposal area is indicated on the plans, the excavated material will become the property of the Contractor and removed from the project limits. Any stockpiling or re-handling of these materials will be considered incidental to the Contract with no direct compensation therefore.

Excess excavation will not be deposited on private property without the permission of the Engineer and until a Permission to Fill form has been executed by the property owner. The Contractor will not be expected to finish grade material deposited on private property as part of this Contract.

B. 2105.4 Method of Measurement

Common excavation was computed by the volume of material in its original position using the average end area method and will be paid for by the cubic yard. This item will include topsoil stripping if no other item is designated as well as excavation required for roadway and walk construction. If designated (P) it will be paid at plan quantity. Excavation designated (LV) will be paid for by vehicle measure loose volume. All other excavation will be assumed excavated volume (EV).

C. 2105.4A Excavation Material

Only the excavated material that is cut to line and grade will be considered for payment. For payment by loose volume (LV) measure, each truck will be measured by the Contractor and no payment will be made if the Engineer does not receive a load count each day.

Subgrade excavation will be paid for at the bid price per cubic yard by length times width times depth measurement.

All necessary excavation required for the placement of a uniform depth of slope dressing and seed will be paid for at the unit price per cubic yard of excavation, which includes bank sloping.

7.0 TEST ROLLING

The provisions of MnDOT 2111 are supplemented and/or modified with the following:

Prior to the placement of any geotextile fabric, sub-base material, or aggregate base material, the Engineer will require a proof roll of the existing sub-grade. Proof rolling will consist of driving a fully loaded dump truck, capable of delivering a minimum 9-ton axle load, over the existing in place sub-grade. This procedure will be observed by the Project Engineer. The sub-grade will be considered unstable if any deflection or rutting exceeds set limits defined within the provisions of MnDOT 2111.

All unstable areas will be corrected and test rolled until the sub-grade meets the requirements or as directed by the Engineer. If there is any measurable precipitation between the original test roll and before any geotextile fabric or aggregate base is placed, if requested by the Engineer, the contractor will be required to re-test roll the sub-grade and make any corrections needed prior to placement of geotextile fabric or aggregate base. All test rolling is considered incidental and no direct compensation will be made.

Test rolling will be performed no more than 24 hours prior to pavement being placed. If within that time the project receives any measurable precipitation, the contractor will need to conduct another test roll at no extra cost to the Owner, if requested by the Project Engineer. Any additional corrections will need to be corrected and test rolled prior to bituminous being placed.

8.0 NOTIFICATION TO PROPERTY OWNER

The Contractor will provide 24 hour notice to the property owner before any driveway is blocked and give them sufficient time to move their vehicles. No driveway will be blocked longer than necessary for construction and only as approved by Engineer.

Access to existing businesses will be maintained at all times. When construction is directly impacting business driveways and entrances, work will be done continuously and as promptly as possible to return the driveway entrance to a finished surface. The contractor will exercise care to minimize impacts to business parking facilities.

9.0 PROTECTION OF UTILITIES

The Contractor is required to protect all Utilities per the General Conditions. Special care will be taken in crossing of underground gas, electric and telephone conduits.

The Contractor will cooperate with the private utility company concerned in protecting and supporting conduits for uninterrupted service. The utility company will be notified immediately of any damage to conduits.

In the event it is necessary to cut any gas line to perform the necessary grading, such cutting will be performed by the utility company, at no expense to the Contractor. Any accidental breakage of gas lines will be the responsibility of the Contractor; such breakage will be repaired by the utility company. The Contractor will contact the utility company prior to excavating in any street.

10.0 PROTECTION OF EXISTING DRIVEWAYS, CURBS AND SIDEWALK

Any concrete, asphalt, paver, or other type of driveway material carelessly disturbed by the Contractor during construction will be replaced or rebuilt to a condition at least equal to its condition at time of removal. There will be no compensation allowed for this item.

Existing concrete curb or sidewalk not scheduled for removal and replacement that is carelessly damaged by the Contractor during any construction activities will be replaced at no cost to the City.

