

**FS-132 Pine Creek Road South
Landslide Repairs
Lawrence County, Ohio
Decatur Townships
Scioto County, Ohio
Vernon Townships**

**Specifications
REV 1
June 5, 2012**

**Wayne National Forest
Ironton Ranger District**



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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 PROJECT IDENTIFICATION

- A. Project Name and Location: FS-132 Pine Creek Road South Landslide Repairs in Decatur Township, Lawrence County, Ohio and Vernon Township, Scioto County, Ohio. The access from Twp. Rd. 211 Decatur Township, Lawrence County, Ohio.
- B. Project Summary Description: The project includes but is not limited to the following Work:

Work will consist of the following but not limited to these items: Directional drilling and installation of 3 – inch HDPE pipe; steel cable installation; concrete anchor blocks; excavation; steel fabrication and erection; segmental concrete wall construction, limestone backfill; guardrail; clearing; seeding and mulching.
- C. Government or Owner refers to the USDA Forest Service. Contracting Officer (CO) refers to the person assigned by the USDA Forest Service to administer the Contract. Soon after Contract award, the Contracting Officer will designate a Contracting Officers Representative (COR).

1.2 REQUIREMENTS OF THE OFFERER'S PROPOSAL

- A. This project is advertised as a request for proposal.
- B. The Government DRAWINGS FS-132 Pine Creek Road South Landslide Repairs dated April 25, 2012.
- C. The construction work shall conform to the DRAWINGS as closely as possible. Those products listed in the SPECIFICATIONS are preferred products, chosen for compatibility, longevity, durability and quality.
- D. Evacuation Criteria of Bid

Technical evaluation will compare five factors: 1) Price, 2) Past Performance, 3) Technical Capability, 4) Quality Control and Safety, and in descending order of importance

SECTION 011400 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 CONTRACTOR USE OF PREMISES

- A. The Government will conduct a pre-construction survey with the Contractor to review and document the existing project conditions prior to construction.
- B. The Contractor shall perform all work during the time period: **150 Days From Date Of Notice- To- Proceed.**
- C. The Contractor shall limit use of the premises to the work in areas indicated.
 - 1. Confine operations at the site to areas indicated.
 - 2. Schedule deliveries to minimize on-site storage of material and equipment.
 - 3. Repair damage caused by construction operations. Take precautions to protect the public during the construction period.
 - 4. Space on the premises is available for the Contractor's storage and related activities, as staked by the Government.
 - 5. Existing materials and equipment that are removed as part of the construction operations, and that are not reused or salvaged as Government property, shall become the property of the Contractor and shall be promptly removed from the site.

1.2 GOVERNMENT OCCUPANCY

- A. The Government will occupy the site during the construction. Cooperate with the Government's representatives during construction operations to minimize conflicts and facilitate Government usage. Perform the Work in a manner that does not interfere with the Government's operations.

PART 2 - PRODUCTS

Products as specified on drawings and specifications.

PART 3 – EXECUTION

The Contractor shall enter the Site from Twp. Rd. 211 Decatur Township, Lawrence County, Ohio by use of FS-132 and erect a gate at the intersection of FS-132 and Twp. Rd. 211 on FS-132 which shall be locked and maintain during the duration of these projects.

END OF SECTION 011400

SECTION 012200 - UNIT PRICES

PART 1 – GENERAL

1.1 SUMMARY

- A. A unit price provides an amount proposed by the Contractor and stated on the Schedule of Items as a price per unit of measurement for materials or services.
- B. Unit prices include all necessary material and labor costs, overhead, profit, taxes, shipping and other related expenses for the added or deducted work.

1.2 PROCEDURES

- A. Measurement: Method of measurement for unit prices is Lump Sum Quantity or Actual Quantity as defined below:
- B. Methods of Measurement:
 - 1. Lump Sum Quantities (LSQ): These quantities denote one complete unit of work as required by or described in the Contract, including all necessary materials, equipment, and labor to complete the job. They will not be measured.
 - 2. Actual Quantities (AQ): These quantities denote completed units of work, as described in the Contract, including all necessary materials, equipment, and labor, to complete the job. They will be measured in the field.
 - 3. Contract Quantities (CQ). These quantities denote the final number of units to be paid for under the terms of the contract. They are based upon the original design data available prior to advertising the project. Original design data include the preliminary survey information, design assumptions, calculations, drawings, and the presentation in the contract.
Changes in the number of units DESIGNATED IN THE SCHEDULE OF ITEMS may be authorized under one or more of the following conditions:
 - (1) Changes in the work authorized by the CO.
 - (2) A determination by the CO that errors exist in the original design that cause a PAY ITEM quantity to change by 15 percent or more.
 - (3) A written request submitted to the CO showing evidence of errors in the original design that cause the quantity of a PAY ITEM to change by 15 percent or more. The evidence must be verifiable and consist of calculations, drawings, or other data that show how the designed quantity is believed to be in error.

PART 2 - PRODUCTS (Not Applicable) & EXECUTION (Not Applicable)

END OF SECTION 012200

SECTION 012800 - MOBILIZATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Move personnel, equipment, material, and incidentals to the project, and perform all activities necessary to accomplish the work at the project site. Obtain permits, insurance, and bonds.

PART 2 - PRODUCTS & EXECUTION

1.1

- A. ALL equipment will be pre-washed to remove soil and seeds of plants prior to being brought to National Forest land, any equipment with soil on it will be rejected until it is cleaned. Equipment will also be washed prior to leaving the site so as not to transport NNIS to other locations from the construction site.

PART 4- MEASUREMENT & PAYMENT

- A. Measurement: Measurement will be lump sum:
- B. Payment: The accepted quantity, measured as provided above, will be paid at the contract price per unit of measurement for the PAY ITEM listed below that is DESIGNATED IN THE SCHEDULE OF ITEMS. The Mobilization lump sum will be paid as follows:
 - 1. If applicable, bond premiums will be reimbursed according to FAR clause 52.232-5, Payment Under Fixed-Price Construction Contracts, after receipt of evidence of payment.
 - 2. Fifty percent of the lump sum, not to exceed 5 percent of the original contract amount, will be paid following completion of 5% of the original contract amount, not including Mobilization.
 - 3. Payment of the remaining portion of the lump sum, up to 10 percent of the original contract amount, will be paid following completion of 10 percent of the original contract amount, not including Mobilization.
 - 4. Any portion of the lump sum in excess of 10 percent of the original contract amount will be paid after final acceptance.

END OF SECTION 012800

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes certain administrative provisions for managing and coordinating construction operations.

1.2 GENERAL PROJECT COORDINATION

- A. Coordination of Trades: Coordinate construction operations to provide an efficient and orderly installation of each part of the Work.

1.3 CONSERVATION

- A. Practice conservation of energy, water and materials during construction operations.

1.4 SPILL AND EROSION CONTROL

- A. Spill and Erosion Control Plans: Develop plans to minimize erosion. Develop plans to provide for containment of hazardous materials and unplanned spills.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. In addition to meeting the requirements of FAR 52.236-6 for an on-site Project Superintendent, the Contractor shall provide other administrative and supervisory personnel as required for performance of the Work.

