GENERAL PRINCIPLES

The following general principles shall be maintained as effective means of minimizing erosion and sedimentation during the development process.

Stripping away of vegetation, regrading or other development shall be done in such a way as to minimize erosion.

Grading and development plans shall preserve important natural features, keep cut and fill operations to a minimum, and insure conformity with topography so as to create the least erosion potential and adequately handle the volume and velocity of surface water runoff.

Whenever feasible, natural vegetation shall be retained, protected and supplemented wherever indicated on the site development plan.

The undisturbed area and the duration of exposure shall be kept to a practical minimum.

Disturbed soils shall be stabilized as quickly as possible.

Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development when expected to be exposed in excess of 7 days.

The permanent (final) vegetation and mechanical erosion control measures shall be installed as soon as practical during construction.

Sediment in the runoff water shall be trapped until the disturbed areas are stabilized by the use of debris basins, sediment basins, silt traps or similar measures.

All lots, tracts or developments shall be final graded to provide proper drainage away from buildings and dispose of it without ponding, and all land within a development shall be graded to drain and dispose of surface water without pondina

Land disturbance will be kept to a minimum. Restabilization will be scheduled as soon as practical. Not more than 5 acres will be disturbed at any one time.

Catch basins will be protected with haybale filters throughout the construction period and until all disturbed areas are thoroughly stabilized.

Haybale filters will be installed at all outlets and along the toe of slope of all critical cut and fill slopes. All control measures will be maintained in effective condition throughout the construction period.

The responsibility for implementing the erosion and sediment control plan will rest with the developer of record. He acknowledges that he is responsible for informing all concerned of the requirements of the plan and for notifying the planning administration of any transfer of responsibility.

Additional control measures will be installed during construction if necessary or required.

Concentration of surface runoff shall be only permitted by piping and/or through drainage swales or natural watercourses. EXCAVATION AND FILLS --

Slopes created by cuts or fills shall not be steeper than 2:1 unless noted specifically on the plans and shall be restabilized by temporary or permanent measures, as required during the development process. Erosion control blankets will be used on slopes in the vicinity of wetlands regulated areas and on additional slopes as needed.

Adequate provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surfaces of fills.

Cuts and fills shall not endanger adjoining property.

All fills shall be compacted to provide stability of material and to prevent undesirable settlement. The fill shall be spread in a series of layers each not exceeding twelve (12) inches in thickness and shall be compacted by a mechanical roller or other approved method after each laver is spread.

Fills shall not encroach on natural watercourses, constructed channels or regulated flood plain areas, unless permitted by license or permit from authority having jurisdiction.

Fills placed adjacent to natural watercourses, constructed channels or flood plains shall have suitable protection against erosion during periods of flooding.

Grading shall not be done in such a way as to divert water onto the property of another landowner without their express written consent.

During grading operations, necessary measures for dust control shall be exercised.

All erosion and sediment control measures will be constructed in accordance with the standards and specifications of the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (2002) - State of Connecticut DEP Bulletin 34.

RESPONSIBILITY FOR THE PLAN

The responsibility for implementing and maintaining the Erosion and Sedimentation Control Plan rests with the DEVELOPER, where any development of the parcel gives cause to erosion and sedimentation. The DEVELOPER shall be held responsible for informing all concerned regarding responsibility of the plan.

Whenever sedimentation is caused by stripping vegetation and/or grading, it shall be the responsibility of the person, corporation or other entity having responsibility to remove sedimentation from all lower properties, drainage systems and watercourses and to repair any damage at their expense as quickly as possible.

Maintenance of all drainage facilities and watercourses within any land development shall be the responsibility of the DEVELOPER until they are accepted by the Town. All control measures will be maintained in effective condition throughout the construction period. Surface inlets shall be kept open and free of sediment and debris. The system shall be checked after every major storm and sediment shall be disposed of at an approved location consistent with the plan.

It shall be the responsibility of any person, corporation or other entity engaging in any act on or near any stream, watercourse or swale or upon the flood plain or right-of-way thereof to maintain as nearly as possible in its present state that same stream, watercourse, swale, flood plain or right—of—way for the duration of the activity and to return it to its original or equal condition after such activity is completed. Maintenance of drainage facilities or watercourses originating and completely on private property shall be the responsibility of the DEVELOPER to their point of open discharge at the property line or at a communal watercourse within the property.

No person, corporation or other entity shall block, impede the flow of, alter, construct any structure or deposit any material or thing or commit any act which affects normal or flood flow in any communal stream or watercourse without having obtained prior approval from the Town.

