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**Technical Specifications**  
**for**  
**Remediation Area 1, Phase II**  
**Trap Range Stabilization Package**

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**Contract No. FSC629**  
**FDF Project No. 20713**  
**Document No. 20713-TS-0001**

**October 1998**  
**Revision 0**

**Environmental Remedial Action Project**  
**Fernald Environmental Management Project**  
**Fernald, Ohio**  
**FDF Subcontract No. 98PC001322**  
**Task Order P-012**



**4055 Executive Park Drive**  
**Cincinnati, Ohio 45241**

**INFORMATION**  
**ONLY**

**Technical Specifications  
for  
Remediation Area 1, Phase II  
Trap Range Stabilization Package**

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U.S. DEPARTMENT OF ENERGY

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FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

REMEDATION AREA 1, PHASE II  
TRAP RANGE STABILIZATION PACKAGE  
TECHNICAL SPECIFICATIONS

PARSONS

Approved by:

*Carlton Schroeder*

Carlton Schroeder, Project Manager

10/22/98

Date

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TECHNICAL SPECIFICATIONS

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FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

REMEDATION AREA 1. PHASE II  
TRAP RANGE STABILIZATION PACKAGE  
TECHNICAL SPECIFICATIONS

Division 2

PARSONS

Prepared by:

*Frank Parton Jr.*

10/21/98  
Date

Checked by:

*[Signature]*

10/21/98  
Date



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SECTION 02050  
SURVEYING

**PART 1 GENERAL**

**1.1 SCOPE**

Section includes, but is not limited to:

- A. Setting limits and boundaries of construction activities.
- B. Performing surveys for:
  - 1. Verification of the existing conditions.
  - 2. Support surveys during the construction activities.
  - 3. Measurement and payment.
- C. Preparing and furnishing preliminary and final survey documentation including: sketches, drawings, and field notes, including electronic data and hard copy formats.
- D. Establishing temporary survey control points.

**1.2 RELATED SECTIONS AND PLANS**

- A. Section 02100 - Site Preparation.
- B. Section 02270 - Erosion and Sediment Control.
- C. Part 6 - Statement of Work.
- D. Part 8 - Environmental Health and Safety, and Training Requirements.

**1.3 REFERENCES**

National Geodetic Survey Standards.

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**1.4 QUALIFICATIONS**

- A. Oversight for survey work shall be provided and certified by a Land Surveyor licensed in the State of Ohio.
- B. Survey work shall be performed under the direct supervision of a person who has at least 3 years of experience in construction surveying.
- C. Work performed in referencing or re-establishment of Fernald Environmental Management Project (FEMP) or United States survey monuments shall be stamped/certified by an Ohio licensed Land Surveyor.

**1.5 SUBMITTALS**

- A. Provide submittals as required in Part 6 and Part 8.
- B. Submit qualifications for land surveyor and the survey supervisor.
- C. Submit redline mark-ups showing the locations and elevations of any existing underground utilities and structures encountered during construction within 24 hours.
- D. Submit survey notes, field notes, sketches and drawings for the following surveys within seven (7) calendar days of the completion of each survey:
  - 1. Preliminary surveys.
  - 2. As-built, (Final) surveys.
- E. Submit 2 copies of field notes prepared by the licensed Land Surveyor on a bi-weekly basis (as a minimum) or upon request by the Construction Manager. Dated and signed field notes shall be legibly recorded in standardized field notebooks with format as defined in

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Construction Manager. The Contractor shall be responsible for the costs of replacing/resetting survey control points.

**1.9 HEALTH AND SAFETY REQUIREMENTS**

- A. Environmental Health and Safety, and Training requirements shall be as specified in Part 8.

**PART 2 PRODUCTS AND INSTRUMENTS**

- A. Provide materials as required to perform the surveys, including, but not limited to: instruments, tapes, rods, mounts, tripods, stakes, hubs, nails, ribbon, and other reference markers.
- B. The survey instruments shall be precise and accurate to meet the needs of the project. Survey instruments shall be capable of reading to a precision of 0.01 feet with a setting accuracy of 8 seconds.

**PART 3 EXECUTION**

**3.1 GENERAL**

- A. The accuracy of horizontal and vertical control shall meet or exceed Third-Order, Class I and Third-Order, respectively, as defined by National Geodetic Survey Standards. Elevation shall be referenced to National Geodetic Vertical Datum (NGVD) of 1929 and horizontal coordinates to North American Datum (NAD) 1983.
- B. Establish elevations, lines, and levels that are tied into the FEMP Survey Control System. Topographic contours shall be shown to the nearest foot. The Construction Manager shall provide data on these control points if not shown on the Construction Drawings. Field run data shall be taken to adjacent

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existing undisturbed area (100 ft. minimum overlap) to create a smooth contour transition.

- C. Maintain accurate and complete notes of surveys:
1. Handwritten survey notes and information shall be documented in survey field books. A copy of the numbered, dated and signed field book pages shall be given to the Construction Manager weekly, or upon request, for use in reviewing the work.
  2. Electronically collected field survey information shall be collected and backup equipment shall be available in the event of equipment malfunction.
    - a. Electronic format for printed output of data collector's field survey notes shall be compatible with the field book notation format.
    - b. Electronic format for survey data shall be Intergraph Microstation 5.0 or other compatible system as approved by the Construction Manager.
- D. Measurement and payment surveys for elevation and for horizontal distance shall be to the nearest 0.1 foot +/- 0.05 foot.
- E. Perform construction layout surveys in advance of scheduled construction and stabilization activities. The Contractor is responsible for rework and/or construction delays caused by survey or staking errors.
- F. Survey all sample locations and final stabilization boundary and provide information on as-builts.
- G. Establish and maintain temporary survey control points (horizontal and vertical control), as necessary, to support construction activities.

