

ERRATA FOR APPENDIX A OF THE AREA 1 PHASE I REMEDIAL ACTION  
WORK PLAN

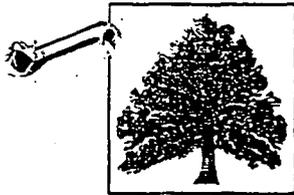
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LETTER

EPAS



**Department of Energy**

**Ohio Field Office  
Fernald Area Office**  
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(513) 648-3155



**AUG 12 1996**

**DOE-1210-96**

**Mr. James A. Saric, Remedial Project Director  
U.S. Environmental Protection Agency  
Region V - SRF-5J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590**

**Mr. Tom Schneider, Project Manager  
Ohio Environmental Protection Agency  
401 East 5th Street  
Dayton, Ohio 45402-2911**

Dear Mr. Saric and Mr. Schneider:

**ERRATA FOR APPENDIX A OF THE AREA 1 PHASE I REMEDIAL ACTION WORK PLAN**

Unfortunately, the previously submitted draft of the Area 1, Phase I Remedial Action Work Plan (RAWP) contained incorrect drawing specifications in Appendix A. Therefore, enclosed is a copy of the correct drawing specifications to be included in Appendix A of the Area 1, Phase 1 RAWP, July 17, 1996, revision. Please keep the signature page in Appendix A; remove the pages between the signature page and the first 11-inch by 17-inch construction drawings and replace them with the enclosed pages.

If you have questions regarding this RAWP, please contact Robert Janke at (513) 648-3124.

Sincerely,

**Johnny W. Reising  
Fernald Remedial Action  
Project Manager**

FN:R.J.Janke

Enclosure: As Stated

cc w/enc:

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Remedial Action Project  
Hamilton County and Butler County, Ohio

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DIVISION 2 - SITEWORK

DIVISION 2-SITWORK  
SECTION 02100  
SITE PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This work includes the selective removal of trees and shrubs.
- B. Excavation and removal of underground utilities, concrete foundations, cattle fencing and above ground structures, as shown on the contract drawings.
- C. Placement of debris in debris stockpile area.
- D. Protection of existing monitoring wells, as indicated on the contract drawings.

1.02 RELATED SECTIONS

- A. Section 02210 Grading
- B. Section 02220 Excavation, Backfilling, and Compaction
- C. Section 02300 Construction Entrance/Decontamination Pad

1.03 REFERENCES

- A. OSHA 29 CFR Part 1926, Subpart O.
- B. ODOT Construction and Material Specifications, Item 202
- C. OSHA 29 CFR Part 1926, Subpart P, Excavations

1.04 DELIVERY STORAGE AND HANDLING

- A. Trees and shrubs will be cut and transported to the debris stockpile area.

**1.05 ENVIRONMENTAL REQUIREMENTS**

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.
- B. Top six inches of excavated material will be transported to the east impacted soil stockpile shown on the contract drawings.
- C. Manmade material will be segregated from soils prior to transfer to the debris stockpile area.
- D. Aggregate material and geotextile material will be segregated from soils and transported to the debris stockpile area shown on the contract drawings.

**1.06 SUBMITTALS**

- A. General submittal requirements are specified in Attachment B.

**PART 2 PRODUCTS**

Not Used

**PART 3 EXECUTION****3.01 DESCRIPTION**

This work shall consist of:

- A. The cutting and removal of all trees and shrubs in the limits of work.
- B. The excavation and removal of roots to a depth of six inches below existing grade.

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- C. The excavation and/or removal of structural features. These features include concrete foundations, footers, gravel roads, and single strand cattle fencing.

### 3.02 EXECUTION

- A. The subcontractor shall fell and remove all trees, stumps, and shrubs within the designated limits of work not designated to remain as shown on the contract drawings. The cuttings are to be removed and cut into sections easily transportable. The maximum length for any material is 6 feet. Root material shall be excavated and removed to a depth of six inches below existing grade. Roots below six inches in depth may be cut and left in place. The roots shall be transported to the debris stockpile area and segregated from attached soil. The segregated soil shall be placed in the east impacted soil stockpile. The roots shall be generally free of clumps of soil larger than four inches.
- B. Backfill of excavations will not be permitted until precertification surveys are completed by FERMCO. It is anticipated the contamination will be removed upon the general six inch excavation operation. See Section 02210, Grading.
- C. The subcontractor shall excavate and remove all items within the designated limits of work not designated to remain as shown on the contract drawings. The manmade materials are to be excavated and broken or cut into sections easily transportable. The maximum size for concrete is 6 feet by 4 feet by 1.5 feet high.
- D. Excavate areas when within three feet of active utilities with nonmechanical hand tools.
- E. Trench cave-ins shall be excavated immediately and the soil transported to the soil stockpile area located within the six inch topsoil removal boundary as designated by the FERMCO Construction Contract Manager (CCM).
- F. Underground utilities are solely owned by FERMCO. Buried telephone and fiber optic cable are present within the limit of work. FERMCO shall field locate and identify locations of the fiber optic cable. The location and depth of all buried utilities are approximate. The subcontractor shall be responsible to confirm the locations and protect all buried utilities designated to remain. If damage to existing

cable or any other utility is incurred, all repairs will be completed by FERMCO at the subcontractors expense.

