Energy Systems Environmental Restoration Program

**Storm Water Control Plan
for the Lower East Fork
Poplar Creek Operable Unit,
Oak Ridge, Tennessee**

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Environmental Management Activities at the
OAK RIDGE Y-12 PLANT
Oak Ridge, Tennessee 37831-8169
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

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PREFACE

This *Storm Water Control Plan for the Lower East Fork Poplar Creek Operable Unit, Oak Ridge, Tennessee (Y/ER-259)*, was prepared in support of the *Phase II Remedial Design Report (DOE/OR/01-1499&D1)* and in accordance with requirements under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) to present the plan for storm water control practices which will be followed during the remediation. This work was performed under Work Breakdown Structure 1.4.12.3.1.04, Activity Data Sheet 9304 "Lower East Fork Poplar Creek." This document provides the Environmental Restoration Program with information about the erosion and sediment control, storm water management, maintenance, and reporting and record keeping practices to be employed during Phase II of the remediation project for the Lower East Fork Poplar Creek (LEFPC) Operable Unit.

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ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	certified for construction
DOE	U.S. Department of Energy
Energy Systems	Lockheed Martin Energy Systems, Inc.
ILF-V	Industrial Landfill V, Y-12
LEFPC	Lower East Fork Poplar Creek
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation

1. INTRODUCTION

1.1. OVERVIEW

The U.S. Department of Energy (DOE) has three major operating facilities on the DOE Oak Ridge Reservation (ORR) (the Reservation) in Oak Ridge, Tennessee. They are the Y-12 Plant and the K-25 Site, managed by Lockheed Martin Energy Systems, Inc.; and Oak Ridge National Laboratory (ORNL), managed by Lockheed Martin Energy Research Corp.

The Y-12 Plant is adjacent to the city of Oak Ridge and is also upstream from Oak Ridge along East Fork Poplar Creek. The portion of the creek downstream from the Y-12 Plant is Lower East Fork Poplar Creek (LEFPC). The project includes removal of mercury-contaminated soils from the LEFPC floodplain, transportation of the soils to Industrial Landfill V (ILF-V), and restoration of any affected areas. See Fig. 1 in Appendix A for location of site features.

The project contains areas that were designated in 1989 as a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site, including DOE property and portions of commercial, residential, agricultural, and miscellaneous areas within the city of Oak Ridge.

The two sites designated for remediation within this project are the National Oceanic and Atmospheric Administration (NOAA) site and the Bruner Site. Figs. 2, 3, 4, and 5 in Appendix A shows the extent of remediation at each site.

ILF-V, an existing Class II landfill, will receive the contaminated soils.

The remediated areas will be backfilled with "clean" soils. Backfill soils will be obtained from a borrow area located at the West Borrow Area as shown in Fig. 1 in Appendix A.

The purpose of this document is to provide specific storm water control requirements at the NOAA site and at the Bruner site. Storm water control at the ILF-V and the West Borrow area is not within the scope of this document; it is addressed in the construction documents and operational documents for the respective areas.

1.2 PROJECT DESCRIPTION

The NOAA site and the Bruner site are located in the 100-year floodplain of East Fork Poplar Creek. Both sites contain wetlands and include wetlands mitigation. Both sites are heavily wooded, which makes site access a crucial part of the project.

Site remediation will directly disturb approximately 7.5 acres.

Location	Site Remediation
NOAA Site	1.7 acres
Bruner Site	5.8 acres

The total area subject to clearing and/or grading is 15.0 acres.

Location	Clearing or Grading
NOAA Site	5.5 acres
Bruner Site	9.5 acres

Additional confirmatory testing and analysis is part of the project scope, which may increase the total volume to be excavated.

Most of the site remediation areas involve excavation of approximately 16 in. of soil, and placement of an equivalent amount of clean backfill and topsoil. A few site remediation areas will be excavated to a depth of 32 in. and backfilled. No excavation is allowed within the stream bed.

Temporary gravel access roads and drainway crossings are required at both sites.

The duration of the project is expected to be 6 months. The project schedule is included in Appendix D.

1.3 EXISTING SITE CONDITIONS

The NOAA site is heavily wooded with deciduous trees and shrubs. It contains light underbrush and a thick layer of topsoil and organic matter. Small rock outcroppings are present in the stream and on the banks. The stream has stretches of divided flow with some evidence of erosion occurring along stream banks and islands.

The NOAA site is located to the west of commercial properties on Illinois Avenue, a major highway. The site is located to the east of commercial and office properties currently being developed. There are no existing storm drainage structures within the NOAA site, but there are existing ravines and ditches. There is a 12-in. diam water line crossing the southern excavation areas. There is a 21-in. diam sewer pipe adjacent to the excavation areas on the east side of EFPC.

The Bruner site is very heavily wooded. It contains deciduous and evergreen trees in addition to heavy underbrush. The stream has stretches of divided flow with some evidence of erosion occurring along the stream banks.

The Bruner site is located south of Oak Ridge Turnpike (TN State Route 95), a major highway. There are no developed areas immediately adjacent to the site. There are no existing storm drainage structures within the site, but there are existing ravines and ditches. There is a major sanitary sewer trunk line located within portions of the remediation areas. There is an 10-in. diam natural gas main as well as overhead utilities immediately south of the Oak Ridge Turnpike.

1.4 SOILS

The predominant soil at both sites is Newark silt loam, deposited in the EFPC floodplain. The underlying rock strata are primarily shale and sandstone. The hydrologic soil classification is C, which

denotes poor drainage conditions. Most of the nearby soils are classified as silt loam. Some clay is also present in nearby soils.

The soil that will be used for backfill material will come from the West Borrow Area. The backfill soils are principally clay. Topsoil will be placed on top of the backfill areas and used to promote revegetation. Topsoil materials used will be a fertile, fine sandy loam.

2. EROSION AND SEDIMENT CONTROL

All vegetative and structural erosion and sediment control practices will be constructed and maintained in accordance with the certified-for-construction (CFC) plans and specifications.

2.1 MANAGEMENT STRATEGIES

1. Construction traffic will be limited to access roads, areas to be graded, staging areas, and other areas designated by the Construction Manager. Clearing and earthwork will be held to the minimum necessary for grading and equipment operation.
2. Silt fences and other erosion and sediment control devices will be installed as a first step in construction and will be maintained throughout the construction period. Areas of topsoil will be seeded and mulched promptly, following completion of grading. Temporary measures may be removed at the beginning of the workday, but will be replaced at the end of the workday. Silt fences and other erosion control measures will be left in place and maintained as outlined in the CFC specifications.
3. Areas which are not to be disturbed will be clearly marked by flags, signs, etc.
4. The contractor will be responsible for the implementation and maintenance of all erosion and sediment control practices.
5. Records and information resulting from the monitoring activities will be retained for a minimum of 3 years, or longer if requested by the Division of Water Pollution Control.
6. Scheduled earthwork activities will be adjusted based on probable weather conditions to minimize work performed during inclement weather. All reasonable attempts will be made to ensure that excavated areas are promptly backfilled and that they are not left open between shifts or during periods of precipitation.
7. Backfilled areas will be covered with topsoil within 3 days of placement of backfill unless weather conditions prevent placement of topsoil.
8. All pumping of accumulated water from excavation and work areas must be approved by the Construction Manager and will be treated by a water treatment system prior to its discharge to the POTW.
9. Storm water discharge from the site will meet the following criteria:
 - a. There will be no distinctly visible floating scum, oil, or other matter contained in the storm water discharge.
 - b. The storm water discharge will not cause an objectionable color contrast in the receiving stream.