1.6 CONFERENCES AND MEETINGS

- A. Pre-construction Conference: The Contracting Officer will schedule a pre-construction conference before starting construction at a time and place convenient to the Contractor and will review responsibilities and personnel assignments in accordance with FAR 52.236-26
- B. Progress Meetings: Progress meetings at the Project Site shall be conducted at regular intervals (at least monthly).. Dates of meetings shall be coordinated with preparation of the payment request in accordance with FAR 52.232-5.
 - 1. Agenda: Include topics for discussion as appropriate to the status of the Project. Include review of the Contractor's Construction Schedule and of the present and future needs of each entity present.

2. Schedule Updating: If the progress of the work falls behind the approved Contractor's Construction Schedule, the Contractor shall submit a supplementary schedule for approval by the Contracting Officer in accordance with FAR 52.236-15.

1.7 SUBMITTALS

- A. Spill and Erosion Control Plans shall be submitted within 10 calendar days after Notice to Proceed. Erosion Control Silt Fence will be required on this project at various locations on this construction site to control sediment as to have no sediment leaving the site and entering the streams. They are but not limited to concrete disposal area, excavation area and fill area. Erosion Control Silt Fence shall be constructed per details on plans there will not be separate pay item for the construction and maintenance of the Erosion Control Fence but that cost will included in other pay items. An Erosion Control Plan for in stream demolition work shall be submit to COR for approval before demolition begins.
- B. Staff Names: Within 10 calendar days after Notice to Proceed, submit a list of principal staff assignments, including the Superintendent and other primary personnel. Identify individuals by name, duties and responsibilities, home address, and business and home telephone numbers. Post copies of this list in the temporary field office.
- C. Construction Schedules shall be submitted as directed in FAR 52.236-15, Schedules for Construction.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

- A. Inspection of Conditions: Prior to installations, require the installer of each major component to inspect both the substrate and conditions under which work is to be performed.
- B. Construction in Progress: Keep construction in progress, adjoining materials in place, and clean during handling and installation. Apply protective coverings for protection from damage or deterioration.
- C. Completed Construction: Clean completed construction and provide maintenance to prevent damage, soiling or other deterioration through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damage.
- D. Limiting Exposures: Supervise construction operations to prevent exposure of any part of construction, completed or in progress, to harmful, dangerous, damaging or otherwise deleterious conditions during the construction period.

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section and FAR 52.236-21 include requirements for Shop Drawings as defined by FAR 52.236-21, which includes, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the Contract.
- B. This section includes requirements for samples and other quality assurance submittals.
- C. Product Data includes manufacturer's standard catalogs, pamphlets and other printed materials, and includes but is not limited to the following:
 - a. Product specifications and installation instructions.
 - b. Color charts and catalog cuts.
 - c. Rough-in diagrams and templates.
 - d. Wiring diagrams.
 - e. Performance curves.
 - f. Operational range diagrams.
 - g. Mill reports.
 - h. Test reports and code approvals
- D. Samples may include mailed samples, field samples or mock-ups of full-size physical examples erected on-site or elsewhere.
- E. Other quality assurance submittals include materials specifically prepared for the project, except drawings and schedules, such as: Certifications of compliance or conformance, manufacturer's instructions and field reports, and mix designs.
- F. Material and Product substitution shall be in accordance with FAR 52.211-6.

1.2 GENERAL SUBMITTAL REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities and with the Submittal Schedule.
 - 1. Allow a minimum of 10 working days for submittal review, corrections following the initial review and re-submittal review before activities scheduled after the submittal approval.
 - 2. Incomplete submittals will be returned to the Contractor with no further review. Delays due to incomplete or rejected submittals will not be excused.
 - 3. Failure by the Contractor to provide the required submittals in a timely manner may result in progress payment requests being delayed until submittals are up-to-date.

- B. Submittal Transmittal: Transmit each submittal from the Contractor to the Government by use of a transmittal form. Minimally include the following information on the transmittal form.
1. Project name and number.
 2. Date.
 3. Name, address and telephone number of firm or entity that prepared the submittal
 4. Names of subcontractor, manufacturer and supplier, as applicable.
 5. Category of submittal.
 6. Description of submittal.
 7. Certification by Contractor stating that submittal complies with the Contract, or statement of deviations from the requirements of the Contract.
 8. Signature of transmitter.
 9. Space to record Contractor's review and approval markings, and for Government action.

1.3 SHOP DRAWINGS AND DESIGNS

- A. Submit originally prepared information, drawn accurately to scale.
- B. Submittals: Submit four blue-line or black-line prints of each drawing submittal. One print will be marked with action taken and returned. Distribution: When submittal is approved, Contractor shall prepare three final copies and approved reproducible prints.
- C. Drawings shall be done in AutoCad format. Upon final approval the drawings shall be emailed or sent on a thumb drive/flash memory (USB).
- D. Specifications shall be done in Microsoft Word format and a copy emailed or sent on a thumb drive/flash memory (USB).

1.4 PRODUCT DATA

- A. Collect Product Data into a single submittal for each system or element of construction. Mark each copy to show specific product choices and options applicable to the project. Product Data shall include the following information, where applicable:
1. Manufacturer's printed recommendations.
 2. Compliance with recognized trade association standards.
 3. Compliance with recognized testing standards.
 4. Applicability of testing agency labels and seals.
 5. Notation of dimensions verified for fit by field measurements.
 6. Notation of coordination requirements.
- B. Preliminary Submittal: Prior to submittal of complete Product Data, submit a preliminary single copy of that part of Product Data when selection of options is required, such as for color charts. Preliminary submittal will be returned, with selection noted, for the Contractor's use in subsequent submittals.

- C. Submittals: Unless otherwise indicated, submit not less than 3 copies of each Product Data submittal. Two copies will be retained, and the remaining copy will be marked with action taken and returned.

1.5 SAMPLES

- A. Submit full-size, fully fabricated samples, cured and finished in the manner specified. Samples shall be physically identical to the material or product proposed for use.
- B. Preliminary Submittal: Where color, pattern, texture or similar characteristics are to be selected from a manufacturer's range of standard choices, submit a preliminary single set sample of available choices.

1.6 OTHER QUALITY ASSURANCE SUBMITTALS

- A. Submit other quality assurance submittals in compliance with requirements in the individual specification sections.

1.7 REVIEW ACTION ON SUBMITTALS

- A. Except for submittals for the record or for information or for another purpose where no action and return is required, the Government will review submittals and mark returned copies to indicate action taken within a maximum time period of 15 days.
- B. Submittals that do not contain an appropriate marking of approval by the Government shall not be used for construction.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013300

SECTION 014000 - QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. This section, FAR 52.246-1 and FAR 52.246-12 include requirements for quality control services to verify quality assurance requirements specified elsewhere in the Contract.
- B. The Government reserves the right to conduct independent tests.
- C. This section includes requirements for quality control services: soil compaction, concrete tests, riprap rock, geotextile.
- D. The quality control services include tests and related actions, including reports, performed by the Contractor, independent agencies or governing authorities.