11.0 IRRIGATION AND PET CONTAINMENT SYSTEMS

Care must be taken to ensure that existing irrigation and underground pet containment systems in place at the start of construction are protected from unnecessary damage. The Contractor will provide irrigation and pet containment system repairs to systems that were damaged during normal construction operations.

This work includes removing existing pipe, irrigation heads, valves, tees, valve boxes, pet containment wiring, conduit, blowing out the system prior to winter freeze up, verifying the system functions the following spring if repairs occurred late in the construction season, etc. related to these systems and reinstalling salvaged items or installing new items such that the system is returned to its pre-construction condition. All wiring and piping will be made water tight with industry approved materials. Irrigation heads will match the style of the existing systems unless otherwise approved by the Engineer.

The Contractor will verify all irrigation heads, conduit, and line locations prior to construction operations so as to protect the portions of the systems that will not be affected and to be aware of systems that will be affected by construction. Unnecessary damage caused to the existing system inside or outside the construction limits will be repaired at the Contractor's expense.

Damage occurring to systems as approved by the Engineer during normal construction activities will be paid at the contract unit price for irrigation system repair and pet containment system repair on a per each basis and will include all labor, equipment, and materials associated with these repairs on a per property basis.

Temporary repairs for irrigation systems and pet containment systems will be considered incidental to the contract.

All pet containment systems will be repaired in accordance with City of Edina Ordinance Chapter 8, Article VI, Division 1, Sec. 8-266 - Electronic Pet Containment Systems with the exception that it will be paid for by the City at the contract unit price and the work will be conducted by the Contractor.

No electronic pet containment system will be installed which allows any animal confined by the system to occupy any area within ten feet of a public sidewalk or within ten feet of the travelled portion of a public street if there is no public sidewalk.

Electronic pet containment systems installed within any public right-of-way or public easement will be owned and maintained by the owner of the system. The engineer may direct the removal or relocation of an electronic pet containment system from any public right-of-way or public easement at the sole cost and expense of the owner of the electronic pet containment system if the engineer determines the system interferes with the public's use of the right-of-way or easement.

12.0 INLET PROTECTION

The contractor will utilize the Wimco Road Drain Curb & Gutter, Lange Industries IPD, or approved equal for all inlets. Devices that take the inlet offline, such as Dandy Bags or silt fence, are not authorized.

The contractor will clean inlet protection devices within 24 hours of discovering the device has become 25% full or when directed by the Engineer. Care must be taken to avoid spilling any sediment into the structure while cleaning. Any spillage into the structure will be removed immediately. This will be considered incidental to the inlet protection.

The Contractor will prevent dirt, concrete, or any other material from entering existing manholes, catch basins, or water valve boxes. All removal of such material from the sewers or repairs caused by such negligence will be made at the expense of the Contractor.

13.0 DUST CONTROL

The Contractor will be required to adequately control dust on the streets at all times. When directed by the Engineer, the Contractor will provide one tank truck, adequate size, with spray bar or other suitable equipment for sprinkling streets, which will be available at all times for dust control. It will be the specific requirement that dust control measures are strictly adhered to and a regular watering schedule be implemented when directed by the Engineer (e.g. once in the morning, once mid-day and once late afternoon). The Owner will furnish the water free of cost, but reserves the right to indicate the source of supply. The Contractor will acquire one water meter per project from the Owner's public works department for use by the Contractor and all sub-contractors at a cost set by public works. Water for dust control will be measured on a thousand gallon basis and include all labor and equipment for the application of water.

Saw cut operations will utilize wet sawing techniques or approved equal to reduce the amount of dust created by sawing operations of both concrete and bituminous pavements. Water used for dust control of saw cutting operations will be incidental to the appropriate bid item.

The Contractor will be required to respond to any verbal notice from the Engineer regarding dust control and respond appropriately within one (1) hour from the time of notification. If the Contractor fails to take appropriate action as indicated, the Engineer will have corrections made and assess \$500.00 damage plus costs incurred in correcting the violation. Damages will be assessed for each violation or repeat violation and appropriate deductions will be made to the final Contract payment.

