

SOIL EROSION AND SEDIMENT CONTROL NOTES:

- The Camden County Soil Conservation District shall be notified 48 hours prior to starting land disturbance activity. Notice may be mailed, faxed or emailed to:
 CCSCD, 423 Commerce Lane #1, West Berlin, NJ 08091
 Phone: 856-767-6299 Fax: 856-767-1676 Email: craig.mcgee@camdenscd.org
- 2. If applicable to this project, the owner should be aware of his or her obligation to file for a NJPDES Construction Activity Stormwater 5G3 Permit (NJG0088323) via the NJDEP online permitting system (www.nj.gov/dep/online) and to maintain the associated best management practices and Stormwater Pollution Prevention Plan self—inspection logbook onsite at all times. This permit must be filed prior to the start of soil disturbance. The online application process will require entry of an SCD certification code, which is provided by the Soil Conservation District upon certification of the Soil Erosion and Sediment Control Plan.
- The Camden County Soil Conservation District shall be notified of any changes in ownership.
 Any changes to the Certified Soil Erosion and Sediment Control Plan, including an increase in the limit of disturbance, will require the submission of revised Soil Erosion and Sediment Control Plans to the District for
- recertification. The revised plans must meet all current State Soil Erosion & Sediment Control STANDARDS.

 5. A copy of the certified Soil Erosion and Sediment Control plan shall be maintained on site at all times.
- All Soil Erosion and Sediment Control practices shall be installed prior to any major soil disturbances, or in their proper sequence as outlined within the Sequence of Construction on the Certified Soil Erosion and Sediment Control Plan, and maintained until permanent protection is established.
- 7. All work shall be done in accordance with the current STANDARDS for Soil Erosion and Sediment Control in NJ. If language contained within any other permit for this project is more restrictive than (but not contradictory to) what is contained within these notes or on the Certified Soil Erosion and Sediment Control Plan, then the more restrictive permit requirements shall be followed.
- 8. The Standard for Stabilized Construction Access requires the installation of a 1½" to 2½" clean stone tracking pad at all construction driveways immediately after initial site disturbance, whether identified on the certified plan or not. The width shall span the full width of egress, and length shall be 50 ft. or more, depending on site conditions and as required by the STANDARD. This shall include individual lot access points within residential subdivisions. If the egress is to a County road, then a 20 ft. long paved transition shall be provided between the edge of pavement and the stone access pad.
- provided between the edge of pavement and the stone access pad.

 9. A sub-base course will be applied immediately following rough grading and installation of improvements in order to stabilize streets, roads, driveways and parking areas. In areas where no utilities are present, the sub-base shall be installed within 15 days of preliminary grading, provided that all other requirements related to detention basins, swales and the Sequence of Construction have been met.
- 10. Any disturbed areas that will be left exposed more than 14 days and not subject to construction activity will immediately receive temporary stabilization. If the season prevents establishment of a temporary vegetative cover, or if the area is not topsoiled, then the disturbed areas will be mulched with straw, or equivalent material, at a rate of two (2) tons per acre, according to State STANDARDS. Sloped areas in excess of 3H:1V shall be provided with erosion control blankets. Critical areas subject to erosion (i.e. steep slopes, roadway embankments, environmentally sensitive areas) will receive temporary stabilization immediately after initial disturbance or rough grading.
- Any steep slopes (i.e. slopes greater than 3:1) receiving pipeline or utility installation will be backfilled and stabilized daily, as the installation proceeds.
 Permanent vegetation shall be seeded or sodded on all exposed areas within ten (10) days after final grading and topsoiling. All agronomic requirements contained within the STANDARDS and on the Certified Plan shall be employed. Mulch with binder, in accordance with the STANDARDS, shall be used on all seeded areas.
- shall be employed. Mulch with binder, in accordance with the STANDARDS, shall be used on all seeded areas. Save all tags and/or bags used for seed, lime and fertilizer, and provide them to the District inspector to verify that mixtures and rates meet the STANDARDS.

 13. At the time when the 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 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, then
- vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, then non-vegetative means of permanent ground stabilization will have to be employed.

 14. During the course of construction, soil compaction may occur within haul routes, staging areas and other project areas. In accordance with the Standard for Topsoiling, compacted surfaces should be scarified 6" to 12" immediately prior to topsoil application. This will help ensure a good bond between the topsoil and
- 15. Prior to seeding, topsoil shall be worked to prepare a proper seedbed. This shall include raking of the topsoil and removal of debris and stones, along with other requirements of the Standard for Permanent Vegetative Cover for Soil Stabilization.

subsoil. This practice is permissible only where there is no danger to underground utilities (cables, irrigation

- 16. 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 buried with limestone in accordance with the STANDARD and be covered with a minimum of 12"of soil having a pH of 5 or more prior to topsoil application and seedbed preparation. If the area is to receive tree or shrub plantings, or is located on a slope, then the area shall
- be covered with a minimum of 24" of soil having a pH of 5 or more.

 17. Mulching to the STANDARDS is required for obtaining a Conditional Report of Compliance. Conditional ROC's are only issued when the season prohibits seeding. Permanent stabilization must then be completed during the optimum seeding season immediately following the Conditional ROC, or the completion of work in a given
- 18. Hydroseeding is a two-step process. The first step includes seed, fertilizer, lime, etc., along with minimal amounts of mulch to promote consistency, good seed-to-soil contact, and give a visual indication of coverage. Upon completion of the seeding operation, hydromulch should be applied at a minimum rate of 1500 lbs. per acre in second step. The use of hydro-mulch, as opposed to straw, is limited to optimum seeding dates as listed in the STANDARDS. The use of Hydromulch on sloped areas is discouraged.
- 19. The contractor is responsible for keeping all adjacent roads clean during life of the construction project. All sediment washed, dropped, tracked or spilled onto paved surfaces shall be immediately removed.
 20. The developer shall be responsible for remediating any erosion or sediment problems that grise as a result
- of ongoing construction, and for employing additional erosion and sediment control measures at the request of the Camden County Soil Conservation District.

