PART III, SECTION J

LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

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A. Jobsite Administration - Superintendence, Subcontract administration and Quality Control, is the responsibility of the Contractor.

1. Final decisions relative to items in conflict shall be made by the Contracting Officer.

2. The Government shall have the authority to temporarily suspend the work for such time as necessary due to the failure on the part of the Contractor to perform any of the terms and conditions of the contract. Resumption of work will not be permitted until the Government determines that the deficiencies in performance, which caused the temporary suspension, have been corrected. Time is usually allowed, compensation for time can be requested at 3% of remaining work.

3. The Contractor shall notify the Engineer at least ten (10) business days prior to the anticipated date of completion of all work specified herein. Upon completion of the work, the Engineer shall proceed with the final inspection which shall be completed as promptly as practicable. The time required for such inspection and for performing any corrective work shall be included in the contract performance time.

B. Modification/Change Order procedures

1. In the event of the need for a change order, the Contractor will receive a request in writing for a price quote identifying proposed changes to the contract.

2. For evaluation purposes, the Contractor's quote shall be broken down to show the costs of labor and materials for each proposed category of work included with the change, along with the total cost for Contractor's overhead, profit, and bond for the proposed changes. Price quote breakout shall reflect the Schedule of Values submitted at time of award wherever possible.

3. All contract time extensions required as a result of a proposed change must be justified and supported in detail

at the time of the proposal.

C. Preconstruction Conference

1. Soon after award of the Contract and prior to commencing construction, the Contractor and any subcontractors shall attend a preconstruction conference with representatives of the Government. Timely notification of the meeting will be given to the Contractor. Time, date, and place of the conference will be determined by the Contracting Officer Representative. Requirements pertaining to contract administration, construction operations and the project schedule will be discussed. The project schedule shall be in accordance with Section 01330.

2. The Preconstruction Safety Checklist must be submitted for review and completion during the Preconstruction Conference.

D. Progress Meetings

1. Periodic general project meetings will be conducted with a representative of the Contractor at the project site or by telephone by the Government's **r**epresentative for the purpose of coordinating, expediting, and assessing the work progress.

2. The Contractor shall provide reports of progress on the project, discuss the work schedule for the coming period and present all conflicts, discrepancies or other difficulties for resolution. A record of discussions and decisions will be prepared by the Government and distributed to those attending and others affected.

(END OF SECTION 01310)

A. General Refer to submittal register or technical specifications for all submittals required.

When specifically requested by the Government representative, the Contractor shall provide copies of manufacturer's literature containing detailed specifications and performance data or shop drawings fully describing the items and written installation instructions and/or recommendations for review and approval prior to accomplishing equipment installation.

B. Submittal Register:

1. A submittal register, listing all items requiring submittals under the awarded contract will be provided as an attachment to the award. The Contractor shall provide all required submittals to the Engineer within 21 days of award except for items noted otherwise on the submittal register.

2. Furnash electronic copies of all required submittals.

3. The approval of submittals shall not relieve the contractor to comply with the terms and conditions of the contract drawings and specifications. The contractor shall be responsible to determine correct dimension, design, connection, detail and satisfactory construction of all work.

C. Project Schedule: Contractor shall provide a preliminary schedule of events to the COR for approval prior to work.

D. Price Breakdown - Lump Sum Items: Contractor shall provide a Schedule of Values detailing how lump sums were calculated.

E. Subcontractor's List

Submit completed SF1413 Subcontractor Identification forms prior to work and Material Approval form as a working document.

F. Guarantees, Warranties And Certificates -Refer to Section 01770.

G. Operating And Maintenance Instruction - Refer to Section 01770

H. Delivery Tickets

1. The Contractor shall submit to the Government's on site representative, one legible copy of each delivery ticket for all material delivered to the construction site.

2. The delivery ticket shall show brand name, catalog number, and number of items received.

I. Waste Manifests

4. The Contractor shall submit copies of all waste manifests.

5. Manifests shall state type of waste (i.e., construction debris, hazardous asbestos, etc.), location of disposal, landfill designation, EPA registration of landfill, and EPA registration for transportation of any hazardous wastes.