- G. The subcontractor shall install an approved protective barrier around existing monitoring wells as indicated on the contract drawings. The subcontractor shall hand-excavate the area within the protective barrier. If damage to existing monitoring wells is incurred, all repairs will be completed by FERMCO at the subcontractors expense.
- H. The gravel roads indicated to be removed on the contract drawings are separated from the existing grade by a geotextile blanket. The gravel shall be removed from the geotextile blanket. The gravel, geotextile blanket, and culverts shall be stockpiled separately within the debris stockpile area.
- I. Burning is not permitted.

End of Section 02100

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DIVISION 2-SITWORK  
SECTION 02110  
EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation and maintenance of all erosion and sedimentation control devices required for this project.
- B. Erosion and sedimentation control devices include silt fence, straw bales, diversions, soil excavation, embankment, slope protection, corrugated metal pipe (CMP) riser structures, and necessary appurtenances for sediment basin and sediment trap construction.

1.02 RELATED SECTIONS

- A. Section 02220 Excavation, Backfilling and Compaction
- B. Section 02230 Embankment
- C. Section 02720 Piping
- D. Section 02730 Riser Structure
- E. Section 02999 Miscellaneous and Specialty Items

1.03 REFERENCES

- A. OSHA 29 CFR Part 1926, Subpart P, Excavations
- B. ODOT Construction and Material Specifications, Items 207, 601, 700, and 712.
- C. OSHA 29 CFR Part 1926.106
- D. Hamilton County Earthwork Regulations

#### 1.04 DELIVERY STORAGE AND HANDLING

- A. Top six inches of excavated soil will be transported to the east impacted soil stockpile area shown on the contract drawings.
- B. All pipe shall be handled in a manner to preserve quality and fitness. Damaged pipe will be rejected at the time of installation.
- C. Maintain the filter fabric and silt fence material wrapped in heavy duty covering to shield from sunlight, ultraviolet rays, and temperatures greater than 140 degrees Fahrenheit. Fabric and liners will be rejected at the time of installation if any defects, deterioration, or damage was incurred during manufacture, handling, transportation, and storage.
- D. Aggregates shall be transported in a manner to prevent loss and segregation. Aggregates shall be stored in areas to prevent mixing with soil or other objectionable material.
- E. Storage and laydown areas are as designated on the contract drawings.

#### 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

#### 1.06 SUBMITTALS

- A. General submittal requirements are specified in Attachment B.

- B. Twenty days prior to the start of work, the subcontractor shall submit to FERMCO for review and approval, for the following:
1. Silt fence
  2. Corrugated metal pipe
  3. Concrete, mix design
  4. Slope protection
  5. Aggregate outlet rock

## PART 2 PRODUCTS

### 2.01 PRODUCTS INCLUDED

- A. Portland Cement Concrete , Section 03300.
- B. Corrugated Metal Pipe (CMP), Section 02720.
- C. Silt Fence, ODOT Construction and Material Specification, Item 712.09 Geotextile Fabrics, Type C: Sediment Fence.
- D. Sediment Trap Geotextile, ODOT Construction and Material Specification, Item 712.09, Geotextile Fabrics, Type B: Blankets for Rock Channel Protection.
- E. Slope Protection, ODOT Construction and Material Specification, Item 601.07, Dumped Rock Fill, Type C.
- F. Aggregate Outlet rock, ODOT Construction and Material Specification, Item 601.07, Dumped Rock Fill, Type C.

## PART 3 EXECUTION

### 3.01 DESCRIPTION

This work shall consist of:

- A. The installation and maintenance of silt fence, straw bales, diversions, riser structures, soil excavations and all associated work to install sediment basin and sediment traps.

### 3.02 EXECUTION

- A. The subcontractor shall install all silt fence and straw bales designated on the contract drawings prior to the start of excavation for the sediment basin and site-wide excavation. The subcontractor shall maintain the silt fence and straw bales in good condition. The devices shall be inspected at a minimum of once per week and immediately after a rainfall event. Any breaks or damaged devices will be repaired by the subcontractor immediately.
- B. The subcontractor shall excavate and install sediment basin and sediment traps to the lines and grades as shown on the contract drawings. The subcontractor shall remove the top six inches of soil in the immediate area of excavation and place this material in the east impacted soil stockpile area shown on the contract drawings. The remaining excavation shall be used in the construction of the embankments. The embankments shall be constructed in accordance with Section 02220, Embankment. The subcontractor shall minimize runoff from entering active excavations for construction of the sediment basin and sediment traps and dewatering, as required, following storm events.
- C. The emergency spillway for the sediment basin shall be protected with ODOT Type C rock. A geotextile blanket, Type B, shall be placed over the bottom and slope of the outlet spillway. The geotextile shall continue downstream of the embankment to form an apron on the surrounding grade. The geotextile shall be overlapped a minimum of two feet at all seams. The rock shall be installed to a thickness of eighteen inches. Accumulated sediment shall be excavated when the sediment reaches the elevation shown on the contract drawings. The sediment basin shall be restored to its original lines and grades. The riser structure shall be inspected for damage to the structure and