 21. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming
- 21. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational.
 22. All detention / retention basins must be fully constructed (inclusive of all structural components and liners) and permanently stabilized prior to paving or prior to the addition of any impervious surfaces. Permanent

stabilization includes, but may not be limited to: topsoil, seed, straw mulch and binders or erosion contro

- blankets on all seeding, all agronomic requirements as specified on the Certified Soil Erosion and Sediment Control Plan, installation of the outflow control structures and discharge storm drainage piping, low flow channels, conduit outlet protection, emergency spillways, and lap ring protection.

 23. The riding surface of all utility trenches within paved areas shall be 3/4" clean stone or base pavement until
- such time as final pavement has been installed. Temporary soil riding surfaces are prohibited.

 24. All construction dewatering (trenches, excavations, etc.) must be done through an inlet or outlet filter in accordance with the Standard for Dewatering or as depicted on the Certified Soil Erosion and Sediment
- accordance with the Standard for Dewatering or as depicted on the Certified Soil Erosion and Sediment Control Plan. Discharge locations for the dewatering operation must contain perennial vegetation or similar stable surface.

 25. All swales or channels that will receive runoff from paved surfaces must be permanently stabilized prior to the installation of pavement. If the season prohibits the establishment of permanent stabilization, the
- swales or channels may be temporarily stabilized in accordance with the STANDARDS.

 26. NJSA 4:24-39 et seq. requires that no Certificate of Occupancy or Temporary Certificate of Occupancy be issued by the Municipality before the provisions of the Certified Soil Erosion and Sediment Control Plan have been satisfied. Therefore, all site work for site plans and all work around individual lots in subdivisions must be completed before the District issues a Report of Compliance or Conditional Report of Compliance, which must be forwarded to the Municipality prior to the issuance of a Certificate of Occupancy or Temporary Certificate of Occupancy, respectively.

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

Methods and Materials

1. Side Proposition

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.

B. Immediately prior to seeding and topsoil application the subsoil shall be accordance.

B. Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction in accordance with the Standard for Land Grading.

C. 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.

D. Install needed erosion control practices or facilities such as diversions, grade—stabilization structures, channel stabilization measures, sediment basins, and waterways.

A. 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.

B. Work lime and fertilizer into the topsoil as nearly as practical to a depth 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.
C. 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.

. Seeding.

A. Select a mixture from 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.

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 seeded area and mowed once.
 Warm—season mixtures are grasses and legumes which maximize growth at high temperatures, generally

Warm—season mixtures are grasses and legumes which maximize growth at high temperatures, generally 85oF and above. Planting rates for warm—season grasses shall be the amount of Pure Live Seed (PLS) as determined by germination testing results.
 Cool—season mixtures are grasses and legumes which maximize growth at temperatures below 85oF. Many grasses become active at 65oF. See Table 4—3, mixtures 7&14. Adjustment of planting rates to

grasses become active at 65oF. See Table 4-3, mixtures 7&14. Adjustment of planting rates to compensate for the amount of PLS is not required for cool season grasses.

B. 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.

C. 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.

D. 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

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 4—Mulching below). Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. When poor seed to soil contact occurs, there is a reduced seed germination and growth.

(See Mulching Specification for Permanent and Temporary Vegetative Cover for Soil Stabilization)

5. Irrigation (where feasible)

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.

6. Topdressing

Since soil organic matter content and slow release nitrogen fertilizer (water insoluble) are prescribed in Section 2A — Seedbed Preparation in this Standard, no follow—up of topdressing is mandatory. An exception may be made where gross nitrogen deficiency exists in the soil to the extent that turf failure may develop. In that instance, topdress with 10—10—10 or equivalent at 300 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.

7. Establishing Permanent Vegetative Stabilization

The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing 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. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged. 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.

TABLE 4-3 (SELECTIONS AND RECOMMENDATIONS FROM TABLE 4-3)

ERMANENT SEED IN DETENTION BASIN MIXTURE:

PERMANENT SEED MIXTURE:

CONSISTING OF: (COOL SEASON SEED MIXTURE #7)

CONSISTING OF: (COOL SEASON SEED MIXTURE #7)
130 LBS/ACRE STRONG CREEPING RED FESCUE
50 LBS/ACRE KENTUCKY BLUEGRASS
20 LBS/ACRE PERENNIAL RYE GRASS OR
10 LBS/ACRE REDTOP SUBS/ACRE
25 LBS/ACRE PLUS WHITE CLOVER
265 LBS/ACRE KENTUCKY BLUEGRASS (BLEND)
20 LBS/ACRE PERENNIAL RYE GRASS (BLEND)
305 LBS/ACRE
215 LBS/ACRE

2. SEED MIX SHALL BE FRESH, CLEAN, NEW-CROP SEED WITH A GUARANTEED STATEMENT OF COMPOSITION.

3. SEED TO BE PLANTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

4. SEED TO BE PLANTED TO ITS OPTIMUM DEPTH OF 1/2".

5. SEEDING DATES: MARCH 1 - NOVEMBER 15.

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

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.
- B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways.
- 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 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 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.
- 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 disking 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 high in sulfides or having a pH of 4 or less refer to Standard for Management of High

3. Seeding

A. Select seed from recommendations in Table 7-2

Acid Producing Soils.

B. Conventional Seeding. Apply 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, 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) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too 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, 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.

