

A. PROJECT NARRATIVE

THE PROJECT CONSISTS OF THE INSTALLATION OF A RETAINING WALL, STORMWATER GALLERIES, CATCH BASINS AND LANDSCAPING. MINOR SITE GRADING IS ALSO AN ANTICIPATED ACTIVITY.

LOCATION OF PROJECT: #97 DEFCO PARK ROAD, NORTH HAVEN, CONNECTICUT 06473

PROJECT OWNER: PRO-KLEAN c/o JOSEPH CIFARELLI P.O. BOX 920 NORTH HAVEN, CT 06473 TEL: (203) 410-4921

OWNERS AGENT: CRISCUOLO ENGINEERING, LLC 420 EAST MAIN STREET BRANFORD, CONNECTICUT 06405 TEL: (203) 481-0907 FAX: (203) 488-5729

TOWN CONTACT: ALAN FREDRICKSEN, LAND USE ADMINISTRATOR (203)239-5321 X.440 ANDREW BEVILACQUA, P.E. TOWN ENGINEER (203)239-5321 X.420 TOWN OF NORTH HAVEN 18 CHURCH STREET NORTH HAVEN, CONNECTICUT 06473 FAX: (203) 234-2130

CONSTRUCTION SCHEDULE AND SEQUENCE:

- 1. EQUIPMENT MOBILIZATION
2. ESTABLISHMENT OF PRELIMINARY EROSION AND SEDIMENTATION CONTROL MEASURES
3. IMPLEMENTATION OF ADDITIONAL EROSION AND SEDIMENTATION CONTROL IN ACCORDANCE WITH PLOT PLAN
4. INSTALLATION OF UTILITY SERVICES
5. FINAL GRADING OPERATIONS
6. DRIVEWAY PAVING
7. TOPSOILING, SEEDING AND MULCHING OF SLOPES AND DISTURBED AREAS
8. REMOVAL OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS

B. CONTINGENCY PLAN

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE OWNERS AGENT AND THE TOWN OF BRANFORD WITH THE NAMES AND TELEPHONE NUMBERS OF THE RESPONSIBLE PERSONS TO BE CONTACTED IN THE EVENT OF AN EROSION AND/OR SEDIMENT CONTROL PROBLEM.

THE CONTRACTOR SHALL AT ALL TIMES KEEP A SUFFICIENT AMOUNT OF FILTER FABRIC SEDIMENT FENCE AND/OR HAYBALES ON THE PROJECT SITE TO CONTROL EROSION AND/OR SEDIMENT PROBLEMS. IN THE EVENT OF A PROBLEM THE CONTRACTOR SHALL PROMPTLY STABILIZE THE PROBLEM AND CONTAIN ANY SEDIMENT AND THEN NOTIFY THE TOWN OF BRANFORD.

C. EROSION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN FOR THE PROJECT.

THE MINIMUM STANDARDS FOR ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE THOSE OUTLINED IN THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL," MAY 2002, LATEST REVISION. ALTERNATIVE MEASURES, METHODS, MEANS, AND TECHNIQUES MAY BE ALLOWED WITH THE PRIOR APPROVAL OF THE ENGINEER.

