

**ATHENS COUNTY
ENGINEER'S OFFICE**

2021

DEEP HOLLOW ROAD EWP

**NRCS 2019
ATHENS COUNTY, OHIO**

BID NOTICE
SPECIFICATIONS
PROPOSAL
CONTRACT



ATHENS COUNTY ENGINEER:
Jeff Maiden, P.E., P.S.

ATHENS COUNTY COMMISSIONERS:
Lenny Eliason
Chris Chmiel
Charles Adkins

ATHENS COUNTY AUDITOR:
Jill A. Thompson

BID OPENING: 10:00 a.m., Tuesday, May 25, 2021

**LOCATION: ATHENS COUNTY COMMISSIONER'S OFFICE
15 S. COURT STREET, ATHENS OHIO 45701**

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NOTICE TO BIDDERS

Sealed bids for the DEEP HOLLOW ROAD EWP will be received by the Board of County Commissioners of Athens County, Ohio, at their office, 15 S. Court Street, Athens Ohio 45701 until 10:00 a.m., Prevailing Local Time on the 25th day of May, 2021 and at that time and place will be publicly opened and read aloud. All bids will be considered valid until 60 days after the opening date, although not accepted or rejected.

The work for which proposals are invited consists of streambank stabilization along Deep Hollow Rd (CR65) which includes 216 Tons of Rock Riprap, 107 C.Y. of drainfill, 115 C.Y. of Grouted Rock Riprap, 172 C.Y. of Woven Wire Mesh Gabion Baskets, and channel clearing and shaping. The Engineer's Estimate of Construction Cost for the project is \$121,632.00.

Copies of the Construction Plans, Bidding Forms, and Specifications on the Unit Price Contract may be purchased from the Office of the Athens County Engineer, 16000 Canaanville Rd, Athens, Ohio 45701 during regular business hours (7:00 a.m. to 3:30 p.m. Monday through Friday). A non-refundable fee of \$30.00 will be charged for copies mailed or picked up by prospective bidders.

Legal notice and bid documents are also posted on the internet at www.athenscountyengineer.org under the "Bids/RFPs" heading.

Each bid shall have filed with it a bid guaranty in the form of a certified check, cashier's check, or letter of credit revocable only at the option of Athens County in an amount equal to 10% of the bid or a bond in accordance with division (B) of Section 153.34 of the Revised Code.

Each proposal must contain the full name of the party or parties submitting the proposal and all persons interested therein. Each bidder must submit evidence of its experiences on projects of similar size and complexity. The project has a completion date of August 20, 2021.

All contractors and subcontractors involved with the project will to the extent practicable use Ohio products, materials, services, and labor in the implementation of their project. Additionally, contractor compliance with the equal employment opportunity requirements of Ohio Administrative Code Chapter 123 is required.

Bidders must comply with the prevailing wage rates on Public Improvements in Athens County as determined by the Ohio Department of Commerce, Bureau of Wage and Hour Administration, 614.644.2239.

The Board of County Commissioners of Athens County, Ohio reserves the right to reject any and/or all bids and to waive informalities as may be in the best interest of Athens County.

Jeff Maiden, P.E., P.S.
Athens County Engineer

Advertising dates: 5/8/21, 5/15/21

INFORMATION TO BIDDERS

This streambank stabilization project along Deep Hollow Road (CR65) is through the USDA Natural Resources Conservation Service Emergency Watershed Protection Program, the NRCS, and the Athens County Engineer (sponsor).

The contract documents shall consist of the advertisement for bids, instructions to bidders, plans, specifications and bid forms, all of which are attached.

Work must be completed no later than August 20, 2021. A penalty of \$400 per day will be assessed to work extending past completion date per (ODOT) Construction and Material Specifications (CMS), 2016 Edition, Section 108.07.

If the successful bidder has filed a bid guaranty in the form of a certified check, cashier's check, or letter of credit, then at the time of entering the contract, the bidder shall file a performance bond in accordance with division (C) of Section 153.54 of the Revised Code and in substantially the form provided in Section 153.57 of the Revised Code.