4. Mulching
(See Mulching Specification for Permanent and Temporary Vegetative Cover for Soil Stabilization)

TABLE 7-2 (SELECTION AND RECOMMENDATIONS FROM TABLE 7-2)

TEMPORARY SEED MIXTURE:

1. CONSISTING OF PERENNIAL RYEGRASS (COOL SEASON GRASS #1) AT A RATE OF 1 LB/1000 S.F.

2. SEED MIX SHALL BE FRESH, CLEAN, NEW-CROP SEED WITH A GUARANTEED STATEMENT OF COMPOSITION.

- 3. SEED TO BE PLANTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- 4. SEED TO BE PLANTED TO ITS OPTIMUM DEPTH OF 1/2".

5. SEEDING DATES: MARCH 1 - MAY 15 AND AUGUST 15 - OCTOBER 1.

MULCHING SPECIFICATION FOR PERMANENT AND TEMPORARY VEGE

MULCHING SPECIFICATION FOR PERMANENT AND TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

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.

A. Straw or Hay. Unnrotted small grain straw, 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 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%-95% 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.

mulch, divide area into approximately 1,000 square feet sections and distribute 70 to 90 pounds within each section.

Anchoring 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 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 cris—cross and a square pattern. Secure twine around each peg with two or more round turns.

Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
 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

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 hay or straw mulch.

technique is limited to greas traversable by a tractor, which must operate on the

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) 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 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 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: All names give above are registered trade names. This does not constitute a commendation of these products to the exclusion of other products.

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 ponds per acre (or as recommended by the project 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

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, forma mulch mat. Pelletized mulch shall be applies in accordance with the manufacturers 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 bee 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 activation and expansion of the mulch to provide soil

STANDARD FOR STABILIZATION WITH MULCH ONLY

METHODS AND MATERIALS:

coverage.

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.
 B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION MEASURES. SEDIMENT BASINS, AND WATERWAYS.

- 2. PROTECTIVE MATERIALS
 A. UNROTTED SMALL—GRAIN STRAW, OR SALT HAY AT 2.0 TO 2.5 TONS PER ACRE IS SPREAD UNIFORMLY AT 90 TO 115 POUNDS PER 1000 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.
- B. ASPHALT EMULSION IS RECOMMENDED AT THE RATE OF 600 TO 1,200 GALLONS PER ACRE. THIS IS SUITABLE FOR A LIMITED PERIOD OF TIME WHERE TRAVEL BY PEOPLE, ANIMALS, OR MACHINES IS NOT A PROBLEM.
- C. SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.D. WOOD-FIBER OR PAPER FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE (OR
- E. MULCH NETTING, SUCH AS PAPER JUTE, EXCELSIOR, COTTON, OR PLASTIC, MAY BE USED.
 F. 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

ACCORDING TO THE MANUFACTURER'S REQUIREMENTS) MAY BE APPLIED BY A

INTO AN INLET AND PLUG IT.

G. GRAVEL, CRUSHED STONE, OR SLAG AT THE RATE OF 9 CUBIC YARDS PER 1000 SQ. FT. APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SIZE 2 OR 3

(ASTM C-33) IS RECOMMENDED.

3. MULCH ANCHORING- SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND AND EATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA AND THE STEEPNESS OF

- A. 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 CRISSCROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
- B. MULCH NETTINGS— STAPLE PAPER, COTTON, OR PLASTIC NETTINGS OVER MULCH. USE A DEGRADABLE NETTING IN AREAS TO ME MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.
- C. 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
- D. LIQUID MULCH-BINDERS

 1. 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.
- USE ONE OF THE FOLLOWING:
 a. EMULSIFIED ASPHALT—(SS-1,CSS-1,CMS-2,MS-2,RS-1,RS-2,CRS-1, AND CRS-2).
 APPLY 0.04 GAL./SQ./YD. OR 194 GAL./ACRE ON FLAT AREAS AND ON SLOPES
 LESS THAN 8 FEET OR MORE HIGH, USE 0.075 GAL./SQ.YD. OR 363 GAL./ACRE.
 THESE MATERIALS MAY BE DIFFICULT TO APPLY UNIFORMLY AND WILL DISCOVER
- b. ORGANIC AND VEGETABLE BASED BINDERS NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS THAT MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO A 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. VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER.
 c. 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.

STANDARD FOR PERMANENT STABILIZATION WITH SOD

Methods and Materials

- 1. High quality cultivated sod is preferred over native or pasture sod.
 2. Sod should be free of broadleaf weeds and undesirable coarse and fine weed grasses.
- 3. Sod should be of uniform thickness, typically 5/8 inch, plus or minus 1/4 inch, at time of cutting (excludes top growth.).
 4. Sod should be vigorous and dense and be 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.
- 5. 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.
 6. 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.
 1. Site Preparation
- A. 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.
 B. 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.

C. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways

2. Soil Preparation

A. 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 (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 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 the rate described above during seedbed preparation and repeat another 1/2 rate application of the same fertilizer within 3 to 5 weeks after seeding. 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 6-1 is a general guideline for limestone application rates.

B. 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.
C. 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.
D. Inspect site just before sodding. If traffic has left the soil compacted, the area must be retilled and firmed in accordance with the above.

2. Soil Preparation

3. Sod Placement

A. 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 (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 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. 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 6-1 is a general guideline for limestone application rates.

B. 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.

C. 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.
D. Inspect site just before sodding. If traffic has left the soil compacted, the area must be retilled and firmed in accordance with the above.

A. 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 the sod. B. Place sod strips with snug, even joints (seams) that are staggered. Open spaces invite C. 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. D. 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). E. 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. F. 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.

4. Topdressing — Since soil organic matter and slow release nitrogen fertilizer (water insoluble) are prescribed in Sections 1 and 2in 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.