to the exterior filter fabric. Replace any visible damage. Clean the exterior filter fabric of any material that hinders its capabilities. The outfall of the sediment basin shall be protected with Type C rock, twelve inches thick installed over a Type B geotextile fabric as shown on the contract drawings.

- D. The outlet spillway for the sediment traps shall be constructed of geotextile material and Type C rock. The Type B geotextile blanket shall be placed over the bottom and slope of the outlet spillway. The geotextile shall continue downstream of the embankment to form an apron on the surrounding grade. The geotextile shall be overlapped a minimum of two feet at all seams. The rock shall be installed to a thickness of twelve inches. Accumulated sediment shall be excavated when the sediment reaches the elevation shown on the contract drawings. The trap shall be restored to its original lines and grades. The trap and outlet spillway shall be inspected for damage after each storm event. Correct any visible erosion or damage.
- E. The subcontractor shall install diversions as shown on the contract drawings. The subcontractor shall remove the top six inches of soil in the immediate area of excavation and place this material in the east impacted soil stockpile area shown on the contract drawings. The remaining excavation shall be used to construct diversion embankments.
- F. Slope protection material may be placed by end dumping and may be spread by suitable equipment.
- G. The sediment collected in the basin and traps, along the diversion ditches and upgradient silt fence and straw bales, shall be excavated and placed in the east impacted soil stockpile area shown on the contract drawings. Care will be taken by the subcontractor to transport the sediment to prevent loss or spillage during transport. A sediment clean out elevation for each sediment basin and trap is shown on the contract drawings.
- H. The sediment basin and sediment traps will remain in operation for the contract period. The subcontractor is responsible to maintain each basin, trap, and other controls for the specified contract period.

**3.03 TESTING AND INSPECTION**

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.

End of Section 02110

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DIVISION 2-SITWORK  
SECTION 02210  
GRADING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grading operations during and following excavation activities.

1.02 RELATED SECTIONS

- A. Section 02210 Site Preparation
- B. Section 02220 Excavation, Backfilling, and Compaction

1.03 REFERENCES

Not Used

1.04 DELIVERY STORAGE AND HANDLING

Not Used

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

PART 2 PRODUCTS

Not Used

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**PART 3 EXECUTION****3.01 DESCRIPTION**

This work shall consist of:

- A. The finish grading of the area upon completion of the soil excavation.

**3.02 EXECUTION**

- A. The subcontractor shall perform fine grading over the excavated areas to eliminate vehicle ruts, wind rows, stump/root removal depressions, and ponding areas. The fine grading operation will smooth the surface and not remove material. Minimal depth grading will be permitted to eliminate ponding areas. Grading depths greater than six inches will not be required except for the elimination of wheel ruts and over excavation.
- B. The subcontractor will perform the grading operation upon completion of the precertification survey from an upgradient to downgradient direction. The subcontractor shall verify that equipment entering the precertified areas are not contaminated in order to prevent cross contamination.

End of Section 02210

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DIVISION 2-SITWORK  
SECTION 02220  
EXCAVATION, BACKFILLING, AND COMPACTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavation, backfilling, and compaction of area wide soils.

1.02 RELATED SECTIONS

- A. Section 02100 Site Preparation
- B. Section 02110 Erosion and Sedimentation Controls
- C. Section 02210 Grading
- D. Section 02230 Embankment
- E. Section 02720 Piping

1.03 REFERENCES

- A. ODOT Construction and Material Specifications, Item 203, and 700
- B. OSHA 29 CFR 1926 Subpart P Excavations
- C. ASTM D698 Laboratory Compaction Characteristics of Soil using Standard Effort  
[12,000 ft - lbf/ft (600 kN - m/m)]
- D. ASTM D2922 Density of Soil and Soil - Aggregate in place by Nuclear Methods  
(Shallow Depth)

1.04 DELIVERY STORAGE AND HANDLING

- A. Excavated material will be transported to the east impacted soil stockpile area shown on the contract drawings.

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- B. Manmade material will be segregated from soils prior to transfer to the debris stockpile area shown on the contract drawings.

#### 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

### PART 2 PRODUCTS

#### 2.01 PRODUCTS INCLUDED

- A. Pipe bedding material, ODOT Construction and Material Specification, Item 703.01, AASHTO Number 57 Aggregate.