1. GENERAL GUIDELINES:

- a. NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE WITHIN AREAS DESIGNATED AS INLAND WETLANDS, WATERCOURSES OR FLOODPLAINS, OR WITHIN STREAM CHANNEL, ENCROACHMENT LINES WITHOUT ALL REQUIRED APPROVALS AND/OR PERMITS.
b. TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
c. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED CONTINUOUSLY AND SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
d. THE CONTRACTOR SHALL LIMIT THE DISTURBANCE OF LAND TO THOSE AREAS SHOWN ON THE DRAWINGS AND SHALL TAKE REASONABLE CARE TO PROTECT AND PRESERVE EXISTING VEGETATION WITHIN THE LIMITS OF DISTURBANCE WHERE FEASIBLE.
e. WHERE PRACTICABLE, THE CONTRACTOR SHALL PLAN HIS CONSTRUCTION OPERATIONS SO AS TO LIMIT THE AREAS OF EXPOSED SOIL TO AREAS ACTIVELY UNDER CONSTRUCTION. THE CONTRACTOR SHALL TAKE REASONABLE CARE TO LIMIT THE PERIOD OF EXPOSURE OF DISTURBED AREAS. THE INSTALLATION OF PERMANENT VEGETATIVE MEASURES SHALL BE ACCOMPLISHED AS SOON AS IS PRACTICABLE.
f. ADEQUATE PROVISIONS SHALL BE TAKEN TO PROTECT ALL EXPOSED CUT AND FILL SLOPES FROM SURFACE WATER FLOW DAMAGE.
g. ALL MATERIAL FROM CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF IN DESIGNATED AREAS ONLY.
h. WATER FROM DEWATERING OPERATIONS SHALL NOT BE DISCHARGED DIRECTLY TO ANY WETLAND OR WATERCOURSE. SUCH WATER SHALL BE DISCHARGED TO AN APPROVED SEDIMENT BASIN AND OR FILTER FACILITY OR TO A STORM DRAINAGE SYSTEM WHEN APPROVED. NO WATER FROM DEWATERING OPERATIONS SHALL BE DISCHARGED INTO A SANITARY SEWER SYSTEM.
i. THE STORAGE, WASHING, FUELING, AND MAINTENANCE OF EQUIPMENT AND VEHICLES SHALL TAKE PLACE IN DESIGNATED AREAS ONLY. IN THE EVENT OF A CONTAMINANT SPILL THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION OIL AND CHEMICAL SPILL DEPARTMENT (860-424-3336), AND THE TOWN OF BRANFORD.

2. VEGETATIVE MEASURES

- a. TEMPORARY VEGETATIVE COVER

INSTALLATION REQUIREMENTS

SITE PREPARATION

- i. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR GRADING.
ii. INSTALL NEEDED EROSION CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, SEDIMENT BASINS AND GRASSSED WATERWAYS.

SEEDBED PREPARATION

- i. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY. SOIL SAMPLE MALEERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AS FOLLOWS:

Table with 3 columns: SOIL TEXTURE, TONS/AC, LBS/1,000 SQUARE FEET. Rows include CLAY, CLAY-LOAM, SANDY LOAM, LOAMY SAND, SAND.

SEEDING

- i. ANNUAL RYE GRASS 40 LBS/ACRE, 1 LB/100 SF
ii. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN THE SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER LIME AND SEED.
iii. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER. HYDROSEEDINGS WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10 PERCENT WHEN HYDROSEEDING.

- iv. SPRING SEEDINGS USUALLY GIVE THE BEST RESULTS, HOWEVER, LATE SUMMER SEEDINGS PRIOR TO SEPTEMBER 1 CAN BE MADE. THE RECOMMENDED SEEDING DATES ARE:

MARCH 1 THROUGH JUNE 15 AUGUST 1 THROUGH OCTOBER 1

b. PERMANENT VEGETATIVE COVER

INSTALLATION REQUIREMENTS

SITE PREPARATION

- i. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR GRADING.

SEEDBED PREPARATION

- i. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY. SOIL SAMPLE MALEERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET USING 10-10-10 OR EQUIVALENT. IN ADDITION, 300 POUNDS OF 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED FOR TOPDRESSING. APPLY GROUND LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AS FOLLOWS:

Table with 3 columns: SOIL TEXTURE, TONS/AC, LBS/1,000 SQUARE FEET. Rows include CLAY, CLAY-LOAM, SANDY LOAM, LOAMY SAND, SAND.

- ii. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.

- iii. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.

- iv. REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, TREES OR CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

- v. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

SEEDING DATES

- i. SPRING SEEDING USUALLY GIVE THE BEST RESULTS. THE RECOMMENDED SEEDING DATES ARE:

APRIL 15 THROUGH JUNE 15 AUGUST 15 THROUGH SEPTEMBER 15

THE FINAL SEEDING DATE MAY BE EXTENDED 15 DAYS IN THE COASTAL TOWNS OF NEW LONDON, MIDDLESEX, NEW HAVEN, AND FAIRFIELD COUNTIES.

SEEDING

- i. UNLESS OTHERWISE SPECIFIED, THE SEED MIXTURE SHALL BE AS FOLLOWS:

Table with 3 columns: SEED TYPE, LB/ACRE, LB/1,000 SF. Rows include KENTUCKY BLUEGRASS, CREEPING RED FESCUE, PERENNIAL RYEGRASS, TOTAL.

- ii. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER. NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDINGS WHICH ARE MULCHED MAY BE LEFT ON SOIL SURFACE.

- iii. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.