TABLE 6-1		
LIMESTONE APPLICATION RATE BY SOIL TEXTURE		
SOIL TEXTURE	TONS/ACRE	LBS/1000 SF
CLAY. CLAY LOAM AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM SILT LOAM	2	90
LOAMY SAND, SAND	1	45

REVEGATATION MATTING INSTALLATION

ALL AREAS SO DESIGNATED WILL BE COVERED WITH MIRAMAT OR APPROVED EQUIVALENT. REVEGATATION MATTING, BEFORE HYDROSEEDING OR PLANTING. THE MAT SHALL BE INSTALLED USING THE FOLLOWING METHOD:

- UNROLL REVEGETATION MAT FROM TOP OF SLOPE TO THE BASE WITH OUT STRETCHING MAT.
- BURY EDGES OF MAT WITH 3" OF SOIL TO PREVENT UNDERCUTTING OF THE SOIL.
- OVERLAP BY A MINIMUM OF 3" WITH THE LATERALLY ADJACENT STRIP OF MATTING.
- 4. OVERLAP BY A MINIMUM OF 3' WITH THE END OF ANY ROLL. THE TERMINAL ENDS OF EACH STRIP SHALL BE BURIED IN A LOOPED FASHION, 6" BELOW THE FINISHED GRADE.
- 5. PEG ALL OVERLAPPED AREAS WITH 1" x 3" NOMINAL WOOD PEGS CUT TO 8" LONG TRIANGULAR SECTIONS, OR 8" LONG METAL PINS WITH 1-1/2" WASHERS RETAINED AT THE TOP OF THE PINS.

JUTE MATTING SPECIFICATION

- 1. JUTE MAT SHALL BE OF CLOTH OF A UNIFORM PLAIN WEAVE WITH UNDYED AND UNBLEACHED SINGLE JUTE YARN, 48 INCHES IN WIDTH PLUS OR MINUS 1 INCH AND WEIGHING AN AVERAGE OF 1.2 LBS/LINEAR YARD OF CLOTH WITH A TOLERANCE OF PLUS OR MINUS 5% WITH APPROXIMATELY 78 WRAP ENDS PER WIDTH OF CLOTH AND 41 WEFT ENDS PER LINEAR YARD OF CLOTH. THE YARN SHALL BE OF A LOOSELY TWISTED CONSTRUCTION HAVING AN AVERAGE TWIST OF NOT LESS THAN 1.6 TURNS/INCH AND SHALL NOT VARY IN THICKNESS BY MORE THAN ONE HALF OF ITS NORMAL DIAMETER.

 2. EXCELSIOR MAT SHALL BE WOOD EXCELSIOR, 48 INCHES IN WIDTH PLUS OR MINUS 1 INCH AND WEIGHING 0.8 LBS/SQUARE YARD PLUS OR MINUS 10 PERCENT. THE EXCELSIOR MATERIAL SHALL BE COVERED WITH A NETTING TO FACILITATE HANDLING AND TO INCREASE
- STAPLES STAPLES FOR ANCHORING SOIL STABILIZATION MATTING SHALL BE MADE OF 12 TO 20 INCHES IN LENGTH OF NO. 8 PLAIN IRON WIRE.

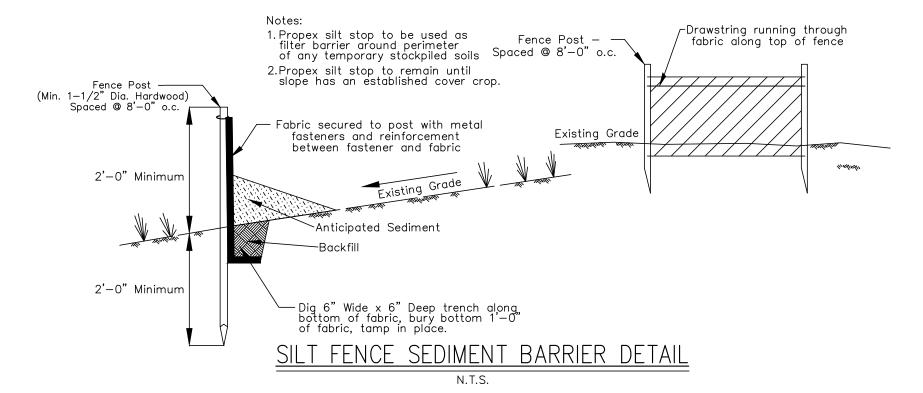
STANDARD FOR DUST CONTROL

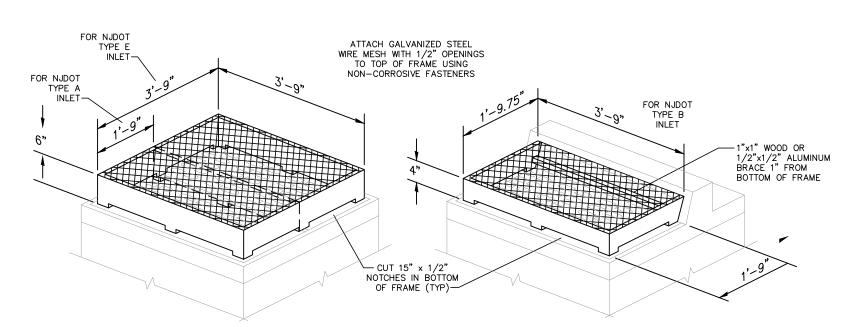
WHERE APPLICABLE, THE FOLLOWING METHODS, OR OTHER METHODS AS APPROVED BY THE SOIL CONSERVATION DISTRICT, ARE TO BE USED FOR THE CONTROL OF DUST:

1. MULCHING – AS PER SPECIFICATION LISTED.

2. VEGETATIVE COVER – AS PER TEMPORARY AND PERMANENT SPECIFICATION LISTED.

3. SPAY-ON ADHESIVES – ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.



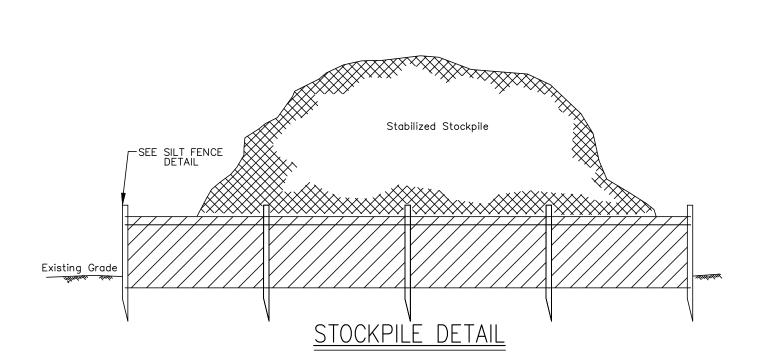


NOTES:

