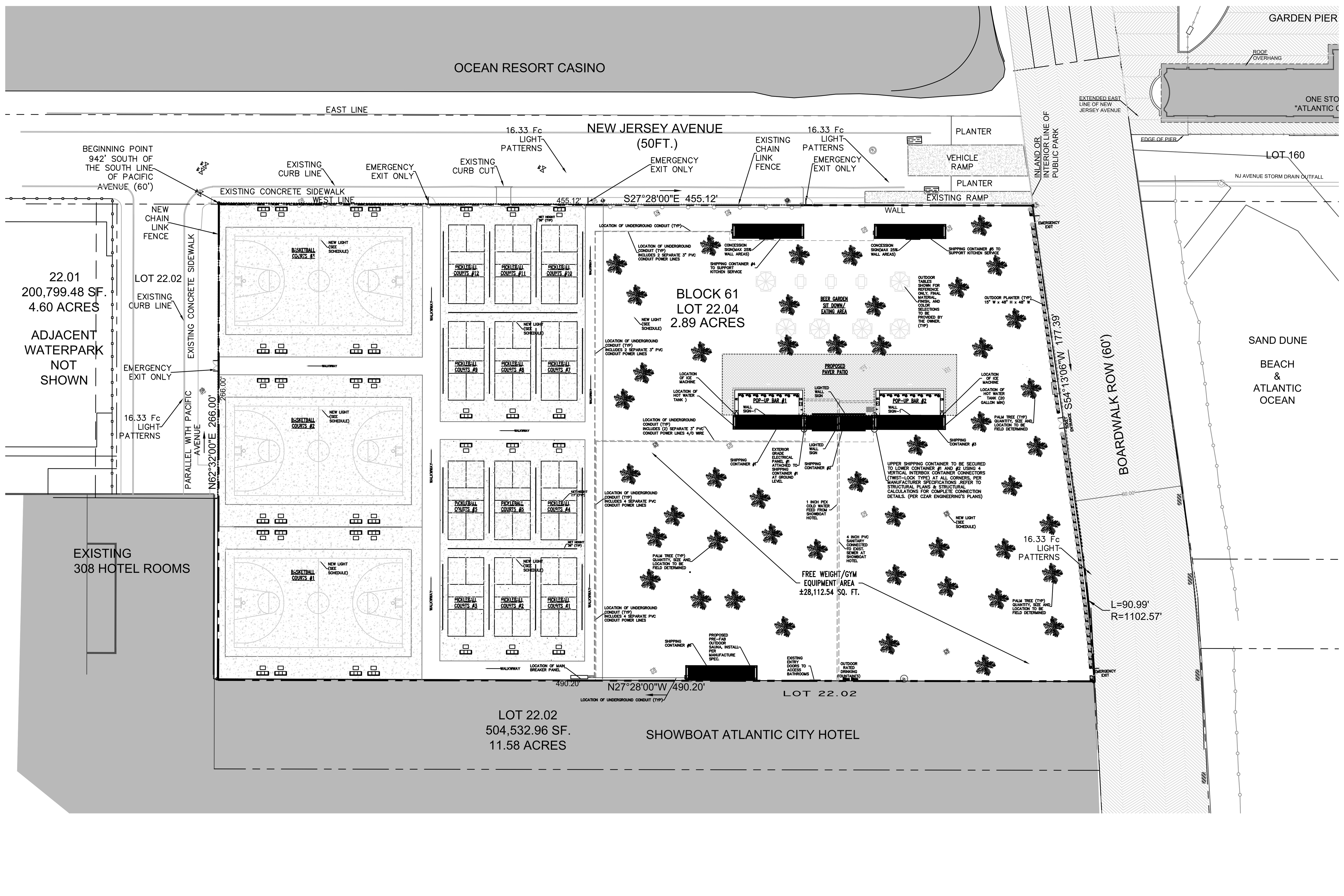


SOIL EROSION AND SEDIMENT CONTROL NARRATIVE

Reference *The Standards for Soil Erosion and Sediment Control In New Jersey*, 7th Edition, January 2014, Revised July 2017, for additional information on items presented in this narrative, as necessary.