- iv. FROST CRACK SEEDING MUST BE DONE IN LATE WINTER OR EARLY SPRING. SUITABLE WEATHER CONDITIONS ARE FREEZING NIGHTS AND THAWING DAYS WITH LITTLE OR NO SNOW COVER. SEEDING RATES MUST BE INCREASED TO 10 PERCENT WHEN USING THIS METHOD.

- v. HYDRAULIC APPLICATION (HYDROSEEDING), IS A SUITABLE METHOD FOR USE ON CRITICAL AREAS, WHEN HYDROSEEDING, A SEEDBED IS PREPARED IN THE CONVENTIONAL WAY OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN SIX INCHES IN DIAMETER. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY). LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED UNLESS IT IS USED TO HOLD STRAW OR HAY. FIBER MULCH DOES NOT PROVIDE ADEQUATE SEEDBED PROTECTION. BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADMISSIBLE MATERIALS OR WOOD PILING PER ACRE OF WOOD FIBER MULCH. SEEDING RATES MUST BE INCREASED BY 10 PERCENT WHEN HYDROSEEDING.

- vi. APPLY MULCH ACCORDING TO THE REQUIREMENTS FOR TEMPORARY MULCHING.

- vii. IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, USE TEMPORARY MULCHING TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

MAINTENANCE

- i. LIME ACCORDING TO A SOIL TEST OR AT A MINIMUM OF EVERY FIVE YEARS USING A RATE OF TWO TONS PER ACRE (100 POUNDS PER 1,000 SQUARE FEET).

- ii. WHERE GRASSES PREDOMINATE, FERTILIZE ACCORDING TO A SOIL TEST OR BROADCAST BIENNIALY, 300 POUNDS OR 10-10-10 OR EQUIVALENT PER ACRE (7.5 POUNDS PER 1,000 SQUARE FEET).

3. NONSTRUCTURAL MEASURES

- a. HAY BALES

SHEET FLOW APPLICATIONS

INSTALLATION REQUIREMENTS

- i. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW FOLLOWING THE GROUND CONTOURS, WITH THE ENDS OF ADJACENT BALES TIGHTLY ADJUTING ONE ANOTHER.
ii. ALL BALES SHALL BE EITHER WIRE BOUND OR STRING TIED. BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES OF THE BALES PARALLEL TO THE GROUND TO PREVENT DETERIORATION OF THE BINDING.
iii. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE BALES ARE STAKED AND CHIMED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO 4 INCHES AGAINST THE UPHILL SIDE OF THE BARRIER. BALES SHOULD BE PLACED TEN FEET AWAY FROM THE TOE OF SLOPES UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED.

- iv. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAD BALE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.

- v. THE GAPS BETWEEN BALES SHALL BE FILLED BY WEDGING STRAW BETWEEN THEM TO PREVENT WATER FROM FLOWING BETWEEN THE BALES.

CHANNEL FLOW APPLICATIONS

INSTALLATION REQUIREMENTS

- i. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PERPENDICULAR TO THE GROUND CONTOURS, WITH ENDS OF ADJACENT BALES TIGHTLY ADJUTING ONE ANOTHER.
ii. THE REMAINING STEPS FOR INSTALLING A HAYBALE BARRIER FOR SHEET FLOW APPLICATIONS APPLY HERE, WITH THE FOLLOWING ADDITION:
THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAT THE TOP OF THE LOWEST MIDDLE BALE TO ASSURE THAT SEDIMENT WILL FLOW EITHER THROUGH OR OVER THE BARRIER BUT NOT AROUND IT.

MAINTENANCE

- i. INSPECTION SHALL BE MADE AFTER EACH STORM EVENT AND PERIODICALLY DURING PROLONGED RAIN EVENTS AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS REQUIRED.
ii. ACCUMULATED SEDIMENT BEHIND THE BALES SHALL BE REMOVED WHEN IT REACHES 1/2 OF THE ORIGINAL HEIGHT OF THE BALES.

- b. FILTER FABRIC FENCE

MATERIALS

- i. SYNTHETIC FILTER FABRIC

SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE FILAMENTS AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:

Table with 2 columns: PHYSICAL PROPERTY, REQUIREMENTS. Rows include FILTERING EFFICIENCY, TENSILE STRENGTH AT 20% (MAX) ELONGATION, EXTRA STRENGTH STANDARD STRENGTH, FLOW RATE.