(END OF SECTION 01330)

A. Regulatory Requirements

1. All work shall be accomplished in strict accordance with the regulations, codes, and laws in effect at the time the work is performed for the location where it is to be performed.

B. Means and Methods

1. Means and methods used in the performance of this contract must be in accordance with all applicable Federal Acquisition Regulations in addition to OSHA regulations, 29 Code of Federal Regulations, acceptable industry practices as recognized by societies, associations, building codes, manufacturers' specifications and any applicable state safety and health requirements.

C. Permits

1. All permits required to support construction activities such as road permits for oversize, overweight vehicles and equipment, bridge permits, and utility hookup permits, shall be obtained and paid for by the Contractor.

(END OF SECTION 01420)

A. Manufacturer's Specifications

1. The installation of manufactured products and equipment, together with all associated parts, shall be in conformance with the manufacturer's recommendations, and code requirements. All installations shall be complete and ready for immediate use, and every essential part required for proper operation of the manufacturer's equipment shall be provided. Following the completion of the work under this contract, all installed equipment shall be tested for proper operation and compliance with the contract.

B. Final Inspection

1. The Contractor shall request a final inspection in writing at least ten (10) business days prior to the anticipated date of completion.

2. Work will not be considered ready for final inspection until all the work has been completed and the Contractor has certified that all items are properly operating and in strict compliance with all contract terms and conditions.

3. The Contractor or the project supervisor shall be at the job site during the final inspection.

C. Tests

1. Submit reports of all tests to the Contracting Officer Representative prior to final payment.

D. Record Drawings

The Contractor shall provide and maintain in proper order and in good, clean condition, in the field or the Refuge office or at the project site, one (1) complete set of full-size prints of all drawings. On this set, with red pencil or ink, the Contractor will neatly inscribe all changes in work. At time of final acceptance, and prior to final payment, these corrected prints will be presented to the Engineer. The Contractor will note all data and changes on these record drawings in sufficient detail and clarity to provide information necessary for preparation of "as built" drawings by the Government.

E. Guarantees, Warranties and Certificates

1. The Contractor will submit all guarantees, warranties and certificates to the government prior to final payment.

2. The Government requires a 100% warranty for a period of one full year after final acceptance. Items of work found defective during the warranty period will be replaced at no cost to the Government and the warranty for that particular part of the work shall automatically extend for one full year beyond the completion date of repairs.

3. If a manufacturer or supplier offers a guarantee in excess of the one-year requirement outlined herein, then the longer guarantee period will apply for those particular items.

(END OF SECTION 01770)

A. General

1. The requirements of this section shall govern the work necessary to place the silt fence required for erosion control.

2. Submittal: The contractor shall submit all materials and dimensions used for the silt fencing including wood stakes, geotextile fabric, silt screen or other miscellaneous components of the silt fence.

B. Material

The geotextile fabric shall conform to the following requirements:

TEST	METHOD	VALUE
Min. Grab Strength Machine Direction	ASTM D 4632	120 Lbs
Min. Grab Strength Cross Machine Direction	ASTM D 4632	100 Lbs
Max. Apparent Opening Size	ASTM D 4751	No. 30
Minimum Permittivity	ASTM D 4491	0.05, s-1
Minimum Ultraviolet stability	ASTM D 4355	70%

C. Execution

1. The Contractor shall provide that during all periods of shipment and storage the silt fence fabric shall be protected from the direct sunlight, ultra-violet rays, temperature greater than 140 degress F and any mud, debris, or damaging material. Any defective fabric not acceptable to the Engineer shall not be used. The fabric

shall remain in a heavy-duty protective covering prior to installation.

2. The silt fence shall totally enclose the work areas listed in the Base Bid, and, if awarded, the changes identified under Modification, to protect the areas from erosion and siltation.

3. Dike rehabilitation operations shall not be started until the silt fence has been installed.

(END OF SECTION 02050)

A. General

1. The requirements of this section shall include the erosion control necessary to conduct earthwork operations around the work site.