STRUCTURAL MEASURES

1. STABILIZED CONSTRUCTION ENTRANCE: The Contractor shall construct a temporary stone apron at the designated entranceways to the site to limit mud tracking onto area roadways. It shall consist of ASTM C-33, size #20-3 crushed stone surface 30' wide x 50' long x 8" deep.
2. HAY BALE DAM: The Contractor shall construct a Hay Bale Dam around all stockpile areas. The Hay Bale Dame shall be constructed with the following provisions:
   a. Bales shall be placed in a row with ends tightly abutting the adjacent bales.
   b. Each bale shall be embedded in the soil a minimum of 4"
   c. Bales shall be securely anchored in place by stakes, steel pickets, or rebars driven through the bales. The first stake in each bale shall be angled toward the previously laid bale.
   d. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
   e. The sediment collected along the hay bales shall be periodically gathered and placed on the site.
   f. Bales shall be removed when they have served their usefulness so as not to block impede storm water flow or drainage.
3. SILT FENCE: A silt fence shall be constructed at locations shown on the Engineering Plan. Installation will be as follows:
   a. Install fence posts 8' o.c. on a slight angle toward the anticipated runoff source.
   b. Dig a 6" trench along the uphill side of the fence line.
   c. Lay out silt fence fabric along post line.
   d. Wrap fabric around the first post and tie securely with cord.
   e. Take fabric to the next post and make a 1 1/2" slit in the hem directly above the cord.
   f. Repeat above step until last post is reached, wrap fabric around the post and secure with the cord.
   g. Drape the lower 6" of fabric in the trench, curled up-hill.
   h. Back fill trench.
   i. MAINTENANCE
   i. Sediment shall be removed from the upstream face of the barrier when it has reached a depth of ½ the barrier height.
   ii. Repair or replace barriers (fabric, posts, bales, etc.)
   iii. Barriers shall be inspected daily for signs of deterioration and sediment removal.
4. LOW POINT INLET SEDIMENT FILTER: The Contractor shall construct low point inlet sediment filters at those locations on the Engineering Plan to prevent the transport of sediment into the stormwater management system and surface water bodies. Silt removal around inlet to be periodically maintained throughout the course of construction. As depicted on Sheet C-8.2, the Inlet Sediment Filter shall consist of:
   a. Surround constructed from 3/4" perforated plywood;
   b. Crushed stone collar
5. STONE BARRIERS
   a. The stone shall be piled to a natural angle of repose with a height of at least 2 feet.
   b. The stone shall meet ASTM C-33 No. 2 (2.5 to 1.5) or 3 (2 to 1 inch)
6. TEMPORARY SEDIMENT BASIN
   a. Outlet of temporary sediment basin to be through primary spillway; masonry blocks to be grouted into weir to raise outlet
   b. Temporary basin discharge must be to a stabilized location.
   c. The sediment shall be removed from the basin once it reaches 50% trap efficiency at elevation <u>27.0'</u>
   d. The sediment shall be removed from the basin once construction is completed.
   e. A flocculent such as PAM (Polyacrylamide) may be added to the basin in accordance with manufacturer's instructions to remove fine suspended colloidal material prior to dewatering.
   f. A source of free cationic ions (such as Ca 2+ may be required at a rate of 50-60 gm Ca2+ / kg PAM to encourage bonding between colloids and PAM.
   g. Material such as lime, CaCl, gypsum or flyash may be used to provide the cation component.
   h. The flocculent shall not cause adverse environmental conditions to develop in the area receiving the basin discharge.
   i. Flocculent may be added through the use of 'logs' or similar devices impregnated with PAM to dose inflow water prior to entrance to the sediment basin. Such devices shall be placed to allow complete passage of the design storm and shall not obstruct flow through storm sewer systems.

NON-STRUCTURAL MEASURES:

