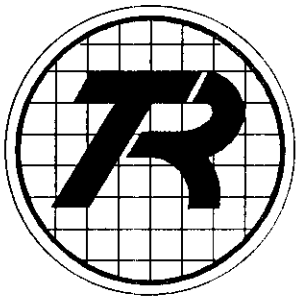
CLOSURE PLAN
BORROW AREA ASH STACK
TENNESSEE VALLEY AUTHORITY
JOHN SEVIER FOSSIL PLANT

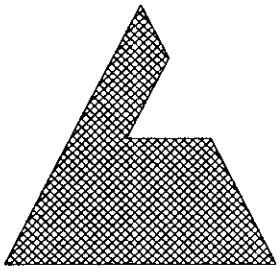
PREPARED FOR
TENNESSEE VALLEY AUTHORITY

PREPARED BY:



TRIBBLE & RICHARDSON INC

AND



LAW ENGINEERING INC

CLOSURE PLAN
BORROW AREA ASH STACK
TENNESSEE VALLEY AUTHORITY
JOHN SEVIER FOSSIL PLANT

November, 1992

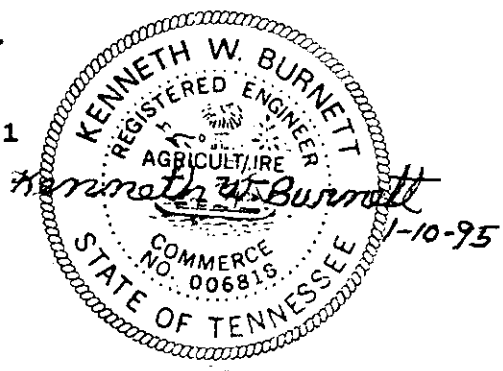
Prepared For:

Tennessee Valley Authority

Revised January, 1995

Prepared By:

Tribble & Richardson, Inc.
and
Law Engineering, Inc.
T&R Project No. 3822-019-01



HWY70.WP5

CLOSURE PLAN
BORROW AREA ASH STACK
TENNESSEE VALLEY AUTHORITY
JOHN SEVIER FOSSIL PLANT

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I. INTRODUCTION

A. Facility Description

The TVA John Sevier Fossil Plant (JSF) is located on the southern bank of the Holston River at mile 106.3 in Hawkins County, Tennessee. The JSF is approximately three miles southeast of the city of Rogersville. Access to the disposal site referred to as the Borrow Area Ash Stack or the Highway 70 Borrow site is by State Highway 70. Reference is made to Figure I which is an excerpt of the Hawkins County map.

B. Operational History

The subject disposal site is located at the south-central border of the John Sevier Fossil Plant reservation, adjacent to Highway 70. The general area consists of a bluff, rising approximately 30 to 40 feet above the general elevation of the large plain which is occupied by the plant. The bluff in this area was initially used as a source of borrow soil for the construction of dikes surrounding ash ponds. Excavations were made into the sides of the bluff such that the base of the cut roughly matched that of the lower plain.

During the latter part of the 1980s, approximately 120,000 cubic yards of fly ash was removed from ponds within the plant reservation and placed in a portion of the borrow area excavation measuring approximately 300 by 600 feet in plan. This area was subsequently covered with a soil cap and vegetated. This area has not been used for waste disposal since 1985, and is therefore not considered to be affected by the Tennessee Solid Waste Regulations promulgated on March 19, 1990.