- c. The storm water discharge will result in no materials in concentrations sufficient to be hazardous or detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

2.2 STRUCTURAL PRACTICES

1. **Silt Fences.** Silt fences will be installed to intercept and detain sediment from the disturbed areas.
2. **Straw Bale Barriers.** Straw bale barriers will be installed as shown on the CFC drawings.

2.3 VEGETATIVE PRACTICES

1. Preconstruction vegetation will not be destroyed, removed, or disturbed more than 14 calendar days prior to grading unless authorized by the Construction Manager. In no case will vegetation be removed more than 20 calendar days prior to grading.
2. Areas covered with topsoil will be seeded or sodded within 2 days unless weather conditions prevent satisfactory completion of work. Seeded areas will be covered promptly with erosion control blankets.
3. Areas to be seeded or sodded will be covered with a uniform layer of topsoil at least 4 in. thick.

2.4 RECONTOURING PRACTICES

1. Areas disturbed during construction activities will be restored to approximate original contour as shown on the CFC drawings.
2. Areas where soils have been excavated will be backfilled to within approximately 4 in. of the original ground surface.
3. Topsoil will be placed on top of the backfilled areas.

3. MAINTENANCE

In general, all erosion and sediment control measures will be checked and will be repaired weekly, when necessary, during dry periods and also within 24-hr after any rainfall. During prolonged rainfall, checks and repairs will be made daily on all erosion control devices. The Contractor will maintain records of checks and repairs. The following items, in particular, will be checked:

1. Silt fences will be checked for undermining or deterioration of materials.
2. Straw bale barriers will be checked for undermining or deterioration of the bales.
3. All seeded and sodded areas will be checked regularly to see that a good stand is maintained. Areas will be fertilized and reseeded as needed.

4. REPORTING AND RECORD KEEPING

This project is covered under the General National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges Associated with Construction Activity. A copy of the General Permit Rule is provided with this plan in Appendix C.

The Contractor will maintain records of checks and repairs on site or at a nearby office. The Storm Water Control Plan will be kept on site and be made available to the Division of Water Pollution Control inspector on request.

5. STORM WATER MANAGEMENT

Calculations of runoff after development indicate that the peak discharge from a 1-in. rainfall at each site will be less than 1 cfs per site. A storm water detention structure is not necessary since the receiving channel, East Fork Poplar Creek, is able to accept the increase.

6. SUMMARY OF STORM WATER CONTROL PLAN

1. The project consists of two sites: the NOAA site and the Bruner site. Each site requires temporary access roads and stream crossings.
2. The total area to be cleared and/or graded is approximately 15.0 acres. The proposed project duration is 6 months.
3. Contaminated soil will be excavated and hauled to the ILF-V landfill.
4. Each site will be restored to the approximate existing grade using borrow material.
5. Erosion and sediment control is very important due to the presence of contaminated soil. Structural measures include silt fences, straw bale barriers, and temporary diversion dikes.

Appendix A

FIGURES

LOCATION PLAN
NOT TO SCALE

LOWER EAST FORK POPLAR CREEK
REMEDIAL ACTION, PHASE II

FIGURE 1
LOCATION MAP

the same time, the fact that the same person can be both a subject and an object of a relation is not a contradiction.

For example, a person can be both a subject and an object of a relation of self-love. In this case, the person is both the one who loves and the one who is loved.

Similarly, a person can be both a subject and an object of a relation of self-hatred. In this case, the person is both the one who hates and the one who is hated.

Therefore, the fact that the same person can be both a subject and an object of a relation is not a contradiction.

On the other hand, the fact that the same person can be both a subject and an object of a relation of self-love and self-hatred is a contradiction.

For example, a person cannot be both a subject and an object of a relation of self-love and self-hatred at the same time.

Therefore, the fact that the same person can be both a subject and an object of a relation of self-love and self-hatred is a contradiction.

In conclusion, the fact that the same person can be both a subject and an object of a relation is not a contradiction.

On the other hand, the fact that the same person can be both a subject and an object of a relation of self-love and self-hatred is a contradiction.

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LOWER EAST FORK POPLAR CREEK
REMEDIAL ACTION, PHASE II

FIGURE 2
NOAA SITE (SOUTH)

LOWER EAST FORK POPLAR CREEK
REMEDIAL ACTION, PHASE II

FIGURE 3
NOAA SITE (NORTH)

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OAK RIDGE TURNPIKE

LOWER EAST FORK POPLAR CREEK
REMEDIAL ACTION, PHASE II

FIGURE 4
BRUNER SITE (EAST)

LOWER EAST FORK POPLAR CREEK
REMEDIAL ACTION, PHASE II

FIGURE 5
BRUNER SITE (WEST)

Appendix B

CONSTRUCTION SPECIFICATIONS

SECTION 02270

SLOPE PROTECTION AND EROSION CONTROL

PART 1—GENERAL

1.01 DESCRIPTION

Section includes: Temporary control measures for slope protection and controls to reduce erosion, sedimentation, and water pollution through the use of erosion control devices.

1.02 RELATED SECTIONS

- A. Division 1.
- B. Section 02110, Site Clearing.
- C. Section 02200, Earthwork.
- D. Section 02936, Seeding and Seedlings.

1.03 REFERENCES

- American Association of State Highway and Transportation Officials (AASHTO).
- M 288-92, Geotextile Specification for Highway Applications.

1.04 SUBMITTALS

Submit for Construction Manager's approval, manufacturer's technical data and installation recommendations for erosion control blankets, including type and spacing of anchorage devices.

1.05 PROJECT/SITE CONDITIONS

- A. Coordinate temporary pollution control provisions with permanent erosion control features to assure economical, effective, and continuous erosion control throughout construction and postconstruction periods.
- B. Additional erosion control practices, procedures, and/or methods may be required as determined by location and methods of construction of minor access roads and temporary stockpile areas. The Contractor shall install additional erosion control measures as required to minimize erosion and prevent sediment from entering streams at the Contractor's expense.

PART 2—PRODUCTS

2.01 MATERIALS

A. Silt Fences

1. Geotextile filter cloth material shall be pervious sheets of strong rot-proof plastic fabric meeting the requirements of AASHTO M 288 for Sediment Control Fabrics.
2. Posts: Wood or steel and a minimum 4 ft long. Wood posts shall be at least 2 in. x 2 in. of oak or similar hardwood. Steel posts shall be round or "U", "T", or "C" shaped with a minimum weight of 1.33 lb/ft. Steel posts shall be used only when geotextile filter cloth material is manufactured with stake pockets.
3. Wire Staples: 9 gage and minimum 1 in. long.

B. Straw Mulching Material

In accordance with Section 02936, Seeding and Seedlings.