All proposal guaranties will be returned immediately following the opening of proposals except those of the lowest three (3) bidders. These guaranties will be returned within ten (10) days following award of the contract, except that of the successful bidder that will be returned after satisfactory contract bond has been furnished and the contract has been executed.

Performance Bonds shall be made with Athens County, Ohio as obligee.

The bidder shall sign the Proposal correctly. Proposals made by an individual, shall show his name and mailing address. Proposals made by a firm or a partnership shall show the name and mailing address of each member of the firm or partnership. If made by a corporation the Proposal must show the name of the state under the laws of which the corporation was chartered and the name and title of officer or officers having authority under the by-laws to sign contracts. Anyone signing the proposal as agent must file with it, legal authority to do so. The proposal submitted by the Bidder will be considered by the Board of County Commissioners as being his lowest responsive and responsible bid, in accordance with Revised Code Section 9.312, and shall not be subject to change or alteration after submission.

Bidders shall submit all pages in **Section II** in a sealed envelope with name, address, and bid time marked outside along with the following: **"DEEP HOLLOW ROAD EWP"**. The County Commissioners reserve the right to increase or decrease any quantities, waive any informalities or technicalities, and may reject any/or all bids as may be deemed to be in the best interest of Athens County.

Contractor shall comply with all OSHA regulations in the construction of this project.

**NATURAL RESOURCES CONSERVATION SERVICE
SUPPLEMENT TO OSHA PARTS 1910 AND 1926
CONSTRUCTION INDUSTRY STANDARDS AND INTERPRETATIONS**

The Contractor shall comply with OSHA (Occupational Safety and Health Administration) Parts 1910 and 1926, Construction Industry Standards and Interpretations, and with this supplement.

Requests for variances or waiver from this supplement are to be made to the Contracting Officer in writing supported by evidence that every reasonable effort has been made to comply with the contractual requirements. A written request for a waiver or a variance shall include--

- (1) Specific reference to the provision or standard in question;
- (2) An explanation as to why the waiver is considered justified; and
- (3) The Contractor's proposed alternative, including technical drawings, materials, or equipment specifications needed to enable the Contracting Officer to render a decision.

No waiver or variance will be approved if it endangers any person. The Contractor shall not proceed under any requested revision of provision until the Contracting Officer has given written approval. The Contractor is to hold and save harmless the Natural Resources Conservation Service free from any claims or causes of action whatsoever resulting from the Contractor or subcontractors proceeding under a waiver or approved variance.

Copies of OSHA Parts 1910 and 1926, Construction Industry Standards and Interpretations, may be obtained from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

1.0 GENERAL CONTRACTOR REQUIREMENTS:

1.1 SAFETY PROGRAM. Each Contractor is to demonstrate that he or she has facilities for conducting a safety program commensurate with the work under contract. The Contractor is to submit in writing a proposed comprehensive safety program to the Contracting Officer for approval before the start of construction operations. The program is to specifically state what provisions the Contractor proposes to take for the health and safety of all employees, including subcontractors and rental equipment operators. The program shall be site specific and provide details relevant to the work to be done, the hazards associated with the work, and the actions that will be necessary to minimize the identified hazards.

1.2 PRECONSTRUCTION SAFETY MEETING. Representatives for the Contractor are to meet with the Contracting Officer (CO) or the CO's representative before the start of construction to discuss the safety program and the implementation of all health and safety standards pertinent to the work under this contract.

1.3 JOINT SAFETY POLICY COMMITTEE. The Contractor or designated on-site representative is to participate in monthly meetings of a joint Safety Policy Committee, composed of the Natural Resources Conservation Service (Contracting Local Organization in locally awarded contracts) and Contractor supervisory personnel. At these meetings the Contractor's project manager and the Contracting Officer will review the effectiveness of the Contractor's safety effort, resolve current health and safety problems, and coordinate safety activities for upcoming work.

1.4 SAFETY PERSONNEL. Each Contractor is to designate a competent supervisory employee satisfactory to the Contracting Officer to administer the safety program.

