

Standard for Topsoil

- 1. Materials**
A. Topsoil should be friable, loamy, free of debris, objectionable weeds and stones, and contain no toxic substance or adverse chemical or physical condition that may be harmful to plant growth. Suitable soils should not be excessive (conductivity less than 0.5 millimhos per centimeter. More than 0.5 millimhos may decrease seedlings and adversely impact growth). Imported topsoil shall have a minimum organic matter content of 2.75 percent. Organic matter content may be raised by additives.
B. Topsoil substitute is a soil material which may have been amended with sand, silt, clay, organic matter, fertilizer or lime and the appearance of topsoil. Topsoil substitutes may be utilized on sites with insufficient topsoil for establishing permanent vegetation. All topsoil substitute materials shall meet the requirements of topsoil noted above. Tests shall be performed to determine the components of sand, silt, clay, organic matter, soluble salts and pH level.
- 2. Storage and Stockpiles**
A. Field exploration should be made to determine whether quantity and quality of surface soil justify striping.
B. Striping shall be confined to the immediate construction area.
C. Where feasible, time may be applied before striping at a rate determined by soil tests to bring the soil pH to approximately 6.5.
D. A 4-6 inch striping depth is common, but may vary depending on the particular soil.
E. Stockpiles of topsoil should be situated so as not to obstruct natural drainage or cause off-site environmental damage.
F. Stockpiles should be vegetated in accordance with standards of Permanent or Temporary Vegetative Cover for Soil Stabilization. Weeds should not be allowed to grow on stockpiles.
- 3. Site Preparation**
A. Grade at the onset of the optimal seeding period so as to minimize the duration and area of exposure of disturbed soil to erosion. Immediately following initial disturbance or rough grading, all critical areas subject to erosion, (i.e. soil stockpiles, steep slopes and roadway embankments) will receive temporary seeding in combination with straw or a suitable equivalent, and a mulch anchor, in accordance with State Standards.
B. 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.
C. The Standard for Stabilized Construction Access requires the installation of a pad of clean crushed stone at points where temporary access is required for construction. Where interior roadways are paved, individual lots require a stabilized construction entrance consisting of one inch to two inch (1" to 2") aggregate for a minimum length of ten feet 10' equal to the lot entrance width. All other access points shall be blocked off.
D. All soil washed, dropped, spilled or tracked outside the limit of disturbance or onto public right-of-ways will be removed immediately.
E. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading.
F. At the time the site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will provide a suitable environment to support 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.
G. 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 ultimately placed or buried with limestone applied at the rate of 10 tons/acre, (or 450lbs/1,000 sq ft of surface area) and covered with a minimum of twelve (12) inches of settled soil with a pH of 5 or more or twenty-four (24) inches where trees or shrubs are to be planted.

Soil De-Compaction and Testing Requirements

- 1. Subgrade soils prior to the application of topsoil** (See permanent seeding and stabilization notes for topsoil requirements) shall be free of excessive compaction to a depth of 6.0 inches to enhance the establishment of permanent vegetative cover.
 - 2. Areas of the site which are subject to compaction testing and/or mitigation** are geographically denoted on the certified soil erosion control plan.
 - 3. Compaction testing locations** denoted on the plan. A copy of the plan or portion of the plan shall be used to mark locations of tests, and attached to the construction remediation form, available from the local soil conservation district. This form must be filed out and submitted prior to receiving a certificate of compliance from the district.
 - 4. In the event that testing indicates compaction in excess of the maximum thresholds indicated for the simplified testing methods** (see details below), the contractor/owner shall have the option to perform either (1) compaction mitigation over the entire mitigation area denoted on the plan (excluding exempt areas), or (2) perform additional, more detailed testing to establish the limits of excessive compaction whereupon only the excessively compacted areas would require compaction mitigation. Additional detailed testing shall be performed by a trained, licensed professional.
- Compaction Testing Methods**
- A. Probing wire test (see detail)
 - B. Hand-held penetrometer test (see detail)
 - C. Bulk density test (licensed professional engineer required)
 - D. Nuclear density test (licensed professional engineer required)
- Note:** additional testing methods which conform to ASTM standards and specifications, and which produce a dry weight, soil bulk density measurement may be allowed subject to District approval.
- Soil compaction testing is not required if:** when subsoil compaction is indicated by a penetrometer (1/2" minimum depth) or similar) is proposed as part of the sequence of construction.
- Procedures for soil compaction mitigation**
Procedures shall be used to mitigate excessive soil compaction prior to placement of topsoil and establishment of permanent vegetative cover.
- Restoration of compacted soils shall be through deep scarification (tillage) (2" minimum depth)** where there is no danger to underground utilities (cables, irrigation systems, etc.). In the alternative, another method as specified by a NJ licensed professional engineer may be substituted subject to district approval.