2. The Contractor shall schedule and conduct his operations to minimize erosion of soils and to prevent silting and muddying of streams, water systems, and ponds. Construction of drainage facilities and performance of other contract work which will contribute to the control or erosion and sedimentation shall be carried on in conjunction with earthwork operations or as soon thereafter as practicable. The area of bare soil exposed at any one time by construction operations shall be kept to a minimum.

3. Prior to suspension of construction operations for appreciable lengths of time, the Contractor shall shape the earthwork in a manner that will permit storm runoff with a minimum of erosion. Temporary erosion and sediment control measures such as berm, dikes, slope drains, or sedimentation basins deemed necessary shall be provided and maintained until permanent drainage facilities and erosion control features are completed and operative. Unless otherwise provided for in the contract, temporary erosion control measures will not be paid for directly but will be considered as a subsidiary obligation of the Contractor covered under the various contract items of work.

    a. Waste or disposal areas and construction roads shall be located and constructed in a manner that will keep sediment from entering streams or ponds.

    b. Frequent fording of live streams will not be permitted. Unless otherwise approved in writing, mechanized equipment shall not be operated in live streams or ponds.

    c. When work areas are located in or adjacent to live streams or ponds, such areas shall be separated from the main stream by dike or other barrier to keep sediment from entering a flowing stream. Care shall be taken during the construction and removal of such barriers to minimize the muddying of streams or ponds.

    d. Pollutants such as fuels, lubricants, raw sewage, and

other harmful materials shall not be discharged into or near rivers, streams, and impoundments or into natural or man-made channels leading thereto.

e. All applicable regulations and statutes relating to the preventions and abatement of pollution shall be complied with during the performance of the contract.

(END OF SECTION 02070)

A. General

1. This section shall govern the work necessary to prepare the site for embankment rehabilitation. This work shall include clearing, grubbing, removal of topsoil, vegetative material and root systems.

2. Waste material from clearing and grubbing operations shall be removed from the construction area and disposed of offsite according to state and local codes.

B. Execution

1. Clearing and Grubbing: All vegetation, topsoil, trees, stumps, roots and other deleterious materials shall be removed to 5 feet outside the proposed embankment areas.

2. Topsoil and vegetation shall be removed from all areas of the work area and shall be removed offsite. Topsoil material shall be defined as soil which contains organic material, humus, vegetative remnants, or plant nutrient material. Such material, during excavation or embankment work, shall be completely removed to the depth and extent it is encountered.

4. If necessary, any state or local permits for material disposal off site, or burning of waste materials on site, shall be obtained by the Contractor.

(END OF SECTION 02100)

A. General

1. The requirements of this section shall govern the earthwork necessary for all embankment construction to prepare the embankment for filter fabric, riprap or clay placement including scarifying, excavating, grading, backfilling, and compacting, as shown on the drawings and specified herein.

2. Submittals:

A. Compaction Tests: The Contractor shall submit compaction tests made by an independent testing laboratory. All tests shall be paid for by the Contractor.

1. In-place field density tests of embankment fill shall be tested for compliance with these specifications in accordance with ASTM Standard D 1556 or Nuclear Testing Standard 2922. Tests which do not meet the density standards shall be repeated after the material has been recompacted.

2. All density tests shall be in accordance with ASTM D 698 at the Standard Proctor maximum dry density specified and within -1 to +3 percent of the soils optimum moisture content.

3. Testing shall be conducted in a random pattern across the embankment sections. A minimum of 20 tests shall be taken and those test locations shall be at the discretion of the Government Inspector.

B. Certification of Embankment Materials: The contractor will provide the location of all soil fill, clay, and topsoil materials prior to placement of any embankment materials.

B. Materials

a. Soil embankment material shall be mineral soil and shall be clean, free of rocks over 4-inches in greatest dimension, trash, muck, and vegetative material. All soil embankment material shall be trucked to the site.

b. Clay embankment material shall be cohesive, fine-grained soil derived from glacial till. It shall be inorganic, low plasticiy silty clay of the CL, ML or CL-ML group in accordance with the Unified Soil Classification System. All clay material shall be trucked to the site.

C. Execution

1. All areas on which embankment material is to be placed shall be excavated free (stripped) of any topsoil, muck, peat, or vegetation.