- H. Document survey work in the field notebooks using the format and procedures described below:
1. Title and consecutive notebook number on the front cover;
  2. Consecutively numbered pages;
  3. Table of contents, indicated by survey task, on the first numbered page;
  4. Legend indicating symbols and abbreviations used in survey notes;
  5. Names of survey team for each task;
  6. Notes on weather, equipment, etc.;
  7. Date and time on each page to indicate when work was recorded;
  8. Notes in a uniform character such that they can be interpreted and used by anyone with survey knowledge;
  9. Description and/or sketches of the existing survey control used.

### 3.2 SUPPORT SURVEYS

- A. Preliminary Surveys:
1. As part of the verification of existing conditions, perform topographic surveys of areas to be stabilized prior to construction activities.
  2. Initial topographic survey shall be at a minimum of 50-foot grid intervals with additional shots as required to define the topography for the area to be stabilized.
  3. Establish location for the installation of the erosion and sediment control measures specified in Section 02270.
  4. Establish limits of stabilization shown on the Construction Drawings. Maximum staking interval shall be 50 feet unless otherwise directed by the Construction Manager.
  5. Establish work limits required for installation of construction fencing as specified in Section 02100

and as shown on the Construction Drawings unless otherwise directed by the Construction Manager.

C. As-built (Final) Surveys:

1. Final topographic survey shall be at a minimum of 50-foot grid intervals or as required to define the topography of final stabilized areas. Additionally, provide all sampling locations and actual stabilization boundary.
2. Perform survey for final measurement and payment.

**END OF SECTION**

SECTION 02100  
SITE PREPARATION

**PART 1 GENERAL**

**1.1 SCOPE**

This Section includes but is not limited to:

- A. Installation and relocation of construction fencing and access control gates.
- B. Dust Control Plan.
- C. Protection of existing groundwater monitoring wells.

**1.2 RELATED SECTIONS**

- A. Section 02050 - Surveying.
- B. Section 02270 - Erosion and Sediment Control.
- C. Part 6 - Statement of Work.
- D. Part 8 - Environmental Health and Safety, and Training Requirements.

**1.3 REFERENCES**

- A. State of Ohio, Department of Transportation (ODOT), Construction and Material Specifications, January 1, 1997, except as supplemented or otherwise modified herein and/or shown on the Construction Drawings.

**1.4 SUBMITTALS**

- A. Provide submittals as required by Part 6.

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- B. Submit a Dust Control Plan in accordance with Part 6.
- C. Along with the Dust Control Plan, manufacturer's Material Safety Data Sheets (MSDS), and recommendations for material handling and usage in accordance with Part 6.
- D. Submit Construction Fence material specifications, including steel T-posts.

**1.5 HEALTH AND SAFETY REQUIREMENTS**

- A. Environmental Health and Safety, and Training requirements shall be as specified in Part 8 of Contract Documents.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Dust Suppression Agent shall be as specified for Crusting Agent in Section 02270.
- B. Construction fence shall be orange, high density polyethylene fabric, opening size approximately 4 inches by ½ inch, minimum tensile strength of 2000 lbs/ft of width. Posts shall be steel T as indicated on the Construction Drawings.

**PART 3 EXECUTION**

**3.1 GENERAL**

- A. Verify existing conditions as specified in Section 02050.
- B. Install erosion and sediment control measures, in accordance with Section 02270 and the Construction Drawings, within a drainage area prior to grading activities.

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- C. Contractor shall notify the Construction Manager prior to movement of material for stockpiling.

**3.2 DUST CONTROL**

- A. Dust control shall be as specified in Part 6 and in accordance with the approved Dust Control Plan.

**3.3 CONSTRUCTION FENCE**

- A. Prior to initiating excavation activities install and relocate construction fencing as shown on the Construction Drawings and as specified in Part 8. T-posts less than 4-foot in height above grade shall be capped with rebar safety cap.
- B. Maintain and repair construction fences until completion of the Contract.

**3.5 STORM DRAINS AND APPURTENANCES**

- A. Subject to the approval of the Construction Manager, the Contractor shall furnish and install additional temporary culverts and driveways as needed to access work areas. These temporary culverts and driveways shall be removed and transported to the OSDF when access is no longer required.

**3.7 PROTECTION OF EXISTING STRUCTURES**

- A. Prior to commencing construction activities, install a protective barrier around existing groundwater wells designated to remain as shown on the Construction Drawings. Use, at a minimum, standard construction fence offset 5-feet from the item requiring protection. If earthwork activities are to occur in proximity of monitoring wells and/or extraction wells designated to remain, hand excavate the area within the protective barrier. If damage to existing monitoring wells, extraction wells, existing properties or utilities

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occurs, repairs and/or replacement will be completed by the Construction Manager at the Contractor's expense. Survey benchmarks shall be replaced and verified as specified in Section 02050.

- B. Protect trees, plant growth, and features that are outside the construction area.
- C. Locate, identify, and protect from damage utilities that are to remain.
- D. Maintain existing roadways at the construction site.

**END OF SECTION**

SECTION 02211  
TREATABILITY AND STABILIZATION

**PART 1 GENERAL**

**1.1 SCOPE**

- A. Treatability study.
- B. Disposition of Treatability study materials.
- C. Stabilization of contaminated soil.

**1.2 RELATED SECTIONS AND PLANS**

- A. Section 02050 - Surveying.
- B. Part 6 - Statement of Work.
- C. Part 8 - Environmental Health and Safety, and Training Requirements.

**1.3 REFERENCES**

- A. Environmental Protection Agency (EPA)
  - 1. Toxicity Characteristic Leachate Procedure (TCLP)  
EPA SW846, Method 1311
  - 2. Paint Filter Liquids Test  
EPA SW846, Method 9095
- B. Sitewide Excavation Plan, Document No. 2500-WP-0028,  
July 1998, Revision 0.
- C. Geotechnical Data and Evaluation Report for Southeast  
Borrow Areas, Document No. 20710-RP-0009, July 1998,  
Revision 0.
- D. Characterization Summary of the Area 1 Phase II Trap

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Range, October 1998, Document No. 20710-RP-0010.

