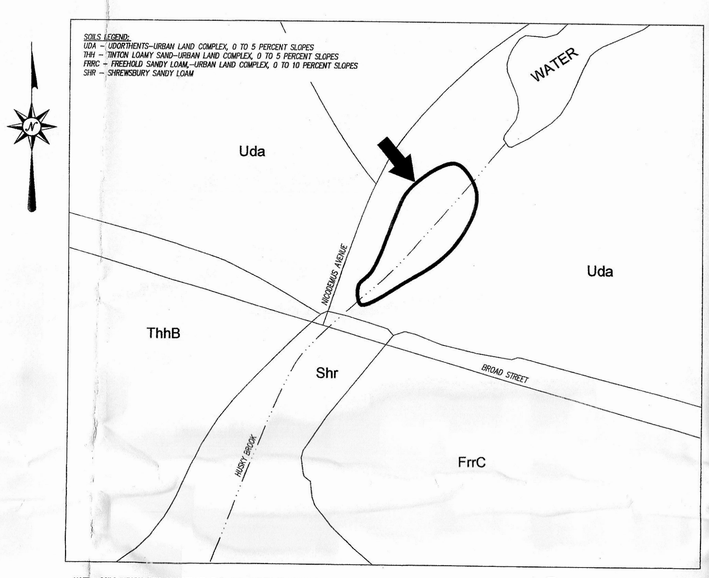
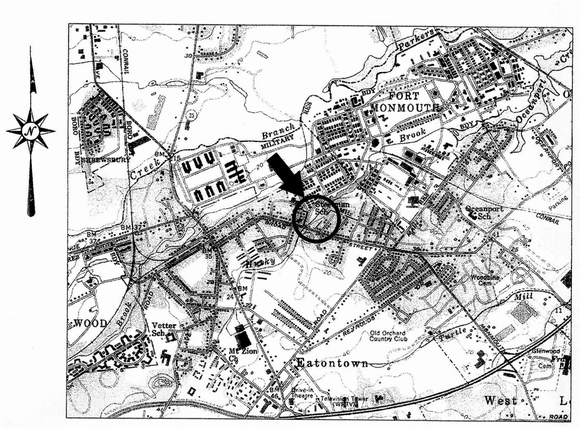
HUSKY BROOK RESTORATION

FORT MONMOUTH
BOROUGH OF EATONTOWN
MONMOUTH COUNTY, NEW JERSEY



NOTE: SOILS INFORMATION AS OBTAINED FROM SOIL SURVEY OF MONMOUTH COUNTY, NEW JERSEY.

1 SITE SOILS MAP
PLAN VIEW
SCALE: 1" = 200'



2 PROJECT VICINITY
SCALE: 1" = 2000'
USGS QUADRANGLE
7.5 MINUTE SERIES
NEW EGYPT, NEW JERSEY

SHEET INDEX:

PROJECT APPLICANT:

FORT MONMOUTH, DIRECTORATE OF PUBLIC WORKS
ATTN: JOSEPH FALLON
167 RIVERSIDE AVENUE
FORT MONMOUTH, NEW JERSEY 07703

6			
5			
4			
3			
2			
1	DATE	REVISIONS	DRWN BY / CHK BY

Jerry K. Snyder, P.E.
N.J. License GE 35935
6/14/06

VEETech P.C.
630 Freedom Business Center
King of Prussia, PA 19406
Phone: 610-768-7700
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RECEIVED
JUN 23 2006
FREEHOLD S.C.D.

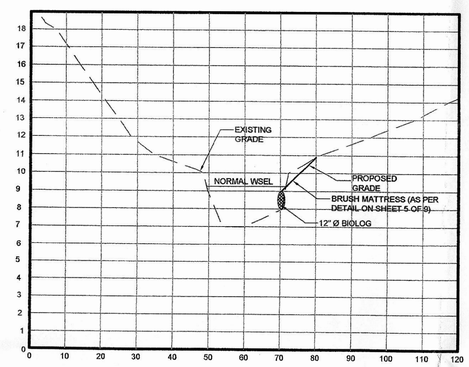
HUSKEY BROOK RESTORATION
FORT MONMOUTH
BOROUGH OF EATONTOWN
MONMOUTH COUNTY, NEW JERSEY