1.2 RESPONSIBILITIES

- A. Contractor Responsibilities: The Contractor shall provide for tests, inspections and other quality control services where specified in the Contract or when required by authorities having jurisdiction. Costs for these services are included in the Contract price. The Contractor shall maintain complete inspection records and make them available to the Government.
- B. The Contractor shall employ and pay for a qualified independent testing agency to perform the quality control services.
- C. Retesting: The Contractor is responsible for retesting, including repeated inspections and other services, where results of the initial tests, inspections or other quality control services indicate noncompliance with the requirements of the Contract.
- D. Associated Services: The Contractor shall cooperate with others performing required tests, inspections and other quality control services, shall provide access to the work, and shall furnish incidental labor and facilities necessary to facilitate inspections and tests.
- E. Take adequate quantities of representative samples of materials that require testing or assist the independent testing agency in taking samples.
 - 1. Deliver samples to testing laboratories.
 - 2. Provide security and protection of samples and test equipment at the Project site.
- F. The independent testing agency shall provide qualified personnel to perform required inspections and tests.
- G. The independent testing agency shall notify the Government and the Contractor of irregularities or deficiencies observed in the Work during performance of their services.

- H. The independent testing agency is not authorized to change requirements of the Contract or approve or accept any portion of the Work. The Agency shall not perform any duties of the Contractor.

1.3 QUALIFICATIONS OF INDEPENDENT TESTING AGENCIES

- A. A qualified independent testing Agency shall be an accredited entity engaged to perform tests or inspections, and to report on and, if required, to interpret results of those tests or inspections.

1.4 SUBMITTALS

- A. Reports: The Contractor shall submit a certified written report, in duplicate, of each test, inspection or other quality control service to the COR.
- B. Written reports shall include but not be limited to the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making the test or inspection.
 - 6. Designation of the work and test method.
 - 7. Identifications of product and specification section.
 - 8. Complete test or inspection data.
 - 9. Test results and an interpretation of test results.
 - 10. Ambient conditions at the time of sample taking and testing.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting.
- C. Permits, Licenses, and Certificates: Submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work directly to the COR.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General Explanation: Specification language often includes terms that are defined elsewhere in the Contract including the Construction Clauses. Certain terms are defined in this section. These definitions or explanations are not necessarily complete or exclusive, but are general for the Work and may be explained more explicitly in other sections.
- B. "General Conditions" refer collectively to the Construction Contract Clauses, Labor Standards and the U.S. Department of Labor Wage Decision bound into the specifications.
- C. "Indicated" refers to graphic representations, notes or schedules on the Drawings, or to requirements elsewhere in the Specifications or other Contract Documents. Terms such as "shown", "noted", "scheduled" and "specified" have the same meaning as "indicated" and are used to further help locate the reference, but no limitation on location is intended except as specifically stated.
- D. Where "directed", "authorized", "selected", "approved", or a similar term is used in conjunction with the Contractor's submittals, applications, requests and other activities, and the specifications state that an individual other than the Contracting Officer (CO) shall provide this action, it is understood that only the CO has this authority unless the individual stated is so authorized in writing by the CO.
 - 1. When the individual is so authorized by the CO, the Contractor may still appeal the action to the CO.
 - 2. The CO's decision will be final.
 - 3. In no case shall the CO action be interpreted as releasing the Contractor from responsibility to fulfill the requirements of the Contract.
- E. "Regulations" include laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work.
- F. "Project site" refers to the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other work.
- G. "Furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembling, installation and similar operations.
- H. "Install" describes operations at the Project site, including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations.
- I. "Provide" means to furnish and install, complete in place and ready for full use.

- J. "Cutting" refers to removal of material by cutting, sawing, drilling, breaking, chipping, grinding, excavating and similar operations.
- K. "Patching" refers to restoration of a surface to its original completed condition by filling, repairing, refinishing, closing and similar operations.
- L. "Installer" is the Contractor or another entity engaged by the Contractor, either directly or indirectly through subcontracting, to perform a particular construction operation at the Project site, including installation, erection, application and similar operations. Installers shall be skilled in the operations they perform.
- M. "Testing agency" or "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report the results of those inspections and tests.
- N. "Notice to Proceed" is the CO's notification by letter to the Contractor to proceed with the Contract, activating the time period for construction and establishing the completion date.

1.2 CODES AND STANDARDS

- A. Applicability of Standards: Unless the Contract includes more stringent requirements, applicable construction industry standards have the same force and effect, to the extent referenced, as if bound or copied directly into the Contract. Such standards are made a part of the Contract by reference.
- B. Codes: The Work shall be performed in compliance with the latest editions of the following codes: UMC, NEC, IBC and UPC.
- C. Conflicting Requirements. Where compliance with two or more standards is specified, comply with the most stringent requirement. Refer uncertainties, and requirements that are different but apparently equal, to the CO in writing for a decision before proceeding.
- D. Abbreviations: Names and titles of standards are frequently abbreviated. Abbreviations and acronyms used in the Contract mean the recognized name of a trade association, standards-producing organization, authority having jurisdiction or other entity applicable to the context of the particular provision. Except as otherwise indicated, refer to the current editions of the following publications for abbreviations:
 - 1. "Encyclopedia of Associations: National Organizations of the U.S.", published by Gale Research.
 - 2. "National Trade and Professional Associations of the United States", published by Columbia Books.
 - 3. "Means Illustrated Construction Dictionary - New Unabridged Edition" published by R.S. Means Company, Inc.
- E. Abbreviations: Names and titles of standards are frequently abbreviated. Abbreviations and acronyms used in the Contract mean the associated names. The following names may be referenced in the Contract:

1. AASHTO - American Association of State Highway and Transportation
2. ACI - American Concrete Institute
3. ADA – American’s with Disabilities Act
4. ADAAG – Americans with Disabilities Act Accessibility Guidelines
5. AI - Asphalt Institute
6. AISC - American Institute of Steel Construction
7. AITC - American Institute of Timber Construction
8. ALSC – American Lumber Standard Committee
9. ANSI - American National Standards Institute
10. ASME – American Society of Mechanical Engineers International
11. ASTM - American Society for Testing and Materials
12. AWPA - American Wood-Preservers' Association
13. AWS - American Welding Society
14. AWWA - American Water Works Association
15. CABO - Council of American Building Officials
16. CFR - Code of Federal Regulations
17. CRSI - Concrete Reinforcing Steel Institute
18. CS - Commercial Standard (U.S. Dept. of Commerce)
19. CSI - Construction Specifications Institute
20. DOT – Department of Transportation
21. EIA - Electronic Industries Association
22. EPA - Environmental Protection Agency
23. FS - Federal Specification (Publications available from GSA)
24. GSA - General Services Administration
25. IBC – International Building Code
26. IFC – International Fire Code
27. IPC – International Plumbing Code
28. ICBO – International Conference of Building Officials
29. MCAA – Mechanical Contractors Association of America
30. MSS-Manufacturers Standardization Society of the Valve and Fittings Industry Inc.
31. NECA – National Electrical Contractors Association
32. NEMA - National Electrical Manufacturers Association
33. NEC – National Electrical Code
34. NFPA - National Fire Protection Association
35. ODOT – Ohio Department of Transportation (January 1, 2008)
36. OSHA - Occupational Safety and Health Administration (U.S. Dept. of Labor)
37. PCA - Portland Cement Association
38. SSPC - Steel Structures Painting Council - The Society for Protective Coatings
39. UFAS – Uniform Federal Accessibility Standards
40. UL - Underwriters Laboratories Inc.
41. IMC – International Mechanical Code
42. IPC – International Plumbing Code
43. USDA - U.S. Department of Agriculture

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide temporary utilities, support facilities, protection, and controls required for construction. Provide project work signs and secured areas to direct safe construction operations.