### PART 3 EXECUTION

#### 3.01 DESCRIPTION

This work shall consist of:

- A. The excavation of existing soils to the limits of work as noted on the contract drawings. The depth of excavation for surface soils is six (6) inches (minimum 5 inches). The depth of excavation for diversion ditches, sediment traps, and sediment basin are noted on the contract drawings. The depth of excavation of subsurface areas are as noted on the contract drawings and in Section 02100, Site Preparation. Excavation and removal of above ground manmade features are included in Section 02100, Site Preparation. Excavation is defined as the excavation and removal of all materials of whatever character encountered in the work. It is anticipated rock will not be encountered in this work. Rock is defined as a solid mass requiring drilling or blasting to be removed. Blasting is not permitted on this project.

### 3.02 EXECUTION

#### A. EXCAVATION

1. Prior to the start of six inch topsoil removal excavation activities, all erosion and sedimentation devices shall be installed by the subcontractor in accordance with Section 02110, Erosion and Sedimentation Controls.
2. The subcontractor shall excavate and remove all soils and items within the designated limits of work not designated to remain as shown on the contract drawings.
3. The subcontractor shall excavate the area from an upgradient to a downgradient pattern to minimize and prevent recontamination of clean subsurface soils due to runoff and vehicular traffic. Additional excavation required due to recontamination of designated clean soil by the subcontractor will be the sole responsibility of the subcontractor and accomplished at no additional cost to FERMCO.
4. If the subcontractor encounters any manmade material unidentified on the contract drawings or any stained earth or unusual odor, he shall stop work in the area and contact the FERMCO CCM or their representative immediately.
5. The subcontractor is responsible for the depths and grades established on the contract drawings. The subcontractor is not authorized for over-excavation in any area unless specifically directed by the authorized FERMCO CCM or their representative.
6. The five-foot limit from the property line designated on the contract drawings is the limit of excavation. Additional excavation of this five-foot strip and beyond will be determined by FERMCO during the course of the project.
7. Excavations shall be performed in a manner and sequence that will provide drainage at all times. Water accumulated in the excavation area shall be removed by pumps or other approved means to a discharge point approved by the FERMCO CCM.

8. Stockpiles shall be built up and compacted in twelve-inch layers for the full width of the storage pile. Stockpile side slopes shall be as indicated on the contract drawings.

#### B. BACKFILLING

1. Backfill of excavations will not be permitted until notified by FERMCO, the subcontractor will backfill and compact the excavated trenches to the top of the trench (see Section 02210, Grading).
2. Backfill piping trenches with AASHTO number 57 aggregate in accordance with ODOT Construction and Material Specification, Item 703.01.
3. Borrow material area, if needed, will be located within the six inch topsoil removal boundary as designated by the FERMCO CCM.

#### C. COMPACTION

1. Soil backfill compaction efforts will be to the soil density of a minimum 95% of Standard Proctor, ASTM D698.
2. The compaction effort for piping is as follows: Tamp solidly the piping backfill material under and around the pipe to a height two-thirds of the diameter above the invert of the pipe. Backfill and tamp suitable soil to a height of 12 inches above the crown of the pipe in 4 inch lifts. Stone or other material larger than 4 inches in size in any dimension will be removed from the backfill prior to placement.
3. Embankment compaction for the sediment traps and basin will be a minimum of 95% of Standard Proctor, ASTM D698. Erosion or failure of any portion of the embankment will be corrected immediately by the subcontractor.
4. Compaction of the diversions will be by mechanical means to stabilize the embankment. Erosion or failure of the diversion embankments will be corrected immediately by the subcontractor.

5. Stockpile layers shall be compacted by a minimum of four passes with a roller compactor or other suitable equipment.

### 3.03 TESTING AND INSPECTION

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.
- B. Compaction field tests shall be made according to ASTM D2922. Field density testing shall not be effected when vibratory equipment is operating. At least one field density test shall be performed by an independent testing and inspection agency per whichever of the following requires the greatest number of tests;
  1. One test for each day of work filling and backfilling.
  2. One test for each 1000 cubic yards of fill compacted by mechanical means.
  3. One test for each 400 cubic yards compacted by nonmechanical means.

End of Section 02220

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DIVISION 2-SITWORK  
SECTION 02230  
EMBANKMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preparation and construction of an embankment for use as a diversion embankment, sediment basin embankment, or sediment trap embankment in conformity with the lines, grades, thickness, and cross section shown on the contract drawings.

1.02 RELATED SECTIONS

- A. Section 02100 Site Preparation
- B. Section 02110 Erosion and Sedimentation Controls
- C. Section 02220 Excavation, Backfilling, and Compaction.

1.03 REFERENCES

- A. ASTM D698 Laboratory Compaction Characteristics of Soil using Standard Effort [12,000 ft - lbf/ft (600 kN - m/m)]
- B. ASTM D2922 Density of Soil and Soil - Aggregate in place by Nuclear Methods (Shallow Depth)

1.04 DELIVERY STORAGE AND HANDLING

- A. Top six inches of excavated material will be transported to the east impacted soil stockpile area shown on the contract drawings.
- B. Embankment material will be protected from cross contamination.