TITLE SHEET

DRAWN BY: GP
JOB No.: 05-092
DATE: 03/15/2006
SCALE: AS SHOWN
REVISION: 0
SHEET: 1 OF 4

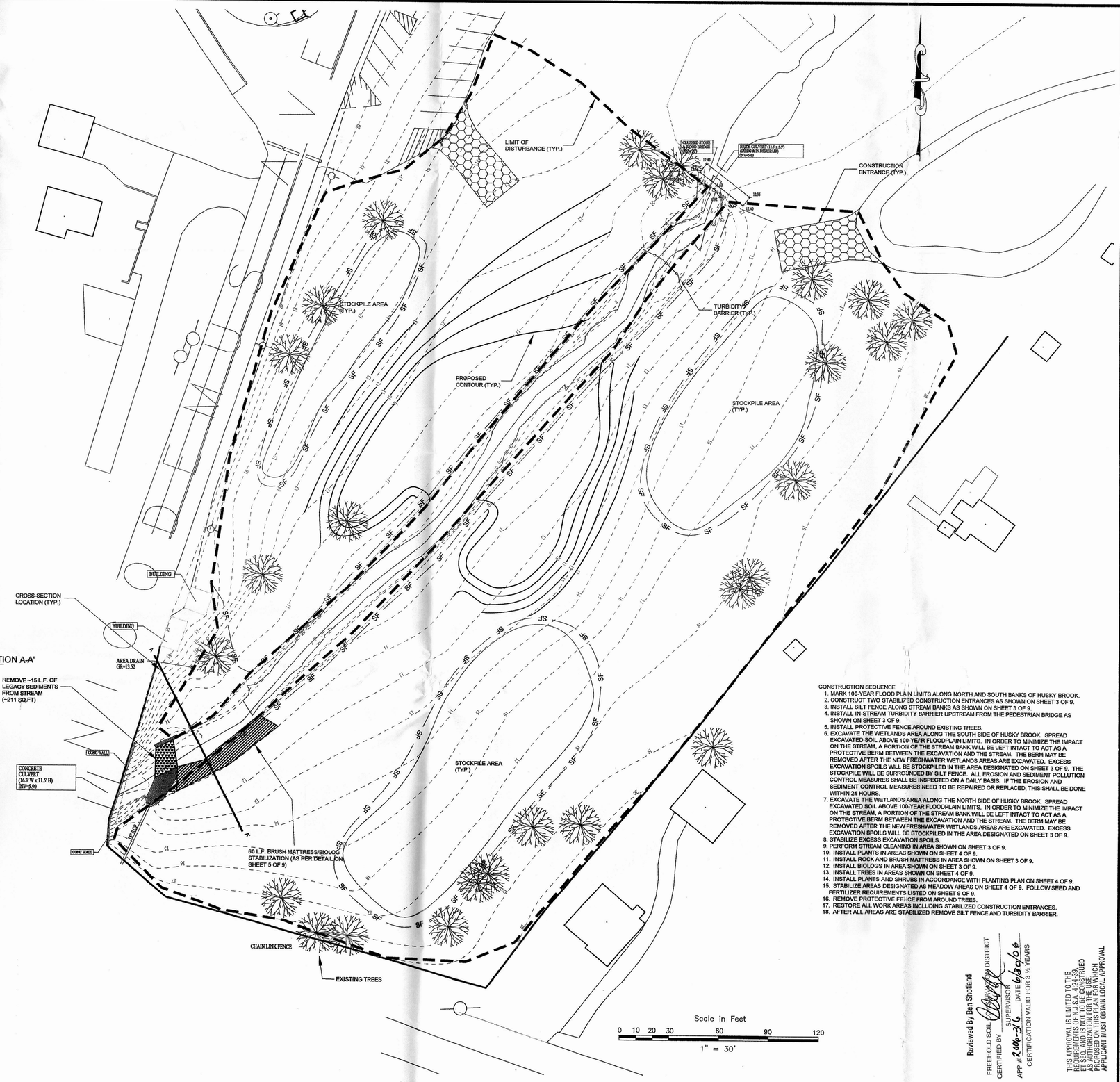
200.1e
FTMM_02.04_0539_a

Drawing name: P:\0642\Projects\0642002\CAD\Sheets - Area 1\SESC\SHEET 2 - SOIL EROSION AND SEDIMENT CONTROL PLAN.dwg Plotted on: Jun 13, 2006 - 10:22am



A BIOENGINEERING SECTION A-A'
SCALE: 1"=4'V 1"=20'H

GRAPHIC SCALE
H: 1" = 20'
V: 1" = 4'
FEET



CONSTRUCTION SEQUENCE

1. MARK 100-YEAR FLOOD PLAIN LIMITS ALONG NORTH AND SOUTH BANKS OF HUSKY BROOK.
2. CONSTRUCT TWO STABILIZED CONSTRUCTION ENTRANCES AS SHOWN ON SHEET 3 OF 9.
3. INSTALL SILT FENCE ALONG STREAM BANKS AS SHOWN ON SHEET 3 OF 9.
4. INSTALL IN-STREAM TURBIDITY BARRIER UPSTREAM FROM THE PEDESTRIAN BRIDGE AS SHOWN ON SHEET 3 OF 9.
5. INSTALL PROTECTIVE FENCE AROUND EXISTING TREES.
6. EXCAVATE THE WETLANDS AREA ALONG THE SOUTH SIDE OF HUSKY BROOK. SPREAD EXCAVATED SOIL ABOVE 100-YEAR FLOODPLAIN LIMITS. IN ORDER TO MINIMIZE THE IMPACT ON THE STREAM, A PORTION OF THE STREAM BANK WILL BE LEFT INTACT TO ACT AS A PROTECTIVE BERM BETWEEN THE EXCAVATION AND THE STREAM. THE BERM MAY BE REMOVED AFTER THE NEW FRESHWATER WETLANDS AREAS ARE EXCAVATED. EXCESS EXCAVATION SPOILS WILL BE STOCKPILED IN THE AREA DESIGNATED ON SHEET 3 OF 9. THE STOCKPILE WILL BE SURROUNDED BY SILT FENCE. ALL EROSION AND SEDIMENT POLLUTION CONTROL MEASURES SHALL BE INSPECTED ON A DAILY BASIS. IF THE EROSION AND SEDIMENT CONTROL MEASURES NEED TO BE REPAIRED OR REPLACED, THIS SHALL BE DONE WITHIN 24 HOURS.
7. EXCAVATE THE WETLANDS AREA ALONG THE NORTH SIDE OF HUSKY BROOK. SPREAD EXCAVATED SOIL ABOVE 100-YEAR FLOODPLAIN LIMITS. IN ORDER TO MINIMIZE THE IMPACT ON THE STREAM, A PORTION OF THE STREAM BANK WILL BE LEFT INTACT TO ACT AS A PROTECTIVE BERM BETWEEN THE EXCAVATION AND THE STREAM. THE BERM MAY BE REMOVED AFTER THE NEW FRESHWATER WETLANDS AREAS ARE EXCAVATED. EXCESS EXCAVATION SPOILS WILL BE STOCKPILED IN THE AREA DESIGNATED ON SHEET 3 OF 9.
8. STABILIZE EXCESS EXCAVATION SPOILS.
9. PERFORM STREAM CLEANING IN AREA SHOWN ON SHEET 3 OF 9.
10. INSTALL PLANTS IN AREAS SHOWN ON SHEET 4 OF 9.
11. INSTALL ROCK AND BRUSH MATTRESS IN AREA SHOWN ON SHEET 3 OF 9.
12. INSTALL BIOLOGS IN AREA SHOWN ON SHEET 3 OF 9.
13. INSTALL TREES IN AREAS SHOWN ON SHEET 4 OF 9.
14. INSTALL PLANTS AND SHRUBS IN ACCORDANCE WITH PLANTING PLAN ON SHEET 4 OF 9.
15. STABILIZE AREAS DESIGNATED AS MEADOW AREAS ON SHEET 4 OF 9. FOLLOW SEED AND FERTILIZER REQUIREMENTS LISTED ON SHEET 9 OF 9.
16. REMOVE PROTECTIVE FENCE FROM AROUND TREES.
17. RESTORE ALL WORK AREAS INCLUDING STABILIZED CONSTRUCTION ENTRANCES.
18. AFTER ALL AREAS ARE STABILIZED REMOVE SILT FENCE AND TURBIDITY BARRIER.