An adequate right—of—way and/or easement shall be provided for all drainage facilities and watercourses which are proposed either for acceptance by the Town or provided by other property owners for the convenience of the OWNER.

IN CASE OF AN EMERGENCY (e.g. severe flooding, rains, or other environmental problems): THE PARTY RESPONSIBLE AND THE TOWN'S WETLAND ENFORCEMENT OFFICER SHALL BE NOTIFIED.

SEEDING AND PLANTING REQUIREMENTS

EMERGENCY CONTACT: MR. MARK OCZKOWSKI (203) 736-1678

Seedbed Preparation Fine grade and rake surface to remove stones larger than 2" in diameter. Install needed erosion control devices such as surface water diversions. Grade stabilization structures, sediment basins or drainage channels to maintain grassed areas. Apply limestone at a rate of 2 tons/Ac. or 90 lbs/1000 SF unless otherwise required according to soil test results. Apply fertilizers with 10-10-10 at a rate of 300 lbs./Ac. or 7.5 lbs/1000 SF. At least 50% of the nitrogen shall be from organic sources. Work lime and fertilizer into soil uniformity to a depth of 4" with a whisk, springtooth harrow or other suitable equipment following the contour lines.

Seed Application Apply grass mixtures at rates specified by hand, cyclone seeder or hydroseeder. Increase seed mixture by 10% if hydroseeder is used. Lightly drag or roll the seeded surface to cover seed. Seeding for selected fine grasses should be done between April 1 and June 1 or between August 15 and October 15. If seeding cannot be done during these times, repeat mulching procedure below until seeding can take place or seed with a quick germinating seed mixture to stabilize slopes. A quick germinating seed mixture (Domestic Rye) can be applied between June 15 through August 15 as approved by the Engineer.

Immediately following seeding, mulch the seeded surface with straw, hay or wood fiber at a rate of 1.5 to 2 tons/Ac. except as otherwise specified elsewhere. Mulches should be free of weeds and coarse matter. Spread mulch by hand or mulch blower. Punch mulch into soil surface with track machine or disk harrow set straight up. Mulch material should be "tucked" approximately 2- 3" into the soil surface. Chemical mulch binders or netting, in combination with the straw, hay or wood fibers, will be used where difficult slopes do not allow harrowing by machines

Grass Seed Mixtures

Temporary Covers Perennial ryegrass 20 lbs/Ac. Annual ryegrass 20 lbs/Ac.

NOTE: ALL PLANTINGS ON SITE SHALL BE NATIVE, NON-INVASIVE SPECIES.

CONSTRUCTION OF STORMWATER RENOVATION BASIN & TEMPORARY SEDIMENT TRAP EXTERIOR BERMS

A. MATERIALS

1. Fill material shall be free of frozen material, sod, brush. roots, stumps and other organic material. Earth embankments shall contain no stones over six inches in diameter. The material used in the core portion of the embankment shall be the most impervious material obtained from the borrow areas, as required. The more pervious materials shall be used in the outer fill portion of the embankment as shown on the plans.

2. The impervious core fill material shall be glacial till, to be provided in sufficient quantities to complete the work. Fill to be approved by the Engineer prior to placement. Glacial till to consist of hard and durable particles or fragments and shall be free from organic matter and other objectionable materials. Glacial till shall conform to the following gradation requirements.

U. S. Standard Percentaae Passina Sieve Size By Weight 100 3 inch No. 4 60- 95 50- 95 No. 10 30- 95 No. 40 No. 100 20- 65 10- 40 No. 200

B. BERM FOUNDATION PREPARATION

1. The area where the berm is to be constructed shall be cleared and grubbed of all topsoil and other organic materials to a depth of at least 24". Unless otherwise specified on the plans, berm foundation areas shall be scarified to a minimum depth of three inches prior to placement of fill material. C. PLACEMENT OF FILL

1. No fill shall be placed until the foundation preparation and excavations in the foundation have been completed and approved by the Engineer. No fill shall be placed on a frozen surface nor shall frozen material be incorporated.

2. Embankment material shall be placed in horizontal layers in 12 inch loose lifts. During construction, the surface of the fill shall be sloped to drain. Each layer or lift shall extend over the entire area of the fill.

3. The fill shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material. The more pervious material shall be placed in the outside portion of the berm or as indicated on the drawings. The finished fill shall be shaped and graded to the lines and grade shown on the drawings.