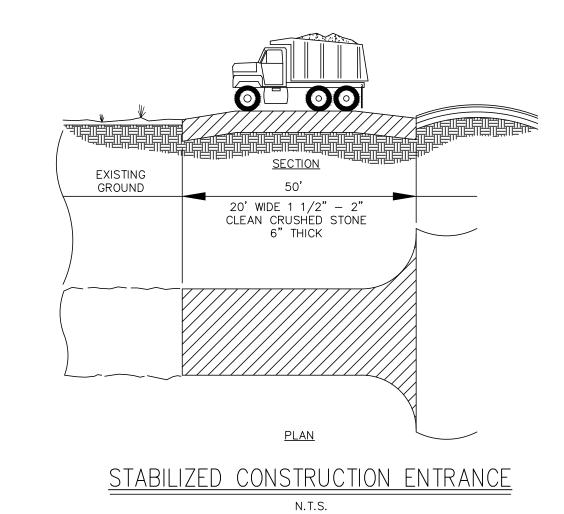
- NOTES:

 1. FRAMES ARE TO BE CONSTRUCTED FROM WOOD OR ALUMINUM MATERIAL.
- FRAMES ARE TO BE CONSTRUCTED FROM WOOD OR ALUMINUM MATE
 FRAME THICKNESS WILL BE 1" FOR WOOD OR 1/2" FOR ALUMINUM.
- 3. WOOD FRAMES WILL BE ASSEMBLED USING GALVANIZED SCREWS.
- 4. ALUMINUM FRAMES WILL BE WELDED ALL AROUND.
 5. PLACE 1-1/2" TO 2" STONE AROUND OUTSIDE OF FRAME FROM TOP OF FRAME TO A MINIMUM OF 2 FEET FROM THE FRAME
- 6. NO STONE SHALL BE PLACED UPON THE WIRE MESH.

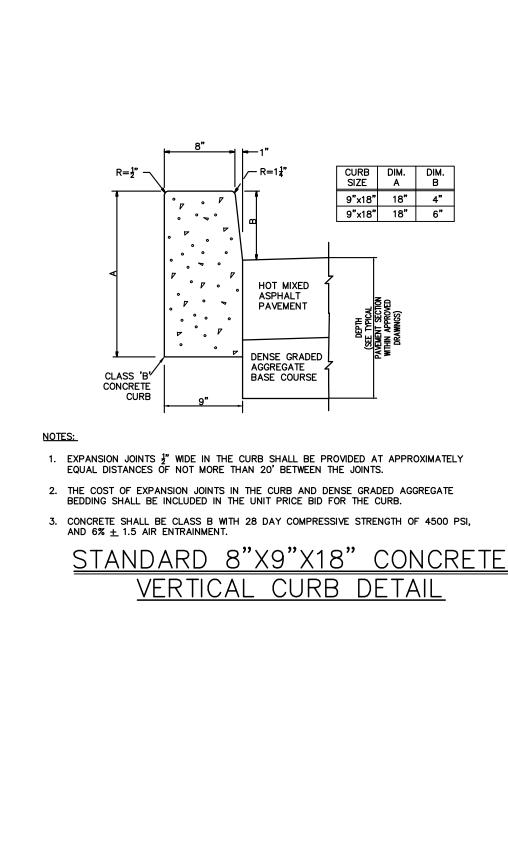
7. STONE THICKNESS SHALL BE AS REQUIRED TO REACH TOP OF FRAME.

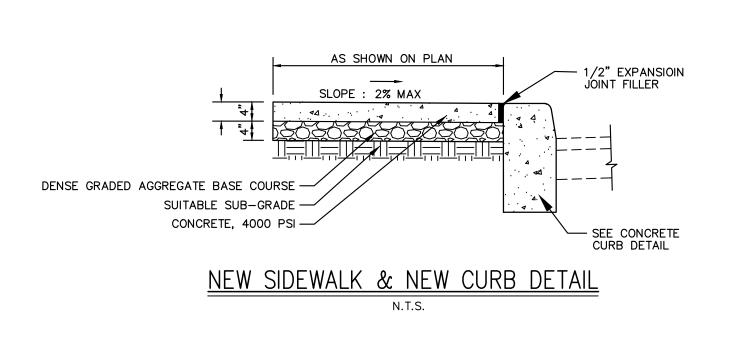


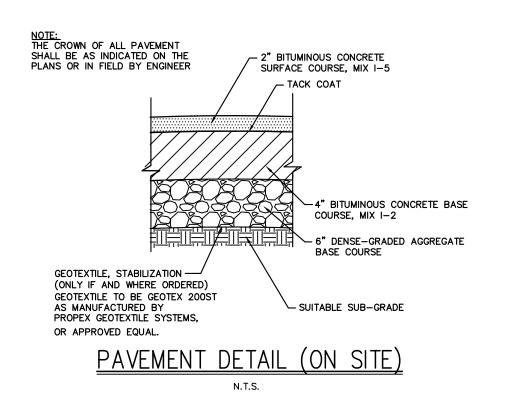
TOTAL AREA OF DISTURBANCE = XXX SF (X.XX AC)