Reviewed by Ben Shotland FREEHOLD SOIL CONSERVATION DISTRICT
CERTIFIED BY _____ SUPERVISOR DATE 6/30/06
APP # 2006-36 CERTIFICATION VALID FOR 3 ½ YEARS

THIS APPROVAL IS LIMITED TO THE REQUIREMENTS OF N.J.S.A. 4:24-39 ET SEQ. AND IS NOT TO BE CONSTRUED AS AUTHORIZATION FOR THE USE PROPOSED ON THIS PLAN FOR WHICH APPLICANT MUST OBTAIN LOCAL APPROVAL

CALL BEFORE YOU DIG!
NEW JERSEY LAW REQUIRES
3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP CALL
NEW JERSEY ONE CALL SYSTEM, INC.
REFERENCE NEW JERSEY TITLE 48, CHPT. 2, ARTICLE 9
1-800-272-1000

PROJECT NOTES

PROJECT DATA SOURCES:

1. HORIZONTAL DATUM IS NAD 83 STATE PLANE NEW JERSEY (FIPS 2900). VERTICAL DATUM IS XXXX.

2. UPLAND TOPOGRAPHY INFORMATION OBTAINED FROM PROJECT DRAWINGS AS SUPPLIED BY VEETECH P.C., IN DIGITAL FORMAT.

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Jerry K. Snyder, P.E.
NEW JERSEY P.E. LICENSE GE 35935
6/14/06
DATE

DATE	DESCRIPTION

REVISIONS

STATE OF NEW JERSEY CERTIFICATE OF AUTH. NO.: 24GA27976800

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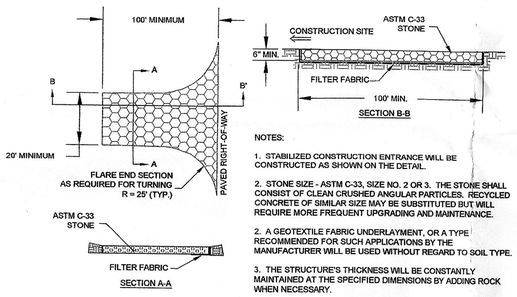
PROJECT NAME/LOCATION:
HUSKY BROOK RESTORATION
FORT MONMOUTH
BOROUGH OF EATONTOWN
MONMOUTH COUNTY, NEW JERSEY

DRAWING NAME:
SOIL EROSION AND SEDIMENT CONTROL PLAN

DATE:	MARCH 15, 2006
PROJECT NO.:	0642.002
SCALE:	AS SHOWN
DRAWN BY:	JEH
CHECKED BY:	MLP

SHEET NO. 2 OF 4



NOTES:

1. STABILIZED CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED AS SHOWN ON THE DETAIL.

2. STONE SIZE - ASTM C-33, SIZE NO. 2 OR 3. THE STONE SHALL CONSIST OF CLEAN CRUSHED ANGULAR PARTICLES. RECYCLED CONCRETE OF SIMILAR SIZE MAY BE SUBSTITUTED BUT WILL REQUIRE MORE FREQUENT UPGRADING AND MAINTENANCE.

2. A GEOTEXTILE FABRIC UNDERLAYMENT, OR A TYPE RECOMMENDED FOR SUCH APPLICATIONS BY THE MANUFACTURER WILL BE USED WITHOUT REGARD TO SOIL TYPE.

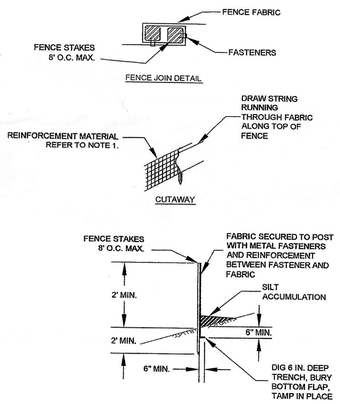
3. THE STRUCTURE'S THICKNESS WILL BE CONSTANTLY MAINTAINED AT THE SPECIFIED DIMENSIONS BY ADDING ROCK WHEN NECESSARY.

4. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2 TO 5%	100 FT	200 FT
>5%	ENTIRE SURFACE STABILIZED WITH FABC BASE COURSE **	

** AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

A STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTES:

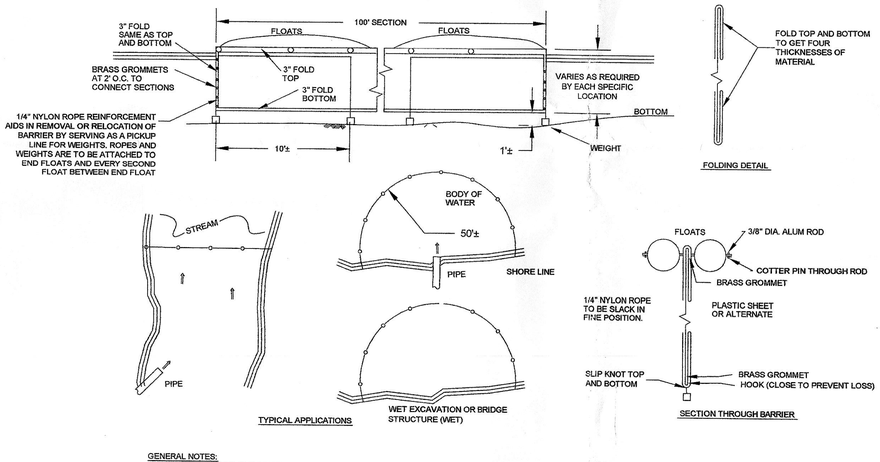
1. FENCE POSTS SHALL BE SPACED 8 FEET CENTER TO CENTER OR CLOSER. THE POSTS SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND AND EXTEND AT LEAST 2 FEET ABOVE THE GROUND AND SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1.5 INCHES.

2. A METAL FENCE WITH 6 INCH OR SMALLER OPENINGS AND AT LEAST 2 FEET HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEOTEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.

3. A GEOTEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6 INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST 2 FEET ABOVE THE GROUND. FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OR STAPLES) AND HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS, ETC.) PLACED BETWEEN THE FASTENER AND THE GEOTEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH.

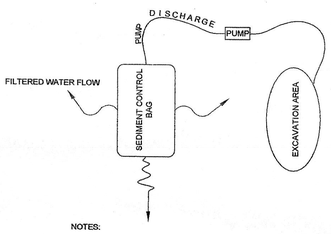
4. SEDIMENTS SHALL BE REMOVED WHEN THE ACCUMULATION HEIGHT REACHES ONE QUARTER THE GROUND HEIGHT OF THE FENCE.