14.0 TURF ESTABLISHMENT

Unless specifically indicated in the Contract, the materials provided for this project and the procedure for seeding will conform to the requirements of MnDOT Specifications 2574, 2575, 3876, 3877, 3878, 3884 and as modified herein:

A. Description

This work will include establishing perennial ground cover disturbed or uprooted by phases of the Contract or at other locations as directed by the Engineer.

B. Topsoil

The topsoil borrow material will be a light and friable loam, be black in color appearance and meet the requirements in accordance with MnDOT Specification 3877.2.H modified to include 50% screened and pulverized loam topsoil instead of salvaged topsoil. Contractor will furnish test results and samples prior to delivery of the material to the project. Loam topsoil will be 0.5-inch screened and pulverized and free of heavy clay, peat, stones, glass, plants, roots, sticks, and other foreign materials.

Prior to placing any topsoil, the slopes will be cut uniformly such that the finished seeded slope will conform to the designated section. Topsoil will be leveled and smoothly blended into the existing turf. Topsoil will be placed to a minimum depth of 6" for seeding operations. Where topsoil abuts existing turf, the edge will be clean cut to a depth of 6 inches. The topsoil will be raked and all lumps and irregularities removed prior to placing the seed. Operations to remove lumps or irregularities will be incidental to topsoil placement. The topsoil will not be too loose whereby footprints greater than 1.0 inch are observed, nor will it be too dense whereby only footprints less than one-quarter of an inch are observed.

Prior to the application of seed, topsoil will be tilled by disking, rototilling, or other approved method of tillage to a minimum depth of 3.0 inches, and will be leveled and raked to prepare a weed-free, smooth, and even seedbed with a loose and open surface. Stones, soil clumps and other debris over 0.5 inches in diameter will be removed from the soil surface. A uniform grade will be established so that no depressions or elevations are present, and so that the safe and effective operation of mowing equipment will not be hindered after the turf grass is established.

Care will be taken to ensure that the topsoil does not contaminate the subgrade or base of the roadway. Grading stakes, stones, trash, root masses, and other debris which may hinder the distribution of fertilizer, compost, seed, or seed mulch during seeding operations will be removed from the site when soilbed preparation operations are completed. Soil, fertilizer, compost and seed will be removed from paved areas as soon as possible after soilbed tilling, grading, and seeding operations are completed.

It will be the responsibility of the contractor to ensure that the soil of the soilbed preparation area is not blown or washed from the site and that nearby areas are protected from soil, fertilizer, compost, etc. In the event of heavy rain or wind that causes damage to the site which may have been anticipated and prevented by the contractor, then the contractor will repair the damaged areas so they are restored to a condition acceptable under the specifications; when soil or other material is moved from the site and deposited on nearby areas the contractor will restore those areas to a condition substantially similar to that which prevailed before the damaging event. Watering of seeded areas will be done with equipment necessary to prevent seed from being displaced from its original location.

C. Hydroseeding and Hydromulching

Hydroseeding and Hydromulching will be done in accordance with MnDOT Specification 2575 and modified herein:

Hydroseeding and Hydromulching applications will be completed from two different directions to ensure even application and reduce shadow areas. The Contractor will protect existing driveways, curb and gutter, landscaping, plantings, signs, turf, walls, fire hydrants, and all other in-place items from hydro-seed overspray. Any overspray will be removed by the Contractor within 24 hours of receiving notice from the Engineer. A penalty of \$500.00 per day will be deducted from the seeding bid item for failure to remove hydro-seeding or hydromulching overspray within 24 hours of receiving notice.

The use of a tracer product within the Hydroseeding process will be considered incidental to the Turf Establishment pay item.

Basis of Payment

Turf Establishment by the square yard shall be paid in full following the Engineer's final inspection and acceptance of the turf establishment. If deemed appropriate by the Engineer, only a portion of the Turf Establishment quantity may be paid to the Contractor based on the quality of the watering and maintenance of the seeded area. A likely scenario may be payment of 50%

following initial seeding and the remaining 50% following the Engineer's final inspection and acceptance of the turf establishment.