1. PERMANENT VEGETATION: Immediately following the completion of construction activities at the site, the Contractor shall stabilize with permanent vegetative cover all exposed and disturbed soils. Permanent vegetative cover shall be accomplished as specified below:
   a. Site preparation
      1) 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.
      2) Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction in accordance with the Standard for Land Grading.
      3) Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 5 inches (unsettled) is required on all sites. Topsoil shall be amended with organic matter, as needed, in accordance with the Standard for Topsoiling.
      4) Install needed erosion control practices or facilities such as diversions, grade-stabilization structures, channel stabilization measures, sediment basins and waterways.
   b. Seedbed Preparation
      1) Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, 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 (http://njaes.rutgers.edu/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-10-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply one-half the rate described above during seedbed preparation and repeat another one-half rate application of the same fertilizer within 3 to 5 weeks after seeding
      2) Work lime and fertilizer into the topsoil as nearly as practical to a dept of 4 inches with a disc, spring-tooth harrow, or other suitable equipment. The final harrowing or disking operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.
      3) High acid producing soil. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed reparation. See Standard for Management of High Acid-Producing soils for specific requirements.
   c. Seeding
      1) Seed shall consist of:
         a) Hard fescue and/or Chewing Fescue and/or Strong creeping red fescue - 4 lbs / 1,000sf
         b) Perennial ryegrass - 1 lb / 1,000sf
         c) Kentucky bluegrass - 1 lb / 1,000sf
      2) Seeding Dates: 2/1-4/30 or 8/15 - 10/30. If seed is not planted within these dates, the Contractor shall stabilize with mulch.
      3) Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal)seeder, drop seeder, drill or cultipacker seeder. 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. <u>Sandy soils require seed depth to be doubled.</u>
   d. 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 compliance with this mulching requirement.
      1) <u>Straw or Hay.</u> Unrotted small grain hay, hay free of seeds, 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 crimper is used instead of a liquid mulch-binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper-blowers must <u>not</u> grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
         a) <u>Application.</u> Spread mulch uniformly by hand or mechanically so that approximately 95% of the soil surface will be covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 square foot sections and distribute 70 to 90 pounds within each section.
         b) <u>Anchoring</u> shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and cost.
      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 a square pattern. Secure twine around each peg with two or more round turns.
      2) Mulch Nettings. Staple paper, jute, cotton or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
      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 long 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 tackifying or adhesive agent is required.
      4) Liquid Mulch-Binders - May be used to anchor salt hay, hay or straw mulch.
   i. 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.
   ii. Use one of the following:
      1. 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 impeded growth of turf grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.
      2. Synthetic Binders - High polymer synthetic emulsion, miscible with water when diluted and, following application of mulch, drying and curing, shall no longer be soluble or dispersible in water. Binder shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.
      2) <u>Wood-fiber or paper-fiber mulch.</u> 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.
      3) <u>Pelletized mulch.</u> 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 water, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs./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. <u>Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.</u>
   e. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore 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.
   f. <u>Establishing permanent vegetation means 80% vegetative coverage with the specified mixture for the seeded area and mowed once.</u>
   g. If soil moisture is deficient supply new seeding with adequate water (a minimum of 1/4 inch applied up to 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.
2. PERMANENT STABILIZATION WITH SOD
   a. High quality cultivated sod is preferred over native or pasture sod.
   b. Sod should be free of broadleaf weeds and undesirable coarse and fine weed grasses.
   c. Sod should be of uniform thickness, typically 5/8 inch, plus or minus ¼ inch, at time of cutting (excludes top growth)
   d. Sod should be vigorous and dense and able to retain its own shape and weight when suspended vertically with a firm grasp from the upper 10 percent of the strip. Broken pads and rolls or torn and uneven ends will not be acceptable.
   e. For droughty sites, a sod of turf-type tall fescue or turf-type tall fescue mixed with Kentucky bluegrass is preferred over a 100% Kentucky bluegrass sod. Although not widely available, a sod of fine fescue is also acceptable for droughty sites.
   f. Only moist, fresh, unheated sod should be used. Sod should be harvested, delivered, and installed within a period of 24 hours or less during summer months.
   g. Site preparation
      1) Grade as needed and feasible to permit the use of conventional equipment for liming, fertilizing, incorporation of organic matter, and other soil preparation procedures. All grading should be done in accordance with Standard for Land Grading.
      2) Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 6 inches (unsettled) is required on all sites. See the Standard for Topsoiling for topsoil and amendment requirements.
      3) Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways.
   h. Soil preparation
      1) Uniformly 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 using 10-10-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply ½ the rate described above during seedbed preparation and repeat another ½ rate application of the same fertilizer within 3 to 5 weeks after seeding.
      2) Work lime and fertilizer into the topsoil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or disking operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared.
      3) Remove from the surface all objects that would prevent good sod to topsoil contact and remove all other debris, such as wire, cable, tree roots, pieces of concrete, clods, lumps or other unsuitable material.
      4) Inspect site just before sodding. If traffic has left the soil compacted, the area must be retiled and firmed in accordance with above.
   i. Sod Placement
      1) Sod strips should be laid on the contour, never up and down the slope, starting at the bottom of the slope and working up. On steep slopes, the use of ladders will facilitate the work and prevent damage to the sod. During periods of high temperature, lightly irrigate the soil immediately prior to laying sod.
      2) Place sod strips with snug, even joints (seams) that are staggered. Open spaces invite erosion.
      3) Lightly roll or tamp sod immediately following placement to insure solid contact of root mat and soil surface. Do not overlap sod. All joints should be butted tightly to prevent voids which would cause drying of the roots and invasion of weeds.
      4) On slopes greater than 3 to 1, secure sod to surface soil with wood pegs, wire staples, biodegradable plastic spikes, or split shingles (8 to 10 inches long by 3/4 inch wide).
      5) Surface water cannot always be diverted from flowing over the face of the slope, but a capping strip of heavy jute or plastic netting, properly secured, along the crown of the slope and edges will provide extra protection against lifting and undercutting of sod. The same technique can be used to anchor sod in water-carrying channels and other critical areas. Wire staples must be used to anchor netting in channel work.
      6) Immediately following installation, sod should be watered until water penetrates the soil layer beneath sod to a depth of 1 inch. Maintain optimum water for at least two weeks.
   j. Topdressing - Since soil organic matter and slow release nitrogen fertilizer (water insoluble) are prescribed in Sections 1 and 2 in this Standard, a follow-up topdressing is not mandatory, except where gross nitrogen deficiency exists in the soil to the extent that turf failure may develop, topdressing shall then be applied. Topdress with 10-0-10 or equivalent at 400 pounds per acre or 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is ameliorated.
3. TEMPORARY VEGETATIVE COVER