B SILT FENCE DETAIL
NOT TO SCALE



GENERAL NOTES:
SILT BARRIER TO PREVENT DRIFTING OF SILT CAUSED BY DISCHARGE CONSTRUCTION, DREDGING OF FILLING OPERATIONS. EXACT PLACEMENT OF SILT BARRIER SHALL BE SO AS TO EFFECTIVELY CONTROL SILT DISPERSION UNDER THE CONDITIONS PRESENT ON A PARTICULAR PROJECT THE DETAIL SHOWN HEREON ARE SUGGESTED METHODS, ONLY ALTERNATE SOLUTIONS AND USAGE OF MATERIALS MAY BE USED AS APPROVED BY THE ENGINEER AT SHALLOW WATER LOCATIONS THE PLASTIC SHEET OR MATERIAL ALTERNATE MAY BE ATTACHED TO STAKES DRIVEN INTO THE BOTTOM IN LIEU OF FLOATS AND WEIGHTS.

F FLOATING TURBIDITY BARRIER DETAIL
NOT TO SCALE



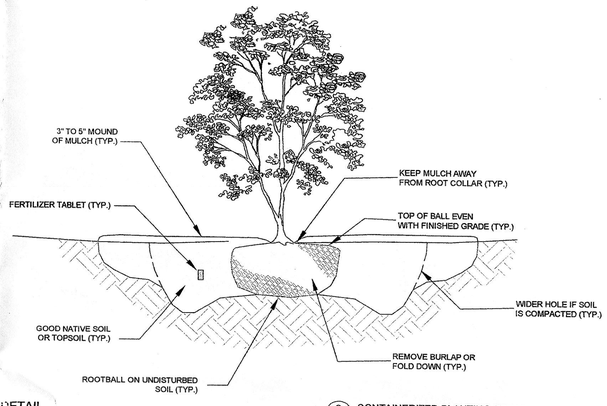
NOTES:

1. CONTAINERS SHALL BE LOCATED FOR EASE OF CLEAN-OUT AND DISPOSAL OF TRAPPED SEDIMENT AND TO MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND PEDESTRIAN TRAFFIC. BAGS SHALL NOT BE PLACED DIRECTLY INTO RECEIVING WATERS.

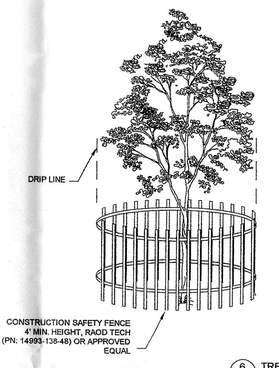
2. SEDIMENT CONTROL BAGS MUST BE LOCATED AWAY FROM RECEIVING WATERS AND DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

3. UPON PRIOR APPROVAL FROM ENGINEER, ALTERNATIVE METHODS OF DEWATERING SUCH AS DEWATERING WELL POINTS MAY BE USED.

E DEWATERING SEDIMENT BAG DETAIL
NOT TO SCALE



2 CONTAINERIZED PLANTING DETAIL
NOT TO SCALE



NOTES:

1. TO PREVENT GENERAL MECHANICAL DAMAGE TO TREES INSTALL TREE PROTECTION AS INDICATED IN DETAIL.

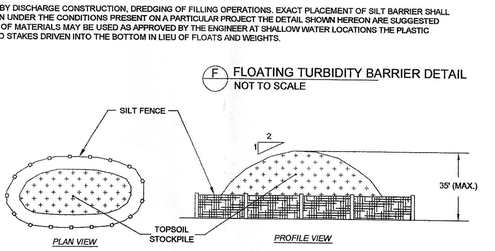
2. BOX TREES WITHIN 25 FEET OF BUILDINGS SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED AT THE DRIP LINE OF THE TREE BRANCHES OR BEYOND. TREE ROOT SYSTEMS COMMONLY EXTEND WELL BEYOND THE DRIP LINE.

3. BOARDS WILL NOT BE NAILED TO TREES DURING CONSTRUCTION.

4. FEEDER ROOTS SHOULD NOT NE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE BRANKCES.

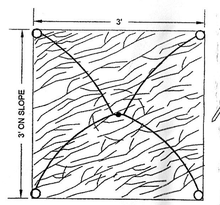
5. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT.

6 TREE PROTECTION DETAIL
NOT TO SCALE



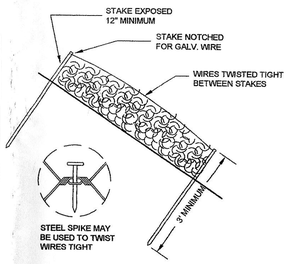
NOTE:
1. SILT FENCE MUST BE PLACED AROUND THE PERIMETER OF ALL STOCKPILES.
2. ALL STOCKPILES SHALL BE IMMEDIATELY TEMPORARY SEEDED.

G TOPSOIL STOCKPILE AREA DETAIL
NOT TO SCALE

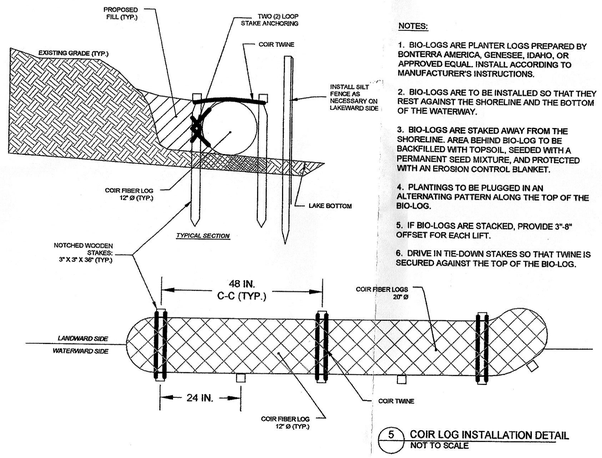


NOTES:

1. STEMS SHOULD BE CUT WITH A THICKNESS OF 1" OR LESS
2. LAY BRUSH SINGLE FASHION, WITH BUTT END UP-STREAM
3. BRUSH MATTRESS SHALL BE 4" TO 18" THICK, DEPENDING ON THE SIZE OF THE STREAM
4. WIRE TIE-DOWN SHALL BE GALVANIZED WIRE



3 BRUSH MATTRESS DETAIL
SPECIFICATIONS AND INSTALLATION
NOT TO SCALE



NOTES:

1. BIO-LOGS ARE PLANTER LOGS PREPARED BY BONTERRA AMERICA, GENESEE, IDAHO, OR APPROVED EQUAL. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