1.2 QUALITY ASSURANCE

- A. Standards and Regulations: Comply with industry standards, codes, and with applicable laws and regulations of authorities having jurisdiction.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 TEMPORARY UTILITIES

- A. Temporary Electric Power Service: Provide as needed.

3.2 TEMPORARY SUPPORT FACILITIES

- A. Provide temporary enclosures for protection of construction as needed. Collect waste from construction areas and elsewhere daily.

3.3 TEMPORARY PROTECTION FACILITIES

- A. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard involved.

3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Maintain facilities in good operating condition until removal. Each temporary facility shall be removed when need for has ended.

END OF SECTION 015000

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

1.2 DEFINITIONS

- A. Protection Zone: Area surrounding individual **trees, groups of trees, shrubs, or other vegetation** to be protected during construction, and as **indicated on Drawings**.

1.3 SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1.4 QUALITY ASSURANCE

- A. Pre-installation Conference: Conduct conference at **Project site**.

1.5 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than **1 inch** in diameter; and free of weeds, roots, and toxic and other non-soil materials.
- B. Topsoil: Stockpiled topsoil from location shown on Drawings.
- C. Organic Mulch: **Shredded hardwood** free from deleterious materials (produce onsite if possible). If mulch is produced offsite it must be certified, free of pests and non-nature seeds.
- D. Protection-Zone Fencing: Fencing fixed in position and meeting **one of** the following requirements. **Previously used materials may be used when approved COR.**
- E. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion-and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Protection Zones: Mulch areas inside protection zones and other areas indicated with **4-inch** average thickness of organic mulch. Do not place mulch within **6 inches** of tree trunks.

3.2 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones in a manner that will prevent people from easily entering protected area except by entrance gates.
 - 1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.

2. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to COR.
 3. Access Gates: Install **where indicated**
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by COR.
 - C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by COR.
 - D. Maintain protection-zone fencing and signage in good condition as acceptable to COR and remove when construction operations are complete and equipment has been removed from the site.

3.3 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Division 31 Section "Earth Moving."
- B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.
- C. Do not allow exposed roots to dry out before placing permanent backfill.

3.4 ROOT PRUNING

- A. Prune roots that are affected by temporary and permanent construction. Prune roots as **follows**:
 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 2. Temporarily support and protect roots from damage until they are permanently covered with soil.
 3. Cover exposed roots with burlap and water regularly.
 4. Backfill as soon as possible according to requirements in Division 31 Section "Earth Moving."
- B. Root Pruning at Edge of Protection Zone: Prune roots by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading

forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

3.5 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches **as follows**:
 - 1. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
 - 2. Pruning Standards: Prune trees according to ANSI A300 (Part 1) **and the following**:
 - 3. Cut branches with sharp pruning instruments; do not break or chop.
 - 4. Do not apply pruning paint to wounds.
- B. Scatter any clearing debris outside ROW of trail. Site disposal shall be approved by COR.

3.6 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- C. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.
- D. Temporary ATV crossing will be removed and regraded to as new original state mulching and seeded.

3.7 FIELD QUALITY CONTROL

- A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.8 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by COR.

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash and debris, at site approved by COR. See drawings for disposal location for approved materials on site.

END OF SECTION 015639

SECTION 017300 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section, FAR 52.236-5, FAR 52.236-12 and FAR 52.236.17 include certain general procedural requirements governing the Contractor's execution of the Work, including, but not limited to laying out the Work, general installation of products, correction of defective Work, and cleaning.

1.2 QUALITY ASSURANCE

- A. Workmanship Standards: Initiate and maintain procedures to ensure personnel performing the Work are skilled and knowledgeable in the methods and craftsmanship needed to produce the required levels of workmanship. Remove and replace Work that does not comply with workmanship specified and standards recognized in the construction industry for the applications indicated. Remove and replace Work damaged or deteriorated by faulty workmanship or replacement of other Work.
 - 1. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable installation instructions and recommendations to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract. The Contracting Officer's Representative shall be immediately notified of conflicts between manufacturer's instructions and the Contract.
 - 2. Minimum Quality and Quantity: The quality level or quantity shown or specified shall be the minimum required for the Work. Except as otherwise indicated, the Work shall comply exactly with that minimum or may be superior to that minimum. Specified numeric values are either minimums or maximums as indicated or as appropriate for the context of the requirements.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 LAYING OUT THE WORK

- A. Before proceeding to lay out the Work, verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered notify the Contracting Officer's Representative promptly.
- B. Maintain existing benchmarks at the sites as indicated on the Drawings or replace at new locations.

- C. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction.

3.2 PREPARATION

- A. Site Improvements: The Contractor is responsible for all staking, maintaining and replacing of staking, except: The Government will mark existing benchmarks locations on the ground. The Government will establish (one time only) the clearing limits for the on-site septic system drain fields. The Government will stake waterline locations through treed areas. NOTE: Any damage to existing utilities or structure either above or below ground shall be repaired at contractors expense and approved by C.O.R.
- B. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.
- C. Take field measurements as required to fit the Work properly.

3.3 INSTALLATION

- A. Locate the Work and components of the Work accurately. Make vertical work plumb and horizontal work level.
- B. Install products at the time and under conditions that will produce satisfactory results.
- C. Conduct construction operations so that no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- D. Anchors and Fasteners: Provide anchors and fasteners as required to withstand stresses, vibration and physical distortion. Anchor each component securely in place, accurately located and aligned with other Work.
- E. Adjust operating components for proper operation without binding.

3.4 CORRECTION OF DEFECTIVE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
- B. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and proper adjustment of operating equipment.
- C. Remove and replace damaged surfaces that are exposed to view if the surfaces cannot be repaired without visible evidence of repair.

- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired to operate properly.
- E. Remove and replace chipped, scratched or broken surfaces.

3.5 CLEANING

- A. Maintain the project site and work areas free of waste material and debris.
- B. Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the work.
 - 1. Remove liquid spills promptly.
- C. Remove debris from concealed spaces prior to enclosing the space.
- D. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at the time of project completion.

3.6 PROTECTION

- A. Protect installed work from soiling and damage.
- B. Protective Coverings: Provide appropriate protective coverings for work that might be damaged by subsequent operations. Maintain protective coverings in place until project completion.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for Contract close out.
- B. Substantial Completion is defined as that state when the Contractor has complied with the Contract, except for minor deviations, and the project is sufficiently complete and capable of being occupied and used by the Government for the intended purpose.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for Substantial Completion, complete the following.
 - 1. Submit a list to the Contracting Officer, of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Submit operation and maintenance manuals, and As-Built Drawings.
 - 3. Make final change over of valve keys to the Government.
 - 4. Complete startup testing of systems and instruction of the Government operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
- B. Inspection Procedures: The Contracting Officer will notify the Contractor of Substantial Completion following an inspection or advise the Contractor of construction that must be completed or corrected before Substantial Completion.
 - 1. The Government will repeat the inspection when requested and when assured that the Work is substantially complete.
 - 2. Results of the completed inspection for Substantial Completion will form the basis of the requirements for Final Acceptance.

1.3 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting inspection for Final Acceptance, complete the following:
 - 1. Submit final payment request with releases and supporting documentation not previously submitted and accepted.
 - 2. Submit an updated final statement accounting for final additional changes to the Contract price.
 - 3. Submit written verification of the completion of the previous Substantial Completion inspection list of items.
 - 4. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 5. Submit record documents and similar final record information.