   a. Prior to halting construction for periods longer than 60 days and during the off-season, the Contractor shall stabilize with temporary vegetative cover all exposed soils.
   b. Site preparation
      1) Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.
      2) Install needed erosion control practices or facilities.
      3) Immediately prior to seeding, the surface should be scarified 6" to 12" where there has been soil compaction.
   c. Seedbed Preparation
      1) 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. 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.
      2) 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 disking operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.
      3) Inspect seedbed just before seeding. If traffic has let the soil compacted, the area must be retiled in accordance with the above.
      4) Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils, pg. 1-1.
   d. Seeding
      1) Seed shall consist of Perennial ryegrass - 1 lb / 1,000sf - at a depth of 0.5 inches
      2) Seeding Dates: 2/1-4/30 or 8/15 - 10/30. If seed is not planted within these dates, the Contractor shall stabilize with mulch.
      3) Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal)seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse-textured soil. <u>Sandy soils require seed depth to be doubled.</u>
      4) After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore 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.
   e. 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 compliance with this mulching requirement.
      1) <u>Straw or Hay.</u> Unrotted small grain hay, hay free of seeds, 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 crimper is used instead of a liquid mulch-binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch chopper-blowers must <u>not</u> grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
         a) <u>Application.</u> Spread mulch uniformly by hand or mechanically so that approximately 95% of the soil surface will be covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 square foot sections and distribute 70 to 90 pounds within each section.
         b) <u>Anchoring</u> shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and cost.
      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 a square pattern. Secure twine around each peg with two or more round turns.
      2) Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
      3) Crimper (mulch anchoring tool). A tractor-drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long 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 a contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.
      4) Liquid Mulch-Binders
   i. Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.
   ii. Use one of the following
      1. Organic and Vegetable Based Binders - Naturally occurring, powder based, hydrophilic materials that mixed with water formulates a gel and when applied to the mulch under satisfactory curing condition
      2. 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 and weather conditions recommended by the manufacturer and remain tacky until germination of grass.
      2) <u>Wood-fiber or paper-fiber mulch.</u> 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.
      3) <u>Pelletized mulch.</u> 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 water, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs./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. <u>Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.</u>
3. STABILIZATION WITH MULCH ONLY
   a. Site preparation
      1) 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.
      2) Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways.
   b. Protective Materials
      1) Unrotted small-grain straw, at 2.0 to 2.5 tons per acre, is spread uniformly at 90 to 115 pounds per 1,000 square feet and anchored with a mulch anchoring tool, liquid mulch binders, or netting tie down. Other suitable materials may be used if approved by the Soil Conservation District. The approved rates above have been met when the mulch covers the ground completely upon visual inspection, i.e. the soil cannot be seen below the mulch.
      2) Synthetic or organic soil stabilizers may be used under suitable conditions and in quantities as recommended by the manufacturer.
      3) Wood-fiber or paper-fiber mulch at the rate of 1,500 pounds per acre (or according to the manufacturer's requirements) may be applied by a hydroseeder.
      4) Mulch netting, such as paper jute, excelsior, cotton, or plastic, may be used.
      5) Woodchips applied uniformly to a minimum depth of 2 inches may be used. Woodchips will not be used on areas where flowing water could wash them into an inlet and plug it.
      6) Gravel, crushed stone, or slag at the rate of 9 cubic yards per 1,000 sq. ft. applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM C-33) is recommended.
   c. Mulch Anchoring - should be accomplished immediately after placement of hay or straw mulch to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area and steepness of slopes.
      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 a square pattern. Secure twine around each peg with two or more round turns.
      2) Mulch Nettings - Staple paper, cotton, or plastic nettings over mulch. Use degradable netting in areas to be mowed. Netting is usually available in rolls 4 feet wide and up to 300 feet long.
      3) Crimper Mulch Anchoring Coulter Tool - A tractor-drawn implement especially designed to punch and anchor mulch into the soil surface. This practice affords maximum erosion control, but its use is limited to those slopes upon which the tractor can operate safely. Soil penetration should be about 3 to 4 inches. On sloping land, the operation should be on the contour.
      4) Liquid Mulch-Binders
         a) Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.
         b) Use one of the following
      1) Organic and Vegetable Based Binders - Naturally occurring, powder based, hydrophilic materials that mixed with water formulates a gel and when applied to the mulch under satisfactory curing condition
      2) 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 and weather conditions recommended by the manufacturer and remain tacky until germination of grass.
5. DUST CONTROL: To control dust generation on-site, the Contractor shall wet construction traffic routes and staging areas.
6. MAINTENANCE
   a. Maintenance shall occur on a regular basis consistent with favorable plant growth, soils and climatic conditions.
   b. When it becomes necessary, the Owner will inform the Contractor of unsatisfactory conditions of erosion and sediment devices, at such time the Contractor shall improve the conditions and sediment devices to meet with the approval of the Owner.
   c. Should unforeseen erosive conditions develop during construction, the Contractor shall take steps to remedy such conditions and to prevent damage to adjacent properties as a result of increased runoff and/or sediment displacement.
   d. Seeded areas that have been washed away shall be filled and graded as necessary and then reseeded. This procedure shall be repeated after each storm or until no more signs of erosion are evident.
   e. The sediment collected along the temporary diversions shall be periodically gathered and placed back on the site.
   f. Control measures shall apply to subsequent owners if title is conveyed.
7. GENERAL
   a. Existing vegetative cover beyond the limits of construction shall be retained until final stabilization is complete.
   b. The Contractor shall schedule and conduct his operations to minimize erosion of soils and to prevent silting and muddying of streams, rivers, irrigation systems and impoundments (lakes, reservoirs, etc.). Construction of drainage facilities and performance of their contract work which will contribute to the control of erosion and sedimentation shall be carried out in conjunction with earthwork operations or as soon thereafter as practicable.
   c. When borrow material is obtained from other than commercially operated sources, erosion of the borrow site shall be controlled both during and after completion of the work that erosion will be minimized and sediment will not enter streams or other bodies of water. Waste or disposal areas and construction roads shall be located and constructed in a manner that will keep sediment from entering streams.
   d. When work areas are located in or adjacent to live streams, such areas shall be separated from the main stream by a dike or other barrier to keep sediment from entering a flowing stream.
   e. Water from aggregate washing or other operations containing sediment shall be treated by filtration, a settling basin or other means sufficient to reduce the sediment content to note more than that of the stream into which it is discharged.
   f. Pollutants such as fuels, lubricants, bitumens, raw sewerage and other harmful materials shall not be discharged into or near rivers, streams and impoundments or into natural or manmade channels leading thereto. Wash water or waste from concrete mixing operations shall not be allowed to enter live streams.