SOIL EROSION AND SEDIMENT CONTROL NOTES

- The Borough of Sayreville shall be notified forty-eight (48) hours in advance of any land disturbance activity.
- All Soil Erosion and Sediment Control practices are to be installed prior to soil disturbance, or in their proper sequence, and maintained until permanent protection is established.
- 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 Borough for Re-certification. The revised plans must meet all current State Soil Erosion and Sediment Control Standards.
- N.J.S.A. 4:24-39 et. Sec. requires that no Certificates of Occupancy be issued before the Borough determines that a project or portion thereof is in full compliance with the Certified Plan and Standards for Soil Erosion and Sediment Control to New Jersey and a Report of Compliance has been issued. Upon written request from the applicant, the Borough may issue a Report of Compliance with conditions on a lot-by-lot or section-by-section basis, provided that the project or portion thereof is in satisfactory compliance with the sequence of development and temporary measures for soil erosion and sediment control have been implemented including provisions for stabilization and site work.
- Any disturbed areas that will be left exposed more than sixty (60) days, and not subject to construction traffic, will immediately receive a temporary seeding. If the section 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 the Standard for Stabilization with Sod Only.
- Immediately following initial disturbance or rough grading, all critical areas subject to erosion, (i.e. soil stockpiles, steep slopes and roadway embankments) will receive temporary seeding in combination with straw or a suitable equivalent, and a mulch anchor, in accordance with State Standards.
- 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.
- The Standard for Stabilized Construction Access requires the installation of a pad of clean crushed stone at points where temporary access is required for construction. Where interior roadways are paved, individual lots require a stabilized construction entrance consisting of one inch to two inch (1" to 2") aggregate for a minimum length of ten feet 10' equal to the lot entrance width. All other access points shall be blocked off.
- All soil washed, dropped, spilled or tracked outside the limit of disturbance or onto public right-of-ways will be removed immediately.
- Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading.
- At the time the site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will provide a suitable environment to support 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.
- 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 ultimately placed or buried with limestone applied at the rate of 10 tons/acre, (or 450lbs/1,000 sq ft of surface area) and covered with a minimum of twelve (12) inches of settled soil with a pH of 5 or more or twenty-four (24) inches where trees or shrubs are to be planted.
- Conduit Outlet Protection must be installed at all required outlets prior to the drainage system becoming operational.
- 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.
- 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.
- Stockpile and staging locations established in the field shall be placed within the limit of disturbance according to the Certified Plan. Staging and stockpiles 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.
- All soil stockpiles are to be temporarily stabilized in accordance with Soil Erosion and Sediment Control note #6.
- 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.
- All soil erosion and sediment control methods and materials shall be in accordance with the requirements and recommendations within the Standards for Soil Erosion and Sediment Control in New Jersey.