2. BIO-LOGS ARE TO BE INSTALLED SO THAT THEY REST AGAINST THE SHORELINE AND THE BOTTOM OF THE WATERWAY.

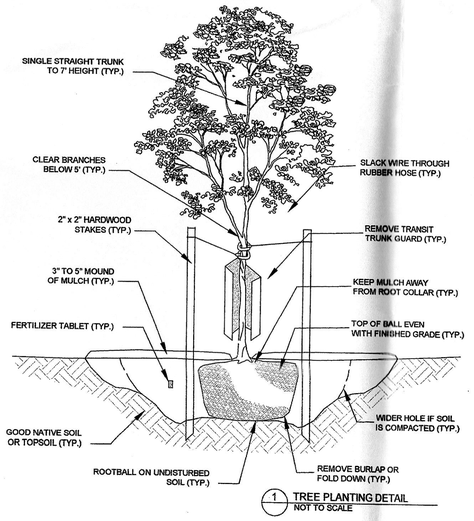
3. BIO-LOGS ARE STAKED AWAY FROM THE SHORELINE. AREA BEHIND BIO-LOG TO BE BACKFILLED WITH TOPSOIL, SEEDED WITH A PERMANENT SEED MIXTURE, AND PROTECTED WITH AN EROSION CONTROL BLANKET.

4. PLANTINGS TO BE PLUGGED IN AN ALTERNATING PATTERN ALONG THE TOP OF THE BIO-LOG.

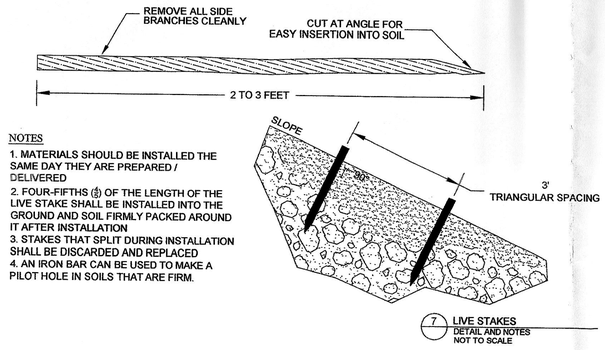
5. IF BIO-LOGS ARE STACKED, PROVIDE 3"-6" OFFSET FOR EACH LIFT.

6. DRIVE IN TIE-DOWN STAKES SO THAT TWINE IS SECURED AGAINST THE TOP OF THE BIO-LOG.

5 COIR LOG INSTALLATION DETAIL
NOT TO SCALE



1 TREE PLANTING DETAIL
NOT TO SCALE



NOTES
1. MATERIALS SHOULD BE INSTALLED THE SAME DAY THEY ARE PREPARED / DELIVERED
2. FOUR-FIFTHS (⅘) OF THE LENGTH OF THE LIVE STAKE SHALL BE INSTALLED INTO THE GROUND AND SOIL FIRMLY PACKED AROUND IT AFTER INSTALLATION
3. STAKES THAT SPLIT DURING INSTALLATION SHALL BE DISCARDED AND REPLACED
4. AN IRON BAR CAN BE USED TO MAKE A PILOT HOLE IN SOILS THAT ARE FIRM.

7 LIVE STAKES
DETAIL AND NOTES
NOT TO SCALE

CALL BEFORE YOU DIG!
NEW JERSEY LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE – STOP CALL
NEW JERSEY ONE CALL SYSTEM, INC.
REFERENCE NEW JERSEY TITLE 48, CHPT. 2, ARTICLE 9
1-800-272-1000

PROJECT NOTES

PROJECT DATA SOURCES:

1. HORIZONTAL DATUM IS NAD 83 STATE PLANE NEW JERSEY (FIPS 2900). VERTICAL DATUM IS XXXX.

2. UPLAND TOPOGRAPHY INFORMATION OBTAINED FROM PROJECT DRAWINGS AS SUPPLIED BY VEETECH P.C., IN DIGITAL FORMAT.

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Jerry K. Snyder, P.E.
NEW JERSEY P.E. LICENSE GE 35935
Jerry K. Snyder
6/14/06
DATE

DATE	DESCRIPTION

REVISIONS

STATE OF NEW JERSEY CERTIFICATE OF AUTH. NO.: 24GA27976800

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Mary L. Paist-Goldman
6/13/06
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PROJECT NAME/LOCATION:
HUSKY BROOK RESTORATION
FORT MONMOUTH
BOROUGH OF EATONTOWN
MONMOUTH COUNTY, NEW JERSEY

DRAWING NAME:
SOIL EROSION AND SEDIMENT CONTROL DETAILS

DATE:	MARCH 15, 2006
PROJECT NO.:	0642.002
SCALE:	AS SHOWN
DRAWN BY:	JEH
CHECKED BY:	MLP

SHEET NO. 3 OF 4

Drawing name: P:\0642\Projects\0642002\CAD\Sheets - Area 1\SESC\SHEET 4 - E&S NOTES.dwg Plotted on: Jun 13, 2006 - 10:21am

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

DEFINITION:
ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOILS WHERE PERENNIAL VEGETATION IS NEEDED FOR LONG TERM PROTECTION.

PURPOSE:
TO PERMANENTLY STABILIZE THE SOIL, ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

WATER QUALITY ENHANCEMENT:
SLOWS THE OVERLAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OTHER STORMWATER CONVEYANCES.

WHERE APPLICABLE:
ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

METHODS AND MATERIALS:

1. SITE PREPARATION

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING ("STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", THE NEW JERSEY STATE SOIL CONSERVATION COMMITTE, JULY, 1999, PAGE 19-1.)

B. IMMEDIATELY PRIOR TO TOPSOILING, THE SURFACE SHOULD BE SCARIFIED 6 TO 12 INCHES WHERE THERE HAS BEEN SOIL COMPACTION. THIS WILL HELP ENSURE A GOOD BOND BETWEEN THE TOPSOIL AND SUBSOIL. *THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.)*

C. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42, "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", THE NEW JERSEY STATE SOIL CONSERVATION COMMITTEE, JULY 1999.

2. SEEDBED PREPARATION

A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE IN ACCORDANCE WITH TABLE 4-1 AND THE RESULTS OF SOIL TESTING. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. TABLE 4-1 IS A GENERAL GUILDLINE FOR LIMESTONE APPLICATION RATES.

B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.

C. IMMEDIATELY PRIOR TO TOPSOILING, THE SURFACE SHOULD BE SCARIFIED 6 TO 12 INCHES WHERE THERE HAS BEEN SOIL COMPACTION. THIS WILL HELP ENSURE A GOOD BOND BETWEEN THE TOPSOIL AND SUBSOIL. *THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.)*

D. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS RECOMMENDED. SOILS WITH A Ph OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A pH OF 5.0 OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL, ("STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", THE NEW JERSEY STATE SOIL CONSERVATION COMMITTEE, JULY 1999, PAGE 1-1.)