- ii. POSTS FOR FILTER FABRIC FENCES SHALL BE EITHER 1 X 2 INCH WOOD OR 0.5 POUND (MINIMUM) PER LINEAL FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.

- iii. WIRE FENCE REINFORCEMENT FOR FILTER FABRIC FENCES USING STANDARD STRENGTH MATERIAL SHALL BE A MINIMUM OF 42 INCHES IN HEIGHT. A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES.

INSTALLATION REQUIREMENTS

- i. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES. (HIGHER BARRIERS MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE). THE FILTER FABRIC FENCE SHALL BE PLACED 10 FEET AWAY FROM THE TOE OF SLOPES UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED.

- ii. WHEN JOINTS ARE NECESSARY, FILTER FABRIC ROLL ENDS SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST IN CONFORMANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

- iii. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM DEPTH OF 12 INCHES.

- iv. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOD RINGS. THE WIRE SHALL EXTEND INTO A TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

- v. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED, WIRED OR TIED TO THE WIRE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH.

- vi. WHEN EXTRA STRENGTH FILTER FABRIC OR BURLAP AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED.

- vii. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.

MAINTENANCE

- i. INSPECTION SHALL BE MADE AFTER EACH STORM EVENT AND PERIODICALLY DURING PROLONGED RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE AS REQUIRED.
ii. ACCUMULATED SEDIMENT BEHIND THE FABRIC SHALL BE REMOVED WHEN IT REACHES 1/2 OF THE HEIGHT OF THE BARRIER.

c. GRADING

- i. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
ii. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
iii. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDIENCE OR OTHER RELATED PROBLEMS.

- iv. FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS.

- v. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.

- vi. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.

- vii. TOPSOILING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS FOR TOPSOILING.

- viii. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING OPERATIONS.

d. TOPSOILING

MATERIALS

AN INVESTIGATION SHALL BE MADE TO DETERMINE IF THERE IS A SUFFICIENT QUANTITY OF TOPSOIL OF GOOD QUALITY ON THE SITE TO JUSTIFY STRIPPING. HIGH QUALITY TOPSOIL SHALL BE FRAGILE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM). OTHER SOIL TYPES WITH HIGH ORGANIC CONTENT SHALL BE FORMED SUITABLE AFTER TESTING. IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS, AND NOXIOUS WEEDS. IT SHALL GIVE EVIDENCE OF BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHALL CONTAIN NO SUBSTANCE THAT IS POTENTIALLY TOXIC TO PLANT GROWTH.

ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY TO DETERMINE THE PROPER APPLICATION RATES OF LIME AND FERTILIZER.

INSTALLATION REQUIREMENTS

- i. STRIPPING OF TOPSOIL SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. THE DEPTH OF REMOVAL MAY VARY DEPENDING ON THE SITE CONDITIONS. ALL SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO BEGINNING STRIPPING OPERATIONS.

- ii. TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL SURFACE WATER FLOW IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT.

- iii. SLOPES OF STOCKPILES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.

- iv. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STOCKPILES.

- v. TEMPORARY SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF THE STOCKPILE IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE COVER REQUIREMENTS.

- vi. PREVIOUSLY ESTABLISHED GRASSES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE DRAWINGS.

- vii. WHERE THE PH OF THE SUBSOIL IS 6.0 OR LESS, GROUND AGRICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH THE SOIL TEST OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.

- viii. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING OR SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.

- ix. TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

- x. TOPSOIL SHOULD BE COMPACTED ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A UNIFORM FIRM SEEDBED FOR THE ESTABLISHMENT OF A HIGH MAINTENANCE TURF. UNDULE COMPACTION IS TO BE AVOIDED AS IT INCREASES RUNOFF VELOCITY AND VOLUME, AND PREVENTS SEED GERMINATION.

e. TEMPORARY MULCHING

INSTALLATION REQUIREMENTS

- i. ORGANIC MULCHES MAY BE USED IN ANY AREA WHERE MULCH IS REQUIRED, SUBJECT TO THE RESTRICTIONS NOTED BELOW:

ORGANIC MULCH MATERIALS AND APPLICATION RATES

Table with 3 columns: MULCHES, PER ACRE, PER 1000 SF. Rows include STRAW OR HAY, WOOD FIBER, CORN STALKS, WOOD CHIPS, SHREDDED BARK.