2. All areas on which embankment is to be placed, after stripping, shall be scarified to a minimum depth of 8-inches and shall be moistened or aerated as necessary such that the fill will bond with the surface on which it is placed.

3. Embankment soil material shall be placed in layers not exceeding a loose depth of 8-inches. Each layer shall be machine compacted over the entire width. Embankment fill shall be compacted to at least 95 percent of the soils Standard Proctor maximum dry density at -1 to +3 percent of the soils optimum moisture content. Loose and soft soil pockets and stump/root holes shall be filled with embankment soil and similarly compacted to the specifications above. Backfill not meeting the compactions requirement shall be excavated and recompacted at the Contractor's expense, and no claim for delay will be permitted.

4. Clay embankment material shall be placed in layers not

exceeding a loose depth of 8-inches. Each layer shall be machine compacted to at least 97% percent of the soils Standard Proctor maximum dry density at -1 to +3 percent of the soil’s optimum moisture content. Clay backfill not meeting the requirement shall be excavated and recompacted at the Contractor's expense, and no claim for delay will be permitted

4. Embankment material shall be placed and compacted to the lines and grades shown on the drawings.

(END OF SECTION 02200

A. General

1. Work under this section includes the furnishing, spreading and compaction of the 6-inch deep aggregate surfacing along the top of the dike and as shown on the Contract Drawings.

2. The Contractor shall provide all labor, tools, materials and equipment necessary to install the aggregate surface course as described on the contract drawings and as specified herein.

3. All work performed under this section shall be accompanied by personnel experienced in this type of work and with equipment suitable for the work being done. Unless otherwise specified herein, work under this section shall meet the requirements of the Minnesota Department of Transportation Standard Specifications for Construction.

4. All work specified herein shall be accomplished only when, in the opinion of the COR, weather and site conditions are suitable for this type of work.

5. The equipment used in the work shall be of sufficient size and in such mechanical condition as to meet the requirements specified herein and shall be capable of providing a satisfactory quality of work. All equipment shall be ready for immediate use when required or directed by the Engineer. The Engineer may order the immediate removal and replacement of any unsatisfactory piece of equipment which will not, in his opinion, produce finished work of acceptable quality.

6. Any equipment which drips fuel, grease, oil or any other substance which, in the opinion of the Engineer, is detrimental to the quality of the finished product shall not be permitted on the job site until such drips are adequately repaired.

7. Submittals:

   a. Certification that all materials meet these specifications shall be submitted for approval prior to delivery of any materials to the job site.

Weight tickets shall be collected by the Government Inspector at the job site.

b. The Contractor shall submit compaction tests made by an independent testing laboratory. All tests shall be paid for by the Contractor.

1. Aggregate density tests shall be in accordance with Method C of AASHTO T 99 and shall be taken with a minimum of 4 tests being taken at the site. Testing locations shall be at the discretion of the Government Inspector.

2. All subgrade density tests shall be in accordance with ASTM D 698 and be at 95% of the Standard Proctor maximum dry density and within -1 to +3 percent of optimum moisture content.

B. Materials

The material used for the aggregate surfacing shall be Class 5 Base Aggregate as specified in the Minnesota Department of Transportation of Highway Construction, Aggregate Surface and Base Coarse.

C. Execution

1. Subgrade Preparation: Following embankment rehabilitation construction activities, the contractor shall restore the dike road to its relatively original condition, including regrading, leveling and compacting, if necessary. Prior to gravel placement operations, subgrade density tests will be taken. Density testing shall conform to paragraph A.7.b.2 shown above. A minimum of four (4) subgrade density tests shall be taken along the road. The test locations shall be at the discretion of the government inspector.

2. Placement and Compaction:

a. The aggregate for the road surfacing shall be placed in a total compacted thickness of three (3) inches placed in 2 lifts.

b. Aggregate surfacing shall be shaped and compacted in accordance with the Ordinary Method, according to MnDOT specifications. Each layer shall be compacted until there is no further evidence of consolidation using a steel-wheeled roller or pneumatic-tired roller. The steel-wheeled roller shall be self-propelled and have a total weight of not less that 8 tons. The Pneumatic-tired roller shall have a compacting width of 60 inches or more and be a type where the gross weight can be varied. Water shall be applied when considered necessary to obtain proper compaction.