3. SEEDING

A. USE THE PROPER MIXTURE AS INDICATED IN TABLE 4-3 OR USE A MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED.

1. SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE INSPECTION. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDBED AREA AND MOWED ONCE.
2. WARM SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85°F AND ABOVE. SEE TABLE 4-3, MIXTURES 1 TO 7. PLANTING RATES FOR WARM SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
3. COOL SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT LOW TEMPERATURES, GENERALLY BELOW 85°F. SEE TABLE 4-3, MIXTURES 8 TO 20. ADJUSTMENT OF PLANTING RATES FOR COOL SEASON GRASSES FOR THE AMOUNT OF PURE LIVE SEED (PLS) IS NOT REQUIRED.

B. **CONVENTIONAL SEEDING** IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.

C. **HYDROSEEDING** IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH **SHALL NOT** BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION IV MULCHING BELOW) HYDROSEEDING IS **NOT PREFERRED SEEDING METHOD** BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.

D. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED TO SOIL CONTACT, RESOTRE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. **THIS IS THE PREFERRED METHOD**. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

4. MULCHING

MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED IN COMPLIANCE WITH THIS MULCHING REQUIREMENT.

A. **STRAW OR HAY.** UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR SALT HAY TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMER IS USED INSTEAD OF LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS **MUST NOT** GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.

APPLICATION. SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

ANCHORING. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND AND WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE TURNS.
2. MULCH NETTINGS. STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOVED.
3. CRIMPER (MULCH ANCHORING COULTER TOOL). A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LON FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO ADHESIVE AGENT IS REQUIRED.
4. LIQUID MULCH BINDERS. MAY BE USED TO ANCHOR SALT HAY, HAY AND STRAW MULCH.
   a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
   b. USE ONE OF THE FOLLOWING:
      (1) EMULSIFIED ASPHALT (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, AND CRS-2). APPLY 0.04 GALLONS PER SQUARE YARD OR 194 GALLONS PER ACRE ON FLAT AREAS AND ON SLOPES LESS THAN 8 FEET OF MORE HIGH, USE 0.075 GALLONS PER SQUARE YARD OR 363 GALLONS PER ACRE. THESE MATERIALS MAY BE DIFFICULT TO APPLY UNIFORMLY AND WILL DISCOLOR SURFACES.
      (2) ORGANIC AND VEGETABLE BASED BINDERS. NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURFGRASS. USE AT A RATE AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. **MANY NEW PRODUCTS AREA AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.**
      (3) SYNTHETIC BINDERS. HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH, DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.
      NOTE: NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION (CONT.)

B. **WOOD FIBER OR PAPER FIBER MULCH.** SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS **LIMITED** TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

C. **PELLETIZED MULCH.** COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 POUNDS PER 1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

5. IRRIGATION (WHERE FEASIBLE)

IF SOIL IS DEFICIENT, AND MULCH IS NOT USED, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

6. TOPDRESSING

SINCE LOW RELEASE NITROGEN FERTILIZER (WATER SOLUBLE) IS PRESCRIBED IN SECTION II.A. SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE WHERE GROSS NITROGEN DEFICIENCY EXISTS TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 400 POUNDS PER 1,000 SQUARE FEET.

7. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION

THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARATION THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 ARE REQUIRED WHEN A **REPORT OF COMPLIANCE** IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A **REPORT OF COMPLIANCE** FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. **ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE.**

PERMANENT VEGETATIVE SEED MIXTURE FOR SOIL STABILIZATION FOR SOIL DISPOSAL LOCATION

1. SEED MIXTURE AS DERIVED FROM "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", TABLE 4-2 & 4-3, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION STANDARD, AS DEFINED BY ZONE 7a.

RELAVENT PORTION OF TABLE 4-3:

A. SEED NAME	QTY.	
DEERTONGUE OR	51	LBS/ACRE
SWITCHGRASS	69	LBS/ACRE
REDTOP	21	LBS/ACRE
PLUS BIRDSFOOT TREFOIL	34	LBS/ACRE

STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS

DEFINITION:
IDENTIFYING HIGH ACID PRODUCING SOIL WHICH MAY BE EXPOSED DURING EXCAVATION AN LAND GRADING ACTIVITIES AND PRACTICES FOR ITS BURIAL. HIGH ACID PRODUCING SOILS WITH A pH OF 4 OR LESS OR CONTAIN IRON SULFIDE.

PURPOSE:
TO PREVENT PR LIMIT EXPOSURE, EXPOSURE IME AND SPREADING BY EQUIPMENT OR RAINFALL ON AND OFF SITE AND MINIMIZE EROSION, SEDIMENTATION AND ACID LEACHATE RELATED DAMAGES.

WATER QUALITY ENHANCEMENT:
PROTECTS ON SITE SOILS AND OFFSITE STREAMS AND LAKES FROM SULFURIC ACID LEACHATE WHICH CREATES SOIL pH CONDITIONS UNSUITABLE FOR GROWTH OF VEGETATION.

CONDITIONS WHERE PRACTICES APPLIES:
THIS PRACTICE IS APPLICABLE TO ANY HIGH ACID PRODUCING SOIL MATERIALS. SUCH MATERIALS HAVE BEEN FOUND IN THE COASTAL PLAIN AREAS OF BURLINGTON, CAMDEN, GLOUCESTER, MERCER, MIDDLESEX, MONMOUTH, OCEAN AND SSALEM COUNTIES.

PLANNING CRITERIA:
EARLY RECOGNITION AND BURIAL, REMOVAL, OR DISPOSAL OF HIGH ACID PRODUCING SOILS IS ESSENTIAL FOR LIMITING THE AMOUNT OF ACIDIC MATERIAL PRODUCED.