SLOPE STABILIZATION STANDARDS

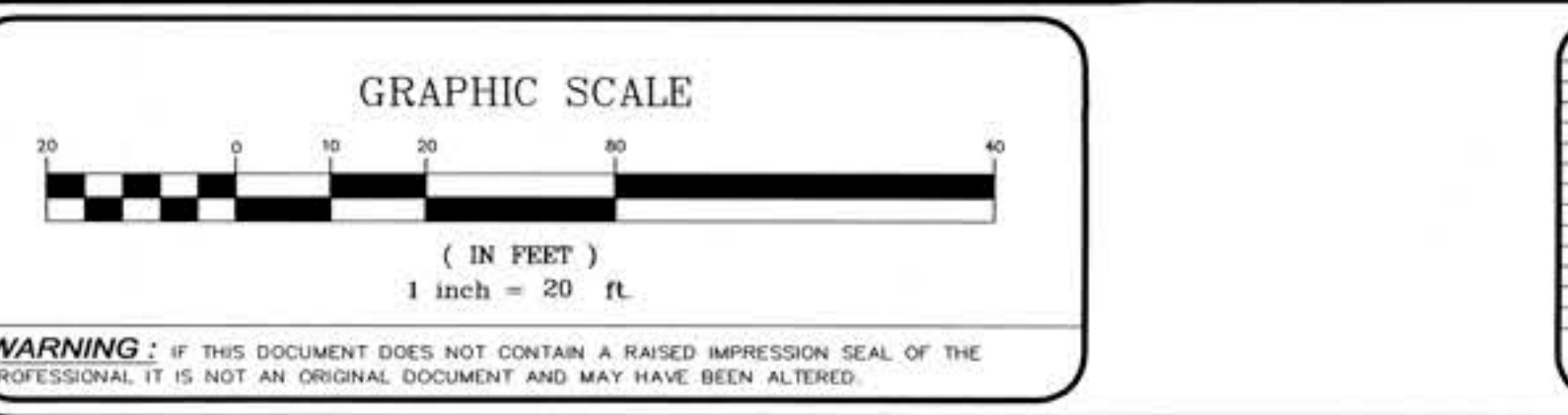
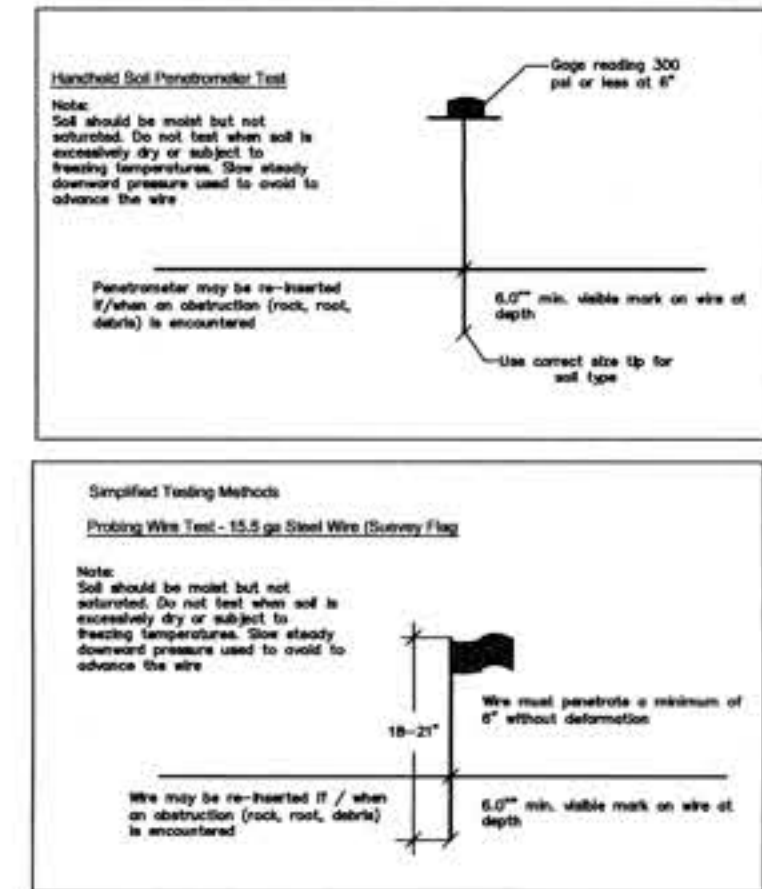
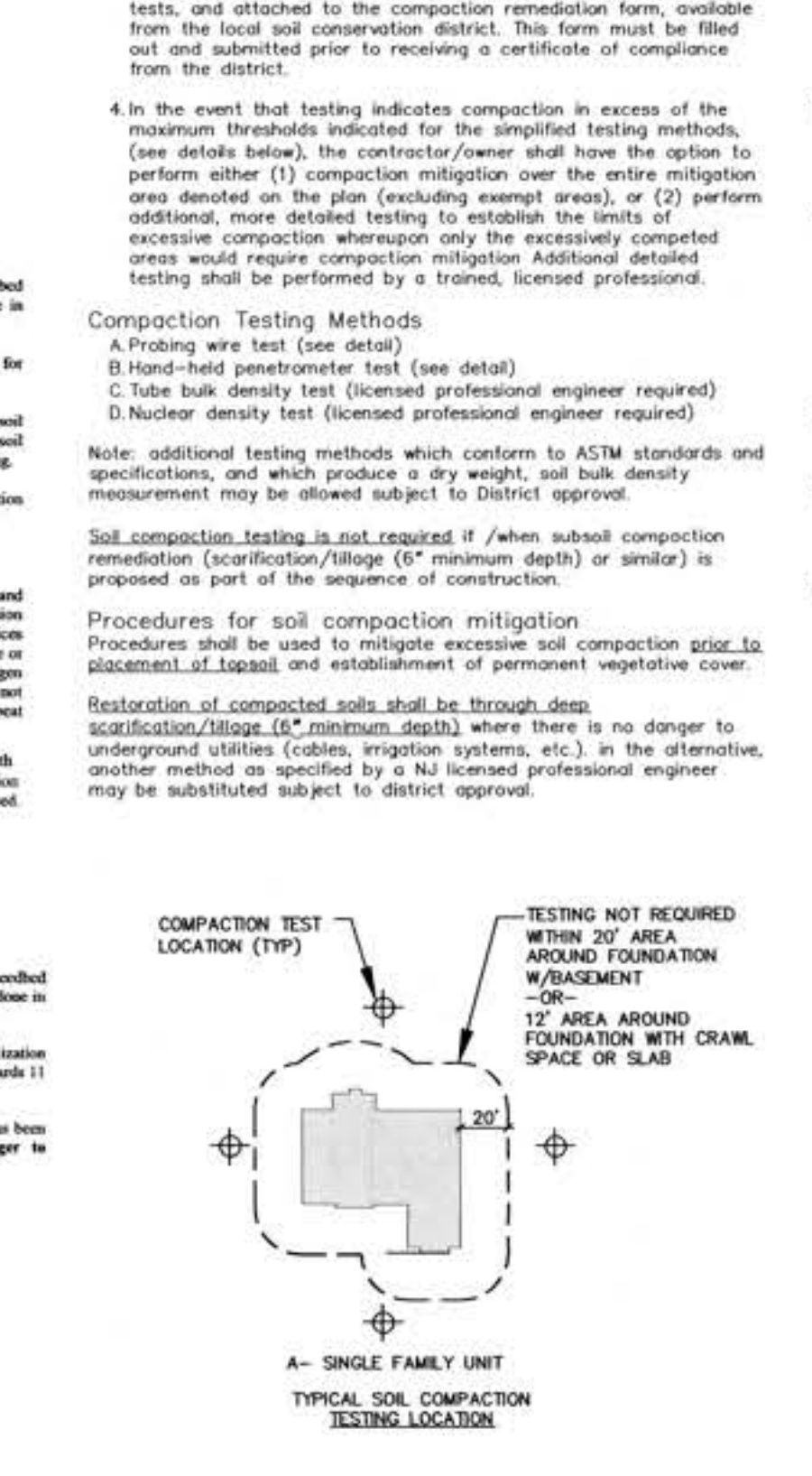
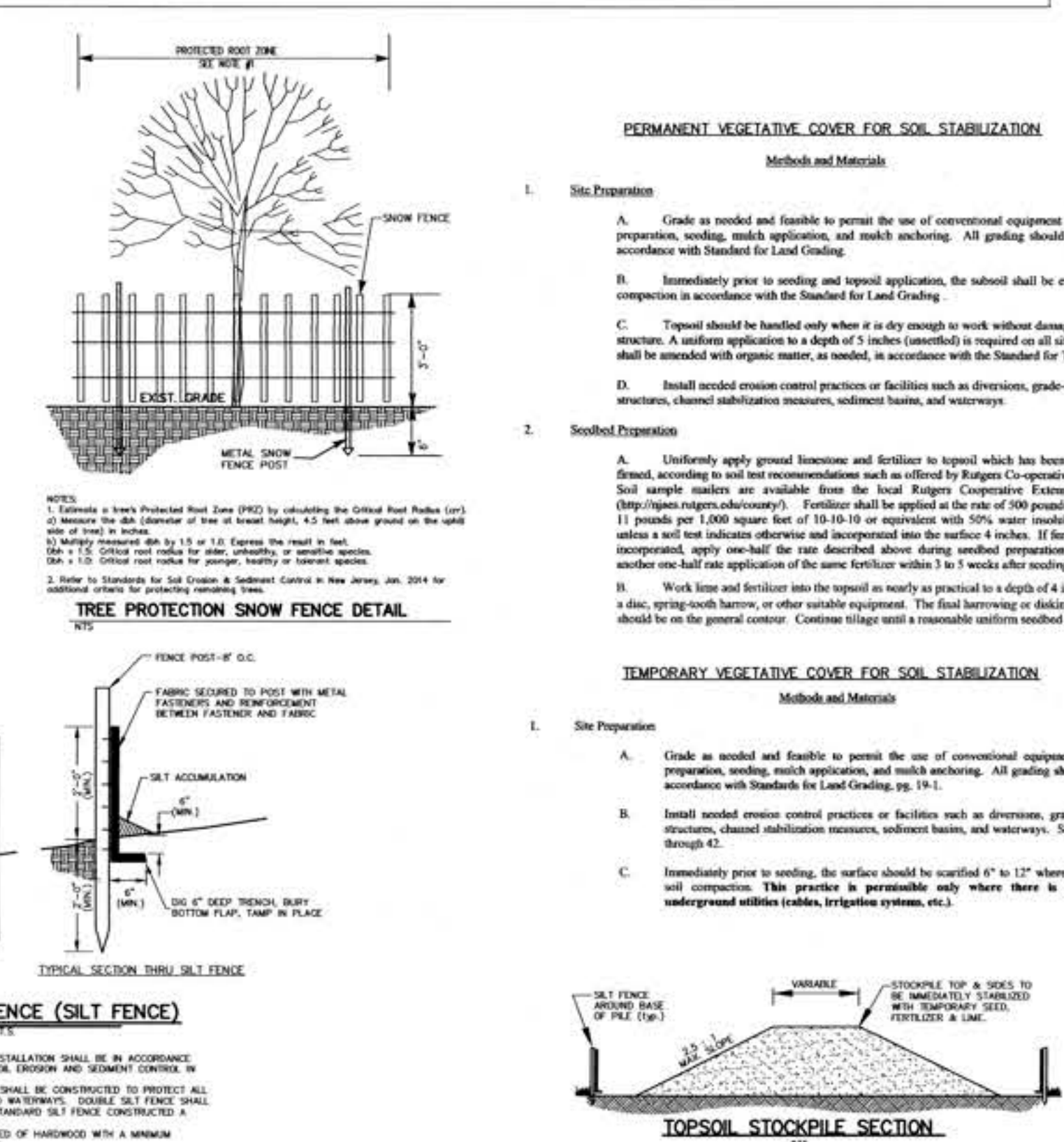
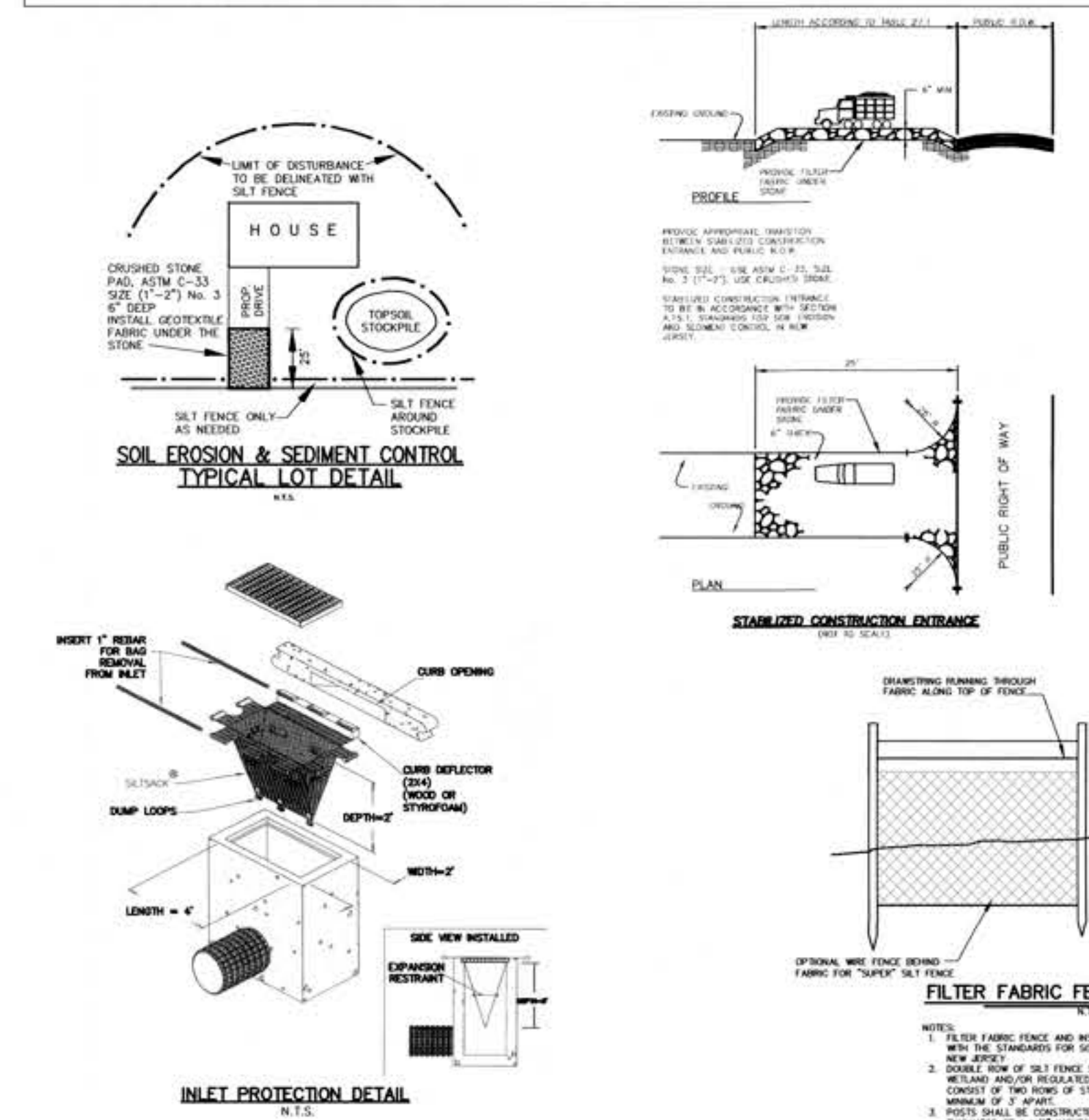
- Grade slopes as per plan.
- Apply Limestone at a rate of approximately 2 tons/acre and fertilizer at approximately 500 pounds/acre (10-20-10 or equal).
- Work lime and fertilizer into soil to a depth of 4 inches.
- Apply seed 40 pound/acre by hand, cyclone seeder or hydro seeder.
- Rill seed bed to a uniform compaction.
- Mulch and stabilize as per mulching and tacking specifications on the sheet.
- Steep slopes to be stabilized w/ jute matting or equivalent approved slope stabilization blanket (4:1 or steeper).
- Basins steep slopes to be stabilized w/ jute matting or equivalent approved slope stabilization and a water retaining seed mix (SCD MIX #1) consisting of Rough Bluegrass @ 2.0 lbs/1000sf and Strong Creeping Red Fescue @ 1.2 lbs/1000sf.