C. Erosion Control Blankets

1. General: Any chemical treatment used on erosion control blankets shall be nonleaching, nontoxic to vegetation and the germination of seed and noninjurious to the skin.
2. Type A - A machine produced blanket of clean, weed free straw from agricultural crops. The blanket shall be of a consistent thickness and the straw fiber evenly distributed over the entire area of the blanket. The top and bottom side of each blanket shall be covered with a photodegradable plastic netting having mesh size of 9/16" x 9/16". The top and bottom mesh shall be sewn to the fibers using a biodegradable thread. The blanket shall be at least 5 ft. wide and a minimum dry weight of 0.5 pounds per square yard, and shall be marked in a suitable manner to clearly indicate the top side.

- OR -

A machine produced blanket of 100% wood excelsior, smolder resistant, of which 80 percent has 4 inch or longer fiber length, with constant thickness and the fiber evenly distributed over the entire area of the blanket. The top side and bottom side of each blanket shall be covered with a heavyweight duty, photodegradable plastic netting having a mesh size of maximum 1" x 1". The blanket shall be at least 5 ft wide with a minimum dry weight of 1.0 pounds per square yard.

3. Type B - A machine produced blanket of seventy (70%) clean, weed free straw from agricultural crops and thirty percent (30%) coconut fiber. The blanket shall be a consistent thickness and the straw and coconut fiber evenly distributed over the entire area of the blanket. The top side of each blanket shall be covered with a heavyweight, photodegradable plastic netting having a mesh size of 3/4" x 3/4". The bottom shall be covered with a plastic netting having a mesh size of 3/4" x 3/4". The bottom shall be covered with a plastic netting of equal weight to or lighter weight than the top netting having mesh size of 3/4" x 3/4". The top and bottom mesh shall be sewn to the fibers using a biodegradable thread. The

blanket shall be at least 5 ft wide with a minimum dry weight of 0.5 pounds per square yard, and shall be marked in a suitable manner to clearly indicate the top side.

4. Anchoring stakes: Wood or other biodegradable anchoring devices. Length shall be as recommended by manufacturer, but in no case shall be less than 8". Anchoring devices shall be of sufficient thickness for driving into soil without breakage or undue distortion.

D. Straw Bale Barriers

Baled hay or straw containing 5 ft³ or more of material. Securely bind bales with wire or nylon.

PART 3—EXECUTION

3.01 PREPARATION

- A. Coordinate general preparation with requirements of Section 02110, Site Clearing.
- B. Site Preparation: Prepare site in accordance with good engineering practices for installation of surface erosion control features. Compact surface and remove and replace pockets of soft soil with compacted earth material to provide a consistently uniform and stable surface in accordance with Section 02200, Earthwork.

3.02 INSTALLATION/APPLICATION

A. General

1. Control surface water runoff on-site and provide temporary soil stabilization measures as required to prevent removal of soil by action of either water or wind, more commonly known as erosion. Protect land areas adjacent to work site from sedimentation by installation of erosion and sediment control measures. Provide, as a first step in construction operation, perimeter barriers, and other measures intended to deter erosion and transport of sediment associated with construction activities before upslope land disturbance takes place.
2. Temporary erosion and sediment control measures must be in place and functional before grading operations begin, maintained throughout the construction period and repaired, if necessary, after rainfall. Temporary measures may be removed at the beginning of the work day, but must be replaced at the end of the work day.
3. Comply with Local, State, and Federal stormwater discharge quality regulations.
4. Temporary and permanent seeding, and temporary mulching shall be performed in accordance with Section 02936, Seeding and Seedlings.

B. Silt Fences

1. Install silt fence as indicated on Construction Drawings and as required by construction activities to reduce the quantity of sediment and flow velocities to downstream areas.

2. Space posts at a spacing of 6 ft maximum apart and securely install with at least 2 ft in ground. Excavate trench approximately 6 in. wide and 6 in. deep along line of posts and upslope from the barrier. Securely fasten wire reinforcement fence to upslope side of posts using wire staples, tie wires, or hog rings. Extend wire into trench a minimum of 6 in. Attach geotextile filter cloth directly to posts and wire reinforcement fence as required using wire, staples, or other means accepted by the Construction Manager. Install filter fabric in a manner such that fabric height above grade is 2 to 3 ft and that 12 to 18 in. of fabric is extended along the sides and bottom of the trench. Backfill trench and compact soil over the fabric as installed.
3. Do not staple fabric to trees. Do not use fabric with defects, rips, holes, flaws, deterioration, or other damage.

C. Straw Bale Barriers

1. Install rows of entrenched and anchored hay or straw bales to form straw bale barriers as indicated on the Construction Drawings and as required by construction activities.
2. Wire bind or string tie bales. Install bales so that bindings are oriented around the sides rather than along tops and bottoms of bales in order to prevent deterioration of bindings. Excavate a trench the width of bale and a length of proposed barrier to a minimum depth of 4 in. Place bales in the trench and fill the gaps with loose straw to prevent water from escaping between the bales. Anchor bales with at least two stakes driven through bales to a depth of 1.5 to 2 ft in ground. Drive first stake in each bale toward previously laid bale to force the bales together. After bales are staked and chinked, backfill excavated soil against barrier. Backfill soil shall conform to ground level on downhill side and shall be built up to 4 in. against uphill side of the barrier.
 - a. Channel Flow: Place bales at locations indicated, in a single row, lengthwise, oriented perpendicular to channel, with ends of adjacent bales tightly abutting one another. Extend barrier to such a length that bottoms of end bales are higher in elevation than top of lowest middle bale to assure that sediment-laden runoff will flow either through or over barrier but not around it.
 - b. Sheet Flow: Place bales at locations indicated, in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another.

D. Erosion Control Blankets

1. Install erosion control blankets immediately on all areas where permanent seeding has been performed. Type A erosion control blankets shall be used in all areas except in drainageways, diversion ditches, and stream bank excavations. Drainageways, diversion ditches, and stream bank excavations areas, and other critical areas subject to concentrated flow shall be lined with Type B erosion control blankets as shown on the Construction Drawings.
2. Shape disturbed areas to be protected to required shape and grade and remove rocks or clods over 1 1/2 in. in diameter and sticks and other material that will prevent the contact of the erosion control blankets with the soil surface. Complete topsoiling, liming, fertilizing, and seeding activities prior to installing the erosion control blankets.

3. Unroll erosion control blankets in the direction of the flow of water with edges and ends butted snugly against each other. When unrolled, the blankets shall be on top and the fibers in contact with the soil. The mats shall be anchored firmly to the soil with anchoring devices driven vertically into the ground and flush with the surface of the blankets.
4. Anchoring devices shall be installed at intervals as recommended by the manufacturer. Manufacturer's recommendations shall include the use of biodegradable anchoring devices. The type and spacing of anchoring devices may be modified to fit conditions as directed by the Construction Manager.

3.03 MAINTENANCE

A. Silt Fences

Inspect immediately after each rainfall, at least daily during prolonged rainfall and weekly during dry periods. Provide required repairs immediately. Should fabric decompose or become ineffective and still be necessary, replace fabric promptly. As a minimum, remove sediment when deposits reach approximately one-third the height of barrier. Dispose of sediment as directed by Construction Manager. Maintain fabric silt fence outside of excavation areas until final acceptance of the work by the Construction Manager, upon which all silt fence shall be removed, and all areas disturbed due to silt fence removal shall be seeded. Silt fence located within an excavation area shall remain functional until excavation of stream banks begin.