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## 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

## PART 2 PRODUCTS

## 2.01 PRODUCTS INCLUDED

Not Used.

## PART 3 EXECUTION

## 3.01 DESCRIPTION

This work shall consist of:

- A. The preparation of areas upon which embankments are to be placed, and placing and compacting of suitable soil for the construction of embankments.

## 3.02 EXECUTION

## A. PREPARATION

1. Prior to the start of six inch topsoil removal excavation activities, all erosion and sedimentation devices shall be installed by the subcontractor in accordance with Section 02110, Erosion and Sedimentation Control.
2. The subcontractor shall prepare the area for placement of the embankment by removing the top 6 inches of soil. The material will be transported and deposited in the east impacted soil stockpile area shown on the contract drawings.

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**B. MOISTURE CONTROL**

1. Moisture control shall be in accordance with Item 203.11, Moisture Control of ODOT Construction and Material Specifications.

**C. EMBANKMENT**

1. Basin and trap embankments shall be constructed of suitable material excavated during construction of sediment basin and traps, below the initial six inch topsoil removal grade. Vegetative material, frozen material, topsoil and rock over 4 inches in any dimension is not permitted.
2. Diversion embankments will be constructed of soil excavated to construct diversion ditches. Vegetative material, frozen material, topsoil and rock over 4 inches in any dimension is not permitted.

**D. COMPACTION**

1. Embankment compaction requirements for sediment basins shall be a minimum of 95% of Standard Proctor, ASTM D698.
2. Embankment compaction requirements for sediment traps shall be a minimum of 95% of Standard Proctor, ASTM D698.
3. Embankment compaction requirements for diversion embankments shall be tamped in place by mechanical means.

**E. EXECUTION**

1. The subcontractor is responsible for the elevations, lines and grades established on the contract drawings.
2. Soil shall be spread in successive layers, not to exceed eight (8) inches in loose thickness. The layers shall be compacted in accordance with section 3.02(D), Compaction.

3. Erosion or failure of any embankment material shall be corrected by the subcontractor immediately.

### 3.03 TESTING AND INSPECTION

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.
  
- B. Compaction field tests shall be made according to ASTM D2922. Field density testing shall not be effected when vibratory equipment is operating. At least one field density test shall be performed by an independent testing and inspection agency per whichever of the following requires the greatest number of tests;
  1. One test for each day of work filling and backfilling.
  2. One test for each 1000 cubic yards of fill compacted by mechanical means.
  3. One test for each 400 cubic yards compacted by nonmechanical means.

End of Section 02230

DIVISION 2-SITWORK  
SECTION 02300  
CONSTRUCTION ENTRANCE/DECONTAMINATION PAD

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction of a temporary construction entrance/decontamination pad

1.02 RELATED SECTIONS

- A. Section 02100 Site Preparation
- B. Section 02220 Excavation, Backfilling, and Compaction
- C. Section 02720 Piping

1.03 REFERENCES

- A. ODOT Construction and Material Specifications, Items 601, 700, and 707
- B. OSHA 29 CFR 1926
- C. ASTM D698 Laboratory Compaction Characteristics of Soil using Standard Effort  
[12,000 ft - lbf/ft (600 kN - m/m)]
- D. ASTM D2922 Density of Soil and Soil - Aggregate in place by Nuclear Methods  
(Shallow Depth)

1.04 DELIVERY STORAGE AND HANDLING

Not Used

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## 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Minimize overspray of water during cleaning operations.
- B. Protect personnel and areas outside the decontamination pad during spraying operations.

## PART 2 PRODUCTS

### 2.01 PRODUCTS INCLUDED

- A. Aggregate, ODOT Construction and Material Specification, Item 601.07, Dumped Rock Fill, Type C
- B. Corrugated Metal Pipe (CMP), ODOT Construction and Material Specifications Item 707, Steel, Aluminum, and Plastic Pipe, Subparagraph 707.02, Metallic Coated Corrugated Steel Conduits (1-inch Corrugations).

## PART 3 EXECUTION

### 3.01 DESCRIPTION

This work shall consist of:

- A. The installation of a temporary aggregate construction entrance/decontamination pad.

### 3.02 EXECUTION

- A. The subcontractor shall excavate all vegetative materials, topsoil, and unsuitable materials and grade the area to the necessary elevation to install the aggregate construction entrance/decontamination pad. The subgrade shall be graded to drain and discharged as shown on the contract drawings. The subcontractor shall install a 12-inch CMP culvert to match grades of the existing roadside ditch to allow roadside runoff to bypass the construction entrance/decontamination facility.