REVIEW A SURFACE GEOLOGY MAP FOR THE PROPOSED SITE TO INVESTIGATE THE PRESENCE OF GEOLOGIC FORMATIONS WHICH COMMONLY CONTAIN HIGH ACID PRODUCING DEPOSITS. THE GEOLOGIC FORMATIONS ARE AS FOLLOWS:

ENGLISHTOWN SAND	NAVESINK FORMATION
KIRKWOOD FORMATION	RARITAN FORMATION
MAGOTHY FORMATION	RED BANK SAND
MARSHALLTOWN FORMATION	WOODBURY CLAY
MERCHANTVILLE FORMATION	

METHODS AND MATERIALS:

1. LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID PRODUCING SOILS ARE ENCOUNTERED.

2. TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOILS.

3. STOCKPILES OF HIGH ACID PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THE MATERIAL HAS A HIGH CLAY CONTENT.

4. TEMPORARILY STOCKPILED HIGH ACID PRODUCING SOIL MATERIAL TO BE EXPOSED MORE THAN 30 DAYS SHOULD BE COVERED WITH PROPERLY ANCHORED , HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE TO BE INSTALLED AT THE TOE OF SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID PRODUCING SOIL.

5. HIGH ACID PRODUCING SOILS WITH A pH OF 4 OR LESS, OR CONTAINING IRON SULFIDE, (INCLUDING BORROW FROM CUTS) SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT A RATE OF 6 TONS PER ACRE (OR 275 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A pH OF 5 OR MORE EXCEPT AS FOLLOWS:

a. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A pH OF 5 OR MORE.

b. DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES AND OTHERS TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

6. EQUIPMENT USED FOR MOVEMENT OF HIGH ACID PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.

7. NON VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SILT FENCE, WOODCHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID PRODUCING SOILD FROM, AROUND OR OFF THE SITE.

8. FOLLOWING BURIAL OR REMOVAL OF HIGH ACID PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING, SAME SHEET) MONITORING SHOULD CONTINUE FOR APPROXIMATELY 6 TO 12 MONTHS TO ASSURE THERE IS ADEQUATE STABILIZATION AND THAT NO SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

9. MONITORING OF AREAS WHERE HIGH ACID PRODUCING SOIL HAS BEEN PLACED OR BURIED SHOULD BE PERFORMED FOR AT LEAST 2 YEARS OR LONGER IF PROBLEMS OCCUR, TO ASSURE THERE IS NO MIGRATION OF POTENTIAL ACID LEACHATE.

TABLE 4-3

PERMANENT VEGETATIVE MIXTURES, PLANTING RATES AND PLANTING DATES

SEED MIXTURE	PLANTING RATE		PLANTING DATES (O = OPTIMAL PLANTING PERIOD, A = ACCEPTABLE PLANTING PERIOD) — PLANT HARDINESS ZONES (SEE FIGURE 4-1)[1]									MAINTENANCE LEVEL /4	REMARKS
			ZONE 5B, 6A			ZONE 6B			ZONE 7A, 7B				
	LBS/ACRE	LBS/1000 SQ FT	3/15-5/31	6/1-7-31	8/1-10/31	3/1-4/30	5/1-8/14	8/15-11/15	2/1-4/30	5/1-8/14	8/15-11/30		
WARM SEASON SEED MIXTURES													
5. SWITCHGRASS BIG BLUESTERN LITTLE BLUESTERN SAND LOVEGRASS COASTAL PANICGRASS	10 5 5 4 10	.25 .10 .10 .10 .25	O			O			O			C-D	NATIVE WARM-SEASON MIXTURE

1. SEE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", THE NEW JERSEY STATE SOIL CONSERVATION COMMITTEE, JULY 1999, PAGE 4-7

TOTAL DISTURBANCE:
3.57 ACRES

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

DEFINITION:
ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON SOILS FOR PERIODS OF TWO TO 6 MONTHS WHICH ARE NOT BEING GRADED, NOT UNDER ACTIVE CONSTRUCTION OR NOT SCHEDULED FOR PERMANENT SEEDING WITHIN 60 DAYS.

PURPOSE:
TO TEMPORARILY STABILIZE THE SOIL AND REDUCE DAMAGE FROM WIND AND WATER EROSION UNTIL PERMANENT STABILIZATION IS ACCOMPLISHED.

WATER QUALITY ENHANCEMENT:
PROVIDES TEMPORARY PROTECTION AGAINST THE IMPACTS OF WIND AND RAIN, SLOWS THE OVER LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OTHER STORMWATER CONVEYANCES.

WHERE APPLICABLE:
ON EXPOSED SOILS THAT HAVE THE POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

METHODS AND MATERIALS:

1. SITE PREPARATION

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, 19-1.

B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

2. SEEDBED PREPARATION

A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS COOPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. TABLE 7-1 IS A GENERAL GUIDELINE FOR LIMESTONE APPLICATION.

TABLE 7-1

LIMESTONE[1] APPLICATION RATE BY SOIL TEXTURE

SOIL TEXTURE	TONS / ACRE	LBS. / 1000 SQ. FT.
CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND, SAND	1	45

1 PULVERIZED DOLOMITIC LIMESTONE IS PREFERRED FOR MOST SOILS SOUTH OF THE NEW BRUNSWICK - TRENTON LINE.

B. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.

C. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.

D. SOILS IN HIGH SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS.

3. SEEDING

A. SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2

STANDARD FOR DUST CONTROL

DEFINITION:
THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS.

PURPOSE:
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCED ON-SITE AND OFF-SITE DAMAGE AND HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

WATER QUALITY ENHANCEMENT:
SEDIMENTS DEPOSITED AS "DUST" ARE OFTEN FINE COLLOIDAL MATERIAL WHICH IS EXTREMELY DIFFICULT TO REMOVE FROM WATER ONCE IT BECOMES SUSPENDED. USE OF THIS STANDARD WILL HELP TO CONTROL THE GENERATION OF DUST FROM CONSTRUCTION SITES AND SUBSEQUENT BLOWING AND DEPOSITION INTO LOCAL SURFACE WATER RESOURCES.

CONDITIONS WHERE PRACTICES APPLIES:
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON-SITE AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT. CONSULT WITH LOCAL MUNICIPAL ORDINANCES ON ANY RESTRICTIONS.

PLANNING CRITERIA:
THE FOLLWOING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

SPRAY-ON ADHESIVES: ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPREAD	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS.		
ACIDEULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE: TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING: SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS: SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE: SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.

STONE: COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

FREEHOLD SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE FREEHOLD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED SEVENTY-TWO (72) HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.

2. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL OF NEW JERSEY.

3. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.

4. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.

5. IN THAT NJSA 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE PROVISIONS OF THE CERTIFIED PLAN FOR EROSION CONTROL HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES. ALL SITE WORK AND ALL WORK AROUND INDIVIDUAL LOTS IN SUBDIVISIONS, WILL HAVE TO BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.

6. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN THIRTY (30) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 TONS PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.

7. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 1 1/2 TO 2 TONS PER ACRE, ACCORDING TO STATE STANDARDS.

8. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.

9. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION CONTINUES (I.E. SLOPES GREATER THAN 3:1).

10. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF ONE INCH TO TWO INCH (1"-2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.

11. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.

12. PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.

13. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.

14. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE COVERED WITH A MINIMUM OF TWELVE (12) INCHES OF SOIL HAVING A PH OF 5 OR MORE PRIOR TO SEEDBED PREPARATION. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF TWENTY-FOUR (24) INCHES OF SOIL HAVING A PH OF 5 OR MORE.

15. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.

16. UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.

17. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET, TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST CONTROL.

18. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 5,000 SQUARE FEET IS DISTURBED.

19. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.

20. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

STANDARD FOR LAND GRADING

DEFINITION:
RESHAPING THE GROUND SURFACE BY GRADING TO PLANNED ELEVATIONS WHICH ARE DETERMINED BY TOPOGRAPHIC SURVEY AND LAYOUT.

PURPOSE:
THE PRACTICE IS FOR ONE OR MORE OF THE FOLLOWING: PROVIDE MORE SUITABLE SITES FOR LAND DEVELOPMENT; IMPROVE SURFACE DRAINAGE AND CONTROL EROSION.

CONDITIONS WHERE PRACTICES APPLIES:
THIS PRACTICE IS APPLICABLE WHERE GRADING TO PLANNED ELEVATIONS IS PRACTICAL AND IT IS DETERMINED THAT GRADING IS NEEDED. GRADING THAT INVOLVES THE DISTURBANCE OF VEGETATION OVER LARGE AREAS SHALL BE AVOIDED. IT MAY BE NECESSARY TO PROVIDE TEMPORARY STABILIZATION OVER LARGE AREAS.

WATER QUALITY ENHANCEMENT:
PROPER GRADING OF DISTURBED SITES WILL PROTECT AGAINST SOIL LOSS FROM EROSION, ENHANCE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER AND HELP TO PROPERLY MANAGE STORMWATER RUNOFF ALL OF WHICH WILL REDUCE OFFSITE DISCHARGE OF POLLUTANTS.

PLANNING CRITERIA:
EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE STANDARD CONTAINED HEREIN. THE CUT FACE OF EARTH EXCAVATIONS AND FILLS SHALL BE NO STEEPER THAN THE SAFE ANGLE OF REPOSE FOR THE MATERIALS ENCOUNTERED AND FLAT ENOUGH FOR MAINTENANCE AND WILL BE NO GREATER THAN TWO (2) HORIZONTAL TO ONE (1) VERTICAL IN ANY SITUATION. PERMANENTLY EXPOSED FACES OF EARTH CUTS AND FILLS SHALL BE VEGETATED OR OTHERWISE PROTECTED EROSION. PROVISIONS SHALL BE MADE TO SAFELY CONDUCT SURFACE WATER TO STORM DRAINS OR SUITABLE WATER COURSES AND PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES. ADJACENT PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS.

TABLE 7-2

TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH

SEED SELECTION	SEEDING RATE[1] (POUNDS)		OPTIMUM SEEDING DATE[2] BASED ON PLANT HARDINESS ZONE[3]			OPTIMUM SEEDING DEPTH[4] (INCHES)
	PER ACRE	PER 1000 SQ. FT.	ZONE 5b, 6s	ZONE 6b	ZONE[4] 7a,b	
COOL SEASON GRASSES						
1. PERENNIAL RYEGRASS	100	1.0	3/15 - 6/1 8/1 - 9/15	3/1 - 5/15 8/15 - 10/1	2/15 - 5/1 8/15 - 10/15	0.5
2. SPRING OATS	86	2.0	3/15 - 6/1 8/1 - 9/15	3/1 - 5/15 8/15 - 10/1	2/15 - 5/1 8/15 - 10/15	1.0
3. WINTER BARELY	96	2.2	8/1 - 10/1	8/15 - 10/1	8/15 - 10/15	1.0
4. WINTER CEREAL RYE	112	2.8	8/1 - 11/1	8/1 - 11/15	8/1 - 12/15	1.0
WARM SEASON GRASSES						
1. PEARL MILLET	20	0.5	6/1 - 8/1	5/15 - 8/15	5/1 - 9/1	1.0
2. MILLET (GERMAN OR HUNGARIAN)	30	0.7	6/1 - 8/1	5/15 - 8/15	5/1 - 9/1	1.0
3. WEEPING LOVEGRASS	5	0.2	6/1 - 8/1	5/15 - 8/15	5/1 - 9/1	0.25

1 SEEDING RATE FOR WARM SEASON GRASS, SELECTIONS 5-7 SHALL BE ADJUSTED TO REFLECT THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY A GERMINATION TEST RESULT. NO ADJUSTMENT IS REQUIRED FOR COOL SEASON GRASSES.

2 MAY BE PLANTED THROUGHOUT SUMMER IF SOIL MOISTURE IS ADEQUATE OR SEEDED AREA CAN BE IRRIGATED.

3 TWICE THE DEPTH FOR SANDY SOILS.

4 THIS PROJECT IS LOCATED IN ZONE 7a, AS INDICATED IN FIGURE 4-1, "PLANT HARDINESS ZONES", "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", THE NEW JERSEY STATE SOIL CONSERVATION COMMITTEE, JULY 1999, PAGE 4-15.

CALL BEFORE YOU DIG!
NEW JERSEY LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE – STOP CALL
NEW JERSEY ONE CALL SYSTEM, INC.
REFERENCE NEW JERSEY TITLE 48, CHPT. 2, ARTICLE 9
1-800-272-1000

PROJECT NOTES

PROJECT DATA SOURCES:

1. HORIZONTAL DATUM IS NAD 83 STATE PLANE NEW JERSEY (FIPS 2900). VERTICAL DATUM IS XXXX.

2. UPLAND TOPOGRAPHY INFORMATION OBTAINED FROM PROJECT DRAWINGS AS SUPPLIED BY VEETECH P.C., IN DIGITAL FORMAT.

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DATE	DESCRIPTION

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PROJECT NAME/LOCATION:
HUSKY BROOK RESTORATION
FORT MONMOUTH
BOROUGH OF EATONTOWN
MONMOUTH COUNTY, NEW JERSEY

DRAWING NAME:
SOIL EROSION AND SEDIMENT CONTROL NOTES

DATE:	MARCH 15, 2006
PROJECT NO.:	0642.002
SCALE:	AS SHOWN
DRAWN BY:	JEH
CHECKED BY:	MLP