B. Straw Bale Barriers

Inspect straw bale barriers immediately after each rainfall, at least daily during prolonged rainfall and weekly during dry periods. Repair damaged bales, end runs, and undercutting beneath bales. Accomplish necessary repairs to barriers or replacement of bales promptly. Remove sediment when level of deposition reaches approximately one-third the height of lowest point of barrier. Dispose of sediment as directed by Construction Manager. Maintain barrier until final acceptance of the work by the Construction Manager.

END OF SECTION

SECTION 02936

SEEDING AND SEEDLINGS

PART 1—GENERAL

1.01 DESCRIPTION

Section includes: Material and installation requirements for permanent and temporary seeding, for fertilizing and liming prior to seeding, planting of deciduous tree seedlings, and planting requirements for wetlands area.

1.02 RELATED SECTIONS

- A. Section 02200, Earthwork.
- B. Section 02270, Slope Protection and Erosion Control.
- C. Section 02938, Sodding

1.03 DEFINITION OF TERMS

- A. Collected plants: plants which are not nursery grown.
- B. Dry Seeding: Dry broadcast seeding by spreader or seeding machine.
- C. Hydroseeding: Wet hydraulic spraying of seed, fertilizer, and/or mulch.

1.04 QUALITY ASSURANCE

Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

1.05 REFERENCES

- A. Tennessee Department of Agriculture.
- B. Tennessee Department of Transportation (TDOT), Standard Specifications for Road and Bridge Construction, 1995 edition.

1.06 SUBMITTALS

- A. A nursery certificate shall be furnished with each shipment of tree seedlings. The certificate shall indicate the number of plants of each species in the shipment and a statement that the materials conform to the specifications.
- B. Technical product literature with manufacturer recommended application instructions for the specified tackifier.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Deliver tree seedlings in bundles with identifying legible waterproof tags fastened to each bundle. Plants shall be handled that the roots are protected at all times and are suitably covered.
- D. Seedlings shall be planted promptly. If it is necessary to store moss-packed seedlings for more than 2 weeks, one pint of water per package shall be added. If clay treated, do not add water. Packages shall be separated to provide ventilation. Separate packages with wood strips and store out of the wind in a shaded, cool (not freezing) location.

PART 2—PRODUCTS

2.01 MATERIALS

- A. Seed Mixture, Permanent and Temporary: In accordance with requirements of Tennessee Department of Agriculture and TDOT Specification, Subsection 918.14. Percentages forming group shall be as follows:

Seed	Quantity % by Weight	Seeding Dates
PERMANENT		
Group A		
Kentucky 31 Fescue	50	Feb. 1-July 1
English Rye	35	
Korean Lespedeza	15	
Group B		
Kentucky 31 Fescue	50	June 1- Aug. 15
English Rye	25	
Korean Lespedeza	15	
German Millet	10	
Group C		
Kentucky 31 Fescue	60	Aug. 1-Dec. 1
English Rye	30	
White Clover	10	

Seed	Quantity % by Weight	Seeding Dates
TEMPORARY		
Group D		
Italian Rye	33-1/3	Jan. 1 - May 1
Korean Lespedeza	33-1/3	
Summer Oats	33-1/3	
Group E		
Sudan-Sorghum Crosses or Starr Millet	100	May 1 - July 15
Group F		
Balboa Rye	66-2/3	July 15 - Jan. 1
Italian Rye	33-1/3	

B. Topsoil: In accordance with Section 02200, Earthwork.

C. Mulching Material

1. Mulching materials specified under this subparagraph shall be utilized with temporary seeding. All areas receiving permanent seeding shall be covered with a erosion control blanket as specified in Section 02270, Slope Protection and Erosion Control.
 2. Straw mulch: Dry oat or wheat straw, free from weeds, foreign matter detrimental to plant life. Hay or chopped cornstalks are not acceptable. All straw mulch materials shall be air dried and reasonably free of noxious weeds and weed seeds or other materials detrimental to plant growth. Straw shall be suitable for spreading with standard mulch blower equipment.
 3. Fiber mulch: Mulch for hydroseeding shall be a specially processed 100% virgin wood fiber mulch containing no growth or germination-inhibiting factors. It shall be manufactured in such a manner that after addition and agitation in slurry tanks with water, the fibers in the material become uniformly suspended to form a homogeneous slurry. When sprayed on the ground, the material shall allow absorption and percolation of moisture.
- D. Fertilizer: Standard commercial fertilizer conforming to requirements of TDOT Specification, Subsection 918.15 with guarantee of analysis conforming to a 5-15-15 formula. Fertilizer shall be uniform in composition, free flowing, and suitable for application with approved equipment.
- E. Agricultural Limestone: Agricultural Limestone shall contain not less than 85% of calcium carbonate and magnesium carbonate combined and be crushed so that at least 85% will pass No. 10 mesh sieve and 50% through a No. 40 mesh sieve.

- F. Water: Clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass. Water from East Fork Poplar Creek shall not be used.
- G. Tackifier: A non-flammable, non-asphaltic, non-toxic, polymeric emulsion such as SOIL SEAL® Concentrate, or an equivalent accepted by the Construction Manager.
- H. Erosion Control Blankets: Shall be in accordance with Section 02270, Slope Protection and Erosion Control.
- I. Tree seedlings shall be a minimum 18 in. in height, with a 3/16 in. (min) caliper and 10 in. (min) root length conforming to the ANSI, Z60.1, 1990. All seedlings shall be true to type, have vigorous fibrous root systems, and be free of defects, abrasions, diseases, insect eggs, and all forms of infestation. No collected plants shall be allowed. The following species are required:

Common Name	Botanical Name	Density Plants per Acre
Box Elder	Acer negundo	125
Green Ash	Fraxinus pennsylvanica	50
American Sycamore	Platanus occidentalis	20
Red Maple	Acer rubrum	20

J. Sod: Sod shall be in accordance with Section 02938, Sodding.

K. Wetlands soil: In accordance with Section 02200, Earthwork.

L. Wetlands vegetation:

- The following species of trees, shrubs, and grasses are required for planting within wetlands:

Common Name	Botanical Name	Number of Plants or Planting Density
Eastern Cottonwood	Populus deltoides	200
Black Willow	Salix nigra	100
Box Elder	Acer negundo	100
Silky Dogwood	Cornus amomum	100
American Sycamore	Platanus occidentalis	100
Creeping Jenny	Lysimachia	3lbs/1000ft ²

2.02 EQUIPMENT

Choice of equipment to perform required operations in conformance with these specifications shall be the responsibility of the Contractor. However, any equipment that results in waste or damage of material, or inaccurate work, or is otherwise objectionable is to promptly replaced as directed by the Construction Manager.

PART 3—EXECUTION

3.01 PREPARATION

Verify that the soil base is ready to receive work of this section and that final dressing is within reasonably close conformity to the required lines, grades, and cross-sections.

3.02 INSTALLATION/APPLICATION

A. Unless designated otherwise on the Construction Drawings, all areas made bare during the construction activities shall receive an application of fertilizer, lime, and seed. Unless otherwise noted, areas where backfilling of contaminated excavation has occurred shall also be topsoiled and planted with tree seedlings.