- E. Ohio Administrative Code (OAC) 3745-51-04 (E-F), Identification of Samples Undergoing Treatability Studies at Laboratories and Testing Facilities.

**1.4 HEALTH AND SAFETY REQUIREMENTS**

- A. Environmental Health and Safety, and Training requirements shall be as specified in Part 8.

**1.5 SUBMITTALS**

- A. Provide submittals as required in Part 6 and Part 8. All workplans and reports shall be submitted as hard copy and electronic copy on 3 1/2 inch floppy disk in WORDPERFECT 8 or compatible format.
- B. Submit a Treatability Study Work Plan (TSWP) that includes the following:
  1. Goals of the treatability study and procedures used to attain these goals.
  2. All QA/QC procedures (minimum of one duplicate sample will be collected for every 20 samples).
  3. Detailed description of the mixing and testing schemes to be utilized (i.e., outline range of additives and mixing ratios that will be tested and the samples that will be analyzed). This shall include plans to obtain the data required for the Treatability Study Report.
  4. Treatability study schedule.
  5. Treatability study facility location.
  6. Analytical laboratory (Construction Manager must approve analytical laboratory).
  7. Plan to collect representative treatability study samples and amounts of material needed and the proposed analysis for initial waste characterization.
  8. Steps to determine the reaction/cure time required before treated soils can be excavated.

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- C. Submit a Treatability Study Report (TSR) that includes the following:
1. The goals of the treatability study.
  2. Initial waste characterization.
  3. Testing methods performed during the study.
  4. Equipment used during the study.
  5. Observations and measurements made during the study, including but not limited to:
    - a. Handling problems that may have occurred.
    - b. Volume increase/decrease associated with the treatment process on a dry unit weight basis.
    - c. Physical and chemical uniformity of the waste.
    - d. Volatile emissions that are of concern.
    - e. Description of treated samples attributes (i.e., spongy, powdery, granular, excess water on sample surface, sample exudes water when finger pressure applied, etc).
    - f. Bulk density (g/cc), pH, and Moisture Content (%), and specific gravity.
  6. Analytical results, and relevant laboratory QC data including but not limited to: matrix spikes, matrix spike duplicates, method blanks, lab duplicates, and serial dilutions. The laboratory shall have method detection studies available for review, if requested by the Construction Manager.
  7. Discussion and interpretation of the results, chemical reaction that occurred, including a comparison of the effectiveness of each treatment and the associated costs for each recommendation of the optimal mix.
  8. Field Implementability Evaluation. Explain how the treatability study bench-scale test results verify that the process can stabilize the entire volume of soil at the AlPII Trap Range and meet the technical and schedule requirements. Show how the approach used in the treatability study can be implemented in the field (i.e. criteria for full

scale of recipe mix for field implementation). Applicable regulatory drivers that affect the application of the process shall also be described. Provide recommendations for full scale remediation.

9. Any additional information that is collected during the study that will support the remedial action should also be documented and included in the TSR.
10. Stabilization set time, defined as the time which the treated soil must cure before analyses can be performed.
11. Discuss lower limits of the treatment process. Although the ability of the process to meet TCLP limits will be evaluated on a pass/fail basis, all soil provided to the Contractor may not exceed toxicity characteristic limits. Therefore, the Contractor shall include in the treatability testing a demonstration of the ability of the treatment process to treat A1PII Trap Range soils as far below the TCLP results and as uniform as possible. Provide the TCLP results of the stabilized samples for this demonstration. This information will be used to evaluate the overall ability of the process to reduce the mobility of hazardous constituents in a full scale application.

- D. Submit a Verification of Treatment Sampling Plan (VTSP). The purpose of the VTSP is to present a sampling and analysis program to demonstrate that the treatment process was successful in treating all of the contaminated soil to the requirements of this Section. The VTSP shall be based on the Contractor's prior experience and knowledge of SW-846 sampling methods. The VTSP shall contain the following sections:
1. Purpose.
  2. Area description.

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- 3. Scope.
- 4. Objectives.
- 5. Soil sampling and analysis strategy.
- 6. Analytical requirements.
- 7. Location and number of samples (include statistical basis) to be taken.
- 8. List with specific sample identification numbers.
- 9. Depths for each sample taken.
- 10. Diagram of where samples will be taken.
- 11. QA/QC requirements.
- 12. Equipment decontamination.
- 13. Health and safety.
- 14. Disposition of wastes.
- 15. Data management.

The VTSP must be approved by Construction Manager prior to initiation of any verification sampling.

E. Submit a Full Scale Stabilization Work Plan (FSSWP) that includes the following:

- 1. Resource loaded schedule.
- 2. Crew size and work hours.
- 3. Plan for receipt, storage and handling of stabilizing agents.
- 4. Utilization of water, include methods for obtaining, storing and handling of water for stabilization and dust control.
- 5. Type(s), including specifications, and amount of stabilizing agent(s) and/or admixture(s) to be applied.
- 6. Method and number of applications of stabilizing agent(s) to the soil.
- 7. Equipment and method(s) of mixing stabilizing agent(s) and/or admixture(s) with the soil.
- 8. Quality assurance and quality control procedures to be implemented to ensure that planned mixing ratios are achieved and that stabilizing agent(s) and/or admixture(s) are adequately mixed throughout the depth of contaminated soil.
- 9. Process control description for parameters

necessary to ensure proper operation of the treatment system. Include types of equipment used to spread and mix the agents and/or admixtures and methods to control depth of stabilization.

10. Stabilization set time.
11. Impact of weather on the stabilization process. Provide contingencies for adverse weather.
12. Special requirements for handling or excavation of stabilized material.

- F. Submit a Verification of Treatment Report (VTR). The VTR shall summarize the results of sampling and analysis performed per the VTSP and shall also include a summary of the stabilization methods used. The VTR must be approved by the Construction Manager.
- G. Submit technical specifications and MSDS for stabilization agents, admixtures and other chemicals to be used by the Contractor.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Stabilizing agent(s) and/or purchased admixture(s) for stabilization.