(END OF SECTION 02230)

A. General

1. The requirements of this section shall govern the work necessary to place the geotextile fabric. Geotextile fabric shall be used in conjunction with riprap for slope protection as shown on the plans.

2. Submittal: The brand geotextile fabric to be used shall be accepted on the following basis: The Contractor shall furnish the Engineer a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the fabric. The mill certificate or affidavit shall attest that the fabric meets the requirements stated in these specifications.

B. Material

The geotextile fabric shall be Type HR (Heavy Riprap). The geotextile shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultra-violet and heat exposure. The geotextile shall meet the following characteristics:

TEST	METHOD	VALUE
Weight	ASTM D 5261	16 oz/sy
Grab Strength	ASTM D 4632	380 Lbs
CBR Puncture Strength	ASTM D 6241	1236 Lbs
Grab Elogation Strength	ASTM D 4632	50 Lbs.
Apparent Opening Size (AOS)	ASTM D 4751	No. 100
Minimum Permittivity	ASTM D 4491	0.70, s-1

C. Execution

1. The Contractor shall provide that during all periods of shipment and storage the geotextile fabric shall be protected from the direct sunlight, ultra-violet rays, temperature greater than 140 degress F and any mud, debris, or damaging material. Any defective fabric not acceptable to the Engineer shall not be used. The fabric shall remain in a heavy duty protective covering prior to installation.

2. Geotextile fabric shall be installed under all areas where riprap is to be placed. Fabric strips shall be placed so as to provide a minimum overlap of three (3) feet under riprap. The fabric shall be secured to the slope by the use of 3/16 inch diameter steel pins, 18 inches long, pointed at one end and fabricated with a head to retain a steel washer having an outside diameter of no less than 1-1/2 inches. The pins shall be spaced at no greater than three (3) feet apart, and shall be pushed through the fabric until the washer is in firm contact with the fabric. Additional securing pins shall be used as required to prevent slippage and displacement of the fabric. The fabric shall be protected at all times during installation and construction. Damaged fabric shall be replaced, except that holes or tears of not larger than two (2) feet in any direction and not closer than two (2) feet to an edge may be covered with a patch two (2) feet larger than the hole. The fabric shall be covered within 30 days.

3. Contractor shall follow manufacturer’s guidelines for installation.

(END OF SECTION 02270)

A. General

1. This section shall govern the placement of riprap on the embankment slopes next to the Water Control Structure. Riprap shall be used in conjunction with the geotextile filter fabric specified in Section 02270.

2. Quality Control

a. The Government may require testing to assure that the riprap meets the requirements specified herein. All costs of tests of density and gradation shall be borne by the Contractor. One (1) performance of each type of test may be required. However, should the riprap be shown to be inadequate in any test, additional testing under the direction of the Engineer and at no cost to the Government, may and probably will be required. The Engineer will designate the riprap samples to be used in the test.

b. This gradation test shall be performed by the Contractor on site and in the presence of the Engineer. Location of the test area will be selected by the Engineer. The test will involve removing all riprap in place from the predetermined location, weighing and grading approximately one (1) cubic yard of material, and replacement of material to the original location. It is the Contractor's responsibility to assure that the riprap meets the gradation and tolerances specified in these specifications at the source of supply.

c. Riprap found to be deficient in any respect shall be regraded or replaced at no additional cost to the Government.

3. Submittal Certification:

a. The source of the riprap material to be used shall be approved, in writing by the Engineer prior to the start of riprapping operations.

B. Materials

1. Riprap shall be sound, hard, durable, tine-loaded quarried rock free from laminations, weak cleavages, cracks, seams, undesirable weathering, and other defects. It shall be of such quality and character that it will not disintegrate from exposure to water or weathering.

2. All riprap material shall be compact in shape, and the greatest dimension of any individual rock shall be no greater than three (3) times its least dimension.