B. Provide erosion and sediment control to minimize erosion and transport of sediment beyond limits of Contractor's work area. Methods of control shall conform to Section 02270, Slope Protection and Erosion Control.

C. Fertilizing and Liming

1. Apply commercial Grade 5-15-15 fertilizer at a rate of not less than 20 lb/1000 ft²
2. Apply agricultural limestone at a rate based on the pH of the topsoil in accordance with the following:

Topsoil pH	Lbs lime required per 1000 ft ²
Less than 4.0	(Topsoil not suitable for use)
4.0 to 4.5	150
4.5 to 5.0	75
5.0 to 8.0	0
Over 8.0	(Topsoil not suitable for use)

2. Apply after smooth raking of topsoil.
3. Uniformly incorporate into topsoil for a depth of approximately 1/2 in.
4. Lightly water to aid the dissipation of fertilizer.

D. Seeding

1. Refer to Subparagraph 2.01.A. for permanent and temporary seed mixture based upon the seeding date.
2. Do not sow immediately following rain, when ground is too dry, or during windy periods.
3. Permanent seeding shall be done within 2 days following the placement of topsoil unless conditions preclude satisfactory completion of work. Seeding operations may be performed hydraulically or by dry broadcasting.
4. Temporary seeding shall be performed within 5 days where grading has not been completed and has temporarily ceased, and grading activities are not anticipated to resume within 15 days, unless approval is obtained from the Construction Manager. Temporary seeding shall be performed over all areas where grading has been completed between December 1 and February 1, unless approval is obtained by the Construction Manager. Temporary seeding shall also occur on all slopes where fill material has been placed in order to construct access roads, staging areas, and bridge approaches.
5. Apply seed at a rate of 3 lb/1000 ft² evenly in two intersecting directions. Do not seed area in excess of that which can be mulched (temporary seeding) or can be covered with erosion control blankets (permanent seeding) on the same day.
6. Apply water with a fine spray immediately after each area has been mulched or received erosion control blankets. Saturate to 2 in. depth of soil.
7. Combined hydraulic application of seed, fertilizer, mulch and tackifier will be considered if site conditions are suitable and application is approved by the Construction Manager.
8. Hydraulic spraying equipment and mixture shall be designed that when the mixture is sprayed over the area, the mixture components shall be equal in quantity to the specified rates.

E. Seed Protection

1. Immediately following temporary seeding apply straw mulch at a rate of 100 lb/1000 ft²., or apply wood fiber mulch hydraulically at the rate of 28 lb to 35 lb/1000 ft². Maintain clear of shrubs and trees.
2. Immediately following permanent seeding and prior to tree seedlings planting, apply erosion control blankets in accordance with Section 02270, Slope Protection and Erosion Control.
3. All temporary seeding areas shall be tackified with a tackifier at the manufacturer's recommended rate, as approved by the Construction Manager.

F. Seedling Planting

1. The seedlings shall be planted to produce natural appearing wooded areas similar to others in the vicinity. To gain this effect, seedlings specified are to be mixed and planted with the density as specified in Article 2.01.I.
2. Holes to receive seedlings are to be of sufficient size and depth to place the roots in a normal position, and to allow the plant to be set upright, slightly below grade, leaving a depression to receive and hold water. Do not bend roots upwards.
3. When planting, roots shall be kept moist until trees are in the ground. Do not carry seedlings exposed to the air and sun. Keep moss-packed seedlings in a container packed with wet moss or filled with thick muddy water. Cover clay-treated seedlings with wet burlap only.
4. Do not plant in frozen ground.
5. When seedlings have been planted, a thorough watering is to be provided on the same day. Planting and watering shall be a continuous operation. Upon completion of planting as specified above, each plant shall be solidly in the ground and thoroughly wetted.

3.03 MAINTENANCE

- A. Maintain newly graded, topsoiled and seeded areas until final acceptance. Restore areas showing settlement or washes to specified grades at Contractor's expense. Newly seeded areas shall be watered as necessary or reseeded at the Contractor's expense until an acceptable stand of grass has been achieved. An acceptable stand of grass is defined as follows:
 1. No bare spots larger than 3 ft².
 2. No more than 10% of total area with bare spots larger than 1 ft².
 3. No more than 15% of total area with bare spots larger than 6 in. square.
- B. Water to prevent grass and soil from drying out.
- C. Maintain newly planted tree areas until final acceptance. Inspection of the tree planting shall be made jointly by the Contractor and Construction Manager at the completion of work. All seedlings not in a healthy, growing condition shall be removed and replaced with plants of like, size and quality as originally specified.

END OF SECTION

SECTION 02938

SODDING

PART 1—GENERAL

1.01 DESCRIPTION

Section includes: Material and installation requirements for sodding, fertilizing, and liming prior to sodding.

1.02 RELATED SECTION

Section 02200, Earthwork.

Section 02936, Seeding and Seedlings

Section 02270, Slope Protection and Erosion Control

1.03 QUALITY ASSURANCE

A. Sod Producer: Manufacturer specializing in sod production and harvesting with minimum 5 years' experience and certified by the State of Tennessee.

B. Sod: Minimum age of 18 months with root development that will support its own weight, without tearing, when suspended vertically by holding upper two corners.

1.04 REFERENCES

A. American Sod Producers' Association (ASPA), Guideline Specifications to Sodding.

B. Tennessee Department of Transportation (TDOT), Standard Specifications for Road and Bridge Construction, 1995 edition.

1.05 SUBMITTALS

Submit sod certification for grass species and manufacturer of sod.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver sod on pallets. Protect exposed roots from dehydration.

B. Do not deliver more sod than can be laid within 24 hrs.

PART 2—PRODUCTS

2.01 MATERIALS

A. Sod

1. Sod shall conform to requirements of TDOT Specification, Subsection 803.02, Sod.
2. Machine cut sod and load on pallets in accordance with ASPA guidelines.
3. Cleanly cut sod in strips having a reasonably uniform thickness of not less than 2 1/2 in., reasonably uniform width of not less than 8 in., and length of not less than 12 in.

B. Topsoil: In accordance with Section 02200, Earthwork.

C. Fertilizer: Fertilizer shall conform to requirements of TDOT Specification, Subsection 918.15, and shall be Grade 5-15-15 formula.

D. Agricultural Limestone: Agricultural Limestone shall contain less than 85% of calcium carbonate and magnesium carbonate combined and be crushed so that at least 85% will pass No. 10 mesh sieve and 50% through a No. 40 mesh sieve.

E. Water: Clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass. Water from East Fork Poplar Creek shall not be used.

2.02 EQUIPMENT

Choice of equipment to perform required operations in conformance with these specifications shall be the responsibility of the Contractor. However, any equipment that results in waste or damage of material, or inaccurate work, or is otherwise objectionable is to promptly replaced as directed by the Construction Manager.

PART 3—EXECUTION

3.01 PREPARATION

Verify that the soil base is ready to receive work of this section and that final dressing is within reasonably close conformity to the required lines, grades, and cross-sections.