6. Deliver tools, spare parts, extra stock and similar items.
7. Complete final clean-up requirements including touch-up painting of marred surfaces.

B. Final Inspection Procedure: The Government will inspect the Work upon receipt of notice from the Contractor that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the CO.

1. Upon completion of inspection, the CO will notify the Contractor of Final Acceptance or will advise the Contractor of Work that it is incomplete or of obligations that have not been fulfilled and are required for Final Acceptance.

1.4 RECORD DOCUMENT SUBMITTALS

A. Record Drawings: Maintain a clean, undamaged set of red line prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark the drawing that is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

B. Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of Record Drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily determined later by direct observation.

1.5 OPERATION AND MAINTENANCE MANUALS N/A

1.6 UTILITY LINES SITE PLAN

A. Provide an accurately dimensioned site plan showing survey location and elevation of all utility lines, including valves, connections and changes in direction, as installed under the Contract within property lines and outside of building walls.

1. Points where utility lines leave buildings shall be dimensioned from building corners.
2. All site plans will be provided to the government in AutoCAD format. Base drawings are available from the government in ACAD R.2004 format.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Government's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives or installers. Include the following:
1. Maintenance manuals.
 2. Record documents.
 3. Spare parts and materials.
 4. Tools.
 5. Hazards.
 6. Cleaning.
 7. Warranties and bonds.
- B. As part of instruction for operating equipment, demonstrate the following procedures to site maintenance personnel:
1. Startup.
 2. Shutdown.
 3. Emergency operations.
 4. Safety procedures.

3.2 FINAL CLEANING

- A. Clean each surface or unit to the condition expected in a normal, commercial cleaning and maintenance program. Comply with manufacturer's instructions.
1. Complete the following cleaning operations before requesting inspection for Final Acceptance.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - d. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean, and remove stains, spills, and other foreign deposits. Rake beach areas and other grounds that are neither paved nor planted to a smooth, even-textured surface.
- B. Compliance: Do not burn waste materials. Do not bury debris or excess materials on Government property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of it lawfully.

END OF SECTION 017700SECTION 019900 - SAFETY

USDA Forest Service
Wayne National Forest

FS-132 Pine Creek Road South Landslide Repairs
April 25, 2012

Contractor is responsible for project site safety and is required to meet all Federal (OSHA), State and local requirements. It should be noted that confined space procedures and underwater operations procedures shall be submitted to the contracting officer at the pre-construction meeting.

DIVISION 02
ITEM SPECIFICATIONS

Item 1 – Site #1 & #2 - Mobilization

1.1 General

The item includes Mobilization (including bidding, bonding, etc.) and Demobilization of the contractor's work force only. Costs for overhead and profit should be included in each individual pay items. This work to be completed as per section 151-Mobilization in the "Standard Specification for Construction of Roads and Bridges on Federal Highway Projects" (FP-03) unless modified below.

1.2 Method of Measurement to be: Lump Sum Quantity - LSQ

1.2 Use Basis of Payment FP-03 Section 109.02 (h): LS

Item 2 – Site #1 & #2 - Layout of Project

2.1 General

This item includes all equipment, labor and materials for Layout of Project per plans and specifications.

2.2 Product

N/A

2.3 Execution

- (1) COR and Engineer shall set Control Points for each Site as shown on the drawing.
- (2) Contractor shall run a traverse thru the Control Points and establish X,Y and Z for each of the Control Points with the Control Point #1 at each of the Sites to have X=10,000; Y=10,000 and Z=100. The error of closure shall be less than 1 in 50,000.
- (3) Once coordinates have been established for the Control Points at each Site, the Contractor shall survey in the Center Line of the roads, edge of road, and edge of landslide and at Site #1 the Center Line of ORV Trail and edge of Trail. The Contractor shall furnish the coordinates of all information in an Excel spread sheet format both in hard copy and electronic copy to the COR.
- (4) The COR/Engineer shall finish the Contractor X,Y and Z coordinates for the Anchor Blocks and final end point of 3 inch Diameter HDPE Pipe at Landslide face. The Contractor shall run straight line profile between these points sitting wood latch every 25 feet and establishing X, Y and Z for the ground surface at each one of these wooden latch. The latch shall be marked with a number and cross-section number. These coordinates (X, Y and Z) will be furnished to the COR and Engineer. The COR/Engineer will Calculate the depth of the 3 inch diameter HDPE Pipe which will be required to be at for each of the wooden latch. The Contractor shall marked each of the wooden latch with these depth. The Directional Drill Head will be measured by the Contractor at each of the latch and shall be within +/- six (6) inches of the required depth and directly below the wooden latch.
- (5) The COR and Engineer shall furnish X, Y and Z for the final end point of the 3 inch Diameter HDPE Pipe and the Contractor shall expose the face and mark that point. The Directional Drilled 3-inch Diameter HDPE shall come within +/- six (6) inches of that point.

2.4 Method of Measurement to be: Lump Sum Quantity - LSQ

2.5 Use Basis of Payment FP-03 Section 109.02 (h): LS

Item 3 – Site #1 & #2 – Directional Drilling and Installation of 3 Inch HDPE Pipe

3.1 General

This item includes all equipment, labor and materials for Directional Drilling and installation of 3-inch Diameter HDPE Pipe per plans and specifications.

3.2 Product

3- inch Diameter (Inside) HDPE Pipe shall be SDR9-200 psi meeting all requirements of ANSI/AWWA C-906-2006 and DIP size inside diameter of 3 inch with tracer wire (12 gauge cooper).

3.3 Execution

The Contractor shall use the Directional Drilling method to install the 3 inch HDPE per layout and plans and specifications with the minimum measurements as given in Item 2.3 and HDPE Pipe shall be within +/- six (6) inches of requirements and Punch Out at face (aka final end point) within +/- six (6) of were the Punch Out is marked in the field as outlined in Item 2.3.

The order of Directional Drilling for the various Sites shall be as follows:

(a) Site #2

- | | |
|--------------------------|--------------------------|
| 1. "C" Cable Upper Level | 5. "C" Cable Lower Level |
| 2. "B" Cable Upper Level | 6. "B" Cable Lower Level |
| 3. "D" Cable Upper Level | 7. "D" Cable Lower Level |
| 4. "A" Cable Upper Level | 8. "A" Cable Lower Level |

Note: Soft Wall at Upper Level shall be completed before any Directional Drilling is done on Lower Level.

(b) Site #1

1. "A" Cable
2. "B" Cable
3. "C" Cable
4. "D" Cable
5. "E" Cable
6. "F" Cable
7. "G" Cable
8. "H" Cable

The Drilling Soil conditions will be Sand Stone, Shale and some unconsolidated materials. There will be no change of conditions for the type of Soil condition uncounted.

3.4 Method of Measurement to be: Actual Quantity - AQ

3.5 Use Basis of Payment FP-03 Section 109.02 (g): Lin. Feet

Item 4 – Site #1 & #2 – Anchor Cable

4.1 General

This item includes equipment, labor and materials for the installation of Steel Cable within the 3-inch Diameter HDPE Pipe per plans and specifications.

4.2 Product

Cable shall be Steel Wire Rope ¾ inch diameter meeting or exceeding applicable API-9A and Federal Specification RR-W-410 (latest revision) 6 x 36 Classification one (1) Bright (uncoated fiber core), EIPS nominal strength 26.2 Tons with approx. mass of 0.95 lbs/ft.