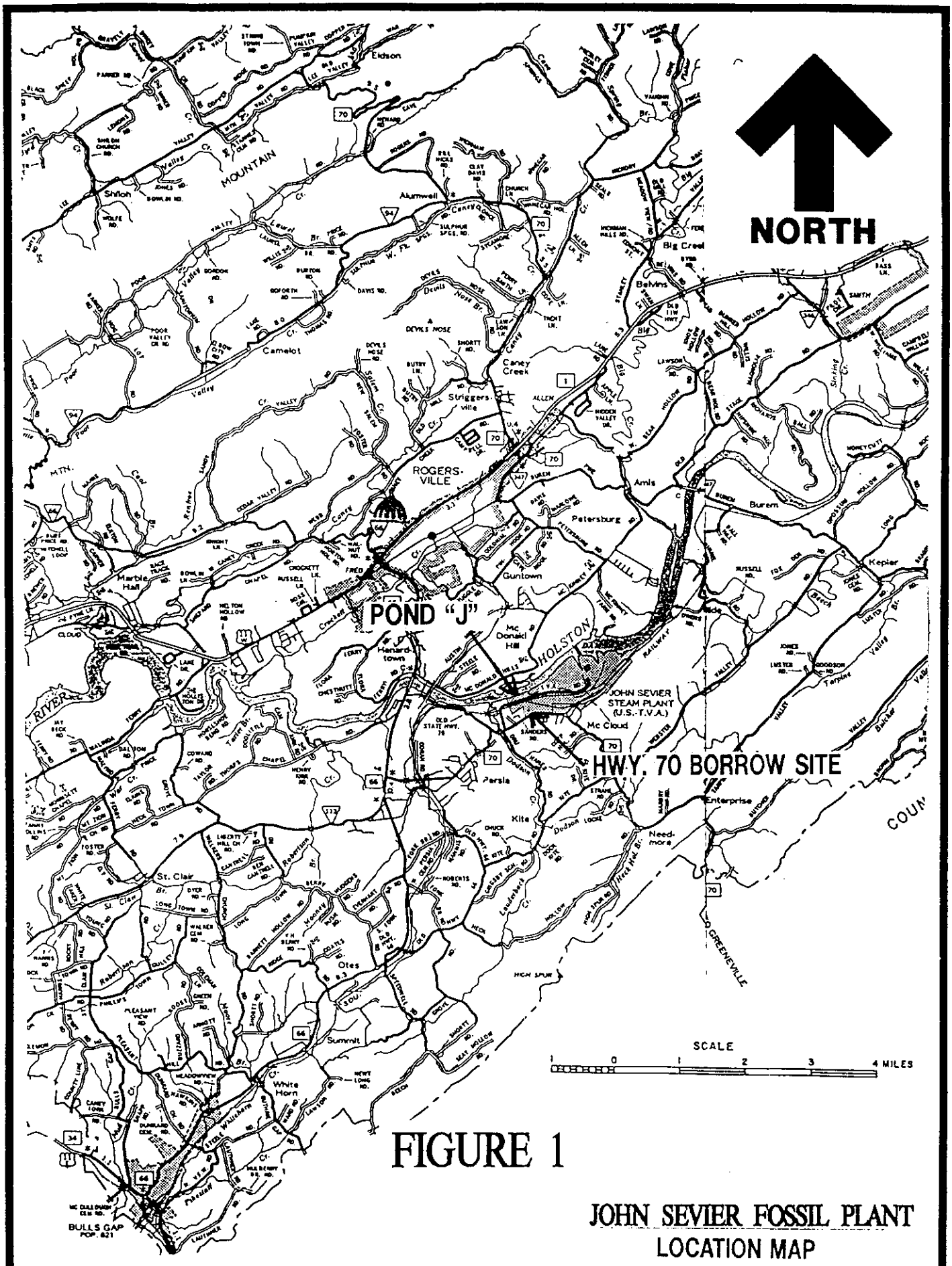

FIGURE 1

JOHN SEVIER FOSSIL PLANT
LOCATION MAP

C. Expected Year of Closure

The Highway 70 Borrow Site has not received dry fly ash or any other type of solid waste material since 1985. It is proposed to proceed with the final closure steps immediately upon approval of this closure plan by the DSWM.

It is anticipated to take approximately 6 months to complete the work required for closure from the time this plan is approved by the DSWM.

D. Facility Contact

The names, addresses and telephone numbers of the TVA personnel that may be contacted during the closure period are listed as follows:

Plant Manager
Tennessee Valley Authority
John Sevier Fossil Plant
P.O. Box 2000
Rogersville, TN 37857
(615)272-8152

As of the date of this report the plant manager is Mr. Bill Edwards.

II. FACILITY CLOSURE

A. Complete Closure Steps

1. Final Cover

The extent of the Highway 70 Borrow Area Disposal Site are indicated on the drawings prepared by TVA and submitted as part of this Closure Plan. The extent of the ash was determined through a program of exploration conducted by Law Engineering in 1992. The program

included the performance of a series of shallow hand auger borings conducted around the periphery of the disposal area to determine its lateral extent, followed by the drilling of 4 soil test borings within the waste cell to determine the vertical extent of the ash. Logs of the 4 soil test borings are included in Appendix A for informational purposes. The locations of these borings within the disposal area are indicated on TVA Drawing 10W288.

As stated previously, no ash or other material has been disposed of at this site since 1985. It is not proposed to place any additional ash at this site. TVA will close this site under the DSWM regulations in force prior to March 19, 1990. As specified in the DSWM regulations in force prior to March 19, 1990, the existing final cover consists of approximately 12" of compacted earth cover. The final surface shall be re-graded wherever necessary to promote drainage but no surface slope shall be so steep as to cause erosion of the cover. This final grading will facilitate control of precipitation run-off and minimize infiltration or accumulation of moisture within the dry fly ash.