SEEDING SCHEDULE

- Temporary seeding shall consist of Spring Oats applied at a rate of 2.0 lbs per 1,000sf (80lbs/acre) or Perennial Ryegrass at a rate of 1.0 lbs per 1,000 sf (100lbs/acre). Apply ground limestone and fertilizer according to soil test recommendations. 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 temporary seeding to be maintained until disturbed areas are permanently stabilized with permanent seeding. Mulch seeded areas with a mulch as indicated under Mulching & Tacking Specifications this sheet.
- For warm season seed mixture for temporary seeding, Pearl Millet shall be used. Pearl Millet at a rate of 0.2 per 1,000 square feet. The seeding rate for warm season grass shall be adjusted to reflect the amount of Pure Line Seed (PLS) as determined by a germination test result. Warm season seedings may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
- Permanent Seeding shall consist of the following mixture or approved equal:
EXCESSIVELY DRAINED LOTS (MIXTURE #10):
Tall Fescue (turf-type) @ 25lbs/Ac. (5lbs/1000 sf)
Perennial Ryegrass @ 20lbs/Ac. (5lbs/1000 sf)
Optimum Planting Period Dates: 3/1-4/30
Acceptable Planting Period Dates: 5/1-8/14, 8/15-10/15
WELL TO MODERATELY WELL DRAINED LOTS (MIXTURE #6):
Fine Fescue (Blend) @ 130lbs/Ac. (3lbs/1000sf)
Hard Fescue @ 130lbs/Ac. (3lbs/1000sf)
- Chewy Fescue
- Strong Creeping Red Fescue
Kentucky Bluegrass @ 45lbs/Ac. (0.1lbs/1000sf)
Perennial Ryegrass @ 20lbs/Ac. (0.5lbs/1000sf)
White Clover @ 5lbs/Ac. (0.10lbs/1000sf)
Sheep Fescue @ 20lbs/Ac. (0.45lbs/1000 sf)
Plus Partridge pea @ 10lbs/Ac. (0.25lbs/1000 sf)
Optimum Planting Period Dates: 3/1-4/30, 5/1-8/14
Acceptable Planting Period Dates: 8/15-10/15
POORLY DRAINED LOTS & DETENTION BASINS (MIXTURE #16):
Rough Bluegrass @ 90lbs/Ac. (2.0lbs/1000 sf)
Strong Creeping Red Fescue @ 130lbs/Ac. (3lbs/1000sf)
Optimum Planting Period Dates: 8/15-10/15
Acceptable Planting Period Dates: 3/1-4/30, 5/1-8/14
- Warm season Permanent Seeding shall consist of the following mixture or approved equal:
EXCESSIVELY DRAINED LOTS & WELL TO MODERATELY WELL DRAINED LOTS (MIXTURE #3):
Switchgrass @ 15lbs/Ac. (0.35lbs/1000 sf)
Deergrass @ 10lbs/Ac. (0.25lbs/1000 sf)
Little Bluestem @ 20lbs/Ac. (0.45lbs/1000 sf)
Sheep Fescue @ 20lbs/Ac. (0.45lbs/1000 sf)
Plus Partridge pea @ 10lbs/Ac. (0.25lbs/1000 sf)
Optimum Planting dates for warm season seeding is 3/1-4/30.