1.5 SAFETY MEETINGS. A minimum of one "on-the-job" or "toolbox" safety meeting is to be conducted each week by all field supervisors or foremen and attended by mechanics and all construction personnel at the jobsite. The Contractor is to also conduct regularly scheduled supervisory safety meetings at least monthly for all levels of job supervision.

1.6 SAFETY INSPECTION. The Contractor shall perform frequent and regular safety inspections of the jobsite, materials, and equipment, and shall correct deficiencies.

1.7 FIRST AID TRAINING. Every Contractor foreman's work crew must include an employee who has a current first aid certificate from the Mine Safety and Health Administration, American Red Cross, or other state-approved organization.

1.8 REPORTS. Each Contractor is to maintain an accurate record of all job-related deaths, diseases, or disabling injuries. The records shall be maintained in a manner approved by the Contracting Officer. A copy of all reports is to be provided to the Contracting Officer. All fatal or serious injuries are to be reported immediately to the Contracting Officer, and every assistance is to be given in the investigation of the incident, including submission of a comprehensive narrative report to the Contracting Officer. Other occurrences with serious accident potential, such as equipment failures, slides, and cave-ins, must also be reported immediately. The Contractor is to assist and cooperate fully with the Contracting Officer in conducting accident investigations. The Contracting Officer is to be furnished all information and data pertinent to investigation of an accident.

1.9 CERTIFICATION OF INSURANCE. Contractors are to provide the Contracting Officer or his or her authorized representative with certificates of insurance before the start of operations indicating full compliance with State Worker's Compensation statutes, as well as other certificates of insurance required under the contract.

2.0 FIRST AID AND MEDICAL FACILITIES:

2.1 FIRST AID KITS. A 16-unit first aid kit approved by the American Red Cross is to be provided at accessible, well-identified, locations at the ratio of at least 1 kit for each 25 employees. The first aid kits are to be moisture proof and dust tight, and the contents of the kits are to be replenished as used or as they become ineffective or outdated.

2.2 EMERGENCY FIRST AID. At least one employee certified to administer emergency first aid must be available on each shift and duly designated by the Contractor to care for injured employees. The names of the certified employees shall be posted at the jobsite.

2.3 COMMUNICATION AND TRANSPORTATION. Prior to the start of work, the Contractor is to make necessary arrangements for prompt and dependable communications, transportation, and medical care for injured employees. At least one stretcher and two blankets shall be readily available for transporting injured employees.

2.4 FIRST AID AND MEDICAL REPORTS. The Contractor is to maintain a record system for first aid and medical treatment on the jobsite. Such records are to be readily available to the Contracting Officer and are to include--

- (a) A daily treatment log listing chronologically all persons treated for occupational injuries and illnesses;
- (b) Cumulative record of injury for each individual;
- (c) Monthly statistical records of occupational injuries, classified by type and nature of injury; and
- (d) Required records for worker's compensation.

2.5 SIGNS AND DIRECTIONAL MARKINGS. Adequate identification and directional markers are to be provided to readily denote the location of all first aid stations.

2.6 EMERGENCY LISTING. A listing of telephone numbers and addresses of doctor, rescue squad, hospital, police, and fire departments is to be provided at all first aid locations.

3.0 PHYSICAL QUALIFICATIONS OF EMPLOYEES:

3.1 GENERAL REQUIREMENTS. Persons employed throughout the contract are to be physically qualified to perform their assigned duties. Employees must not knowingly be permitted or required to work while their ability or alertness is impaired by fatigue, illness, or any other reason that may jeopardize themselves or others.

3.2 HOIST OPERATORS. Operators of cranes, cableways, and other hoisting equipment shall be examined annually by a physician and provided with a certification stating that they are physically qualified to safely operate hoisting equipment. The Contractor is to submit a copy of each certification to the Contracting Officer.

3.3 HEAVY EQUIPMENT OPERATORS. It is recommended that operators of trucks and heavy construction equipment be given physical examinations to determine if they are physically qualified to perform their assigned work without endangering themselves or others.