**2.2 EQUIPMENT**

- A. Provide equipment of size and type to perform the Treatability Study and meeting the requirements for U. S. Department of Labor 29 CFR 1910 and 29 CFR 1926 (OSHA).
- B. Provide equipment of size and type to receive, store, handle, apply, and mix stabilizing agent(s) and/or admixture(s) to meet contract requirements and meeting the requirements for U. S. Department of Labor 29 CFR 1910 and 29 CFR 1926 (OSHA).

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**PART 3 EXECUTION**

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**3.1 TREATABILITY STUDY**

- A. Perform a treatability study in accordance with the TSWP to stabilize contaminated soils as shown on the Construction Drawings.
- B. Request specific sample volumes and locations to be collected by Construction Manager under the direction of the Contractor. Contractor has sole responsibility to ensure collection of representative samples to meet stabilization requirements of this Section.
- C. Consider all technical and regulatory factors in selecting the final insitu treatment approach. The objectives of treatability testing are:
  - 1. To ensure the material generated from proposed treatment will pass the requirements for TCLP for Pb and As in accordance EPA SW-846 Method 1311.
  - 2. To ensure the material generated from proposed treatment method contains no free liquid in accordance with Paint Filter Liquids Test (EPA SW-846 Method 9095).
  - 3. Minimize volume increase and/or dilution of soils.
- D. Schedule at least one visit for Construction Manager to observe the treatability testing in progress at the Contractor's facility.
- E. Perform the treatability study as follows:
  - 1. The treatability study will be performed at the Contractor's facility. A Nuclear Regulatory Commission (NRC) license is not required.
  - 2. Obtain any applicable permits before starting the treatability study.
  - 3. Test admixture over a range of mixing ratios. Multiple mixing ratios shall be tested for each

additive considered in order to determine the optimal stabilization mix. Perform TCLP analysis for each loading.

4. Successful mixes are defined as any mix resulting in a stabilized waste that leaches lead and arsenic concentrations of less than 5 mg/L each in the TCLP test and passes the EPA Paint Filter Liquid test, indicating that the stabilized soil contains no free liquid.

### 3.2 DISPOSITION OF TREATABILITY STUDY MATERIALS

- A. All treated and untreated soil samples shall be returned to the FEMP after the Construction Manager approves the Treatability Study Report and prior to full scale stabilization in the field.
- B. Any treated soil samples which fail TCLP for lead and arsenic after testing shall be treated by the Contractor to pass TCLP, at no additional cost to FDF, prior to returning the samples to the FEMP.
- C. Notify the Construction Manager in writing, a minimum of ten (10) working days prior to returning the material to the FEMP. This notification shall include: the treatment method, including all materials/chemicals used in the treatment, and the volume of treated soil samples and unused soils to be returned to the FEMP.
- D. Upon receiving written notification from the Contractor, Construction Manager will work directly with the Contractor to prepare the necessary documentation and coordinate arrangements for the return of the treated soil samples and any unused soil to the FEMP. The Contractor shall be responsible for all packaging and transportation costs associated with the transportation of untreated soil, and treated soil to the Fernald Environmental Management Project (FEMP). Upon receipt and acceptance of the returned samples,

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the Construction Manager will provide the material back to the Contractor for placement into the stabilization area for subsequent stabilization.

- E. Identify, segregate, and quantify all secondary waste, treated soil samples, and any unused material resulting from treatability testing.
- F. Treat and/or dispose of all secondary waste generated from the treatability testing in accordance with applicable permits, at no additional cost to FDF.

### 3.3 STABILIZATION OF CONTAMINATED SOIL

- A. Stabilize A1PII Trap Range contaminated soils in accordance with the Full Scale Stabilization Work Plan (FSSWP).
- B. Obtain all applicable FEMP permits prior to starting the remedial action per Part 8.
- C. Survey and stake area in accordance with Section 02050.
- D. Stabilize in situ to depth shown on the Construction Drawings. Stabilization depth tolerances shall be minus 0 to plus 2 inches.
- E. Fugitive dust control shall be in accordance with Part 6 and the approved Fugitive Dust Control Plan.
- F. Perform sedimentation and erosion control of inactive exposed material and construction areas in accordance with Section 02270.
- G. Once the soil has stabilized, based on the optimal cure time developed in the treatability study, collect and analyze samples to demonstrate that treatment objectives have been achieved. Sampling will be done in accordance with approved VTSP. Construction Manager

has the option to split and/or collect samples as necessary.

- H. If treatment objectives are not met, take additional actions necessary to obtain those objectives.

**END OF SECTION**

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SECTION 02270  
EROSION AND SEDIMENT CONTROL

**PART 1 GENERAL**

**1.1 SCOPE**

This Section includes but is not limited to:

- A. Soil erosion and sedimentation control measures for work included in this contract, including additional areas disturbed by the Contractor.
- B. Installation and maintenance of all temporary erosion control facilities, including existing erosion and sediment control measures and facilities as shown on the Construction Drawings.
- C. Control of surface water and management of ponded water in construction and stabilization areas.

**1.2 RELATED SECTIONS AND PLANS**

- A. Part 6 - Statement of Work.
- B. Part 8 - Environmental Health and Safety, and Training Requirements.

**1.3 REFERENCES**

- A. State of Ohio, Department of Transportation (ODOT): Construction and Material Specifications, January 1, 1997, except as supplemented or otherwise modified herein and/or shown on the Construction Drawings.

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- B. State of Ohio, Department of Natural Resources (ODNR):  
Rainwater and Land Development, Ohio's Standard for  
Stormwater Management, Land Development, and Urban Stream  
Protection - 1996.
- C. Title 40, Code of Federal Regulations, Part 261,  
Hazardous Waste Management System, Identification and  
Listing of Hazardous Waste.