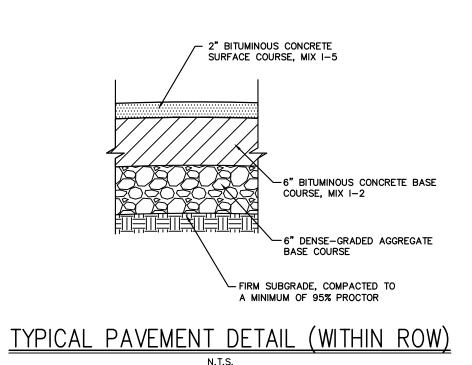


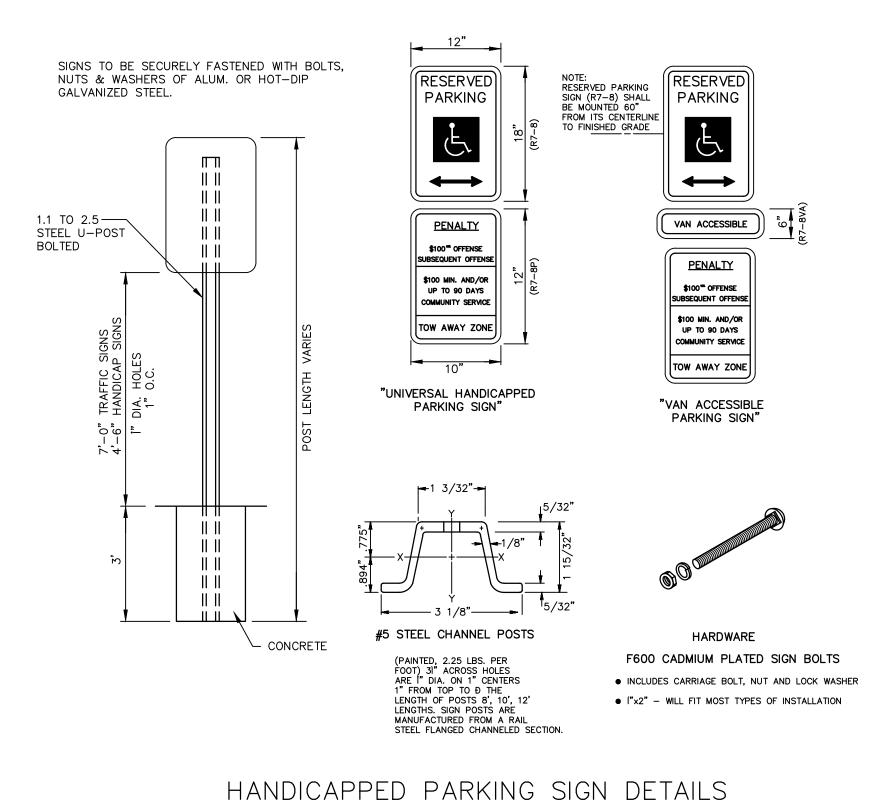
1/15/2020 BID SET MJR JW DATE DRAWN CHECK DESCRIPTION OF REVISION 33 COOPER FOLLY ROAD, WINSLOW TOWNSHIP CAMDEN COUNTY, NEW JERSEY WINSLOW TOWNSHIP SENIOR CENTER 2020 ADDITION & RENOVATIONS SESC NOTES CONSULTING AND MUNICIPAL ENGINEERS — 3141 BORDENTOWN AVENUE, PARLIN, NEW JERSEY 08859 —— 1460 ROUTE 9 SOUTH, HOWELL, NEW JERSEY 07731-1194 -DAVID J. SAMUEL P.E., P.P. NJ PE LIC NO. 25838 NJ PP LIC NO. 2455 NJ PE LS LIC NO. 24271 MICHAEL J. McCLELLAND P.E., P.P. | GREGORY R. VALESI P.E., P.P. JAY B. CORNELL P.E., P.P. NJ PP LIC NO. 3874 NJ PE LIC NO. 32468 NJ PP LIC NO. 3770 NJ PE LIC NO. 34458