3. The riprap shall have a minimum density of 157 pounds per solid cubic foot and shall be reasonably well graded.

4. Riprap shall meet the requirements of Minnesota Department of Transportation Standard Specifications for Construction, Section 3601, Riprap Material.

   Gradation shall be Class III Riprap.

C. Execution

1. The riprap shall be placed in such a manner to avoid dislocating or damaging the filter fabric blanket. The Contractor shall demonstrate to the Engineer prior to placement the method he will use.

2. Riprap shall be dumped and rolled into place in such a manner to ensure that the completed riprap is stable, and the larger stones are uniformly distributed throughout the mass, that no small rock concentrations or voids occur, and in such manner that there will be no damage to the underlying filter blanket. The finished surface shall be uniform meeting the slope and depth requirements shown within a tolerance of 4 inches. The Contractor shall remove substandard riprap and bedding and other materials as directed and replace with riprap meeting the requirements of this specification section. The material which is removed shall be removed from the

Refuge and disposed of in a legally constituted disposal site at no additional cost to the Government.

(END OF SECTION 02271)

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work covered under this Section includes providing all materials, equipment, and labor to furnish and install the precast concrete pipe including, but not limited to:

1. Reinforced concrete pipe (24” diameter).

2. Reinforced concrete pipe flared end section

1.2 REFERENCES

A. Minnesota Department of Transportation Standard Specifications for Construction, current version, hereafter referred to as MNDOT Standard Specifications.

B. American Society for Testing and Materials, Current Edition, hereafter referred to as ASTM.

1.3 SUBMITTALS

A. CONTRACTOR shall submit a certificate of compliance for the reinforced concrete pipe a minimum of two weeks prior to Work.

PART 2 - PRODUCTS

2.1 REINFORCED CONCRETE PIPE

A. Reinforced concrete pipe shall be 24” diameter and conform to the latest requirements of ASTM Specification C-76, C-506, or C-507, Class III and MNDOT Standard Specification Section 3236. All joints shall be tied in accordance with MNDOT Standard Specification. The pipe joints shall be clean and dry and shall be lubricated and joined is accordance with the manufacturer’s instructions.

B. Joint and gasket shall meet the requirements of ASTM C443 and C361.

2.2 PIPE BACKFILL MATERIAL

A. Pipe backfill material, if needed, shall be select granular backfill appropriate for bedding concrete pipe.

PART 3 - EXECUTION

3.1 FILL PLACEMENT AROUND CULVERTS AND PIPES

A. The CONTRACTOR shall notify GOVERNMENT before placing fill around structures or pipes.

B. Do not use frozen fill material or place on frozen subgrade.

C. The native material under the bedding material shall be compacted to 95% Standard Proctor Density.

D. The bedding material shall be compacted as shown on the Drawings.

E. All unsuitable peat materials shall be excavated from under the new intake and all pipes.

F. Place fill material in maximum 4 inch loose lifts under pipe haunches and compact to 95% of maximum Standard Proctor Density , ASTM D 698, with hand operated vibrating compactor until firmly compacted to pipe spring line and in strict accordance with the pipe manufacturer's specifications.

G. No culvert or pipe shall be laid in water nor when the trench bedding conditions are unsuitable, unstable, and/or unconsolidated.

3.2 FIELD QUALITY CONTROL

A. Pipe installation will be subject to rejection for any of the following reasons.

1. Failure to conform to the Specifications, particularly with regard to the folloing:

   a. compaction under and around the pipe

   b. line and grade

2. Fractures or cracks passing through barrel wall or socket.

3. Chips or fractures on interior of barrel exceeding 2 inches in length, 1 inch in width, and depth more than ¼ barrel thickness.

4. Cracks which, in the opinion of the GOVERNMENT, may impair strength, durability, or serviceability of pipe.

5. Defects indicating improper proportioning, mixing, or molding.
6. Damaged ends where such damage would prevent making a satisfactory joint.
7. Non-water tight pipe.