Currently, most of the waste disposal site incorporates a suitable cover. However, localized areas have experienced some erosion and burrow holes, reducing the thickness of cover and removing vegetation. All

existing vegetation will be stripped in improperly covered areas, new fill will be placed to complete the 12 inch thick cap, and vegetative cover will be re-established.

2. Vegetative Cover

An excellent vegetation cover exists over most of the site. In order to establish an adequate vegetative cover, the conditioning, fertilizing and seeding of the areas that require repairs shall begin immediately upon placement of the final cover. The applicable seeding methods and types to be used for vegetation will be selected in consideration of seasonal and other factors. TVA specifications for seed mixture applications are included in Appendix B. Care will be taken to exclude plant species which have deep root systems that could have an adverse impact upon the integrity of the final cap.

3. Groundwater Monitoring

Monitoring wells located both upgradient and downgradient of the site are monitored as part of other permit-related activities at the plant and the results are reported on a regular basis. Therefore, no additional monitoring is required for this site.

4. Closure Schedule

Immediately upon approval of this closure plan by the DSWM, TVA will take steps to implement the complete closure of this site.

Closure activities, to include any necessary grading and establishment of vegetative cover will be completed as soon as possible.

TVA will notify DSWM in writing of completion of closure of the Highway 70 Borrow Site. Such notification will include a certification by TVA that the Highway 70 Borrow Site has been closed in accordance with the approved Closure Plan. An inspection of the entire site shall be made by a representative of the DSWM before the work is considered complete at the site. Any corrective work shall be performed before the project is accepted. Arrangements satisfactory to the DSWM shall be made for repair of all cracked, eroded and uneven areas in the final cover during the year following completion of the final closure.

5. Notice in Deed to Property

TVA is required to ensure that upon completion of final closure of the facility and prior to sale or lease of the property on which the facility is located, there is recorded, in accordance with State law, a notation on the deed to the property or on some other instrument which is normally examined during title search that will

in perpetuity notify any person conducting a title search that the land has been used as a disposal facility.

6. One Year Maintenance Period

Maintenance Activities - During the one year maintenance period, TVA will, at a minimum, perform the following activities:

1. Maintain the approved final contours and drainage system of the site such that erosion of the cover/cap is minimized, precipitation on the site is controlled and directed off the site, and ponding is eliminated.
2. Ensure that a healthy vegetative cover is established and maintained over the site.
3. Maintain the drainage facilities, sediment ponds, and other erosion/sedimentation control measures (if such are present at the disposal site), at least until the vegetative cover is established sufficiently enough to render such maintenance unnecessary.

APPENDIX A

RESULTS OF ON-SITE BORINGS

DEPTH (FT.)	DESCRIPTION	ELEVATION (FT.)
0.0		1145.1
0.8	COVER - TAN CLAYEY SILT	
	FILL ASH - VERY SOFT, DARK GRAY, VERY FINE ASH WITH TRACE OF COARSE GRAINED CINDERS	
23.0	RESIDUAL - SOFT, DARK BROWN, GRAY, CLAYEY SILT WITH PARTIALLY WEATHERED SHALE	
28.0	PARTIALLY WEATHERED ROCK - SAMPLED AS VERY HARD TAN, GRAY, CLAYEY SILT	
29.5	AUGER REFUSAL AT 29.5 FEET	

● PENETRATION - BLOWS/FOOT

0 10 20 30 40 60 80 100

1140.1
1135.1
1130.1
1125.1
1120.1
1115.1
1110.1

REMARKS:

INSTALLED PIEZOMETER WITH 1-INCH PVC CASING. ON MAY 8, 1992 GROUNDWATER MEASURED AT DEPTH OF 22.1 FEET.

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVATIONS USED ABOVE

SOIL TEST BORING RECORD

BORING NUMBER	B-1
DATE DRILLED	March 27, 1992
PROJECT NUMBER	57401440.03
PROJECT	TVA - JOHN SEVIER PLANT
PAGE 1 OF 1	

LAW ENGINEERING

DEPTH (FT.)	DESCRIPTION	ELEVATION (FT.)
0.0		1130.5
1.1	COVER - TAN CLAYEY SILT	
	FILL ASH - VERY SOFT, DARK GRAY, FINE GRAINED ASH WITH TRACES OF COARSE GRAINED CINDERS	1125.5
		1120.5
13.5		
	FILL - FIRM , REDDISH BROWN, TAN, SILTY CLAY WITH ROUND MEDIUM GRAVEL	1115.5
16.0		
18.0	FILL - STIFF, BROWN, TAN, GRAY, CLAYEY SILTY SAND FINE TO MEDIUM GRAVEL	1110.5
22.0		
24.0	RESIDUAL - FIRM, TAN, SILTY CLAY WITH PARTIALLY WEATHERED ROCK FRAGMENTS	1105.5
28.5		
	VERY SOFT, BROWN, TAN, SILTY CLAY WITH PARTIALLY WEATHERED ROCK FRAGMENTS	1100.5
33.5		
	FIRM, BROWN, TAN, SILTY CLAY WITH PARTIALLY WEATHERED ROCK FRAGMENTS	1095.5
40.0	AUGER REFUSAL AT 41.2 FEET	