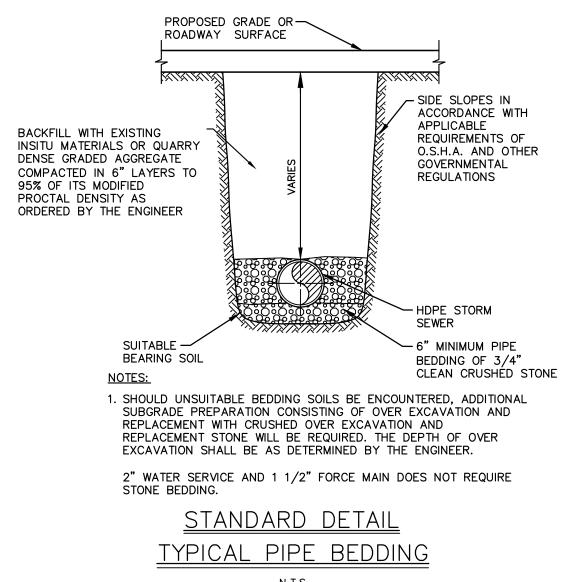


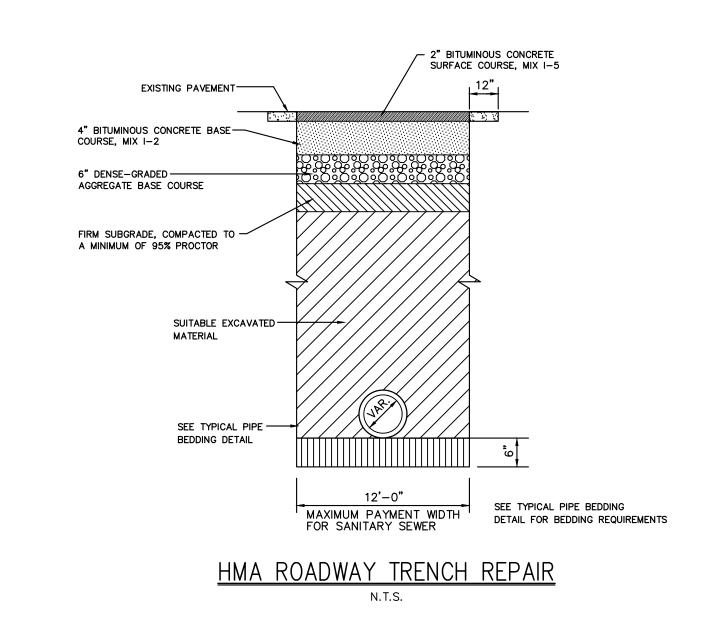


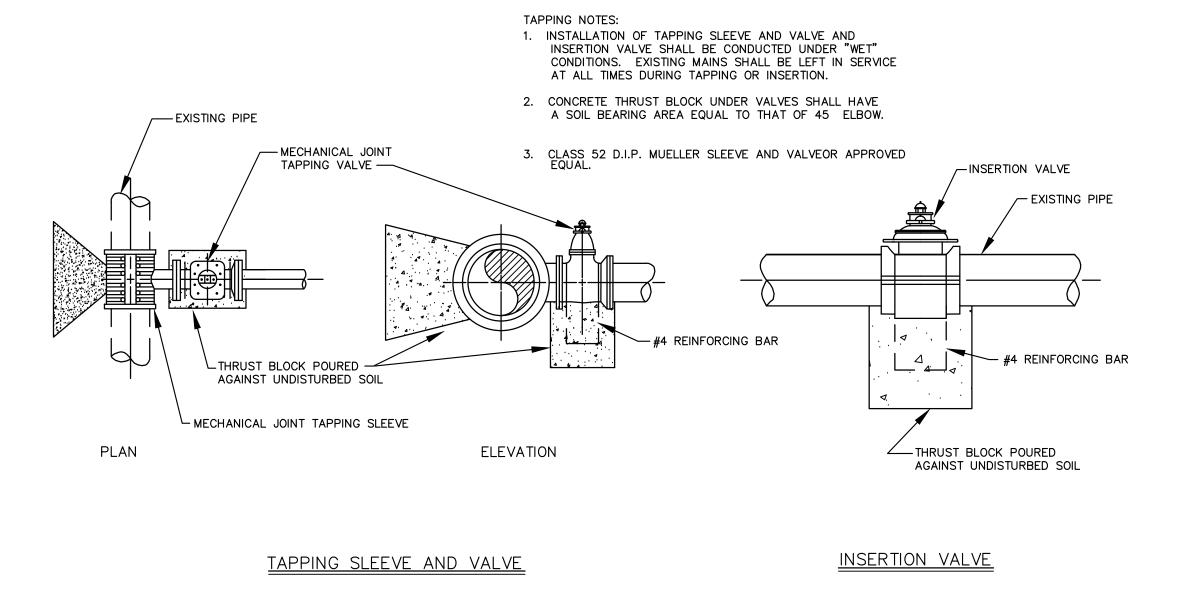


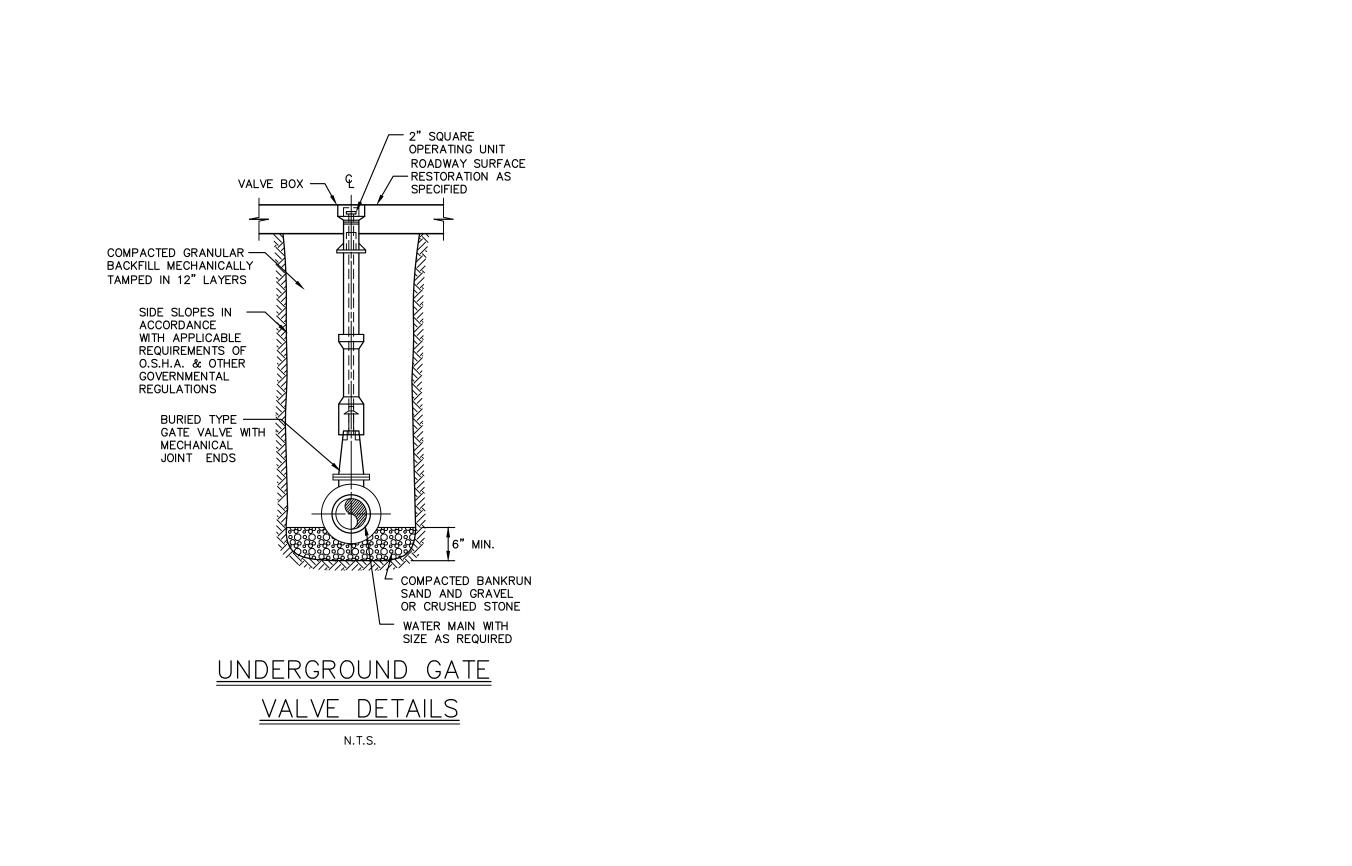