**1.4 SUBMITTALS**

- A. Provide submittals as required in Part 6.
- B. For each product proposed for use, submit the following:
  - 1. Manufacturer's product data and recommended  
methods of installation and maintenance.
  - 2. Certification from supplier or manufacturer that  
the product meets the material requirements of  
this Section to include test results.
  - 3. Material Safety Data Sheet (MSDS) data, if  
applicable.
- C. Records of inspection of erosion and sediment control  
measures as described herein shall be submitted weekly  
upon completion of the inspection report.

**1.5 INSPECTION**

- A. Inspect erosion and sediment control measures to evaluate  
the effectiveness of, and need for maintenance of, the  
control measures. Any repairs to the erosion and  
sediment control measures shall be corrected within 24  
hours of problem discovery. Inspections shall occur, at  
a minimum, at the following frequencies by a qualified  
representative of the Contractor and the Construction  
Manager:
  - 1. Weekly;
  - 2. Daily after each rain event exceeding 0.5 inches  
at the Fernald Environmental Management Project  
(FEMP).

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- 3. Daily inspections during rainfall events after two consecutive days of rainfall at the FEMP.
- B. All inspections shall be conducted and documented in accordance with this Section. The Contractor shall maintain a copy of the inspection records on site with the original submitted as specified in this Section.
- C. The inspection report shall summarize the scope of the inspection, name of the inspector(s), inspection date, observations relating to the implementation of the erosion and sediment control measures, destination of pumping ponded water, estimated quantity of ponded water and corrective action measures, if any, that are required. The report shall indicate if any areas are not in compliance or contain a certification that control measures are effective and in compliance with this Section.

**1.6 HEALTH AND SAFETY REQUIREMENTS**

- A. Environmental Health and Safety, and Training requirements shall be as specified in Part 8.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Silt fence shall at a minimum be composed of strong rot-proof polymeric fibers formed into a woven or non-woven fabric which have fabric and fence post properties and minimum dimensions in accordance with ODNR and as shown on the Construction Drawings.
- B. Crusting agent shall be as approved by the Construction Manager and shall meet the following requirements:
  - 1. The crusting agent shall be a pine sap emulsion comprised of a 100% organic emulsion produced from naturally occurring resins (pine sap). The crusting agent shall not be comprised of chloride,

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lignosulfonate, petroleum, or asphaltic type emulsions. The crusting agent must provide dust suppression and surface stability for exposed soils, both disturbed and undisturbed soils. The crusting agent shall be compatible with application via a hydro seeder, and must not require intense cleaning of equipment after application. Once cured, the crusting agent shall be non-tracking (i.e., will not stick to boots or tires).

2. The crusting agent shall not have hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity as defined in 40 CFR 261 for a hazardous waste in either its pre-applied or cured states.
3. The crusting agent shall have a flash point greater than 200°F. The crusting agent shall be neither a flammable nor combustible liquid per DOT definition. The crusting agent must not be susceptible to significant deterioration from exposure to the elements, including sunlight.

### **PART 3 EXECUTION**

#### **3.1 GENERAL**

- A. Construct and maintain erosion and sediment control measures as specified in this Section and as shown on the Construction Drawings. Maintain existing erosion and sediment control facilities and measures in accordance with this Section.

#### **3.2 SILT FENCES**

- A. Install in accordance with the requirements of the ODNR Rainwater and Land Development Standards. Place at locations shown on Construction Drawings prior to start of excavation activities. Remove accumulated sediment when deposition reaches one-third the height of the silt fence or sooner if accumulated sediment prevents

performance of silt fence as directed by the Construction Manager; remove accumulated sediment within 24 hours of discovery. Sediment shall be removed as specified in this Section.

- B. Install breaks and overlaps to allow equipment access to the construction area.

**3.3 STABILIZATION OF INACTIVE EXPOSED EXCAVATION AND CONSTRUCTION AREAS**

- A. Stabilization of disturbed areas that are planned to be left idle for more than 45 calendar days shall be stabilized as soon as possible, but no longer than seven (7) days after the last activity. Soils shall be stabilized by using a crusting agent as directed by the Construction Manager. Crusting agents shall be applied in accordance with manufacturer's recommendations as specified in this Section.
- B. Apply crusting agent according to manufacturer's directions. Unless specified otherwise by manufacturer, dilute concentrate pine sap emulsion to ratio of four parts water to one part concentrate. Apply diluted solution at the rate of 2,500 gallons per acre.
- C. Dilution ratio and application rate are subject to further adjustment at direction of Construction Manager to optimize performance of crusting agent.

**3.4 SEDIMENT REMOVAL**

- A. Remove accumulated sediment from temporary sumps, STP Excavation Dewatering Sump, ditches, Conveyance Channel, A1PII Sediment Basin, and sediment control measures as directed by the Construction Manager. In no case shall sediment reduce the available depth in the ditches and sediment control measures to less than two-thirds the depth shown on the Construction Drawings. A1PII Sediment Basin cleanout depth is the bottom of the 8-inch pipe and

riser pipe. Repair or replace construction fence in the sediment basin as necessary.

- B. Sediments removed shall be added back to the areas to be stabilized.

### 3.5 CRUSTING AGENT

The material shall be applied at the rates recommended by the manufacturer or as directed by the Construction Manager. Reapply as necessary to inhibit erosion and dust.

**END OF SECTION**

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Date: 10/22/98  
Rev.: 0 RE: FMP

02270  
6 of 6

WBS No: 0.1.2.2.6  
SCEP/TOP-012/A1PII/20713

# UNITED STATES DEPARTMENT OF ENERGY FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

## REMEDIATION AREA 1, PHASE II TRAP RANGE STABILIZATION PACKAGE

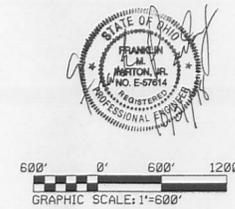
CONTRACT NO. FSC629  
FDF PROJECT NO. 20713



PARSONS

The Ralph M. Parsons Company \* Parsons Main, Inc. \* Engineering-Science, Inc.