D. Erosion Control Blanket

Blanket will be Futerra F4Netless or approved equal.

Place the blankets within 24 hours of sowing seed. Roll blankets flat and parallel to the direction of water flow. Evenly spread blankets without stretching, allowing the fibers to come in direct contact with the soil over the entire area. Overlap the edges parallel to water flow by at least 4 inches. Overlap and shingle the edges perpendicular to water flow by at least 7 inches.

At the top of the slopes bury the upgrade end of the blanket in a check slot 6 inches deep. Insert the blanket end to the full depth of the check slot and backfill and compact the check slot.

Water the area immediately after installing the blanket making sure to thoroughly wet the entire blanket. Only biodegradable pins will be allowed to secure the blanket to the ground.

Measure erosion control blankets by the area covered. Overlapped portions will be considered incidental. Payment for Erosion Control Blanket will be made at the contract unit price by the square yard.

E. Application Rates

Seed Mixture 25-151 (modified substituting annual ryegrass for the perennial ryegrass): 300 lbs/AC (incidental to the Turf Establishment pay item)

Fertilizer Type 3 (22-5-10): 450 lbs/AC (incidental to the Turf Establishment pay item)

Hydraulic Soil Stabilizer Flexterra HP-FGM by Profile Products LLC or approved equal as approved by the Engineer: 2,500 lbs/AC (100% Coverage) (incidental to the Hydraulic Type Reinforced Fiber Matrix pay item)

F. Maintenance

All seeded areas will be maintained during the growing periods until project final completion. A growing period is between April 1 and November 1.

Maintenance includes watering, weeding, fertilizing and mowing to establish turf and create an adequate root system on the seeded areas. Prior to final completion, the Engineer will make the final inspection and consider acceptance of the seeding.

Daily watering will be required throughout the growing period unless otherwise directed by the Engineer. Upon notice from the Engineer, the contractor will water the establishing turf areas as soon as feasible but not more than 24 hours after notification. After written notice, the Engineer may have the work completed by others in accordance with General Condition 2.18. The Owner will furnish the water free of cost but reserves the right to indicate the source of supply. The Contractor will acquire one water meter per project from the Owner for use by the Contractor and all sub-contractors at a refundable cost set by public works. The Contractor will provide all the labor and equipment for the application of water in turf establishment areas during the growing period. A pay item will be designated for the application of water for the use of seeding. The application of water on a daily basis must be a high priority for the contractor. No relief will be granted to the contractor for the failure of turf to establish for any reason, including the MNDOT summer and fall blackout dates. The Contractor must use the application of water to insure the development of the turf. The Contractor must submit weekly water application records to the Engineer. Daily watering will not be required after a 0.5 inch or greater rainfall event or as determined by the Engineer. Should the contractor determine that additional water applications, above the once daily minimum, be critical to the establishment of turf, the Engineer should be informed for approval prior to application. Water for seeding will be measured on a thousand gallon basis and include all labor and equipment for the application of water.

During the growing period, the contractor will be required to perform weeding and mowing of the newly established turf to ensure that an acceptable product is achieved at final completion. The contractor will perform an initial mowing of the turf when the grasses reach a height of 6 inches or as directed by the Engineer, and will be cut to a height of 3 inches during the initial and each subsequent mowing. Prior to the initial mowing, the contractor will be responsible for removing any weeds from the seeded areas that exceed a height of 6 inches by hand pulling the weed in a manner that will prevent damage from the surrounding developing turf grasses. After the initial mowing, the contractor will be required to perform additional mowing anytime that the developing grasses exceed a height of 4 inches or as directed by the Engineer. For the purposes of planning for mowing operations, the contractor should assume that the entire project site will need to be mowed 3 weeks after the initial application of seed and every 1 week thereafter for the duration of the growing period. All mowing must be completed using a lightweight push mower or approved alternative as determined by the Engineer. Failure of the contractor to mow the establishing turf grasses as described in this paragraph, within 24 hours of receiving notice from the Engineer, will subject the contractor to a \$500

deduct from the following payment. In accordance with General Conditions 2.18, the owner may then have the work completed by others. Weeding and mowing of the establishing turf grasses will be considered incidental to the bid price for Turf Establishment.