MATERIALS

- i. SELECT MULCH MATERIALS BASED ON SITE CONDITIONS, AVAILABILITY OF MATERIALS AND LABOR AND EQUIPMENT. OTHER MATERIALS MAY BE USED ONLY WITH THE PERMISSION OF THE APPROVING AUTHORITY.

APPLICATION

- i. MULCH MATERIALS SHALL BE SPREAD UNIFORMLY, BY HAND OR MACHINE. WHEN SPREADING STRAW OR HAY MULCH BY HAND, DIVIDE THE AREA TO BE MULCHED INTO APPROXIMATELY 1,000 SQUARE FOOT SECTIONS AND PLACE 70-90 POUNDS (1-1/2 TO 2 BALES) OF STRAW OR HAY IN EACH SECTION TO ENSURE UNIFORM DISTRIBUTION.

ANCHORING

- i. HAY OR STRAW MULCHES MUST BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT WINDBLOWING. HAY OR STRAW MULCH MAY BE ANCHORED BY TRACKING WITH CONSTRUCTION EQUIPMENT OR BY USING MULCH NETTING OR LIQUID MULCH BINDERS.

MAINTENANCE

- i. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. WHERE EROSION IS OBSERVED, ADDITIONAL MULCH SHOULD BE APPLIED. NETS SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NET AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. INSPECTORS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. GRASSES SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED WHICH IS MATURE ENOUGH TO CONTROL SOIL EROSION AND TO SURVIVE SEVERE WEATHER CONDITIONS. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

DUST CONTROL

INSTALLATION REQUIREMENTS

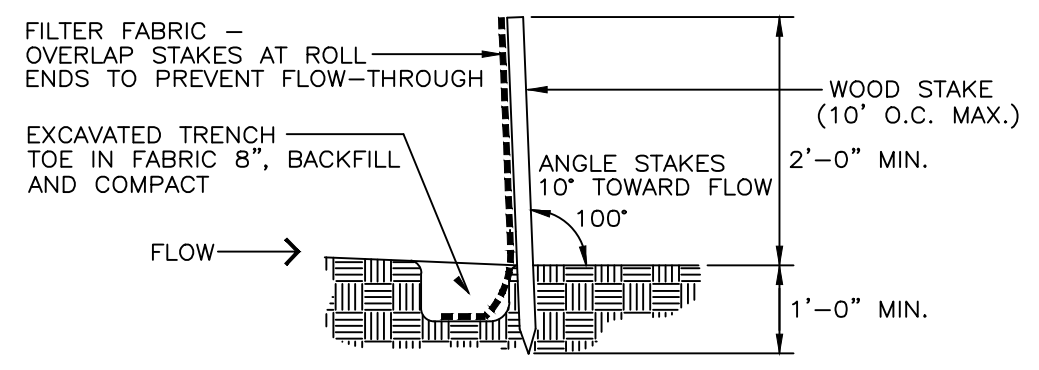
- i. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE QUANTITIES OF WATER TO CONTROL DUST.

STONE

- i. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. IN AREAS ADJACENT TO WATERWAYS USE CHEMICALLY STABLE AGGREGATE.

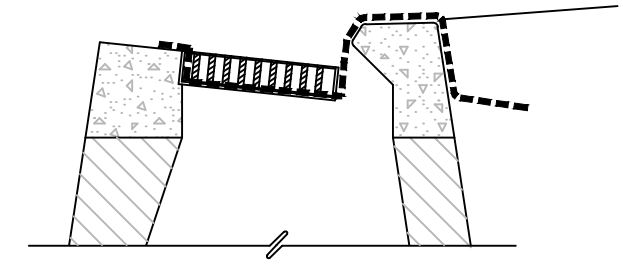
MAINTENANCE

- i. WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.