3.02 INSTALLATION/APPLICATION

A. Areas to receive sodding are designated on the Construction Drawings.

B. Fertilizing and Liming

1. Apply fertilizer at a rate of 12 lb/1000 ft².

2. Apply agricultural limestone at a rate base on the pH of the topsoil in accordance with the following:

• Topsoil ph	Lbs lime required per 1000 ft ²
• Less than 4.0	(Topsoil not suitable for use)
• 4.0 to 4.5	150
• 4.5 to 5.0	75
• 5.0 to 8.0	0
• Over 8.0	(Topsoil not suitable for use)

3. Apply after smooth raking of topsoil and prior to installation of sod.
4. Apply fertilizer no more than 48 hrs before laying sod.
5. Uniformly incorporate into topsoil for a depth of approximately 1/2 in.
6. Lightly water to aid dissipation of fertilizer.

C. Sodding

1. Sod shall be set or reset only when the subsoil is moist and favorable to growth. No setting or resetting shall be done between December 1 and February 1, unless weather and soil conditions are considered favorable and approval is granted by the Construction Manager.
2. Moisten prepared surface immediately prior to laying sod.
3. Lay sod within 24 hrs after delivering to site to prevent deterioration.
4. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 in. minimum. Do not stretch or overlap sod pieces.
5. Lay smooth. Align with adjoining grass areas. Place top elevation of sod 1/2 in. below adjoining edging, paving, or curbs.
6. Water sodded areas immediately after installation. Saturate sod to 3 in. of soil.
7. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

D. Maintenance

1. Water to prevent grass and soil from drying out.
2. Immediately replace sod to areas which show deterioration or bare spots.
3. Maintain sodded areas immediately after placement until grass is well established, exhibits a vigorous growing condition, and is accepted by the Construction Manager.

END OF SECTION

Appendix C

GENERAL PERMIT RULE

1200—4—10—05 GENERAL NPDES PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.

(1) Coverage under this General Permit Rule

- (a) This rule addresses discharges of storm water runoff from land disturbed by construction activity, including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area, which are not part of a larger common plan of development or sale.

This rule also applies to dewatering discharges from work areas at construction sites.

This rule serves as the State of Tennessee's NPDES general permit for storm water discharges associated with construction activity, as defined at 40 CFR 122.26(b)(14), promulgated in *Federal Register*, Vol. 55, No. 222, on Friday, November 16, 1990.

- (b) This rule covers all areas of the State of Tennessee.

- (c) This rule does not apply to the following:

1. Storm water discharges that are regulated by existing individual NPDES permits;
2. Storm water discharges for which the operator has applied for an individual permit;
3. Storm water discharges that the Director finds to be contributing to a violation of a water quality standard; and
4. Storm water discharges for which the Director determines that requirements under this rule do not meet provisions of Section 301 and 402 of the Federal Water Pollution Control Act (BCT and BAT treatment requirements).

- (d) This rule is issued to be effective for a term of five years.

(2) Authorization to Discharge under this Rule

(Rule 1200—4—10—.05, continued)

Except as provided in subparagraph (1)(c) above, if conditions of paragraph (3) are fulfilled, the discharges of storm water runoff from land disturbed by construction activity and dewatering discharges from work areas as stated in paragraph (1)(a) are permitted in accordance with the terms of this rule and of T.C.A. §69—3—108(b) 15 days after submission of the NOI. Any such discharges not permitted under this rule or by an individual permit are unlawful under T.C.A. §69—3—108(b).

(3) Procedure to Request Coverage under this Rule

(a) The developer shall submit the following information to the Division as a Notice of Intent (NOI) to obtain coverage under this rule. "Developer" means a person who engages in or contracts for, or intends to engage in or contract for, construction activity that disturbs at least five acres of land. The NOI must be signed by one who meets signatory requirements of subparagraph (8)(h) of this rule and should be submitted 15 days before construction is proposed to begin, or by October 1, 1992, whichever is later.

1. Name, mailing address, and location of the construction activity for which notification is submitted;
2. Name, mailing address, telephone number, ownership status (federal, state, private, public, or other entity) of the developer responsible for the construction activity;
3. A map on 8 1/2 inch by 11 inch sized paper with boundaries 1-2 miles outside the site property, with the site and construction area outlined and identified and with the receiving water or receiving storm sewer highlighted and identified;
4. The name of the waters receiving the discharge, or if the discharge enters a municipal separate storm sewer, the name of the municipal operator of the storm sewer and name of waters into which the storm sewer discharges;
5. A brief description of the project; estimated timetable, including date when contractor will begin site disturbance; estimates of the number of acres of the site on which soil will be disturbed; statement that a site-specific erosion control plan has, or has not yet, been prepared for the project; and
6. Reference (for example, by title, document number, ordinance) to approved State or local sediment and erosion plans or storm water management plans and certification that all work will be done to provide compliance with such plans.

(b) The NOI shall be submitted to the following address:

Storm Water NOI Processing
Division of Water Pollution Control
401 Church Street,
Tennessee Dept. of Environment and Conservation
Nashville, TN 37243-1534

(c) Facilities that discharge storm water associated with industrial activity through large or medium municipal separate storm sewer systems (MS4's) (Memphis, Nashville/Davidson County, Knoxville and Chattanooga) shall also submit a signed copy of the NOI to the operator of the MS4.

Attn: Storm Water NOI/City of Memphis/Div. of Public Works/125 No. Mid-America Mall/Memphis, TN 38103

(Rule 1200—4—10—.05, continued)

Attn: Storm Water NOI/Metro Nashville and Davidson Co./Dept. of Public Works, Engineering/720 South Fifth St./Nashville, TN 37206

Attn: Storm Water NOI/City of Knoxville/Dept. of Engineering/City County Bldg./P.O. Box 1631/Knoxville, TN 37901

Attn: Storm Water NOI/City of Chattanooga/Dept. of Public Works/City Hall/11th St., Suite 200/Chattanooga, TN 37402

- (d) Contractors of the developer, whose activities at the site may impact storm water discharges or controls, shall affirm, by signature of one who meets signatory requirements of subparagraph (8)(h) of this rule:

"I understand the terms and conditions of Rule 1200—4—10—.05 and that I, and my company, as the case may be, are responsible for and legally liable for complying with this and the applicable state and federal laws. I understand that State or EPA or private actions may be taken against me if the terms and conditions of the Rule are not met."

- (e) The developer shall certify that the named contractor has been retained to perform the described construction-related services.
 - (f) The developer shall place and maintain on site or at a nearby office the contractor's signed statement as in subparagraph (d) and the certification as in subparagraph (e).
- (4) Procedure to Terminate Coverage under this Rule
- (a) When the construction activity is finished and stable perennial vegetation has been established on all remaining exposed soil, the developer shall notify the Division of these facts and request termination of coverage under this rule.
 - (b) Coverage under the rule terminates 20 days after receipt of such notice, except as in subparagraph (c) below.
 - (c) The Division may inspect the site and require additional measures to stabilize the soil and prevent erosion. If the requirement is given by letter, the developer continues to be covered under the terms of this rule until a request for termination has been accepted by the Division.
- (5) Construction Site Storm Water Control Plan
- (a) The construction activity must be covered by a written, site-specific plan to minimize erosion of soil and the discharge of other pollutants into waters of the State. The developer and contractor(s) must sign the plan, stating that the plan is workable, meets requirements of this rule, and if implemented will meet discharge quality requirements of this rule. The one who signs the plan must meet signatory requirements of paragraph (8)(h) of this rule. The plan must be kept on site and be made available to the Division of Water Pollution Control inspector on request.
 - (b) The plan shall contain the following information:
 - 1. A description of the nature of the construction activity, including a proposed timetable for activities;