4.3 Execution

Once 3 inch Diameter HDPE has been installed the Contractor shall install the Steel Wire Rope the complete length with at least 10 feet Steel Wire Rope exposed at both the Anchor Block end and the Soft Wall end.

When installing the Steel Wire Rope Cable it shall be lubricated by the trough method with new motor oil and diesel fuel at a rate of 70 percent oil and 30 percent diesel fuel as recommended by Comesiond/Comthrid and NAVFAC P-404.

4.4 Method of Measurement to be: Actual Quantity - **AQ**

4.5 Use Basis of Payment FP-03 Section 109.02 (g): **Lin. Feet**

Item 5 –Site #2 – Soft Wall

5.1 General

This item includes equipment, labor and materials for installation of the Soft Wall at Site #2 per plans and specifications.

5.2 Product

- (1) Nonwoven Geotextile Fabric: Synthetic Industries Geotex B61 (8 oz fabric) or approved equal.
- (2) Soft Wall Reinforcing: 6"x6"xW6xW6 ASTM A185 and No. 5 Grade 60 Rebar.
- (3) Vertical Walers for Soft Wall: 5" Schedule 40 Pipe (Fy=36 ksi min)
- (4) WF6x6: Steel Structure shall meet the requirements of Section 555 Steel Structure of the FP-03 Standard Specifications for Construction of Roads and Bridges on Federal Highway Project and ASTM A 50 and 25 lbs/ft.

5.3 Execution

Once the Cable has been installed and Concrete Anchor set with Cable Connection at Concrete Anchor the Contractor remove the minimum of existing soil material approximately 20 feet each side of the Cable so as to install the Soft Wall per plans and specifications. Once the Cable has been fasten to the Vertical WF6x6 by means of the couplers at WF6x6 the bolts shall be tighten so as to have 2000 lbs of force applied to the Cable after settlement of Soft Wall into the existing soil mass. These shall be completed on "C" Cable Upper Level before "B" Cable Upper Level. Then once "C" Cable Upper Level is completed "D" Cable Upper Level shall be completed with "A" Cable Upper Level then completed.

Once Soft Wall have pasted the 2000 lbs test the Horizontal WF6x6 between the various stages shall be welded together. Only after complete excavation and installation of the Upper Level shall the Lower Level be completed in the same order as outlined in the above paragraph.

5.4 Method of Measurement to be: Actual Quantity - **AQ**

5.5 Use Basis of Payment FP-03 Section 109.02 (l): **Sq. Feet**

Item 6 – Site #2 - Concrete Anchor Blocks

6.1 General

This item includes equipment, labor and materials for installation of Concrete Anchor Blocks complete with Cable Anchor Connection and required PVC Cap and HDPE fittings so as to make a water tight enclosure at the Concrete Anchor Block per plans and specifications.

6.2 Product

Concrete Anchor shall be 3000 psi Concrete meeting all requirements of ODOT Item 499 – Concrete General Structure Concrete. Reinforcing Steel shall meet all requirements of ODOT Item 509 – Reinforcing Steel. Structure Steel shall meet all requirements of ODOT 711.01 – Structural Steel.

6.3 Execution

Execution at each of the Concrete Anchor Sites shall be done so as to minimize Site clearing with Anchor placed on none disturbed soil face with a minimum soil cover of 2 feet above the highest area of Concrete Anchor Block. The backfill around Concrete Block will not be done until Soft Wall has been completed.

6.4 Method of Measurement to be: Actual Quantity - **AQ**

6.5 Use Basis of Payment FP-03 Section 109.02 (d): **Each**

Item 7 – Site #2 – Vertical Waler for Spreader System Pipe

7.1 General

This item includes equipment, labor and materials for installation of Vertical Waler for Spreader System Pipe per plans and specifications.

7.2 Product

Vertical Waler shall be Galvanized 5-inch Diameter Schedule 40 Pipe.

Horizontal Galvanized 3-inch Diameter Schedule 40 Pipe 1-inch Diameter Galvanized Rod with Galvanized washer and nuts.

7.3 Execution

The Contractor shall establish holes in the Vertical 5-inch Diameter Pipe on the Soft Wall install 1-inch Diameter Rod with washer and nut and then establish holes in 5-inch Diameter Schedule 40 Pipe and 3-inch Diameter Schedule 40 Pipe install along the length of each Upper and Lower faces per plans and specifications.

7.4 Method of Measurement to be: Actual Quantity - **AQ**

7.5 Use Basis of Payment FP-03 Section 109.02 (d): **Each**
Note: Each is one Vertical Waler that is 10 feet long.

Item 8 – Site #2 – Spreader Pipe

8.1 General

This item includes equipment, labor and materials for installation of Horizontal Spreader Pipe per plans and specifications.

8.2 Product

Galvanized 3-inch Diameter Schedule 40 Pipe.

8.3 Execution

The 3-inch Diameter Schedule 40 Pipe shall be placed behind the Vertical Walor as need and in the location for Geogrid Reinforcement to be warped around Spreader and laid in a Horizontal position and be tied into Shored Mechanical Stabilized Segmental Concrete Wall at a 2-foot maximum Vertical spacing.

8.4 Method of Measurement to be: Actual Quantity - **AQ**

8.5 Use Basis of Payment FP-03 Section 109.02 (g): **Lin. Feet**

Item 9 – Site #2 – Segmental Concrete Block Wall

9.1 General

This item includes equipment, labor and materials for the installation of Segmental Concrete Block Wall per plans and specifications.

9.2 Product

Segmental Concrete Block Wall shall be Keystone Compac II or approved equal. Geogrid Reinforcement type per retaining wall plans and as per Keystone or approved equal.

9.3 Execution

A 6-inch crushed Limestone #67 (ODOT) or unreinforced Concrete Leveling Pad shall be constructed under the Segmental Concrete Wall per plans.

Segmental Concrete Blocks shall be installed per manufactures recommendations with fiberglass pins. The installer shall be certified by Keystone Compac II or approved equal.

Grading operations behind and in front of constructed portions of the Wall shall be restricted to prevent damage to constructed portion of the Wall. Only light hand operated equipment shall be used within 15-foot behind the wall to prevent excessive lateral stress on constructed portions of the Wall.

The #67 (ODOT) Limestone Backfill behind the Wall shall be installed and compacted as the Wall is the constructed and to 95% Modified Proctor.

9.4 Method of Measurement to be: Actual Quantity - **AQ**

9.5 Use Basis of Payment FP-03 Section 109.02 (i): **Sq. Feet**

Note: The Faster and Geogrid Reinforcement required shall be included in Sq. Feet. The Sq. Feet Unit is the Face of the Segmental wall.

Item 10 – Site #2 - ODOT #67 Limestone Backfill

10.1 General

This item includes equipment, labor and materials for installation of ODOT #67 Limestone Backfill per plans and specifications.

10.2 Product

ODOT #67 Limestone shall comply with Ohio Department of Transportation (ODOT) table 703.01-1 size of Course Aggregate (AASHTO M 43). Dated January 1, 2010. Material shall be Limestone.

10.3 Execution

The Contractor shall place ODOT #67 in twelve (12) inch layers as the Segmental Concrete Block Wall is construction with hand compaction of each layer. Care shall be taken to place the Aggregate around the Geogrid Ties so as to not cause damage and increase tension in the Geogrid Ties.