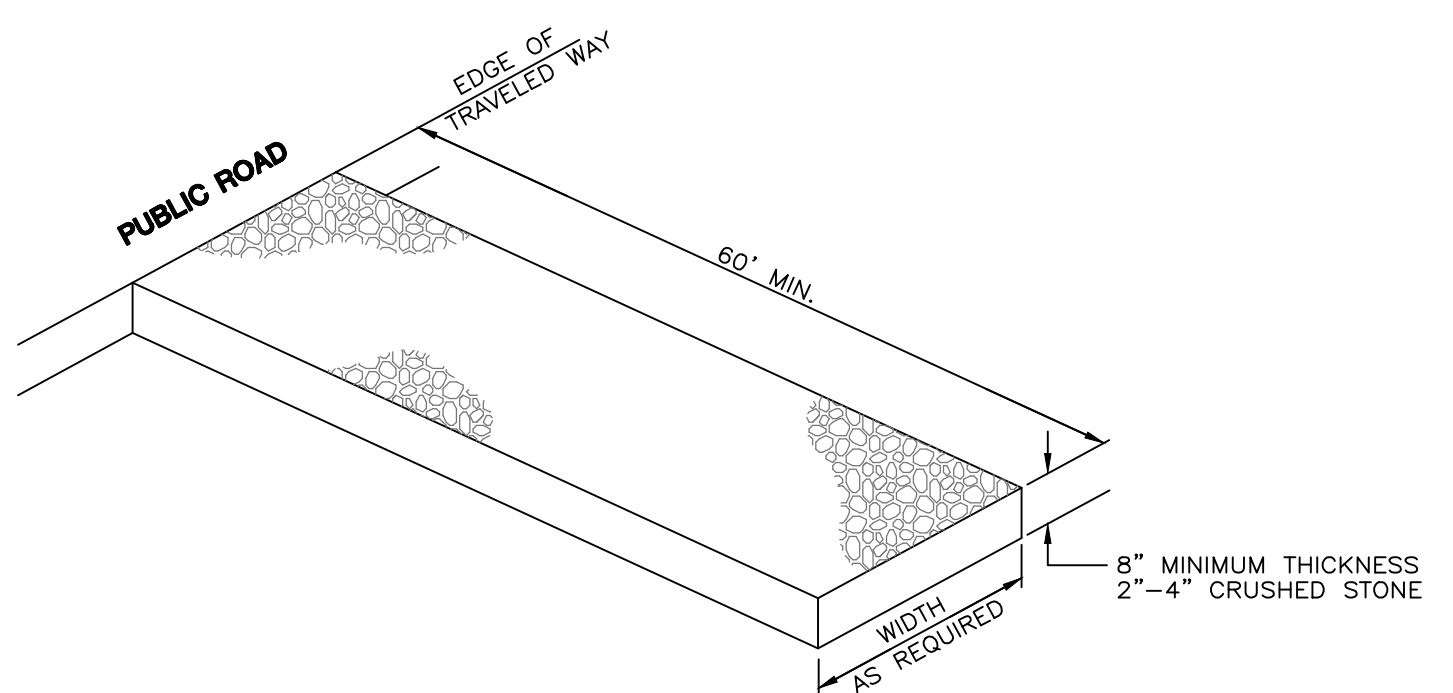
SECTION FILTER FABRIC FENCE NOT TO SCALE

- 1. INSPECT BARRIER AFTER EACH STORM EVENT AND DAILY DURING PROLONGED RAINFALL.
2. REMOVE SEDIMENT WHEN IT REACHES APPROXIMATELY ONE-HALF THE BARRIER HEIGHT.



SECTION SEDIMENT CONTROL AT CATCH BASIN NOT TO SCALE

- 1. WRAP FILTER FABRIC AROUND GRATE AND PLACE IN FRAME.
2. EXTEND FABRIC BEHIND CATCH BASIN TOP AND BACKFILL.
3. INSPECT CATCH BASINS AFTER EACH STORM EVENT.
4. REMOVE ACCUMULATED SEDIMENT AS REQUIRED.



SECTION CONSTRUCTION ENTRANCE/ANTI-TRACKING PAD NOT TO SCALE

- 1. CLEAR AND GRUB AREA BEFORE PLACEMENT OF STONE. A GEOTEXTILE LAYER MAY BE USED TO STABILIZE POOR SUBGRADE SOILS.
2. PROVIDE FOR POSITIVE DRAINAGE OF SEDIMENT LADEN WATER THROUGH AN APPROVED SEDIMENT FILTER OR TO A SEDIMENT BASIN.
3. MAINTAIN ENTRANCE SO AS TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROAD.
4. SHOULD SITE CONDITIONS BE SUCH THAT SOIL CANNOT BE REMOVED BY VEHICLES TRAVELING OVER THE PAD, THE TIRES OF VEHICLES MAY HAVE TO BE WASHED PRIOR TO VEHICLES ENTERING THE PUBLIC ROAD. ALL WASH WATER SHALL BE DIRECTED THROUGH AN APPROVED SEDIMENT FILTER OR TO A SEDIMENT BASIN.

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