CONSTRUCTION SCHEDULE

1. Notify the Atlantic County Soil Conservation District in writing at least 48 hours prior to construction.
2. Construct temporary soil erosion and sediment control measures including installation of temporary sediment basin sump/de-watering pit, silt fence and a stabilized construction entrance.
3. Clearing and grubbing
4. Install underground utilities and recharge basin. Establish permanent cover
5. Establish temporary sediment basin for use during construction; basin slopes must be stabilized immediately. Install temporary courses of 6" masonry block in weir with grout to raise outlet elevation to 29.0'. Install riprap armored discharge channel below spillway.
6. Inlet protection installed on storm sewer inlets
7. Rough grade
8. Topsoil (5" minimum depth) and final grading
9. Permanent stabilization of all disturbed areas.
10. Construct parking areas & driveways
11. Construction of buildings
12. Convert sediment basin to permanent basin. Install K5 sand and conduit outlet protection.
13. Collect silt and sediment and place back on site
14. Landscape treatment

MISCELLANEOUS:

1. REPORT OF COMPLIANCE MUST BE OBTAINED FROM THE DISTRICT PRIOR TO RECEIVING CERTIFICATE OF OCCUPANCY FROM MUNICIPALITY. A REQUEST FOR DISTRICT INSPECTION FOR THE RELEASE OF A REPORT OF COMPLIANCE MUST BE MADE 5 WORKING DAYS IN ADVANCE. THIS APPLIES TO BOTH COMPLETE (FINAL) AND CONDITIONAL (TEMPORARY) CERTIFICATES.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
3. 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.

MISCELLANEOUS:

1. A REPORT OF COMPLIANCE MUST BE OBTAINED FROM THE DISTRICT PRIOR TO RECEIVING A CERTIFICATE OF OCCUPANCY FROM THE MUNICIPALITY. A REQUEST FOR A DISTRICT INSPECTION FOR THE RELEASE OF A REPORT OF COMPLIANCE MUST BE MADE 5 WORKING DAYS IN ADVANCE. THIS APPLIES TO BOTH COMPLETE (FINAL) AND CONDITIONAL (TEMPORARY) CERTIFICATES.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
3. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORWATER OUTFALLS OR OFFSITE AS A RESULT
4. ENVIROFENCE SHALL BE INSTALLED ALONG THE CLEARING LIMIT AND THE AREAS OF TREE TO BE MAINTAINED. THIS WILL AID IN PROTECTION OF EXISTING VEGETATION TO REMAIN.