(Rule 1200—4—10—.05, continued)

2. Estimates of the total area of the site and the area of the site that is expected to undergo excavation or grading;
 3. An estimate of the increase in impervious area after the construction is completed, and an estimate, along with supporting calculations, of the volume of runoff associated with a one-inch storm;
 4. A description of any fill material to be used;
 5. A site map indicating, at a minimum, areas of soil disturbance, areas of cut and fill, drainage patterns and approximate slopes anticipated after major grading activities, areas used for the storage of soils or wastes, the locations of outfalls, and of all structural controls and areas where vegetative practices are to be implemented, the locations of impervious structures (including buildings, roads, parking lots, etc.) after construction is completed, and of wetlands and other surface waters; and
 6. The name of the receiving waters, or if the discharge is to a municipal separate storm sewer, the name of the municipal operator of the storm sewer and the name of receiving waters into which the storm sewer discharges.
- (c) If the plan is reviewed by the Division, the Director or authorized representative may notify the dischargers that the plan does not meet minimum requirements. The dischargers shall have 48 hours, unless additional time is provided by the Director, after such notification to make changes to sediment and erosion controls to prevent the discharge of sediment from the site and 15 days to make necessary changes to the plan.
- (d) The plan shall describe construction management techniques and sediment and erosion controls appropriate for the activity and set forth a schedule for implementing each such controls. At a minimum, the conditions in paragraph (6) of this rule must be addressed.
- (e) The plan shall describe construction site planning and permanent measures that will minimize the discharge of pollutants via storm water discharges after construction operations have been finished. Examples include open, vegetated swales and natural depressions; structures for storm water retention, detention, or recycle; velocity dissipation devices to be placed at the outfalls of detention or retention structures or along the length of outfall channels.
- (f) The discharger(s) shall implement the construction site storm water control plan.
- (6) The following conditions apply to all land disturbance work conducted under this rule.

Construction Management Techniques

- (a) Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.
- (b) Construction must be sequenced to minimize the exposure time of cleared surface area.
- (c) Construction must be staged or phased for large projects. Areas of one phase must be stabilized before another phase can be initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff.
- (d) Erosion and sediment control measures must be in place and functional before earth moving operations begin, and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but must be replaced at the end of the work day.

(Rule 1200—4—10—.05, continued)

- (e) All control measures shall be checked, and repaired as necessary, weekly in dry periods and within 24 hours after any rainfall of 0.5 inches within a 24 hour period. During prolonged rainfall, daily checking and repairing is necessary. The permittee shall maintain records of checks and repairs.

- (f) A specific individual shall be designated to be responsible for erosion and sediment controls on each project site.

Vegetative Controls

- (g) Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to grading or earth moving.
- (h) To the extent feasible, appropriate cover shall be applied within seven days on areas that will remain unfinished for more than 30 calendar days. Examples of cover are grass, sod, straw, mulch, fabric mats, etc.
- (i) Permanent soil stabilization with perennial vegetation shall be applied as soon as practicable after final grading.

Structural Controls

- (j) All surface water flowing toward the construction area shall be diverted by using berms, channels, or sediment traps, as necessary.
- (k) Erosion and sediment control measures shall be designed according to the size and slope of disturbed or drainage areas, to detain runoff and trap sediment.
- (l) Discharges from sediment basins and traps must be through a pipe or lined channel so that the discharge does not cause erosion.
- (m) Muddy water to be pumped from excavation and work areas must be held in settling basins or treated by filtration prior to its discharge into surface waters. Water must be discharged through a pipe or lined channel so that the discharge does not cause erosion and sedimentation.

Discharge Quality

- (n) There shall be no distinctly visible floating scum, oil or other matter contained in the storm water discharge.
- (o) The storm water discharge must not cause an objectionable color contrast in the receiving stream.
- (p) The storm water discharge must result in no materials in concentrations sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

(7) Reporting and Recordkeeping Requirements

- (a) The permittee shall maintain records of checks and repairs on site or at a nearby office.
- (b) Records and information resulting from the monitoring activities required by this rule shall be retained for a minimum of three (3) years, or longer if requested by the Division of Water Pollution Control.

(Rule 1200—4—10—.05, continued)

- (c) Knowingly making any false statement on any report required by this rule may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act and in Section §69—3—115 of the Tennessee Water Quality Control Act.

(8) General Provisions

(a) Renotification

Upon reissuance of this general permit rule, the discharger is required to submit an NOI for coverage under the reissued permit rule.

(b) Right of Entry

The discharger shall allow the Director, the Regional Administrator of the U.S. Environmental Protection Agency, or their authorized representatives, upon the presentation of credentials:

1. To enter upon the discharger's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this rule, and at reasonable times to copy these records;
2. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this rule; and
3. To sample at reasonable times any discharge of pollutants.

(c) Availability of Reports

Except for data determined to be confidential under T.C.A. §69—3—113 of the Tennessee Water Quality Control Act, all reports submitted in accordance with the terms of this rule shall be available for public inspection at the offices of the Division of Water Pollution Control. As required by the Federal Act, operational data shall not be considered confidential.

(d) Proper Operation and Maintenance

The discharger shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the discharger to achieve compliance with the terms and conditions of this rule and with the requirements of the construction site storm water control plan.

(e) Property Rights

This general permit rule does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

(f) Severability

The provisions of this rule are severable. If any provision of this rule due to any circumstance, is held invalid, then the application of such provision to other circumstances and to the remainder of this rule shall not be affected thereby.

(g) Other Information

(Rule 1200—4—10—.05, continued)

If the discharger becomes aware that relevant facts were not submitted in a Notice of Intent, or incorrect information was submitted in a NOI or in any report to the Director, then the discharger shall promptly submit such facts or information.

(h) Signatory Requirements

1. A Notice of Intent submitted to the Director shall be signed as follows:

- (i) For a corporation: by a responsible corporate officer. For the purpose of this subpart, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
- (ii) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- (iii) For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

2. All reports required by the permit or information submitted to the Director shall be signed by a person designated in part 1. above or a duly authorized representative of such person, if:

- (i) The representative so authorized is responsible for the overall operation of the facility from which the discharge originated, e.g., a plant manager, superintendent or person of equivalent responsibility;
- (ii) The authorization is made in writing by the person designated under part 1 above; and
- (iii) The written authorization is submitted to the Director.

3. Any changes in the written authorization submitted to the Director under part 2. above which occur after the issuance of a permit shall be reported to the Director by submitting a copy of a new written authorization which meets the requirements of parts 1. and 2. above.

4. Any person signing any document under parts 1. or 2. above shall make the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

(9) Changes Affecting Coverage under this Rule

(a) Planned Changes

Rule 1200—4—10—.05, continued)

The discharger shall give notice to the Director as-soon-as possible of planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (1990); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the rule, nor to notification requirements under 40 CFR 122.42(a)(1) (1990).

(b) Change of Ownership

If a facility is sold or transferred to a new owner or developer, the new owner or developer shall submit a new NOI in accordance with paragraph 1200—4—10—.05(3) of this rule.