● PENETRATION - BLOWS/FOOT

0 10 20 30 40 60 80 100

REMARKS:

INSTALLED PIEZOMETER WITH 1-INCH PVC CASING. ON MAY 8, 1992 GROUNDWATER MEASURED AT DEPTH OF 31.37 FEET.

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVATIONS USED ABOVE

SOIL TEST BORING RECORD

BORING NUMBER	B-2
DATE DRILLED	March 28, 1992
PROJECT NUMBER	57401440.03
PROJECT	TVA - JOHN SEVIER PLANT
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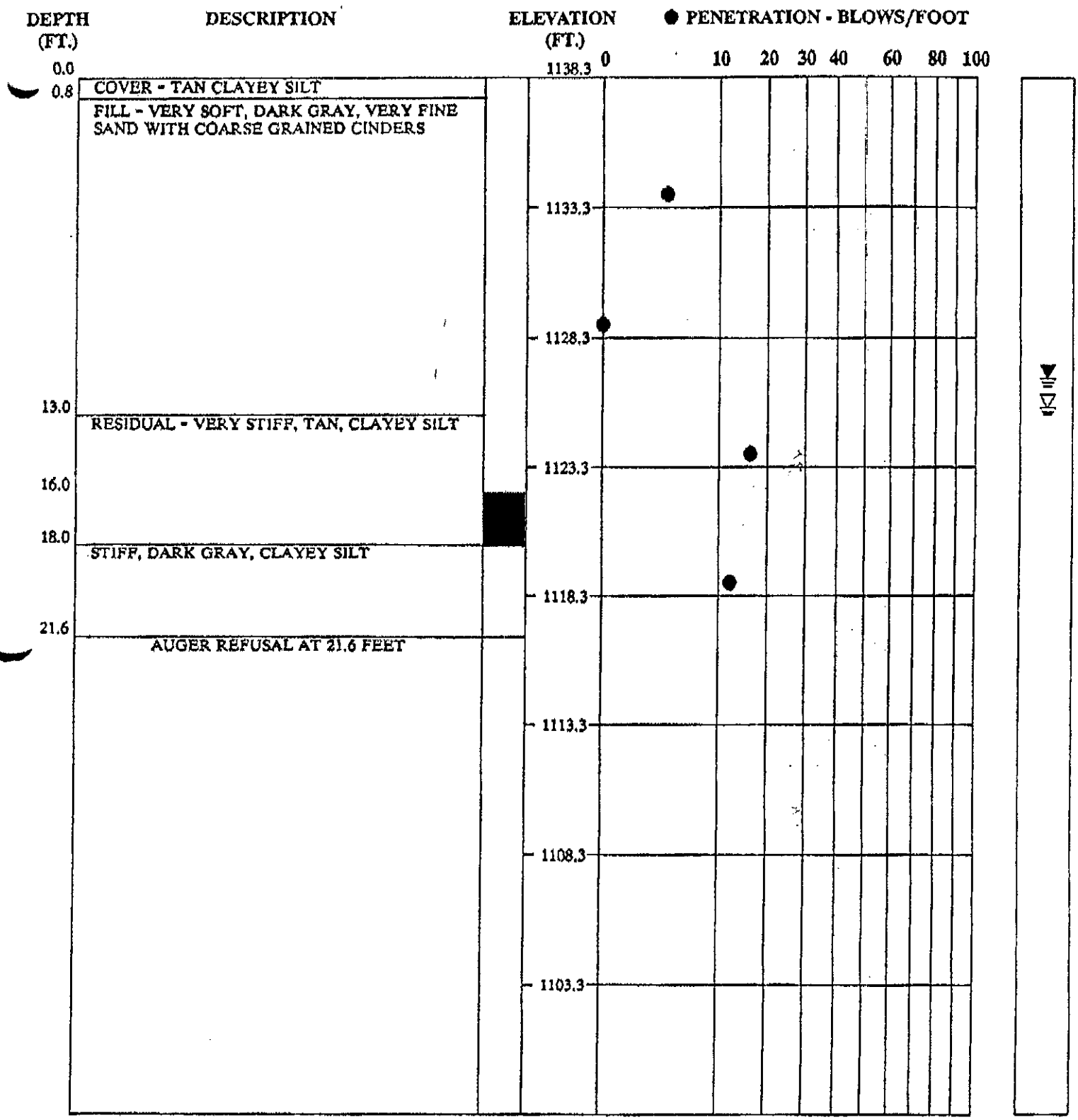
LAW ENGINEERING



REMARKS:

INSTALLED PIEZOMETER WITH 1-INCH PVC CASING. ON MAY 8, 1992 GROUNDWATER MEASURED AT DEPTH OF 11.60 FEET.