ARCHITECTS - ENGINEERS  
CINCINNATI, OHIO



NOTES

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RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00512	DRAWING INDEX	X0002
92X-5900-X-00513	LEGEND AND GENERAL NOTES	X0003

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INFORMATION ONLY

0	CERTIFIED FOR CONSTRUCTION	FMP 10/22/98	CS 10/22/98	FMP 10/22/98
REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REV'D BY
				INITIALS AND DATE

**UNITED STATES  
DEPARTMENT OF ENERGY  
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT**

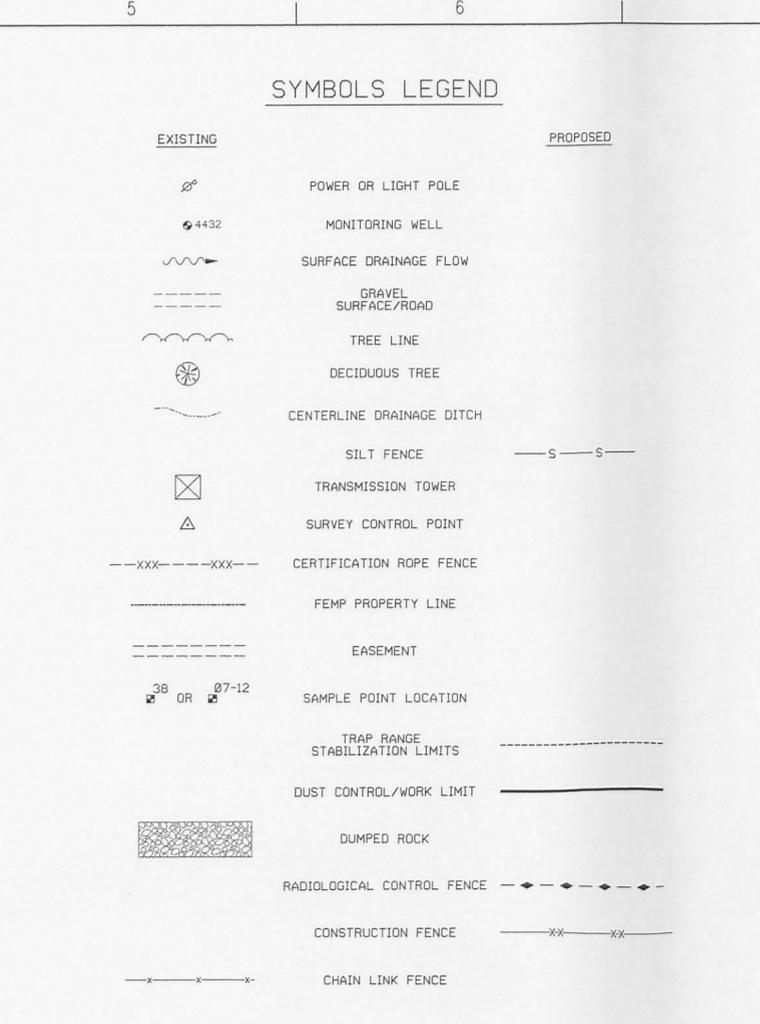
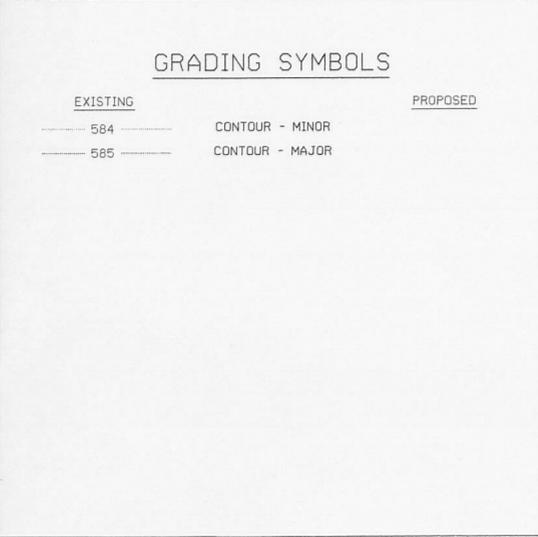
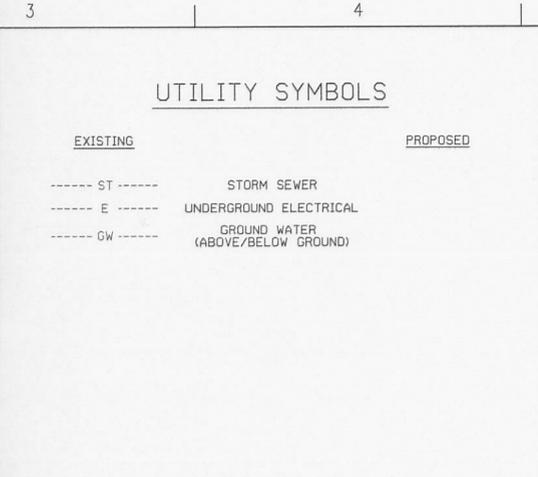
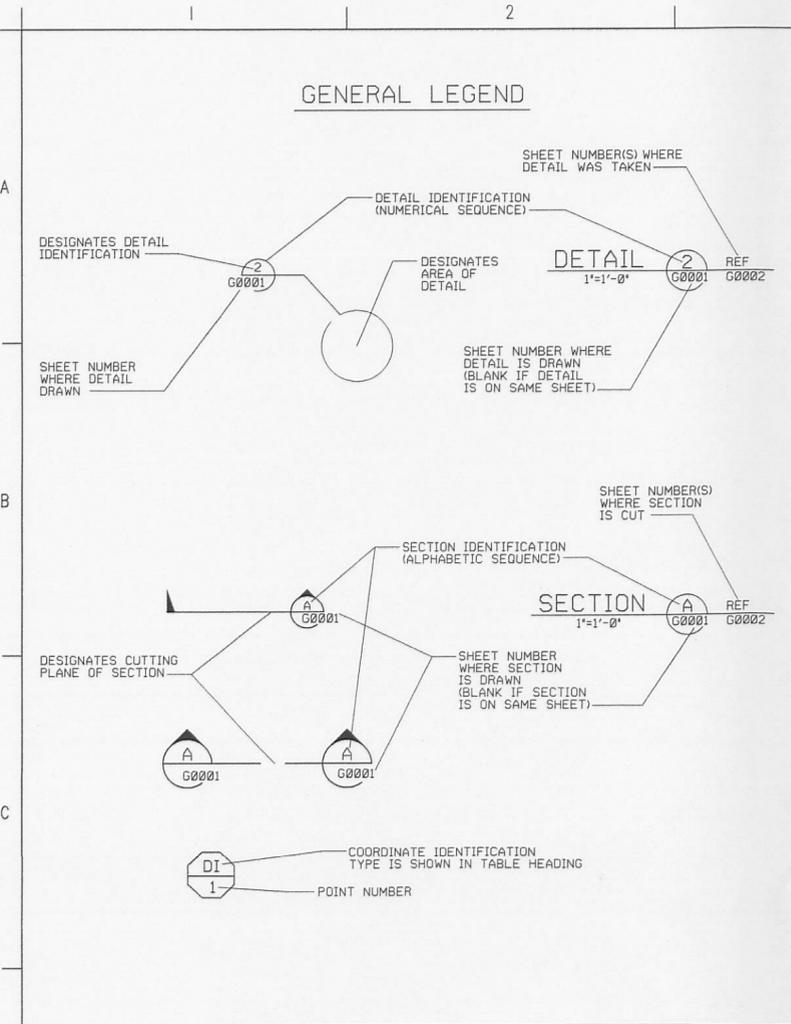
THIS DRAWING PREPARED BY  
**PARSONS**  
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.  
CINCINNATI, OHIO