VEGETATIVE COVER MAINTENANCE NOTES

- Maintenance should occur on a regular basis, consistent with favorable plant growth, soil and climatic conditions. This involves regular seasonal work for mowing, fertilizing, liming, water, pruning, fire control, weed and pest control, reseeding and timely repairs.
 - Mowing on improved areas, such as lawns, certain recreation fields and picnic areas shall be frequent. On semi-improved areas, mowing will be infrequent. Unimproved areas may be left unmowed to permit natural succession.
 - Fertilizer should be applied as needed to maintain a dense stand of desirable species. Frequently mowed areas and those on sandy soils will require more fertilization.
 - Lime requirement should be determined by soil testing to be done every 2 or 3 years. Fertilization will increase the need for liming.
 - Weed invasion may result from abusive mowing and inadequate fertilization and liming. Brush invasion is a common consequence of lack of mowing. Control of weeds or brush shall be accomplished by using herbicides or mechanical methods.
 - The Property Owner (or tenant by contract) shall be responsible for maintenance during and after construction.
- MULCHING & TACKING SPECIFICATIONS**
- Mulching shall be applied to all disturbed areas immediately after construction and following the application of temporary and/or permanent seeding in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey. Mulching to consist of the following:
a) Straw or Hay. Unrotted small grain straw, hay free of seeds, applied at the rate of 1-1/2 to 2 tons per acre (70 to 90lbs/1,000sf), except that where a crimper is used instead of a liquid mulch binder (tackifying or adhesive agent), the rate of application is 3 tons per acre.
b) Wood-fiber or paper-fiber mulch applied at a rate of 1,500lbs per acre (or as recommended by the product manufacturer) and may be applied by hydroseeder.
c) Fertilized mulch applied at a rate of 60-75lbs/1,000sf and activated with 0.2 to 0.4 inches of water.
 - Mulching shall be anchored in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey. Anchoring for proposed Mulch shall be accomplished using one of the following methods:
a) Peg & Twine.
b) Mulch Netting.
c) Crimper (mulch anchoring tool).
d) Liquid Mulch Binders. (May be used to anchor hay or straw mulch).
- DUST CONTROL**
The following methods should be considered for controlling dust:
Mulches - See Standards for Stabilization with Mulches Only (p.5-11).
Vegetative Cover - See Standards for Temporary Vegetative Cover (p. 7-11).
Permanent Vegetative Cover (p. 4-1), and Permanent Stabilization with Sod (p.6-1).
Spray-On Adhesives - On mineral soils (not effective on muck soils).
Keep traffic off these areas.
- MATERIAL**
- | Material | Dilution | Type of Nozzle | Gal/Ac. |
|-----------------------------------|-----------------------------------------------------------------------------------------------------|----------------|---------|
| Anionic Emulsion | 7:1 | Coarse Spray | 1,200 |
| Lotex Emulsion | 12.5:1 | Fine Spray | 235 |
| Resin in Water | 4:1 | Fine Spray | 300 |
| Polyacrylamide (PAM) - spray on | Apply according to manufacturer's instructions. May also be used as an additive to sediment basins. | | |
| Polyacrylamide (PAM) - dry spread | Flocculate and precipitate suspended solids. See Sediment Basin standards, p. 29-1 | | |
| Articulated Soy Bean Soap Sluck | None | Coarse Spray | 1200 |
- Tillage** - To rough 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, boies 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.
- Stones** - Cover surface with crushed stone or coarse gravel.
- * Standards for Soil Erosion and Sediment Control in New Jersey, Jan., 2014.



NO.	REVISION	DATE	Dr/Ck

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TAX MAP LOTS 54, 55, 56, 57, 58, & 59 BLOCK 2
BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY, NEW JERSEY
TAX MAP SHEET No. 1

SOIL EROSION AND SEDIMENT CONTROL PLAN

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JOB #:
22-066