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVATIONS USED ABOVE

SOIL TEST BORING RECORD

BORING NUMBER	B-3
DATE DRILLED	March 28, 1992
PROJECT NUMBER	57401440.03
PROJECT	TVA - JOHN SEVIER PLANT
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LAW ENGINEERING

DEPTH (FT.)	DESCRIPTION	ELEVATION (FT.)
0.0		1138.2
1.1	COVER - TAN, BROWN, CLAYEY SILT	
	FILL - VERY SOFT, DARK GRAY, VERY FINE ASH WITH TRACE OF COARSE GRAINED CINDERS	1133.2
		1128.2
		1123.2
18.0	RESIDUAL - FIRM, BROWN, GRAY CLAYEY SILT	1118.2
24.0		
24.5	PARTIALLY WEATHERED ROCK - SAMPLED AS VERY HARD, GRAY, CLAYEY SILT	1113.2
	AUGER REFUSAL AT 24.5 FEET	1108.2
		1103.2

● PENETRATION - BLOWS/FOOT

0 10 20 30 40 60 80 100

REMARKS:

INSTALLED PIEZOMETER WITH 1-INCH PVC CASING, ON MAY 8, 1992 GROUNDWATER MEASURED AT DEPTH OF 16.47 FEET.

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVATIONS USED ABOVE

SOIL TEST BORING RECORD

BORING NUMBER	B-4
DATE DRILLED	March 28, 1992
PROJECT NUMBER	57401440.03
PROJECT	TVA - JOHN SEVIER PLANT
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APPENDIX B

TVA VEGETATION SPECIFICATIONS

SECTION 580 - Seeding (Pay Item 580)

580.1 -- Description

This specification consists of furnishing and placing seed, commercial fertilizer, and agricultural limestone on roadway slopes, shoulders, borrow pits, channel banks, waste areas, lawns, meadows, beaches, open play areas, and other areas specified by the plans or the Engineer and in accordance with the methods outlined by these specifications.

580.2 -- Materials

1. Seeds

Seeds shall meet the requirements of applicable seed laws and shall be tested in accordance with the most current edition of the U.S. Department of Agriculture Handbook No. 30, Testing Agricultural and Vegetable Seed. Seeds shall be from the last preceding crop and comply with the requirements outlined below for purity and germination. Each variety of seed shall be furnished in separate, strong bags with each bag being fully tagged or labeled to show the variety, weight, purity, germination, and test data prescribed by law. All test results shall be fully certified by the vendor or by a recognized seed testing agency. TVA reserves the right to require that samples be furnished, and to inspect and test the seeds after delivery. Seeds found not to comply with specification requirements shall be subject to rejection.

When mixing or forming seed mixtures, the seeds shall be carefully and uniformly mixed. Seeds shall not be mixed until each variety of seed to be used in the mix has been inspected and/or tested separately and approved.

Seed Varieties	Purity, Minimum %	Germination, Minimum %
Korean Lespedeza (Lespedeza stipulacea), scarified	90	85
Sericea Lespedeza (Lespedeza cuneata), scarified	95	85
Interstate Sericea Lespedeza (Lespedeza cuneata, variety Interstate), scarified	95	85
White Clover (Trifolium repens)	95	85
Alsike Clover (Trifolium repens hybridum)	95	85

1

580.2 -- Materials (Continued)

Seed Varieties	Purity, Minimum %	Germination, Minimum %	
Red Clover (Trifolium pratense)	85	95	
Crownvetch (Coronilla varia), scarified	95	80	
Foxtail Millet (Setaria italica)	80	98	
Bermuda Grass (Cynodon dactylon), hulled	95	80	
Annual Rye (Lolium multiflorum)	90	90	
Perennial Rye (Lolium perenne)	90	90	
Kentucky 31 Fescue (Festuca arundinacea, variety Ky 31)	95	85	
Rebel Fescue (Festuca arundinacea, variety Rebel)	95	85	1
Hard Fescue (Festuca ovina, duriuscula)	95	85	1
Kentucky Bluegrass (Poa pratensis)	95	90	
Creeping Red Fescue (Festuca rubra)	95	90	
Centipede Grass (Eremochloa ophiuroides)	90	75	
Weeping Lovegrass (Eragrostis curvula)	95	90	
Switchgrass (Panicum virgatum)	80	75	1
Zoysia Grass (Zoysia japonica)	95	80	
Little Bluestem Grass (Andropogon scoporius)	40	60	
Bahia Grass (Paspalum notatum)	75	80	
Buffalo Grass (Buchloe dactyloides)	85	50	

580.2 -- Materials (Continued)

Seeding materials shall be free from seeds or bulbets of Wild Onion (Allium vineale), Canada Thistle (Cirsium arvense), and Johnson Grass (Sorghum halepense).