PROJECT NAME  
REMEDIATION AREA 1, PHASE II  
TRAP RANGE STABILIZATION PACKAGE  
DRAWING TITLE

PROJECT TITLE SHEET

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
J.G. ASHWORTH	08/14/98	F.M. PARTON, JR.	08/14/98	F.M. PARTON, JR.	08/14/98
PLANT/BLDG. NO.	FLOOR	SCALE	1"=600'	CLASS	
SUBMITTED FOR 30% ISSUE	TECH LEAD N/A	SUBMITTED FOR 60% ISSUE	TECH LEAD N/A	SUBMITTED FOR 90% ISSUE	TECH LEAD N/A
DATE	DATE	DATE	DATE	DATE	DATE
PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.	
TOP-012	20713	92X-5900-X-00511	X0001	0	





### ABBREVIATIONS

AIP II	AREA I, PHASE II
CG&E	CINCINNATI GAS & ELECTRIC COMPANY
CM	CONSTRUCTION MANAGER
CY	CUBIC YARDS
PDF	FLUOP DANIEL FERNALD
FEMP	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
MIN	MINIMUM
OSDF	ON-SITE DISPOSAL FACILITY
STP	SEWAGE TREATMENT PLANT

### GENERAL NOTES

- EXISTING TOPOGRAPHY PREPARED BY PARSONS FROM DIGITAL MAPPING BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY PROVIDED BY WOOLPERT CONSULTANTS FLOWN APRIL 1997. OTHER SOURCES OF EXISTING INFORMATION SHOWN ON DRAWINGS WERE PROVIDED BY PDF; THESE SOURCES INCLUDE: EXISTING SITE DATA SOURCE (IN PLANT FILES) FEMP CADD GRID/UTILITY DRAWINGS FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS.
- HORIZONTAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NORTH AMERICAN DATUM 1983 (NAD 83). SEE SHEET G0002 FOR PROJECT SURVEY CONTROL.
- VERTICAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29). SEE SHEET G0002 FOR PROJECT SURVEY CONTROL.
- REFERENCES TO SECTIONS (E.G. SEE SECTION 02100) ARE TO THE CONTRACT TECHNICAL SPECIFICATION SECTIONS.
- SITE PREPARATION DETAILS AND CONTOURS SHOWN IN THIS PACKAGE WERE BASED ON THE PREVIOUSLY PREPARED SITE PREPARATION DESIGN DRAWINGS. ACTUAL CONSTRUCTION MAY DIFFER FROM WHAT IS SHOWN IN THIS PACKAGE. FACILITIES IN AIP II CONSTRUCTED DURING SITE PREPARATION INCLUDE BUT ARE NOT LIMITED TO CONVEYANCE CHANNEL, DITCHES, AND SEDIMENT BASIN. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND NOTIFY THE CM IN WRITING OF ANY DEVIATIONS PRIOR TO INITIATING ANY WORK IN THIS AREA.
- LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE. CONSTRUCTION MANAGER WILL LOCATE AND MARK UTILITIES PRIOR TO EXCAVATION. IF SIZE, MATERIAL, LOCATION, OR DEPTH ARE DIFFERENT OR IF UNKNOWN UNCHARTED UTILITIES ARE DISCOVERED, INFORM THE CONSTRUCTION MANAGER BEFORE PROCEEDING.
- DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- FIGURED DIMENSIONS AND/OR ELEVATIONS MARKED (+/-) SHALL BE VERIFIED IN THE FIELD BEFORE START OF CONSTRUCTION.
- MAINTAIN AND PROTECT UTILITY MARKINGS.