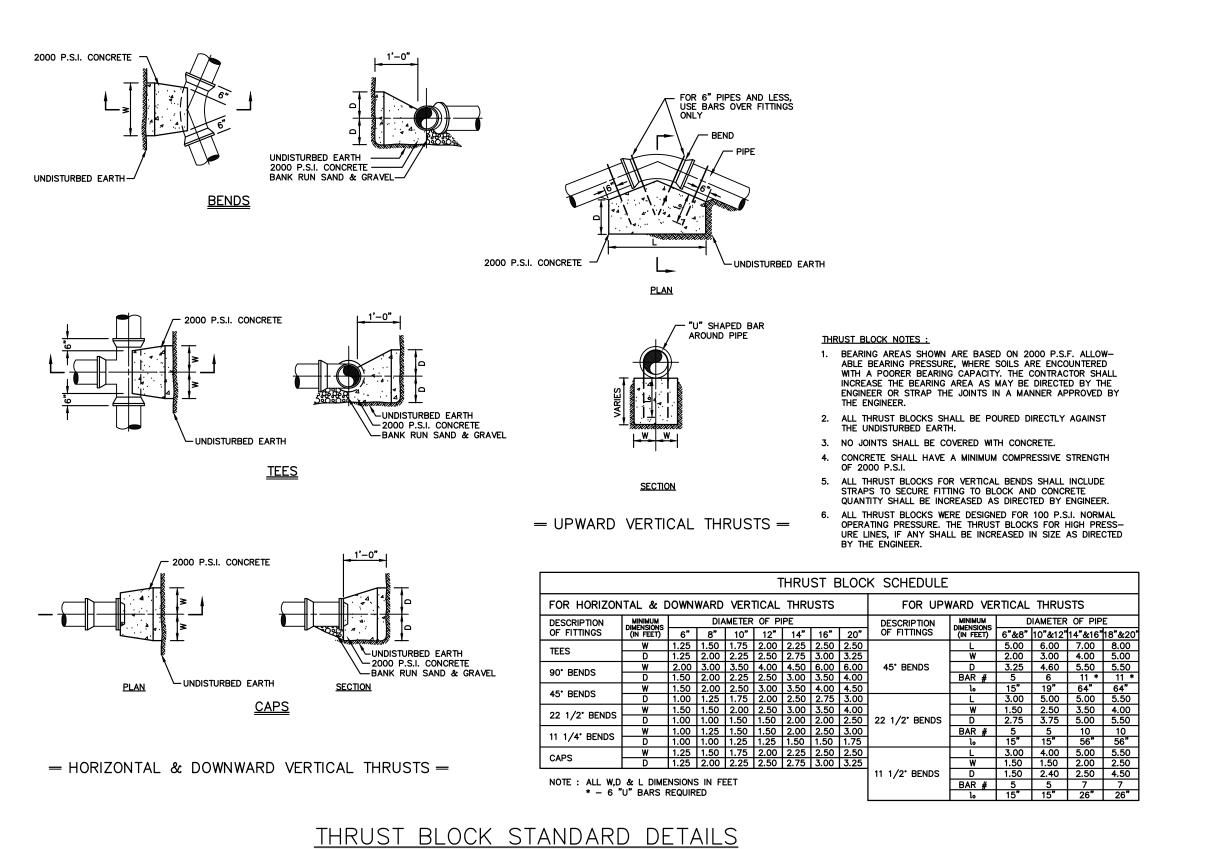
N.T.S.

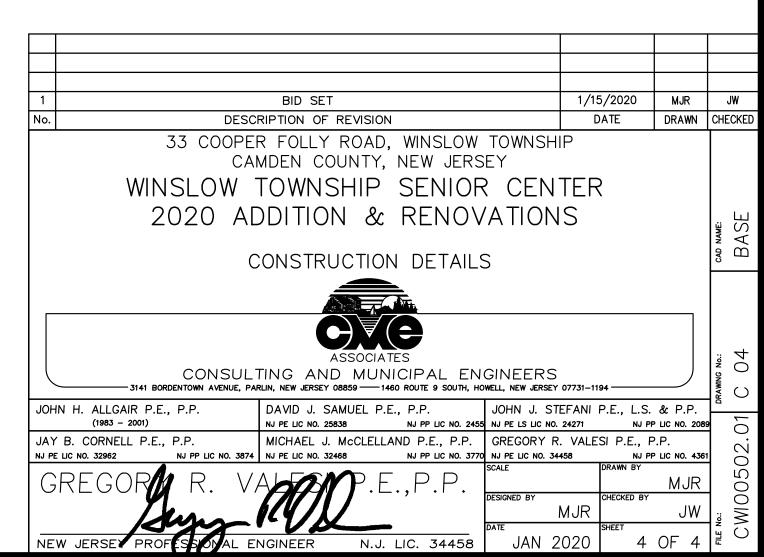












ISSUED FOR ADDENDUM #1: 01-16-2020