Seed species shall not contain more than six seeds per ounce of the seed of any of the following noxious weeds or the seeds of any other weed specifically listed as noxious:

Bindweed (Convolvulus arvensis)
Buckthorn (Plantago lanceolata)
Corncockle (Agrostemmo githago)
Dodder (Cuscuta species)
Oxeyedaisy (Chrysanthemum leucantheumum)
Quackgrass (Agropyron repens)
Sorrel (Rumex acetosella)

Seed species shall not contain an excess of 2 percent by weight of weed seeds, noxious or otherwise.

2. Seed or seed mixtures, rates, and seasons

Seeding mixtures, rates, and seasons shall be those specified herein. The types to be used for each area or project will be specified by the drawings or by memorandum. Mixtures or rates of application other than those specified shall be used only when specified by the plans or the Engineer. Seeding shall be planted during the season and between the dates specified. Temporary cover shall be planted when it is required during seasons not suitable for planting the seed specified by the plans.

a. Lawns

Type 1: Spring or fall seeding (Plant between March 15 and May 1, or between August 15 and October 15).

(1) Kentucky 31 Fescue . . . 120 pounds per acre
(2) Rebel Fescue . . . . . 120 pounds per acre
(3) Creeping Red Fescue . . 80 pounds per acre

Type 2: Fall seeding (Plant between August 15 and October 15).

(1) Perennial Ryegrass . . . 120 pounds per acre
(2) Kentucky Bluegrass . . . 80 pounds per acre

Type 3: Spring seeding (Plant between March 15 and May 1).

Bermuda Grass . . . . . 40 pounds per acre

580.2 -- Materials (Continued)

b. Meadows

Type 4: Spring seeding (Plant between March 15 and May 1).

Mixture:

(1) Kentucky 31 Fescue . . . 50 pounds per acre
Korean Lespedeza (scarified) . . . . . 10 pounds per acre
Alsike Clover . . . . . 10 pounds per acre
Total mixture . . . 70 pounds per acre

(2) Bermuda Grass (hulled) . . . . . 40 pounds per acre
Korean Lespedeza (scarified) . . . . . 10 pounds per acre
Total mixture . . . 50 pounds per acre

(3) Sericea Lespedeza (scarified) . . . . . 30 pounds per acre
Kentucky 31 Fescue . . . 30 pounds per acre
Total mixture . . . 60 pounds per acre

(4) Interstate Sericea Lespedeza (scarified) . . . . . 30 pounds per acre
Kentucky 31 Fescue . . . 30 pounds per acre
Total mixture . . . 60 pounds per acre

(5) Crownvetch (inoculated and scarified) . . . . 30 pounds per acre
Kentucky 31 Fescue . . . 30 pounds per acre
Total mixture . . . 60 pounds per acre

Type 5: Fall seeding (Plant between August 15 and October 15).

Mixture:

(1) Kentucky 31 Fescue . . . 50 pounds per acre
White Clover . . . . . 15 pounds per acre
Total mixture . . . 65 pounds per acre

(2) Bluegrass . . . . . 50 pounds per acre
White Clover . . . . . 15 pounds per acre
Total mixture . . . 65 pounds per acre

1

580.2 -- Materials (Continued)

c. Channel Banks, Cuts, Fill Slopes, Waste Areas, and Other Disturbed Areas

Type 6: Spring seeding only (Plant between March 15 and May 15).