For seeded areas, bare spots which persist after three weeks of favorable growing weather will be re-cultivated and re-seeded as many times as necessary at no cost to the Owner until satisfactory seeded turf is established.

Satisfactory seeded turf will be healthy in color, uniform, free of weeds and surface irregularities, with coverage exceeding 95% and bare spots not exceeding 6 inches x 6 inches. No erosion washes, clumps or deformation of the turf area caused by mowing or other Contractor equipment will be allowed.

15.0 TREE REMOVAL

The trees encountered will be cleared and grubbed as directed by the Engineer and disposed of outside of the City of Edina City limits.

The Contractor will take special care to preserve existing trees and shrubs wherever possible. This may include careful grading operations, slight adjustments of slopes, and placing silt fence at tree drip lines. Protection of trees not identified to be removed will be incidental. See Article 15.0 "Protection of Trees and Private Landscaping" for summary of fines for not properly using care around trees.

Current and pertinent government regulations concerning disposal of elm trees or other types of trees will be adhered to.

Cleared trees may be claimed by the abutting property owner, and if so, they will be trimmed, cut into sixteen inch (16") lengths and piled on private property. All other material will be disposed of by the contractor.

16.0 PROTECTION OF TREES AND PRIVATE LANDSCAPING

Where trees are not marked for removal, Contractor will protect these trees in accordance with MnDOT Spec. 2572. Protection of trees not identified to be removed will be incidental.

A. Description

The work described by this special provision will protect all of the boulevard trees in the project area from damage during reconstruction operations that would require their subsequent removal. It also protects private landscaping adjacent to the reconstruction work.

The contractor is responsible for all damage to trees and private landscaping resulting from any neglectful act or misconduct in the execution of the work. Reasonable damage will be allowed as required to implement the work.

Damage that occurs beyond that allowed will result in monies being deducted from the payment due the contractor. Damage assessments will be performed by the Engineer.

B. Construction Requirements

Protection of existing trees and landscaping will be accomplished using tools such as fencing placed along the construction limits, carefully choosing the style of machinery the specifications allow to travel behind the existing curb and gutter, shoring, construction boxes, and protective ground sheeting. However, it will not be limited to just these tools. The Contractor can use other tools to protect the trees and landscaping at their discretion and as approved by the Engineer, such as hiring a commercial arborist to advise how to best protect the trees. If this arborist should contest a damage assessment performed by the Engineer, the City will consider the arborists argument, but the Engineer’s ultimate decision will prevail.

This work includes proper pruning and trimming of roots and branches of trees or private landscaping as necessary.

- i. Branch pruning will not be done until the limits of pruning are approved by the Engineer and City Forester.

This work includes measures to prevent soil compaction and pollution in the current or future root zone areas. This work includes root and branch cutting using a saw.

C. Schedule of Damages

Damage to trees and shrubs will be measured according to the following table.

SCHEDULE OF DAMAGES (PER TREE OR PRIVATE LANDSCAPING FEATURE)			
TYPE OF DAMAGE	LEVEL OF DAMAGE		
	LOW	MODERATE	SEVERE
Trees			
Above Ground			
Canopy			
Branches			
Less than 2 inch diameter	2 occurrences	Between 3 and 5 occurrences	6 or more occurrences
Greater than 2 inches diameter	1 occurrence	Between 2 and 3 occurrences	3 or more occurrences
Trunk Stem Circumference Damage			