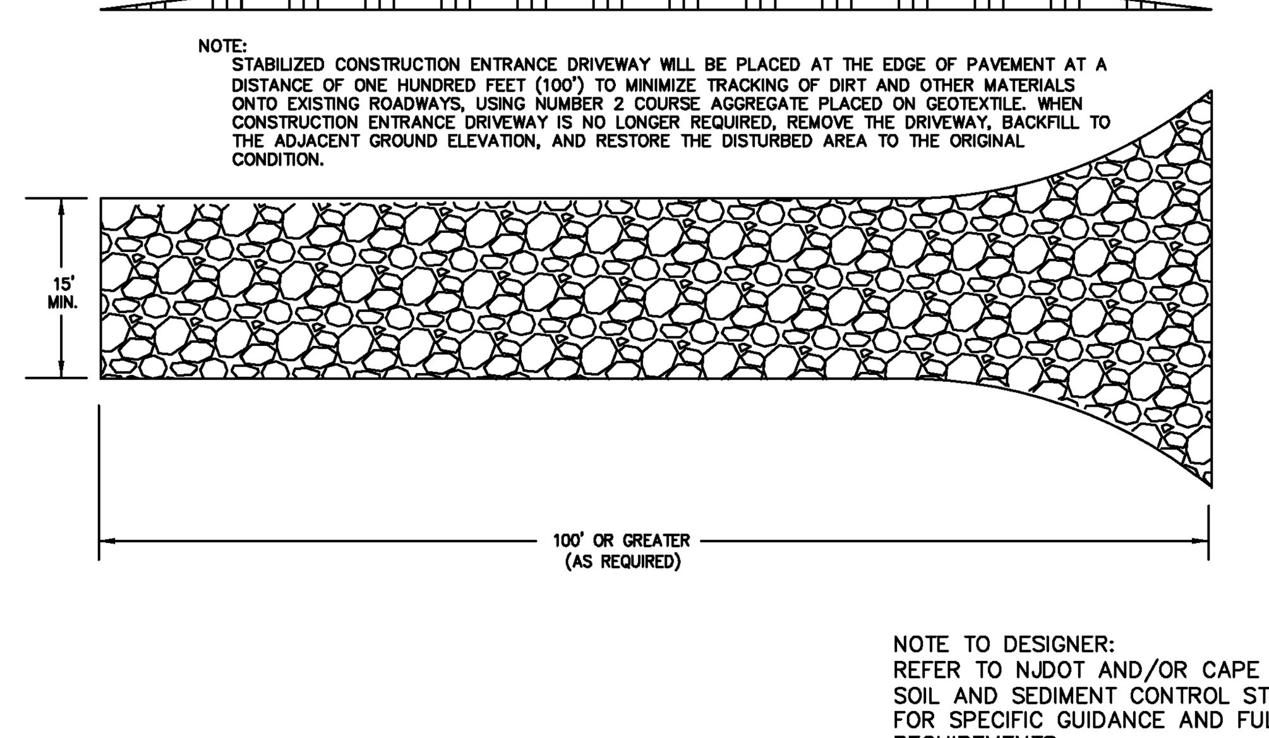
Topsoiling Notes

1. Topsoil should be handled only when it is dry enough to work without damaging soil structure.
2. A uniform application to an average depth of 5" (minimum 4") firmed in place is required.
3. Pursuant to the requirements in Section 7 of the Standard for Permanent Vegetative Stabilization, the contractor is responsible to ensure that permanent vegetative cover becomes established on at least 80% of the soils to be stabilized with vegetation. Failure to achieve the minimum coverage may require additional work to be performed.

SOIL EROSION AND SEDIMENT CONTROL NOTES:

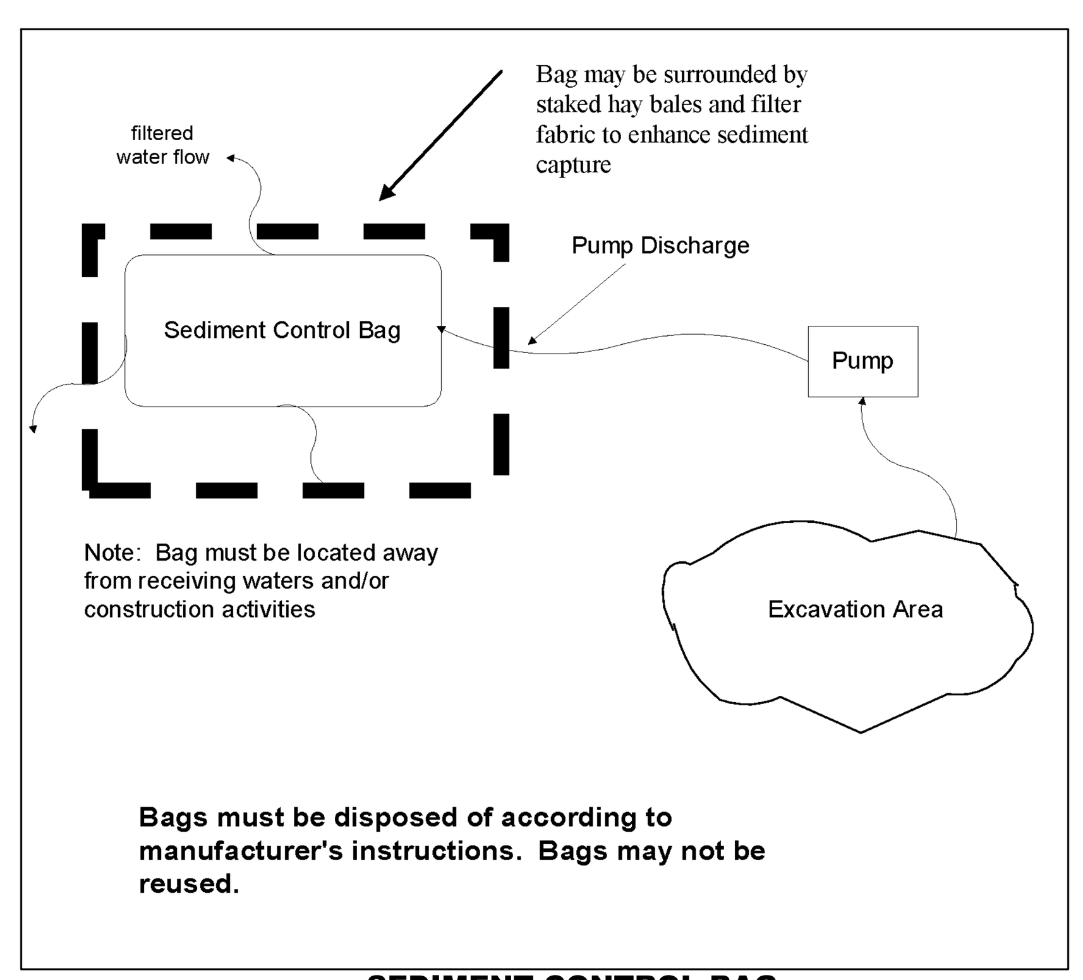
"The soil erosion inspector may require additional soil erosion measures to be installed, as directed by the district inspector, in accordance with the "Standards for Soil Erosion and Sediment Control in New Jersey", 7th Edition, January 2014, Revised July 2017.