Mixture:

(1) Kentucky 31 Fescue . . . 60 pounds per acre

(2) Bermuda Grass (hulled) . 40 pounds per acre

(3) Creeping Red Fescue . . 80 pounds per acre
(Shaded slopes only)

(4) Weeping Lovegrass . . . 15 pounds per acre
Korean Lespedeza
(scarified) . . . . . 10 pounds per acre
Total mixture . . . 25 pounds per acre

(5) Sericea Lespedeza
(scarified) . . . . . 30 pounds per acre
Kentucky 31 Fescue . . . 30 pounds per acre
Total mixture . . . 60 pounds per acre

(6) Interstate Sericea
Lespedeza (scarified) . 30 pounds per acre
Rebel Fescue . . . . . 30 pounds per acre
Total mixture . . . 60 pounds per acre

(7) Crownvetch (scarified
and inoculated) . . . . 30 pounds per acre
Kentucky 31 Fescue . . . 30 pounds per acre
Total mixture . . . 60 pounds per acre

(8) Bahia Grass . . . . . 40 pounds per acre
Bermuda Grass . . . . . 20 pounds per acre
Switch Grass . . . . . 10 pounds per acre
Total mixture . . . 70 pounds per acre

(9) Rebel Fescue . . . . . 40 pounds per acre
Hard Fescue . . . . . 10 pounds per acre
White Clover . . . . . 5 pounds per acre
Total mixture . . . 55 pounds per acre

1

1

580.2 -- Materials (Continued)

c. Channel Banks, Cuts, Fill Slopes, Waste Areas, and Other Disturbed Areas (Continued)

Type 7: Summer seeding (Plant between May 15 and July 15).

Mixture:

(1) Bermuda Grass (hulled) . 40 pounds per acre
Korean Lespedeza (scarified) . . . . . 10 pounds per acre
Total mixture . . . 50 pounds per acre

(2) Buffalo Grass . . . . . 40 pounds per acre
Korean Lespedeza (scarified) . . . . . 10 pounds per acre
Total mixture . . . 50 pounds per acre

Type 8: Fall seeding (Plant between August 15 and October 15).

(1) Kentucky 31 Fescue . . . 60 pounds per acre
White Clover . . . . . 15 pounds per acre
Total mixture . . . 75 pounds per acre

(2) Hard Fescue . . . . . 10 pounds per acre
Rebel Fescue . . . . . 40 pounds per acre
White Clover . . . . . 5 pounds per acre
Total mixture . . . 55 pounds per acre

(3) Rebel Fescue . . . . . 40 pounds per acre
Hard Fescue . . . . . 10 pounds per acre
White Clover . . . . . 5 pounds per acre
Total mixture . . . 55 pounds per acre

1

d. Highway Shoulders

The planting dates and seed mixtures for each type listed here are described above.

Type 6: Spring seeding [Mixture (1), (2), (3) or (9)]

Type 7: Summer seeding [Mixture (1) or (3)]

Type 8: Fall seeding [Mixture (2)]

1

580.2 -- Materials (Continued)

e. Temporary Cover

Type 9: Temporary winter seeding (Plant between October 15 and March 15).

Annual Ryegrass	80 pounds per acre
White Clover	10 pounds per acre
Total mixture	90 pounds per acre

Type 10: Temporary summer seeding (Plant between May 1 and August 15).

Mixture:

(1)

Korean Lespedeza (scarified)	20 pounds per acre
Foxtail Millet	20 pounds per acre
Total mixture	40 pounds per acre

(2)

Red Clover	20 pounds per acre
Weeping Lovegrass	10 pounds per acre
Total mixture	30 pounds per acre

3. Fertilizer

Fertilizers shall be those readily available commercially. The application of fertilizer shall be at a rate of 200 pounds Ureaform (38-0-0) per acre with either 400 pounds of 15-15-15 per acre or 600 pounds of 6-12-12, unless specified otherwise by the drawings or memorandum.

Ammonium nitrate (NH_4NO_3) may be used for supplemental fertilization when specified by the Engineer.

4. Agricultural Limestone

Limestone shall contain no less than 85 percent calcium carbonate by weight. It shall be crushed so that at least 85 percent will pass a No. 10 sieve. The application of limestone shall be at the rate of 2 tons per acre unless specified otherwise by the drawings or memorandum. Hydrated lime may be substituted at a rate of 1 ton per acre.

580.3 -- Topsoil

All lawn areas to be seeded shall have a 2-inch minimum depth of topsoil immediately below finish grade. Topsoil requirements for other areas, if any, will be determined by field inspection and shall comply with Section 581.3.

580.4 -- Soil Preparation

Areas to be seeded shall have approved cross sections and grades. Objects such as large roots, stones, stumps, coarse vegetation, debris, or any other items that might impede mechanical mowing shall be removed and disposed of satisfactorily.

Seedbeds shall be plowed, disked, harrowed, scarified, or cultivated to the approved depth. In areas where it is practical, this work shall be done with farm-type equipment. On steep slopes, preparation of seedbeds shall be done with the tools and methods specified by the Engineer. It is strongly recommended that scarifying and preparation of seedbeds on cut and fill slopes be accomplished with tools or equipment specially designed for this purpose. Small furrows or grooves formed in the slopes shall be horizontal or as nearly horizontal as practical. The work shall be performed only when the ground is in a workable and tillable condition as determined by good farming practices.