- B. The subgrade shall be compacted to a minimum of 85% of Standard Proctor. The aggregate shall be placed in lifts to the thickness and grades shown on the contract drawings. The aggregate shall be maintained in good working order by the subcontractor. Accumulations of soil on the aggregate shall be removed and placed in the east impacted soil stockpile shown on the contract drawings. The aggregate shall be turned and cleaned based upon visual inspections by the subcontractor. Wheel ruts shall be graded and eliminated by the subcontractor.
- C. Construction of temporary aggregate construction entrance/decontamination pad encroaches upon existing fiber optics and telephone lines. FERMCO shall identify existing lines. Identifications are approximate. See Section 02100, Site Preparation.

### 3.03 TESTING AND INSPECTION

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.
- B. Compaction field tests shall be made according to ASTM D2922. Field density testing shall not be effected when vibratory equipment is operating. At least one field density test shall be performed by an independent testing and inspection agency per whichever of the following requires the greatest number of tests;
1. One test for each day of work filling and backfilling.
  2. One test for each 1000 cubic yards of fill compacted by mechanical means.
  3. One test for each 400 cubic yards compacted by nonmechanical means.

End of Section 02300

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DIVISION 2-SITWORK  
SECTION 02720  
PIPING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of corrugated metal pipe (CMP)
- B. Installation of CMP riser structures
- C. Installation of CMP anti-seep collars

1.02 RELATED SECTIONS

- A. Section 02110 Erosion and Sedimentation Controls
- B. Section 02220 Embankment
- C. Section 02730 Riser Structure

1.03 REFERENCES

- A. OSHA 29 CFR Part 1926
- B. ODOT Construction and Material Specifications, Items 513, 603, 700, and 707

1.04 DELIVERY STORAGE AND HANDLING

- A. Top six inches of excavated soil will be transported to the east impacted soil stockpile area.
- B. All pipe shall be handled in a manner to preserve quality and fitness. Damaged pipe will be rejected at the time of installation.
- C. Aggregates shall be transported in a manner to prevent loss and segregation. Aggregates shall be stored in areas to prevent mixing with soil or other objectionable material.

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- D. Storage and laydown areas will be designated by the FERMCO CCM or their representative, and as shown on the contract drawings.

#### 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

#### 1.06 SUBMITTALS

- A. General submittal requirements are specified in Attachment B.
- B. Twenty days prior to the start of work, the subcontractor shall submit to FERMCO, for review and approval, the following:
  - 1. CMP pipe and supplier
  - 2. Anti-seep collar and associated material
  - 3. Aggregate

### PART 2 PRODUCTS

#### 2.01 PRODUCTS INCLUDED

- A. Corrugated Metal Pipe (CMP), ODOT Construction and Material Specifications Item 707, Steel, Aluminum and Plastic Pipe, Subparagraph 707.02, Metallic Coated Corrugated Steel Conduits ( 1 inch Corrugations).
- B. Aggregate Bedding and Backfill, ODOT Construction and Material Specification Item 603.04.
- C. High strength steel bolts, nuts and washers, ODOT Construction and Material Specifications Item 513.15, one-half inch.

DIVISION 2-SITWORK  
SECTION 02730  
RISER STRUCTURE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of a CMP riser structure in a sedimentation basin including aggregate backfill and concrete base.

1.02 RELATED SECTIONS

- A. Section 02110 Erosion and Sedimentation Controls
- B. Section 03300 Concrete

1.03 REFERENCES

- A. OSHA 29 CFR Part 1926
- B. ODOT Construction and Material Specifications, Item 700, and 703

1.04 DELIVERY STORAGE AND HANDLING

- A. Top six inches of excavated soil will be transported to the east impacted soil stockpile area.
- B. All material shall be handled in a manner to preserve quality and fitness. Damaged riser structures will be rejected at the time of installation.
- C. Storage and laydown areas are as designated by the FERMCO CCM or their representative, and as shown on the contract drawings.

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## 1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

## 1.06 SUBMITTALS

- A. General submittal requirements are specified in Attachment B.
- B. Twenty days prior to the start of work, the subcontractor shall submit to FERMCO, for review and approval, the following:
  - 1. Corrugated Metal Pipe
  - 2. Aggregate
  - 3. Concrete
  - 4. Geotextile

## PART 2 PRODUCTS

### 2.01 PRODUCTS INCLUDED

- A. Portland Cement Concrete, Section 03300.
- B. Corrugated Metal Pipe, Section 02720.
- C. Aggregate, ODOT Construction and Material Specification, Item 703.01, AASHTO No. 3 Aggregate.

## PART 3 EXECUTION

### 3.01 DESCRIPTION

This work shall consist of:

- A. The installation of a CMP riser structure in the sedimentation basin including aggregate backfill and concrete base.

### 3.02 EXECUTION

- A. The subcontractor shall install the riser structure in accordance with the lines and grades designated on the contract drawings.
- B. The riser structure will be set in a concrete base cast in place.
- C. The riser structures will be shop fabricated with the barrel structure welded to the elevation shown on the contract drawings.
- D. The riser structure will be perforated with one-inch diameter holes to the location and elevations shown on the contract drawings.
- E. The riser structure shall be surrounded with ODOT Item 703.01, AASHTO No. 3 Aggregate, as shown on the contract drawings.
- F. The riser structure shall be free from sharp edges and burrs.