(END OF SECTION 02630)

A. General

1. The requirements of this section shall govern the work necessary to seed areas disturbed by construction operations.

2. All disturbed embankment areas not protected with gravel or riprap shall be seeded.

3. Preparation of Ground for Seeding: The seedbed shall consist of a minimum of 6-inch depth of loosed friable soil free of refuse, stumps, large roots, rocks over 2 inches in diameter, brush, weeds, or other material which would be detrimental to the proper development of vegetative growth. It shall be capable of supporting normal vegetation. It shall not be taken form a source known to contain any of the noxious weeds listed within these specifications.

4. Seedbed shall have a pH value of 6.2 to 7.4 Testing for pH value shall be performed by the contractor to determine if the seedbed meets these requirements. If necessary, the Contractor shall add agricultural limestone to the seedbed in order to bring the pH within the specified range. Results of the pH tests before and after application of agricultural limestone shall be submitted to the Engineer. (See submittals below.)

5. Seasonal Limitations: For seeding, the normal planting season shall be from March 1 to May 1, and from August 15 to October 1. Seeding at times other than the normal seasonal dates will be allowed only after prior approval by the COR. Seeding shall not be done during windy weather or when the ground is excessively wet, frozen, or otherwise untillable.

6. Submittals: The Contractor shall submit certification that the seed mixture meets these specifications.

B. Materials

1. Seed Mix will be Stormwater South and West, 33-261, as defined in the Minnesota Board of Water and Soil Resources .

2. Fertilizer: Fertilizer shall be free flowing and suitable for application with approved equipment. Bagged fertilizer shall bear the name, trademark, and warranty of the producer, and the contents and their proportions. Proportions of mix and application rates will be as listed in the seed mix specifications page.

3. Seed: The seed shall be furnished in the quantities required and shall be furnished full-tagged and delivered in properly designated packages or bags as directed.

   a. Seed shall be purchased from sources of supply that have been sampled and tested in accordance with the methods and procedures prescribed by the current edition of Rules for Testing Seeds published by the Association of Official Seed Analysis and found to be satisfactory. This report is required before seed is sown. Such test report shall be no more than one year old at the time seed is used and then shall be subject to approval.

   b. Mulch: Mulch for seeding may consist of straw, excelsior mulch, wood cellulose fiber mulch, or other material approved by the Engineer. All mulch shall be reasonable free from noxious weeds.

C. Excecution

1. Fertilizer and agricultural limestone: Fertilizer and agricultural limestone shall be spread uniformly and shall be mixed into the top 2 inches of soils with a

disk harrow, rotary tiller or other approved equipment. Fertilizer shall be applied at a rate of five hundred pounds per acre on all areas to be seeded.

2. Seed: Seed may be drilled in (not to be covered more than 1/2 inch) or mixed with water and the mixture sprayed over the area to be seeded. An approved mechanical method which will place the seed in direct contact with the soil may be used. In places inaccessible to mechanical equipment, or where the area to be seeded is small, a hand operated cyclone seeded or other approved equipment may be used.

   a. Leguminous seeds, unless otherwise specified, shall be inoculated with a culture. The culture shall be mixed with sufficient water to distribute it thoroughly. The seed shall be wet thoroughly with the solution and allowed to dry sufficiently to be in condition for to be in condition for sowing. Inoculated seed shall be sown within 30 hours after treatment. Where seeding is to be done by hydraulic methods, the inoculant may be added to the water in the spray tank.

3. Mulch: Mulching material shall be applied to all seeded areas and shall be applied in a continuous blanket at the rate of 2 tons (air dry weight) per acre except, wood celulose fiber mulch shall be applied at the rate of 3/4 ton (air dry weight) per acre. The percent of moisture in the mulch shall not exceed 50%, except that in wood cellulose fiber mulch the moisture percent shall not exceed 15%. Only wood cellulose fiber will be used for mulch if the hydro-seeing method of application is used. Any of the other application methods may utilize any of the mulch materials in these specifications. The mulching material shall be maintained in place satisfactorily until final completion and acceptance of the contract.

a. The newly laid mulch, except for excelsior and wood cellulose fiber, shall be held in place by one or a combination of the following methods:

Method - The mulch may be held in place with binder twine fastened down with wood pegs not less than 6 inches long spaced 4 feet apart.

b. Other suitable methods may be used if approved by the COR.

(END OF SECTION 02930)