- All applicable erosion and sediment control practices shall be in place prior to any grading operation and/or installation of proposed structures or utilities.
- Soil erosion and sediment control practices on this plan shall be constructed in accordance with the standards for soil erosion and sediment control in New jersey.
- Applicable erosion and sediment control practices shall be left in place until construction is completed and/or the area is stabilized.
- Any disturbed area that is to be left exposed for more than thirty (30) days and not subject to construction traffic shall immediately receive a temporary seeding and fertilization in accordance with the new jersey standards .and their rates should be included in the narrative. If the season prohibits temporary seeding, the disturbed areas will be mulched with salt hay or equivalent and anchored in accordance with the new jersey standards (i.e. peg and twine, mulch netting or liquid mulch binder.
- It shall be the responsibility of the developer to provide confirmation of lime, fertilizer and seed application and rates of application at the request of the soil conservation district.
- All critical areas subject to erosion will receive a temporary seeding in combination with straw mulch at a rate of 2 tons per acre, according to the New Jersey standards immediately following rough grading.
- The site shall at all times be graded and maintained such that all stormwater runoff is diverted to soil erosion and sediment control facilities.
- All sedimentation structures will be inspected and maintained on a regular basis and after every storm event.
- 16. NJSA 4:24-39, et seq. Requires that no certificate of occupancy be issued before all provisions of the certified soil erosion and sediment control plan have been complied with for permanent measures. All site work for the project must be completed prior to the district issuing a report of compliance as a prerequisite to the issuance of a certificate of occupancy by the municipality.
- Mulching is required on all seeded areas to insure against erosion before grass is established to promote earlier vegetation cover.
- Offsite sediment disturbance may require additional control measures to be determined by the erosion control inspector.
- The soil conservation district shall be notified 48 hours prior to any land disturbance.
- Any changes to the site plan will require the submission of a revised soil erosion and sediment control plan to the soil conservation district. The revised plan must be in accordance with the current New Jersey standards for soil erosion and sediment control.
- Adjoining properties shall be protected from excavation and filling operations on the proposed site.

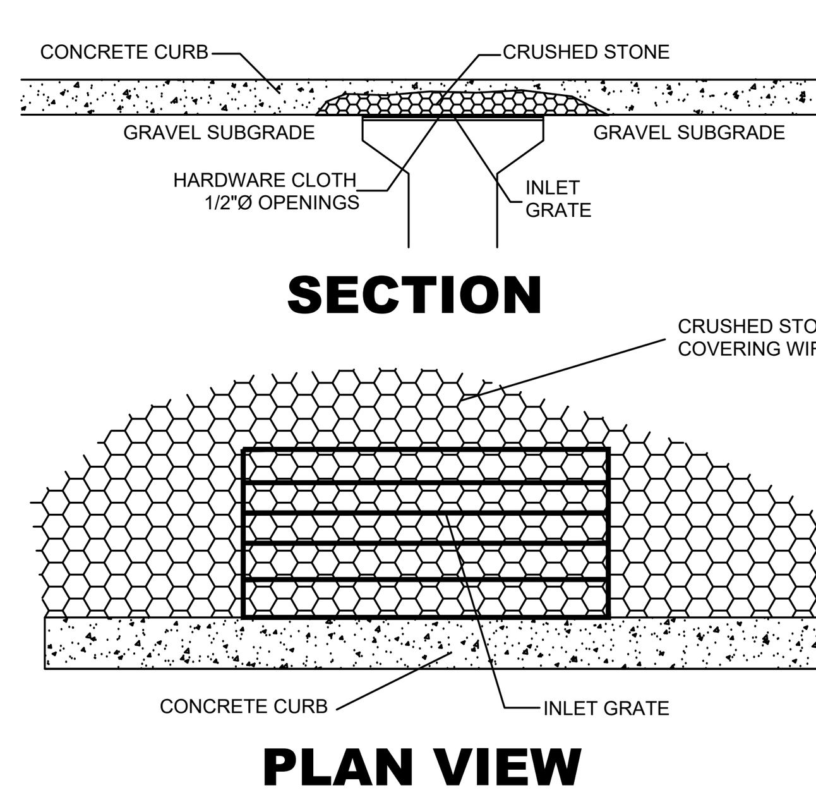


NOTE TO DESIGNER:
REFER TO NJDOT AND/OR CAPE ATLANTIC SOIL AND SEDIMENT CONTROL STANDARDS FOR SPECIFIC GUIDANCE AND FULL REQUIREMENTS.