4. Pipe backfill shall be placed in horizontal layers not to exceed 6- 8 inch loose lifts and shall be brought up uniformly around the outlet pipe and flared end section.

The responsibility of all drainage, erosion and sedimentation control measures will therefore rest with the DEVELOPER.

Permanent Covers Creeping Red Fescue 40 lbs/Ac Canada Bluegrass 20 lbs/Ac

CONSTRUCTION SEQUENCE

THE SEQUENCE OF CONSTRUCTION WILL BE AS FOLLOWS:

Field stakeout the limits of all construction activities.

associated with grading.

Clear all vegetation within the construction area. All trees/shrubs less than 6" in diameter shall be chipped and stored on the site.

Haybales and/or siltation fence and other erosion control features will be placed as shown on the enclosed plan prior to the start of any construction.

Remove stumps and vegetation from the area of construction. Install the anti-tracking pad as shown on the plan. At the end of each working day any

accumulated silt shall be swept from the existing town roads. Install temporary diversion swale, temporary sediment traps and initial erosion control measures

Strip and stockpile topsoil and subsoil material at the locations shown on the plans.

The cuts and fills will be made and all slopes loamed, seeded and mulched.

All erosion and sediment control measures will be constructed in accordance with the standards and specifications of the Guidelines for Erosion and Sediment Control (2002) of the State of Connecticut.

Erosion and sediment control measures will be installed prior to construction whenever possible.

All control measures will be maintained in effective condition throughout the construction period.

Additional control measures will be installed during construction if necessary or required.

FILL MATERIAL & COMPACTION REQUIREMENTS

1. Fill material shall be free of brush, rubbish, large rocks, logs, stumps, building debris and other objectionable material that would interfere with, or prevent construction of, satisfactory fills, where embankments are to be constructed on slopes steeper than 3:1. Deeply scarify the existing slope or cut into steps before filling is begun.

2. Place and compact all fill in layers not exceeding 1 foot in thickness. No fill should be placed on surfaces of snow, ice or frozen or unstable surfaces. If fill placement is not completed within 1 day, then install temporary erosion and sediment controls such as a temporary fill berm to redirect runoff water away from the unstable slope until fill placement resumes.

3. No frozen material be incorporated into the fill envelope. Material shall be placed in horizontal layers in 12 inch loose lifts and each layer compacted. During construction, the surface of the material shall be sloped to drain. The material shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture or gradation from the surrounding material.

4. The moisture content of the material shall be controlled to meet the necessary requirements of compaction. When necessary, moisture shall be added by the use of approved sprinkling equipment. Water shall be added uniformly and each layer shall be thoroughly disked or harrowed to provide proper mixing. Any layer found too wet for compaction shall be allowed to dry before rolling. Placing or rolling of materials will not be permitted during or immediately after rainfalls which increase the moisture content beyond the limit of satisfactory compaction.

5. The material shall be brought up uniformly and its top shall be kept graded and sloped so that a minimum of rain water will be retained thereon. Compacted material damaged by runoff shall be replaced immediately by the contractor.

6. Material shall be compacted to 95% of the standard proctor density at or near optimum moisture content and by the compaction equipment specified herein. The compaction equipment shall traverse the entire surface of each layer of material. Approved tamping rollers shall be used for compacting. The contractor shall demonstrate the effectiveness of the roller by actual soil compaction test results of the soil with laboratory work performed by an approved soil testing laboratory. Compaction tests shall include modified proctor and nuclear density tests made at the Engineer's discretion.

D. MOISTURE CONTROL

1. The moisture content of materials in the berm shall be controlled to meet the requirements of Section E "Compaction of Berm". When necessary, moisture shall be added by the use of approved sprinkling equipment. Water shall be added uniformly and each layer shall be thoroughly disked or harrowed t provide proper mixing. Any layer found too wet for compaction shall be allowed to dry before rolling. Placing or rolling of materials on earth fills will not be permitted during or immediately after rainfalls which increase the moisture content beyond the limit of satisfactory compaction. The earth fill shall be brought up uniformly and its top shall be kept graded and sloped so that a minimum of rain water will be retained thereon. Compacted earth fill damaged by runoff shall be replaced immediately by the contractor.

E. Compaction

1. Berm material shall be compacted to 95% of the standard proctor density at or near optimum moisture content and by the compaction equipment specified herein. The compaction equipment shall traverse the entire surface of each layer of fill material.