### 3.03 TESTING AND INSPECTION

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.

End of Section 02730

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DIVISION 2-SITWORK  
SECTION 02920  
FERTILIZER, SEED, AND MULCH

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Application of fertilizer and seed to stockpile areas, sediment basin and sediment trap embankments, diversions and all disturbed areas.

1.02 RELATED SECTIONS

- A. Section 02110 Erosion and Sedimentation Controls
- B. Section 02210 Grading
- C. Section 02230 Embankment

1.03 REFERENCES

- A. ODOT Construction and Material Specifications, Items 659, and 700

1.04 DELIVERY STORAGE AND HANDLING

- A. Store seed and fertilizer in areas kept dry and free from damage due to equipment operation.
- B. Material damaged by water or mixed with soil will be rejected.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

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- F. The anti-seep collars shall be constructed of the same thickness steel as the CMP culverts. The connecting band shall be of the same thickness steel as the culvert and anti-seep collar. The anti-seep collar shall be fastened to the connecting band by a continuous weld. The connecting band shall match the corrugations of the culvert. The subcontractor shall apply a bituminous mastic to prepare a watertight seal and anchor the connecting band to the culvert. Connecting bolts, washers and nuts shall be one-half inch high strength steel.

### 3.03 TESTING AND INSPECTION

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.

End of Section 02720

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**PART 3 EXECUTION****3.01 DESCRIPTION**

This work shall consist of:

- A. The installation and maintenance of pipe culverts and anti-seep collar in sedimentation basin.

**3.02 EXECUTION**

- A. The subcontractor shall install all pipe culverts in reasonable conformity to the lines and grades designated on the contract drawings. The subcontractor shall excavate trenches and foundations for pipe culverts. The subcontractor shall maintain the culverts during construction activities including excavation of accumulated sediment and damage due to the construction activities. The devices shall be inspected at a minimum of once per week and immediately after a rainfall event. Any breaks or damaged devices will be repaired by the subcontractor, immediately.
- B. The subcontractor shall remove the top six inches of soil in the immediate area of excavation and place this material in the east impacted soil stockpile area shown on the contract drawings. The remaining excavation shall be used in the construction of the embankments. The embankments shall be constructed in accordance with Section 02220, Embankment.
- C. The subcontractor shall excavate trenches for the pipe culverts in accordance with Item 603.03, Excavation of the ODOT Construction and Material Specifications.
- D. The culvert bedding shall be Class C in accordance with Item 603.04 Bedding of the ODOT Construction and Material Specifications.
- E. The culvert shall be placed in accordance with Items 603.05, Laying Conduit, and 603.06, Joining Conduit of the ODOT Construction and Material Specifications.

1.06 SUBMITTALS

- A. General submittal requirements are specified in Section Attachment B.
- B. Twenty days prior to the start of work the contractor shall submit to FERMCO, for review and approval, the following:
  - 1. Fertilizer Mix
  - 2. Seed Mix and supplier

PART 2 PRODUCTS

2.01 PRODUCTS INCLUDED

- A. Commercial fertilizer 12-12-12, ODOT Construction and Material Specifications, Item 659.03
- B. Seed, ODOT Item 659.04.

PART 3 EXECUTION

3.01 DESCRIPTION

This work shall consist of:

- A. The application of fertilizer, seed, and mulch on stockpile areas, embankments and all disturbed areas.

3.02 EXECUTION

- A. The east impacted soil stockpile surface does not require any raking or smoothing prior to the application of fertilizer and seed.
- B. The subcontractor shall apply commercial fertilizer at the rate of 20 pounds per 1,000 square feet.

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- C. The subcontractor shall apply seed on the east impacted soil stockpile at the rate of one and one half pounds per 1,000 square feet of Crown Vetch consisting of; 33 percent Crown Vetch (*Coronilla varia*) and 67 percent Perennial Ryegrass (*Lolium perenne*).
- D. The subcontractor shall apply seed on all disturbed areas, embankments, and diversions at the rate of 2 pounds per 1000 square feet of seed consisting of; 90 percent *Perennial Ryegrass (Lolium perenne)* and 10 percent Alsike Clover (*Trifolium hybridum*).
- E. Seed shall be sown dry or hydraulically.
- F. All disturbed areas shall be mulched during or immediately after seeding. If straw is used, it shall be unrotted small-grain straw applied at the rate of 2 tons/acre or 90 lb/1000 square feet (two to three bales). The mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1000-square-foot sections and spread two 45-lb bales of straw in each section. If wood cellulose fiber is used with a hydroseeder, it shall be used at 2000 lb/acre or 46 lb/1000 square feet.
- G. The outside slopes of the sediment basin will be fertilized and seeded in accordance with this section. The sediment basin slopes will be raked to remove large clumps of soil and stone prior to the application of fertilizer and seed.
- H. The subcontractor shall be responsible for seeded areas 90 days after seed application. If satisfactory growth is not established by the end of this period, reseeding of the area will be accomplished by the subcontractor at no cost to FERMCO.