3.4 MOTOR VEHICLE OPERATORS. Operators of motor vehicles engaged primarily in the transportation of personnel are to be 18 years of age or older and have a valid state operator's permit or license for the equipment being operated. The operators must have passed a physical examination administered by a licensed physician within the past year showing that they are physically qualified to operate vehicles safely.

4.0 PERSONAL PROTECTIVE EQUIPMENT:

4.1 HARDHAT AREAS. The entire jobsite, with the exception of offices, shall be considered a hardhat area. All persons entering the area are, without exception, required to wear hardhats. The Contractor shall provide hardhats for visitors entering hardhat areas.

4.1.1 LABELS. Hardhats shall bear a manufacturer's label indicating design compliance with the appropriate ANSI (American National Standards Institute) standard.

4.2 POSTING. Signs at least 3 by 4 feet worded as follows with red letters (minimum 6 inches high) and white background shall be erected at access points to designated hardhat areas:

CONSTRUCTION AREA - HARDHATS REQUIRED BEYOND THIS POINT

These signs are to be furnished and installed by the Contractor at entries to shops, construction yards, and job access points.

4.3 SAFETY GOGGLES (DRILLERS)

4.3.1 DRILLERS AND HELPERS. Drillers and helpers operating pneumatic rock drills must wear protective safety goggles.

5.0 MACHINERY AND MECHANIZED EQUIPMENT:

5.1 SAFE CONDITION. Before any machinery or mechanized equipment is initially used on the job, it must be inspected and tested by qualified personnel and determined to be in safe operating condition and appropriate for the intended use. Operators shall inspect their equipment prior to the beginning of each shift. Any deficiencies or defects shall be corrected prior to using the equipment. Safety equipment, such as seatbelts, installed on machinery is to be used by equipment operators.

5.2 TAGGING AND LOCKING. The controls of power-driven equipment under repair are to be locked. An effective lockout and tagging procedure is to be established, prescribing specific responsibilities and safety procedures to be followed by the person or persons performing repair work. Mixer barrels are to be securely locked out before permitting employees to enter them for cleaning or repair.

5.3 HAUL ROADS FOR EQUIPMENT

5.3.1 ROAD MAINTENANCE. The Contractor shall maintain all roadways, including haul roads and access roads, in a safe condition so as to eliminate or control dust and ice hazards. Wherever dust is a hazard, adequate dust-laying equipment shall be available at the jobsite and utilized to control the dust.

5.3.2 SINGLE-LANE HAUL ROADS. Single-lane haul roads with two-way traffic shall have adequate turnouts. Where turnouts are not practical, a traffic control system shall be provided to prevent accidents.

5.3.3 TWO-WAY HAUL ROADS. On two-way haul roads, arrangements are to be such that vehicles travel on the right side wherever possible. Signs and traffic control devices are to be employed to indicate clearly any variations from a right-hand traffic pattern. The road shall be wide enough to permit safe passage of opposing

traffic, considering the type of hauling equipment used.

5.3.4 DESIGN AND CONSTRUCTION OF HAUL ROADS. Haul road design criteria and drawings, if requested by the Contracting Officer, are to be submitted for approval prior to road construction. Sustained grades shall not exceed 12 percent and all curves shall have open-sight line with as great a radius as practical. All roads shall be posted with curve signs and maximum speed limits that will permit the equipment to be stopped within one-half the minimum sight distance.

5.3.5 OPERATORS. Machinery and mechanized equipment shall be operated only by authorized qualified persons.

5.3.6 RIDING ON EQUIPMENT. Riding on equipment by unauthorized personnel is prohibited. Seating and safety belts shall be provided for the operator and all passengers.

5.3.7 GETTING ON OR OFF EQUIPMENT. Getting on or off equipment while the equipment is in motion is prohibited.

5.3.8 HOURS OF OPERATION. Except in emergencies, an equipment operator shall not operate any mobile or hoisting equipment for more than 12 hours without an 8-hour rest interval away from the job.