SCHEDULE OF DAMAGES (PER TREE OR PRIVATE LANDSCAPING FEATURE)			
TYPE OF DAMAGE	LEVEL OF DAMAGE		
	LOW	MODERATE	SEVERE
Less than 25% bark loss	1 occurrence		
26-50% bark loss		1 occurrence	
Greater than 51% bark loss			1 occurrence
Below Ground			
Root Zone			
Construction within 4 feet of the face of the trunk			
Material storage	1 occurrence	2 occurrences	3 or more occurrences
Equipment storage	1 occurrence	2 occurrences	3 or more occurrences
Construction Operations	1 occurrence	2 occurrences	3 or more occurrences
Soil Compaction	1 occurrence	2 occurrences	3 or more occurrences
Pollution			1 occurrence
Root Cutting			
1 side of the tree less than 4 feet from the face of the tree		1 occurrence	
2 or more sides of the tree less than 4 feet from the face of the tree			1 occurrence
Private Landscaping			
Shrubs			
Broken branches per shrub		1 branch	2 or more branches
Perennials			
Any damage per perennial			1 occurrence

Schedule of Deductions

Deductions from the amount due to the Contractor for the tree and private landscaping protection item will be calculated in accordance with the following table.

Level of Damage	Damage Fee ¹
Trees	
Low of all Types	\$200 per any 5 low damages

Moderate of all Types	\$400 per any 3 moderate damages
Severe of all Types	\$800 per any severe damage
Private Landscaping	
Shrubs	
Moderate	\$25 per shrub
Severe	\$100 per shrub
Perennials	
Severe	\$20 per plant

¹ Should the Contractor accrue damages, the engineer will maintain a running account of those damage fees throughout the project. Damage fees will be assessed against the contractor in the last application for payment. The Engineers running damage account is available to the Contractor for review upon request.

All labor, equipment, and materials needed to protect trees and private landscaping and prune and trim trees, shrubs, and roots is incidental to the contract.

17.0 CLEAN ROOT CUTTING

Where trees are not marked for removal, but root systems interfere with the construction of curb and gutter or sump drain, Contractor will clean cut the roots in accordance with MnDOT Spec 2572.3A.2. This work will be considered incidental.

18.0 NATURAL STONE RETAINING WALL

This work will include all work necessary to install new retaining walls as indicated in the plan used for lateral support of banks and around trees. Soil analysis and wall design will be completed by the contract and/or wall engineer selected by the Contractor and approved by the Engineer. Prior to construction, the contractor will supply color samples of the block for approval by the Engineer.

The rock wall will conform to Edina Standard Plate 520. The stones will have a thickness of four (4") inches minimum to eight (8") inches maximum. All courses will be level during placement. All stones will be squared off when abutting another stone.

Payment will be on the basis of square feet vertical exposed face area and will be compensation in full for all costs of construction, including all equipment, labor and materials necessary to complete the work, including:

- A. Natural stone wall, cement and mortar materials.
- B. Excavation, furnishing and installing aggregate base footing material, and backfilling with crushed rock.
- C. Furnishing and installing geotextile fabric.

- D. Disposal of any excess or unsuitable excavated material.
- E. Protecting existing improvements from damage.
- F. Gradation and compaction testing to meet requirements of source and field quality control.

19.0 LANDSCAPE MATERIAL SPECIAL

This will include all work necessary to salvage, remove, reinstall, furnish and install landscape materials disturbed within the construction limits. Landscape materials must be of similar size, shape and color to the existing landscaping materials. Landscaping materials include, but are not limited to; wood mulch, rock mulch, landscaping rock, boulders (retaining wall boulders paid for separately), shrubs, flowers, perennials, edging, and fabric.

“Landscape Material Special” will be measured on a square yard basis measured and agreed upon by both the Contractor and Engineer for landscape removal and restoration required within a project area.

Payment for “Landscape Material Special” will include all labor, equipment, and materials associated with the salvage and reinstallation, removal and installation of landscaping materials. All items will be coordinated with the Engineer and property owners prior to removal and installation.

20.0 MAILBOXES

The Contractor will relocate mailboxes as necessary. Mail boxes will be set between 41 and 45-inches from top of curb to the bottom of box and front of mail box straight up from back of curb. Mail box post will be buried a minimum of 2-feet. Mailbox relocations (both temporary and permanent) will be accomplished so there will be no interruption of mail service. This work will be considered incidental and no direct compensation will be provided unless a specific bid item is included in the Contract for such work.