2. Approved tamping rollers shall be used for compacting all parts of the berm. The contractor shall demonstrate the effectiveness of the roller by actual soil compaction test results of the soil to be used in the berm with laboratory work performed by an approved soil testing laboratory. Compaction tests shall include modified proctor and nuclear density tests made at the Engineer's discretion. A minimum of three proctor tests shall be performed and density tests shall be performed every 1500 square feet.

3. Pipe backfill shall be compacted by hand tamping with mechanical tampers. Heavy equipment shall not be operated within three feet of any structure. Equipment shall not be allowed to operate over the outlet culverts until there is at least two feet of cover over the pipes.

F. FINISHING EMBANKMENTS

1. The berm shall be constructed to the elevations, lines and grades and cross sections as shown on the plans. The berm shall be maintained in a manner satisfactory to the Engineer and the Town and surfaces shall be compact and and accurately graded before topsoil is placed on them.

G. MISCELLANEOUS CONDITIONS

1. Clearing limits for the berm area shall be 25' from the toe of the slope unless otherwise directed by the Engineer

2. Test pits can be ordered by the Engineer or the Town at any time during construction to locate or confirm the elevation and condition of existing soils or the content of the embankment fill. This work shall be done at no additional cost to the Owner.

3. If apparent changes occur in the fill material, additional sieve analyses can be ordered by the Engineer at no additional cost to the Owner

CUT: 0 CY

FILL : 2,650 CY CUT : 0 CY

MAINTENANCE PLAN FOR STORM DRAINAGE SYSTEM

The property owner and/or manager will be responsible for the long term maintenance of the storm drainage system as shown on the site plans. Maintenance reports indicating that the system has been maintained in accordance with the intent of the plan shall be submitted to the City Land Use Offices on a biannual basis after the maintenance & inspections have occurred.

MAINTENANCE PLAN FOR TEMPORARY SEDIMENT TRAP

All maintenance of the temporary sediment trap shall be performed in accordance with the 2002 CT Guidelines for Soil Erosion and Sediment Control:

Inspect the temporary sediment trap at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or areater. Check the outlet to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should be maintained at least 1 foot below the crest of the embankment. Also check for sediment accumulation and filtration performance.

When sediments have accumulated to one half the minimum required volume of the wet storage, dewater the trap as needed, remove sediments and restore the trap to its original dimensions. dispose of the sediment removed from the basin in a suitable area and in such a manner that it will not erode and cause sedimentation problems.

LITTER CONTROL NOTES

As a condition of an inland wetlands permit, all industrial and office establishments in close proximity to a wetland or watercourse, shall establish a litter control program to include litter cleanup encompassing the entire site. both paved and vegetated areas, including any storm water control structure such as retention/detention ponds, level spreaders, etc. this cleanup will be performed once monthly. A signoff sheet will be established and kept current which shall include the date and time of the litter pickup and the signature of the person performing the cleanup. This signoff sheet will be available to Inland Wetlands staff, Commissioners, and their agents.

EMERGENCY SPILL PLAN

A spill is defined in the Connecticut General Statute 22a- 452c. For practical purposes, any oil or petroleum products, chemical or waste that is released in any manner constitutes a spill. In the event of an emergency spill, the following steps shall be taken: 1. Contact the State of Connecticut Department of Environmental Protection Oil & Chemical Spill Response Division at (860) 424- 3338 immediately. 2. Contact the First Selectman's office in Oxford at 888-2543. 3. The spill shall be contained immediately.

HAZARDOUS MATERIAL STATEMENT

THERE SHALL BE NO FUEL OR HAZARDOUS MATERIALS STORED ON SITE.

TOTAL EARTHWORK ACTIVITIES

TOTAL EARTHWORK FOR REGRADING (INCLUDING AREA WITHIN 100' WETLANDS REGULATED AREA)

127,200 SF OF ACTIVITY = 2.92 ACRES TOTAL CUT - 4,120 CY TOTAL FILL - 17,440 CY NET FILL - 13.320 CY

ALL MATERIAL TO BE RE-GRADED ON-SITE.

WETLAND REGULATED ACTIVITIES

FOR REGRADING SITE (NO GRADING REQUIRED WITHIN THE EXISTING DETENTION AREA) TOTAL ACTIVITY IN WETLAND AREA 0 SF = 0 AC.FILL : 0 CY

TOTAL ACTIVITY IN 100' REGULATED AREA 10,490 SF = 0.24 AC.

589 INVESTMENTS, LLC PO BOX 506 **OXFORD, CT**

Previous Editions Obsolete

NO. REVISION

1 REVISED PER WEO

DATE

10 MAR

EROSION CONTROL NARRATIVE