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RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00511	PROJECT TITLE SHEET	X0001
92X-5900-X-00512	DRAWING INDEX	X0002
92X-5900-G-00514	TRAP RANGE REMEDIATION PLAN	G0002

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## INFORMATION ONLY

	FMP	05	FMP
0	CERTIFIED FOR CONSTRUCTION	10/22/98	10/22/98
REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	FW
		INITIALS AND DATE	

**UNITED STATES DEPARTMENT OF ENERGY**  
**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT**

THIS DRAWING PREPARED BY  
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 THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.  
 CINCINNATI, OHIO

PROJECT NAME  
**REMEDIATION AREA 1 - PHASE II**  
**TRAP RANGE STABILIZATION PACKAGE**

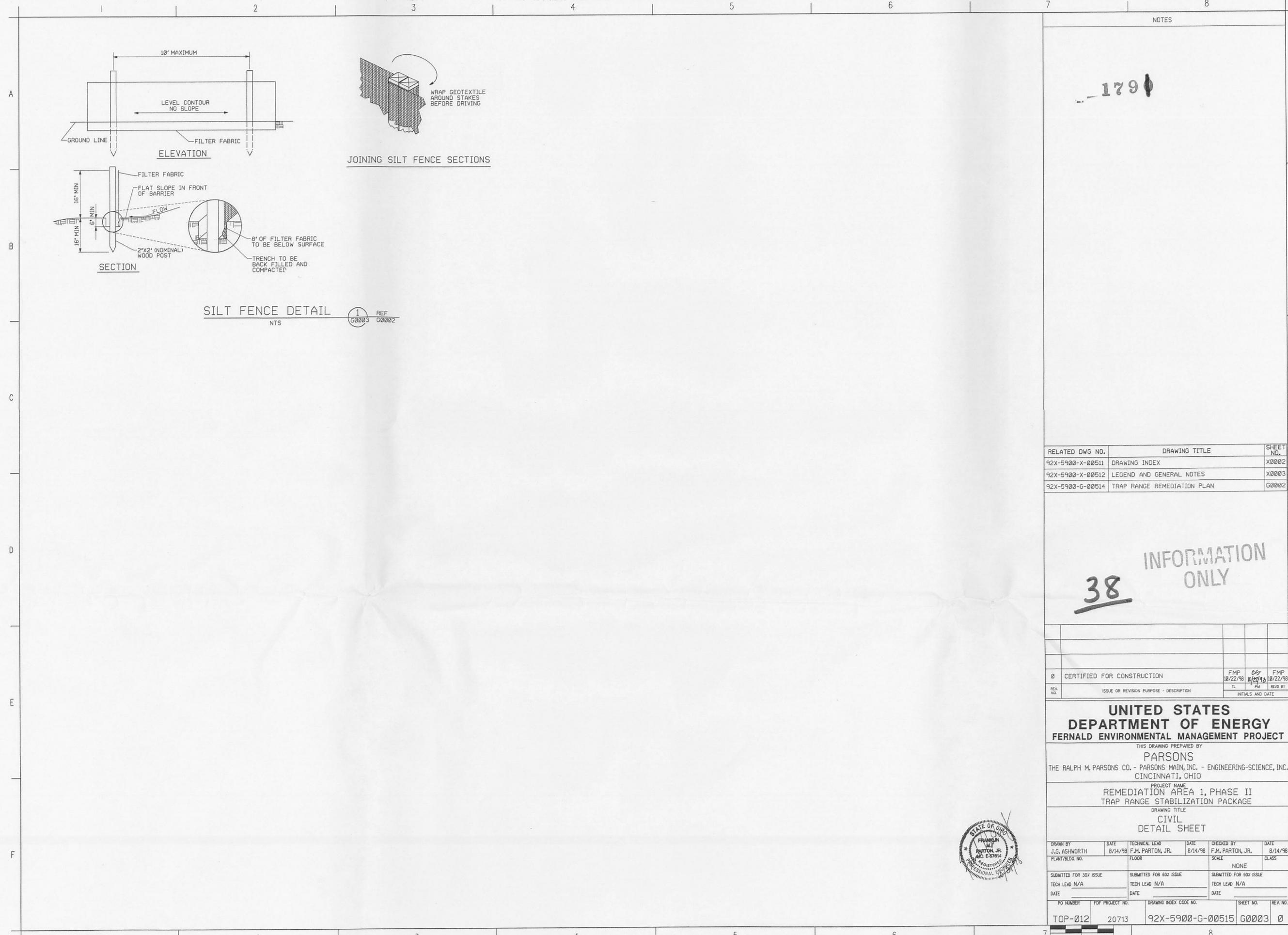
DRAWING TITLE  
**LEGEND AND GENERAL NOTES**

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
J.G. ASHWORTH	08/13/98	F.M. PARTON, JR.	08/13/98	F.M. PARTON, JR.	08/13/98
PLANT/BLDG. NO.	FLOOR	SCALE	NONE	CLASS	
SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE			
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD N/A			
DATE	DATE	DATE			
PO NUMBER	PDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.	
TOP-012	20713	92X-5900-X-00513	X0003	0	









SILT FENCE DETAIL  
NTS

1 REF  
G0003 G0002

NOTES

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RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00511	DRAWING INDEX	X0002
92X-5900-X-00512	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00514	TRAP RANGE REMEDIATION PLAN	G0002

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REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	INITIALS AND DATE
0	CERTIFIED FOR CONSTRUCTION	FMP 10/22/98 CS 10/22/98 FMP 10/22/98

**UNITED STATES DEPARTMENT OF ENERGY**  
**FERNALD ENVIRONMENTAL MANAGEMENT PROJECT**  
 THIS DRAWING PREPARED BY  
**PARSONS**  
 THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.  
 CINCINNATI, OHIO  
 PROJECT NAME  
**REMEDIATION AREA 1, PHASE II**  
**TRAP RANGE STABILIZATION PACKAGE**  
 DRAWING TITLE  
**CIVIL**  
**DETAIL SHEET**



DRAWN BY J.G. ASHWORTH	DATE 8/14/98	TECHNICAL LEAD F.M. PARTON, JR.	DATE 8/14/98	CHECKED BY F.M. PARTON, JR.	DATE 8/14/98
PLANT/BLDG. NO.	FLOOR	SCALE	NONE		
SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE			
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD N/A			
DATE	DATE	DATE			
PO NUMBER TOP-012	PDF PROJECT NO. 20713	DRAWING INDEX CODE NO. 92X-5900-G-00515	SHEET NO. G00003	REV. NO. 0	