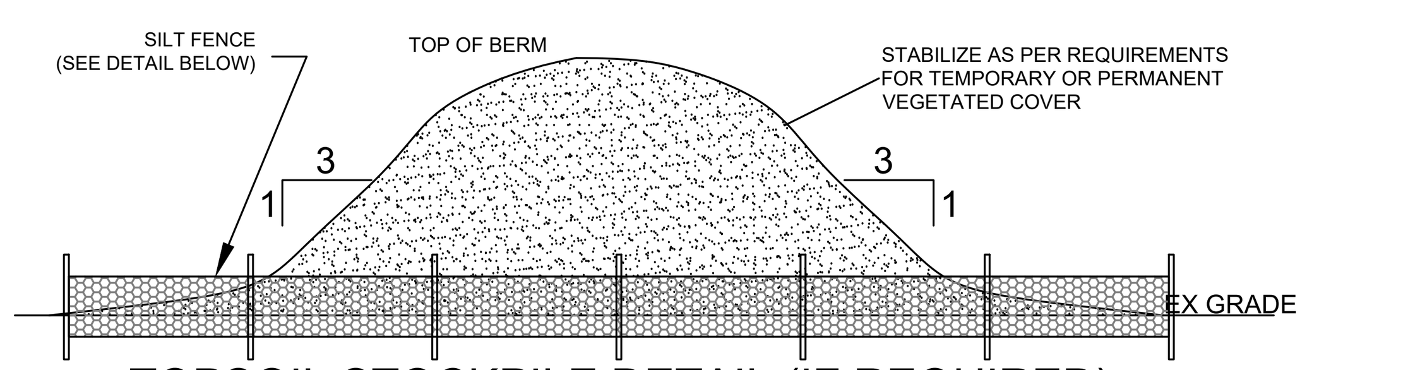
STABILIZED CONSTRUCTION ENTRANCE DETAIL



SEDIMENT CONTROL BAG FOR DEWATERING

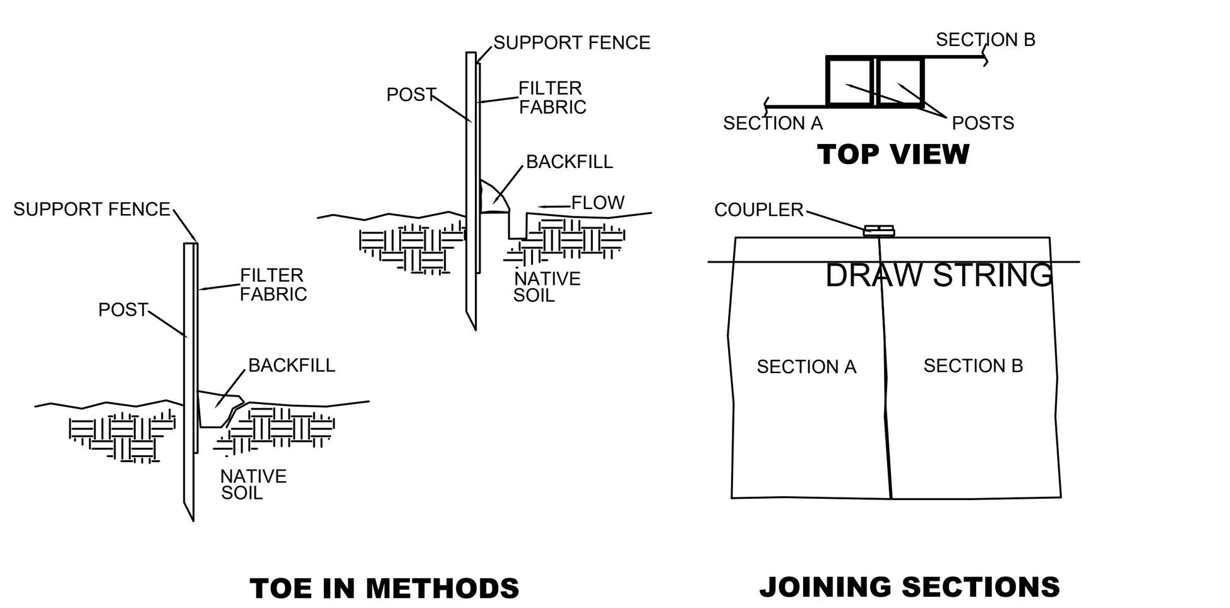


INLET FILTER DETAIL



TOPSOIL STOCKPILE DETAIL (IF REQUIRED)

1. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING
2. STRIPPING SHOULD BE CONFINED TO IMMEDIATE CONSTRUCTION AREA.
3. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPING AT A RATE DETERMINED BY SOIL TESTS TO BRING SOIL pH TO APPRX. 6.5.
4. A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON SOIL.
5. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
6. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS DESCRIBED IN NOTES FOR TEMPORARY OR PERMANENT VEGETATED COVERAGE
7. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES



ENVIROFENCE DETAIL

NOTE:
ELEVATIONS SHOWN
REFERENCE NAVD 1988

40 0 40 120 160
GRAPHIC SCALE IN FEET

ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND SAFETY REQUIREMENTS AND SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), THE HIGH VOLTAGE PROXIMITY ACT, STATE OF NEW JERSEY, ADOPTED 7/21/48 AS P.L. 1948, c 249, THE NEW JERSEY UNIFORM CONSTRUCTION CODE, ICC, ASTM SPECIFICATIONS, ALL LOCAL ORDINANCES AND PERMIT CONDITIONS.

ARTHUR PONZIO CO. RESPONSIBILITIES DO NOT INCLUDE ANY FIELD INSPECTION, CONSTRUCTION MANAGEMENT, CONSTRUCTION OR CONTRACTOR'S COMPLIANCE WITH CONSTRUCTION DOCUMENTS.

NO.	DATE	BY	DESCRIPTION	NO.	DATE	BY	DESCRIPTION

REVISIONS

ARTHUR PONZIO CO.
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SOIL EROSION & SEDIMENT CONTROL PLAN

BLOCK 61 LOT 22.04
ATLANTIC CITY ATLANTIC COUNTY NEW JERSEY

SCALE: 1" = 40' BY: JJB
DATE: 7-16-25 PROJ. NO.: 42097

SHEET NO.
C-04
SHEET 4 of 5