580.5 -- Special Hydroseeding Equipment

Equipment to be used for the hydraulic application of planting materials shall be a Finn Hydro-Seeder, Bowie Hydro Mulcher, Toro Environmental Control Unit, or an approved equal. The equipment shall have mixing tanks with built-in agitators having operating capacities sufficient to agitate, suspend, and homogeneously mix slurries of water and planting materials. Tanks shall have capacities of 1000 gallons or more, and shall be mounted on traveling units that can be either self-propelled or towed by a separate vehicle. The slurry distribution lines shall be large enough to prevent clogging or stoppage. Discharge lines shall be equipped with sets of different sized hydraulic spray nozzles capable of providing for even distribution of varying slurry mixtures on areas to be seeded. Slurry mixture rates are described in Section 580.6.

580.6 -- Seeding Methods

Seeds shall be sown with approved mechanical power-drawn drills or seeders, hand cyclone seeders, or with special hydroseeding equipment. Rates specified in Section 580.2 shall be maintained in a manner that will guarantee uniform coverage. Seeding operations shall not be performed when drought, high winds, and excessive moisture or other factors may defer satisfactory results.

On slopes where the use of drills or seeders is not practical and in other areas specified by plans or by memorandum, seeding shall be accomplished using hydroseeding equipment.

Drill seeding shall be performed in rows with spacing suitable for the type of seed or mixture used. Fertilizer may be drilled simultaneously if drills are equipped for this type of operation. Where fertilizer is not drilled, it may be applied during the cultivation operation described in Section 580.4. When fertilizer and seed are applied separately, the fertilizer shall be spread uniformly over the prepared seedbeds prior to final filling. Rates of application shall be those specified by the plans or the Engineer or those specified in this section. It shall be thoroughly mixed with soil for a depth of 1/2-inch.

580.6 -- Seeding Methods (Continued)

Care shall be taken to ensure that seed and fertilizer remain uniformly and thoroughly mixed in the seeding equipment. Additional mixing shall be performed if necessary to avoid segregation of the seed or seed and fertilizer.

Hydroseeding is the method of applying lime, fertilizer, seed, and mulch combined with water in a single operation. Using the equipment described in Section 580.5, mixing tanks shall be filled with water to the level indicated inside of the tanks. With the engines turned on and the agitators running, the following materials shall be added: (1) limestone at the specified rate of 1/5 per acre (finely ground); (2) fertilizer; (3) seed (Section 580.2); and (4) wood fiber mulch (Section 582.2), for each 1000 gallons of water. The resulting slurries shall be applied to seedbeds at a rate of 5000 gallons per acre.

When hydroseeding slopes are 2:1 or steeper, a vinyl or plastic mulch (Section 582.2) shall be added to the slurries at the rate specified by the manufacturer.

Discharge lines are activated by opening bypass valves with hand levers that allow the slurries to spray through the nozzles. Slurries shall be sprayed on the seedbeds as the spraying vehicles move slowly across the area. Care shall be taken to ensure that all areas are evenly covered. If wind or rough terrain causes skips to occur, additional applications shall be made before moving to other areas. To provide for the even distribution of a slurry, hydroseeding should be performed with the wind or preferably with no wind at all.

For steep slopes, even coverage is best obtained when an application is begun at the top and worked down a slope with successive overlapping passes. When a hydroseeder is located on top of a slope, the reverse is true.

Seed not sown by drills or hydroseeders shall be covered to a depth of approximately 1/4-inch by lightly harrowing or raking. Raking or harrowing shall follow contours as closely as practical.

Where mulching is to be done, the mulch shall be applied immediately after the seeding is completed to avoid the loss of soil moisture or possible erosion. Mulching shall comply with Section 182.

When specified by the Engineer, one or more applications of fertilizer shall be made after a stand of grass has been obtained and allowed to grow for a period of from 3 to 6 weeks. The grade and rate of application of the fertilizer will be specified by the Engineer. When ammonium nitrate or a similar soluble fertilizer is used alone, areas shall be thoroughly soaked as soon as an application is completed.

580.7 -- Maintenance

Seeded areas shall be maintained until a satisfactory cover of plant material is secured, unless stipulated otherwise. All areas shall be preserved, repaired, and protected as specified for this purpose. Areas having poor stands of plant material shall be seeded again and fertilized at the proper rates.

Watering shall be accomplished during the maintenance period to the extent necessary.

580.8 -- Method of Measurement

Seeded areas will be measured in square yard units and include the seeded areas along slopes.

580.9 -- Costs

Costs for Pay Item 580 shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work for this item.