### 3.03 TESTING AND INSPECTION

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.

End of Section 02920

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DIVISION 2-SITWORK  
SECTION 02999  
MISCELLANEOUS AND SPECIALTY ITEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of construction fence.
- B. Fabrication and installation of caution signs.
- C. Ring buoys.

1.02 RELATED SECTIONS

Not Used

1.03 REFERENCES

- A. ODOT Construction and Material Specifications, Item 603
- B. OSHA 29 CFR Part 1926
- C. OSHA 29 CFR Part 1926.106

1.04 DELIVERY STORAGE AND HANDLING

- A. Construction fence, signs, and buoys shall be delivered to the site and protected from damage. Damaged items will be removed from the site.

1.05 ENVIRONMENTAL REQUIREMENTS

Not Used

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## 1.06 Submittals

- A. General submittal requirements are specified in Attachment B.
- B. Twenty days prior to the start of work, the subcontractor shall submit to FERMCO, for review and approval, the following:
  - 1. Construction fence
  - 2. Caution signs, drawing to scale including color notations.
  - 3. Buoys

## PART 2 PRODUCTS

## 2.01 PRODUCTS INCLUDED

- A. Caution signs, flat sheet aluminum, 0.063 inch thick, 12-inch minimum dimension in any one direction, yellow or orange reflective sheeting background, black lettering a minimum of one inch in height, all capital letters, standard block lettering. Signs shall read as follows:

**CAUTION - DROWNING HAZARD, LIFE VEST REQUIRED WITHIN  
5 FEET OF WATER**

- B. Construction fence shall be orange, high density polyethylene, four foot height, opening size approximately four inches by one half inch, minimum tensile strength of 2000 lbs/ft of width. Posts shall be metal, "t", or wood. Rebar shall not be permitted.
- C. Buoys and line shall be U.S., Coast Guard approved, as required by OSHA in 1926.106.

### PART 3 EXECUTION

#### 3.01 DESCRIPTION

This work shall consist of:

- A. The installation of construction fence, caution signs and buoys.

#### 3.02 EXECUTION

- A. Install construction fence at the locations designated on the contract drawings. The fence posts shall be driven. The subcontractor shall secure and stretch the fence fabric to the posts in order to eliminate any sags horizontally and vertically. The bottom of the fence fabric shall be installed to a maximum of 2 inches above the finished grade.
- B. Install caution signs on metal posts at 20 foot intervals along the perimeter of the fence. Metal posts shall be driven and the signs securely bolted to the posts.
- C. Provide ring buoys and 90 feet of line at maximum 200 foot intervals around the perimeter of each sediment trap and sediment basin. Buoys and line shall be hung on metal or wood posts. The buoys shall be installed at approximately four feet above grade. The subcontractor shall inspect each ring buoy for defects or damage. The subcontractor shall be responsible to repair or replace any damaged buoys.
- D. All signs, construction fence, posts and buoys associated with the sediment basin and sediment traps shall remain the property of FERMCO and shall remain on site.

End of Section 02999

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DIVISION 3 - CONCRETE

DIVISION 3-CONCRETE  
SECTION 03300  
CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Installation of cast-in-place concrete for riser base foundations.

1.02 RELATED SECTIONS

- A. Section 02110 Erosion and Sedimentation Control
- B. Section 02720 Piping
- C. Section 02730 Riser Structure

1.03 REFERENCES

- A. ODOT Construction and Material Specifications, Item 511

1.04 DELIVERY STORAGE AND HANDLING

- A. Deliver concrete in approved vehicles.
- B. Concrete mixes stored on site shall be kept dry and free from exposure due to damage and intermingling with other materials during construction activities.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Dust control shall be maintained according to approved subcontractor dust suppression plan.

**PART 2 PRODUCTS****2.01 PRODUCTS INCLUDED**

- A. Concrete, ODOT Construction and Material Specifications, Item 511, Concrete for Structures

**PART 3 EXECUTION****3.01 DESCRIPTION**

This work shall consist of:

- A. The construction of a concrete base for the principal spillway riser pipe in sediment basins.

**3.02 EXECUTION**

- A. An area conforming to the size and shape of the riser base shall be excavated by the subcontractor. The riser base shall be formed to the general shape and depth prior to the anchoring of the riser structure and application of the concrete.
- B. Concrete shall have a minimum strength of 3000 psi and placement, mixing, proportioning, equipment and handling shall be in accordance with Item 511, Concrete for Structures of ODOT Construction and Material Specifications.

**3.03 TESTING AND INSPECTION**

- A. The subcontractor shall be responsible for furnishing all personnel and equipment required to perform all material and performance tests in accordance with ODOT Construction and Material Specification, Item 700, as a minimum.

End of Section 03300

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