(c) Change of Mailing Address

The discharger shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the discharger will be assumed to be correct.

(10) Noncompliance

(a) Duty to Comply

The discharger must comply with all conditions of this permit. Any noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, or for the Director to require an individual permit.

(b) Reporting of Discharges that Cause Emergencies

24-Hour Reporting

In the case of any discharge which would cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice shall be provided to the appropriate Division field office within 24 hours from the time the discharger becomes aware of the circumstances. (The field office should be contacted for names and phone numbers of emergency response personnel.)

A written submission must be provided within five days of the time the discharger becomes aware of the circumstances unless this requirement is waived by the Director on a case-by-case basis. The discharger shall provide the Director with the following information:

1. A description of the discharge;
2. The period of discharge, including exact dates and times or, if not corrected, the anticipated time the discharge is expected to continue; and
3. The steps being taken to reduce, eliminate, and prevent recurrence of the discharge.

(c) Adverse Impact

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
GENERAL PERMITS

CHAPTER 1200—4—10

(Rule 1200—4—10—.05, continued)

The discharger shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with subparagraphs (6)(n), (o), and (p) of this rule, including such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge. It shall not be a defense for the discharger in an enforcement action that it would have been necessary to halt or reduce the construction activity in order to maintain compliance with the conditions of this rule.

(11) Liabilities

(a) Civil and Criminal Liability

Nothing in this rule shall be construed to relieve the discharger from civil or criminal penalties for noncompliance. Notwithstanding this rule, the discharger shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of storm water to any surface or subsurface waters. Additionally, notwithstanding this rule, it shall be the responsibility of the discharger to conduct its storm water treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

(b) Liability Under State Law

Nothing in this rule shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act.

Authority: T.C.A. §69—3—105(b). Administrative History: Original rule filed August 12, 1992; effective September 26, 1992.

Tennessee Department of Environment and Conservation.
Authorization No. 327413, 2,000 copies. This public
document was promulgated at a cost of 17 cents per
copy. December 1992.

Appendix D
PROJECT SCHEDULE

D-3

Plot Date 3APR96
Data Date 2JAN97
Project Start 3APR96
Project Finish 6NOV97

Activity Bar/Early Dates
Critical Activity
Progress Bar
Activity Late Dates
Milestone/Flag Activity

1535

LOCKHEED MARTIN ENERGY SYSTEMS
LEFPC FIELD ACTIVITIES

Sheet 1 of 1

Date	Revision	Checked	Approved

Appendix E

**DEVELOPER'S AND CONTRACTOR'S CERTIFICATION AND
ACCEPTANCE OF THE CONSTRUCTION STORM WATER
CONTROL PLAN**

DEVELOPER'S AND CONTRACTOR'S CERTIFICATION AND ACCEPTANCE OF THE CONSTRUCTION STORM WATER CONTROL PLAN

☐ Original
☐ Revision, Rev. No. ____

Developer: _____

Printed Name (Phone)

Contractor: _____

Printed Name (Phone)

Contractor: _____

Printed Name (Phone)

Project _____
(Name and description)

Location _____

The construction site Storm Water Control Plan is workable and meets the requirements of TN Rule
200-10-05, General NPDES Permit for Storm Water Discharges Associated with Construction Activities.
Implementation of the Plan will assure the discharge quality requirements specified in the rule are satisfied.

Developer Authorized Signature Date _____

Contractor Authorized Signature Date _____

Contractor Authorized Signature Date _____

Appendix F

**CONSTRUCTION ACTIVITY STORM WATER PERMITTING
REQUIREMENTS CONTRACTOR SIGNATURE FORM**

CONSTRUCTION ACTIVITY STORM WATER PERMITTING REQUIREMENTS CONTRACTOR'S SIGNATURE FORM

State of Tennessee
Department of Environment and Conservation
Division of Water Pollution Control

Rule 1200-4-10-.05
NPDES General Permit TNR100000

NOI Submission Date: _____

Project Name: _____

Project Location: _____ County: _____

I have agreed to perform construction-related professional services, as outlined in Document Number DOE/OR 1006 Requirements for Accomplishment of Construction Projects Utilizing a Construction Manager Contractor that will likely impact the nature of storm water runoff from the named construction activity. Erosion control services involve primarily

☐ Prepare erosion control plan	☐ Record retention (during project)
☐ Install, maintain erosion and sediment controls	☐ Record retention (after project)
☐ Inspection of controls	☐ Other _____

I understand the terms and conditions of Rule 1200-4-10-.05 and that I, and my company, as the case may be, am responsible for and legally liable for complying with this Rule and the applicable State and Federal laws. I understand that the State or EPA or private actions may be taken against me if the terms and conditions of the Rule are not met.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

Company Name: _____

Address: _____

City: _____ State: _____ Phone No. _____

Field Contact: _____ Phone No. _____

Developer I certify that the above has been retained to perform the described construction-related services noted above and as outlined in the referenced NOI.

Contractor

Signature: _____ Date: _____

Appendix G

CONSTRUCTION SITE STABILIZATION CHECKLIST

CONSTRUCTION SITE STABILIZATION CHECKLIST

(revised: 4/25/94)

Project Description: _____

Date inspected: _____

Are the following stabilization measures in place?	Yes	No	N/A	Remarks/Actions
1. Mulching				
2. Fabric Mats				
3. Berms				
4. Diversion Ditch/Channels				
5. Trees/shrubs				
6. Gabions/riprap				
7. Check Dams				
8. Temporary Controls				
9. Other				
Are the following acceptable?	Yes	No	N/A	Remarks/Actions
1. Reeks/gullies				
2. Grading				
3. Top soil utilization				
4. Sediment traps/basins				
5. Buffer zone				
6. Sediment disposal				
7. Storm pipes (inlet/outlet)				
8. Access roads				
9. Appropriate vegetation (with density greater than 70 percent)				
10. Other				

If no is checked for any item, an explanation should be provided in the remarks section.

Comments Section and/or conditions other wise noted: _____

CONSTRUCTION SITE STABILIZATION CHECKLIST (continued)

Site Stabilization Acknowledgement

The undersigned believes that the soil area disturbed by construction activities and included in the storm water control plan for this project is stabilized.

Energy Systems Title III Representative

Date

Energy Systems Environmental Representative

Date

The undersigned facility manager acknowledges and agrees to the conditions noted in the above checklist including the remarks/actions/comments section. In addition, the undersigned agrees to be responsible for operating and maintaining the site and conducting inspections as required.

Energy Systems Facility Manager

Date

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18. R. L. Nace, Team Leader, Fernald/Ohio Team, Office of Environmental Restoration, U.S. Department of Energy, Cloverleaf Building, EM-425, 19901 Germantown Road, Germantown, MD 20874
- 19-20. R. C. Sleeman, Director, Environmental Restoration Division, DOE Oak Ridge Operations Office, P.O. Box 2001, Oak Ridge, TN 37831-8541
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- 24-26. R. Hedrick, U.S. Army Corps of Engineers, Nashville District, P.O. Box 1070, Nashville, TN 37902
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- 28-29. T. E. Myrick, Science Applications International Corporation, P.O. Box 2502, Oak Ridge, TN 37831
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