10.4 Method of Measurement to be: Actual Quantity - AQ

10.5 Use Basis of Payment FP-03 Section 109.02 (o): Tons Weight tickets will be submitted to COR for payment.

Item 11 – Site #1 – Soft Wall

11.1 General

This item includes equipment, labor and materials for installation of the Soft Wall at Site #1 per plans and specifications.

11.2 Product

- (1) Nonwoven Geotextile Fabric: Synthetic Industries Geotex B61 (8 oz fabric) or approved equal.
- (2) Soft Wall Reinforcing: 6"x6"xW6xW6 ASTM A185 and No. 5 Grade 60 Rebar.
- (3) Vertical Walers for Soft Wall: 5" Schedule 40 Pipe (Fy=36 ksi min)
- (4) WF6x6: Steel Structure shall meet the requirements of Section 555 Steel Structure of the FP-03 Standard Specifications for Construction of Roads and Bridges on Federal Highway Project and ASTM A 50 and 25 lbs/ft.

11.3 Execution

Once the Cable has been installed and Concrete Anchor set with Cable Connection at Concrete Anchor the Contractor shall remove the minimum of existing soil material approximately 20 feet each side of the Cable so as to install the Soft Wall per plans and specifications. Once the Cable has been fasten to the Vertical WF6x6 by means of the couplers at WF6x6 the bolts shall be tighten so as to have 2000 lbs of force applied to the Cable after settlement of Soft Wall into the existing soil material.

The Soft Wall Segmental for Cable "A" will be completed before Cable "B" Soft Wall then Cable "C", etc then to Cable "H" Soft Wall.

11.4 Method of Measurement to be: Actual Quantity - AQ

11.5 Use Basis of Payment FP-03 Section 109.02 (l): Sq. Feet Note: Sq. Feet of Soft wall Vertical Face.

Item 12 – Site #1 - Concrete Anchor Blocks

12.1 General

This item includes equipment, labor and materials for installation of Concrete Anchor Blocks complete with Cable Anchor Connection and required PVC Cap and HDPE fittings so as to make a water tight enclosure at the Concrete Anchor Block per plans and specifications.

12.2 Product

Concrete Anchor shall be 3000 psi Concrete meeting all requirements of ODOT Item 499 – Concrete General Structure Concrete. Reinforcing Steel shall meet all requirements of ODOT Item 509 – Reinforcing Steel. Structure Steel shall meet all requirements of ODOT 711.01 – Structural Steel.

12.3 Execution

Execution at each of the Concrete Anchor Sites shall be done so as to minimize Site clearing with Anchor placed on none disturbed soil face with a minimum soil cover of 2 feet above the highest area of Concrete Anchor Block. The backfill around Concrete Block will not be done until Soft Wall has been completed. The access to the general area for Concrete Anchor Blocks for Site #1 shall be use of existing ORV Trails.

12.4 Method of Measurement to be: Actual Quantity - **AQ**

12.5 Use Basis of Payment FP-03 Section 109.02 (d): **Each**

Item 13 – Site #1 – Vertical Waler for Spreader System Pipe

13.1 General

This item includes equipment, labor and materials for installation of Vertical Waler for Spreader System Pipe per plans and specifications.

13.2 Product

Vertical Waler shall be Galvanized 5-inch Diameter Schedule 40 Pipe.

Horizontal Galvanized 3-inch Diameter Schedule 40 Pipe 1-inch Diameter Galvanized Rod with Galvanized washer and nuts.

13.3 Execution

The Contractor shall establish holes in the Vertical 5-inch Diameter Pipe on the Soft Wall install 1-inch Diameter Rod with washer and nut and then establish holes in 5-inch Diameter Schedule 40 Pipe and 3-inch Diameter Schedule 40 Pipe install along the length of each Upper and Lower faces per plans and specifications.

13.4 Method of Measurement to be: Actual Quantity - **AQ**

13.5 Use Basis of Payment FP-03 Section 109.02 (d): **Each**

Note: Each is one Vertical Waler that is 10 feet long.

Item 14 – Site #1 – Spreader Pipe

14.1 General

This item includes equipment, labor and materials for installation of Horizontal Spreader Pipe per plans and specifications.

14.2 Product

Galvanized 3-inch Diameter Schedule 40 Pipe.

14.3 Execution

The 3-inch Diameter Schedule 40 Pipe shall be placed behind the Vertical Walor as need and in the location for Geogrid Reinforcement to be warped around Spreader and laid in a Horizontal position and be tied into Shored Mechanical Stabilized Segmental Concrete Wall at a 2-feet maximum Vertical spacing.

14.4 Method of Measurement to be: Actual Quantity – **AQ**

14.5 Use Basis of Payment FP-03 Section 109.02 (g): **Lin. Feet**

Item 15 – Site #1 – Segmental Concrete Block Wall

15.1 General

This item includes equipment, labor and materials for the installation of Segmental Concrete Block Wall per plans and specifications.

15.2 Product

Segmental Concrete Block Wall shall be Keystone Compac II or approved equal. Geogrid Reinforcement type per retaining wall plans and as per Keystone or approved equal.

15.3 Execution

A 6-inch crushed Limestone #67 (ODOT) or unreinforced Concrete Leveling Pad shall be constructed under the Segmental Concrete Wall per plans.

Segmental Concrete Blocks shall be installed per manufactures recommendations with fiberglass pins. The installer shall be certified by Keystone Compac II or approved equal.

Grading operations behind and in front of constructed portions of the Wall shall be restricted to prevent damage to constructed portion of the Wall. Only light hand operated equipment shall be used within 15-feet behind the wall to prevent excessive lateral stress on constructed portions of the Wall.

The #67 (ODOT) Limestone Backfill behind the Wall shall be installed and compacted as the Wall is the constructed and to 95% Modified Proctor.

15.4 Method of Measurement to be: Actual Quantity - **AQ**

15.5 Use Basis of Payment FP-03 Section 109.02 (i): **Sq. Feet**

Note: The Faster and Geogrid Reinforcement required shall be included in Sq. Feet. The Sq. Feet Unit is the Face of the Segmental wall.

Item 16 – Site #1 - ODOT #67 Limestone Backfill

16.1 General

This item includes equipment, labor and materials for installation of ODOT #67 Limestone Backfill per plans and specifications.

16.2 Product

ODOT #67 Limestone shall comply with Ohio Department of Transportation (ODOT) table 703.01-1 size of Course Aggregate (AASHTO M 43). Dated January 1, 2010. Material shall be Limestone.

16.3 Execution

The Contractor shall place ODOT #67 in twelve (12) inch layers as the Segmental Concrete Block Wall is construction with hand compaction of each layer. Care shall be taken to place the Aggregate around the Geogrid Ties so as to not cause damage and increase tension in the Geogrid Ties.

16.4 Method of Measurement to be: Actual Quantity - **AQ**

16.5 Use Basis of Payment FP-03 Section 109.02 (o): **Tons**
Weight tickets will be submitted to COR for payment.

Item 17 – Site #1 & #2 – Subsurface Drainage

17.1 General

This item includes equipment, labor and materials for the installation of Subsurface Drainage per plans and specifications for Site #1 and #2.

17.2 Product

Schedule 40 PVC Pipe and Fittings.