21.0 TRAFFIC SIGNS AND DEVICES

Traffic Signs and Devices will be constructed in accordance with MnDOT 2564, except as follows:

- A. Materials
 - i. Sign Panels

Provide sign panels in accordance with the latest MnDOT Standard Signs Manual, the Minnesota Traffic Engineering Manual, the MMUTCD, the plans, MnDOT 2564, and as follows.

All Traffic signs will be Type C DG-3 Diamond Grade.

ii. Fabricate in accordance with the following:

Sign base material: Sheet aluminum conforming to material requirements of MnDOT 3352.2A1a.

Sign face material: Reflective sheeting conforming to MnDOT 3352.2A.2.a.

Sign legend material: "Direct Applied" conforming to the requirements of MnDOT 3352.2A.5.c or 3352.2A.5.d.

iii. Traffic sign posts:

Provide 3.0 pounds/foot flanged channel Galvanized sign posts conforming to MnDOT 3401.

Provide quantity of Galvanized sign posts at each installation in accordance with the Plans.

Provide sign structural components for mounting sign panels (including posts, knee braces, sign aligns, etc.) in accordance with the applicable provisions of the Plans, the Minnesota Traffic Engineering Manual and with the Standard Plates.

Where Type C Signs are to be installed on permanent barricades or on traffic signal poles, mounting hardware required to mount sign panels will be approved by Engineer prior to installation.

iv. Fabrication Stickers

Screen a fabrication sticker and affix to backside of each new Type C sign panel in lower right-hand corner (when facing the back of the sign.)

Provide full size mock-up (minimum 1-1/2 inches by 3 inches) of sticker to Engineer for written approval prior to producing any stickers for the Project.

Produce fabrication sticker in accordance with the following:

- Colors will be black legend on white reflectorized background.
- Month and year of fabrication of the sign panel will be punched out prior to installation of sticker on sign panel.
- Fabrication sticker will be similar to example shown below, unless otherwise approved by the Engineer.

- Sign Company Name
- Address
- Month 1 2 3 4 5 6 7 8 9 10 11 12
- Year 20

v. Street Name Signs:

The Owner will provide street name signs for the Contractor to pick up from Public works. Contractor must coordinate work with Engineer on site and give a minimum of two weeks notice before picking up.

Contractor will need to supply the 2 3/8" outside diameter galvanized steel post for all street name signs and all other materials needed for installation. This includes but not limited to nuts, bolts, installing steel plate, rivet and all labor.

vi. Post:

Provide round galvanized steel pipe as follows:

- 2-3/8-inch outside diameter
- 12 gauge minimum diameter
- 10.5-foot length

vii. Mounting Hardware:

Provide steel assembly units as follows:

Bracket assembly will be Lyle E-450 for post mounted assemblies, Lyle E-450 OLP for street light pole mounted assemblies, or Engineer approved equal. Street light pole assemblies will be mounted using stainless steel straps.

All remounting hardware will be galvanized or aluminum.

22.0 PAVEMENT MARKINGS

All pavement markings will be installed in accordance with MnDOT Specification 2582.

23.0 STREET SWEEPING

Tracking of dirt onto public roads during hauling and general day-to-day construction operations will require periodic cleaning of these roadways. Scraping and vacuum assisted sweeping or a combination may be required. Power brooms or "sidewinder" type devices are not acceptable for cleaning of the roadway.

For the duration of the project, a gravel construction entrance will be maintained at the entrance/exit to adjacent roadways to minimize the tracking of dirt outside of the

project limits. The gravel will be obtained from either the existing roadway base/bituminous reclamation areas or imported clear rock. The length of the gravel construction entrance will be a minimum of 50-ft for the full width of the roadway.

Any sediment tracked onto City streets or onto streets that drain into storm sewer systems will be kept clean by the Contractor; sediment will be removed within 12 hours of discovery. If the Contractor fails to remove all of the tracked sediment from streets the City will remove any sediment at the Contractor's expense.

Sweeping in preparation for paving is considered incidental to the paving operations.

[End of Grading and Landscaping]