17.3 Execution

The Contractor shall install Subsurface Drainage Pipe as given in the plans and specifications and as staked in the field by COR.

17.4 Method of Measurement to be: Actual Quantity - **AQ**

17.5 Use Basis of Payment FP-03 Section 109.02 (d): **Each**

Note: Each for these pay Item shall mean the Subsurface Drainage System complete for a Site.

Item 18 – Site #1 - Culvert

18.1 General

This item includes equipment, labor and materials for the installation of a Culvert at Site #1 per plans and specifications.

18.2 Product

The Culvert shall be Certa-Lok CL 200 Yelomine PVC Pipe or approved equal.

18.3 Execution

The Contractor shall excavate across the roadway prism a trench 40-inches width at line and grade as established by COR. ODOT 304 Limestone shall be hand compacted to 95% Modified Proctor for Limestone Backfill. After leaving the road prism the Pipe shall be continue in earth material until day lighting and from there it shall lay on top of the existing ground.

18.4 Method of Measurement to be: Actual Quantity - **AQ**

18.5 Use Basis of Payment FP-03 Section 109.02 (g): **Lin. Feet**

Item 19 – Site #1 & #2 – Road Surface Stone

19.1 General

This item includes equipment, labor and materials application of Limestone to the Road Surface at Site #1 and Site #2 as directed by COR.

19.2 Product

ODOT #67 Limestone shall comply with Ohio Department of Transportation (ODOT) Table 703.01 1-size Course Aggregate (AASHTO-M-43) Dated January 1, 2010. Material shall be Limestone.

19.3 Execution

Limestone shall be spread and graded to an smooth and even surface as directed by COR.

19.4 Method of Measurement to be: Actual Quantity - AQ

19.5 Use Basis of Payment FP-03 Section 109.02 (o): Tons
Weight tickets will be submitted to COR for payment.

Item 20 – Site #1 & #2 – FS-132 Road Barricades

20.1 General

This item includes equipment, labor and materials for the installation of Barricades two (2) locations per plans and specifications.

20.2 Product

Steel Pipe Gate as given in the drawings.

20.3 Execution

The Contractor shall complete these Items at start of project. The Contractor shall position existing Limestone Boulders at Barricades Site “B” so as to block all vehicles traffic from entering FS-132 at that location and maintain that Barricade Site during the construction project. At final clean up the Limestone Boulders shall be removed from the Site and taken to the Ironton District Warehouse Site.

The Contractor shall move the existing Limestone Boulders at Barricades Site “A” and erect a Steel pipe Gate as shown on the drawings at Site “A”. The existing Limestone Boulders shall be position on each side of the Steel Pipe Gate so as to block all vehicles traffic from entering FS-132.

The Contractor shall furnish a lock for the Steel Pipe Gate and furnish six (6) keys to Wayne National Forest.

At final clean up the Steel Pipe Gate shall be removed along with the Limestone Boulders and taken to the Ironton District Warehouse Site.

Both Sites “A” and “B” will be graded too match existing contours and established positive surface to existing drainage ditches and seeded and mulch at clean up.

20.4 Method of Measurement to be: Lump Sum Quantity - LSQ

20.5 Use Basis of Payment FP-03 Section 109.02 (h): LS

Note: Once these Item is completed at the start of the project 75% of the LS will be paid. The remaining 25% will be paid at Final Invoice.

Item 21 – Site #1 & #2 – Clearing

21.1 General

This item includes equipment, labor and materials for Clearing of Trees that maybe required at Landslide Site #1 and Site #2. Concrete Anchor Block Locations and Directional Drilling operations.

21.2 Product

N/A

21.3 Execution

The Clearing will be held to an absolute minimum and only Trees that are marked by COR will be removed. The Trees will cut at one (1) foot above ground surface and disposed of in the Forest at location in adjacent area as directed by COR. The Tree roots and stumps shall be removed and disposed of in the Forest at location in the adjacent area as directed by COR.

21.4 Method of Measurement to be: Lump Sum Quantity - **LSQ**

21.5 Use Basis of Payment FP-03 Section 109.02 (h): **LS**

Item 22 – Site #2 - Guardrail

22.1 General

The work includes labor, materials and equipment for installation of Guardrail per plans and specification.

22.2 Product

Guardrail shall comply with all requirements of The Ohio Department of Transportation (ODOT) Item 606 dated January 1, 2010, Type 5 Guardrail.

22.3 Execution

The contractor shall erect Guardrail as shown on plans and as approved by COR. Construction shall comply with all requirements of ODOT Item 606 and ODOT Standard Roadway Construction Drawing GR-2.1 (Dated 1-16-04) Page 1 of 2 and 2 of 2 plus the requirements that post shall have concrete encasement per plans.

22.4 Method of Measurement to be: Contract Quantity: **CQ**

22.5 Use Basis of Payment FP-03 Section 109.02 (g): **Lin. Ft.**

Note: The Lin. Ft. cost shall include rails, post, concrete, PVC Culvert Pipe sleeve, bolts and all incidental Items.

Item 23 – Flared End Sections

23.1 General

The work includes labor, materials and equipment for installation of two (2) Flared End Sections per plans and specification.

23.2 Product

Flared End Sections shall comply with all requirements of The Ohio Department of Transportation (ODOT) dated January 1, 2010, Item 606 and W-Beam Flared End Section as given on ODOT Standard Roadway Construction Drawing GR-1.1 Dated 7-16-04.

23.3 Execution

The contractor shall erect two (2) each Flared End Section per plans and specification.

23.4 Method of Measurement to be: Actual Quantity - AQ

23.5 Use Basis of Payment FP-03 Section 109.02 (d): Each

Note: The Each cost shall include Flared End, post, concrete, bolts and incidental Item.

Item 24 – Silt Fence

24.1 General

This item includes all materials, equipment and labor to install Silt Fence at location as direction by COR to prevent sediment entering waterways.

24.2 Product

Material shall be Type V-C as per FP-03 specifications 714.01.

24.3 Execution

The Contractor shall install Silt Fence at each of the Bridge Sites so as to control run-offs in such a manner that prevent any sediment from entering streams. The Contractor shall submit an Erosion Control plan to the COR for each site before construction begins at that site.

Silt Fence will be installed as per the specifications as shown on drawings and manufacture recommendations.

24.4 Method of Measurement to be: Actual Quantity - AQ

24.5 Use Basis of Payment FP-03 Section 109.02 (d): Lin. Ft.

Item 25 – Seeding and Mulching

25.1 General

This item includes equipment, labor and materials for Seeding and Mulching area as directed by COR.

25.2 Product

Seed mix shall be a native seed at the indicated rates:

Winter Wheat	60 lbs/acre
Annual Ryegrass	20 lbs/acre

Any changes or substitutions of species must be cleared with Forest Botanist.

Mulch shall consist of straw to reduce weed seed (No hay is allowed for use as Mulch).

No Fertilizer is required.

25.3 Execution

The Seeding shall be the Dry method as per FP-03 specification 625.08 (a). the Mulching shall be the Dry method as per FP-03 specification 625.08 (a).

Mulch shall be applied the rate of 2 tons/acre.

Seeding rate is a shown above Item 73.2.

25.4 Method of Measurement to be: Actual Quantity - **AQ**

25.5 Use Basis of Payment FP-03 Section 109.02 (d): **Acres (AC.)**