5.4 POWER CRANES AND HOISTS (TRUCK CRANES, CRAWLER CRANES, TOWER CRANES, GANTRY CRANES, HAMMERHEAD CRANES, DERRICKS, CABLEWAYS, AND HOISTS)

5.4.1 PERFORMANCE TEST. Before initial onsite operation, at 12-month intervals, and after major repairs or modification, power cranes, derricks, cableways, and hoists must satisfactorily complete a performance test to demonstrate the equipment's ability to safely handle and maneuver the rated loads. The tests shall be conducted in the presence of a representative of the Contracting Officer. Test data shall be recorded and a copy furnished the Contracting Officer.

5.4.2 PERFORMANCE TEST—POWER CRANES (Crawler mounted, truck mounted and wheel mounted). The performance test is to be carried out as per ANSI requirements. The test is to consist of raising, lowering, and braking the load and rotating the test load through 360° degrees at the specified boom angle or radius. Cranes equipped with jibs or boom-tip extensions are to be tested using both the main boom and the jib, with an appropriate test load in each case.

5.4.3 PERFORMANCE TEST—DERRICKS, GANTRY CRANES, TOWER CRANES, CABLEWAYS, AND HOISTS, INCLUDING OVERHEAD CRANES. This equipment is to be performance tested as per ANSI requirements.

5.4.4 BOOM ANGLE INDICATOR. Power cranes (includes draglines) with booms capable of moving in the vertical plane shall be provided with a boom angle indicator in good working order.

5.4.5 CRANE TEST CERTIFICATION. The performance test required by 5.4.2 and 5.4.3 is fulfilled if the Contractor provides the Contracting Officer a copy of a certificate of inspection made within the past 12 months by a qualified person or by a government or private agency satisfactory to the Contracting Officer.

5.4.6 POSTING FOR HIGH VOLTAGE LINES. A notice of the 10-foot (or greater) clearance required by OSHA 1926.550, Subpart N, shall be posted in the operator's cab of cranes, shovels, boom-type concrete pumps, backhoes, and related equipment.

5.4.7 BOOM STOPS. Cranes or derricks with cable-supported booms, except draglines, shall have a device attached between the gantry of the A-frame and the boom chords to limit the elevation of the boom. The device shall control the vertical motions of the boom with increasing resistance from 83° or less, until completely stopping the boom at not over 87° above horizontal.

5.4.8 SAFETY HOOKS. Hooks used in hoisting personnel or hoisting loads over construction personnel or in the immediate vicinity of construction personnel shall be forged steel equipped with safety keepers. When shackles are used under these conditions, they shall be of the locking type or have the pin secured to prohibit turning.

5.5 ROLLOVER PROTECTIVE STRUCTURES (ROPS)

5.5.1 ROLLOVER PROTECTIVE STRUCTURES. OSHA 1926, Subpart W, Overhead Protection, Sections 1001 and 1002 are applicable regardless of the year in which the equipment was manufactured and regardless of the struck capacity of the equipment.

5.5.2 EQUIPMENT REQUIRING ROPS. The requirement for ROPS meeting 5.5.1 above applies to crawler and rubber-tired tractors such as dozers, push-and-pull tractors, winch tractors, tractors with backhoes, and mowers; off-highway, self-propelled, pneumatic-tired earthmovers, including scrapers, motor graders and loaders; and rollers, compactors, water tankers (excluding trucks with cabs). These requirements shall also apply to agricultural and industrial tractors and similar equipment.

5.5.3 EQUIPMENT REQUIRING SEATBELTS. The requirements for seatbelts as specified in OSHA Subpart O, Motor Vehicles, Mechanized Equipment, and Marine Operations, Section 1926.602 shall also apply to self-propelled compactors and rollers, and rubber-tired skid-steer equipment.

6.0 LADDERS AND SCAFFOLDING:

6.1 LADDERS. OSHA 1926, Subpart L - Section 450. Ladders shall be used as work platforms only when use of small hand tools or handling of light material is involved. No work requiring lifting of heavy materials or substantial exertion shall be done from ladders.

6.2 SCAFFOLDING. OSHA 1926, Subpart L - Section 451. Scaffolds, platforms or temporary floors shall be provided for all work except that which can be done safely from the ground or similar footing.

6.3 SAFETY BELTS, LIFELINE, AND LANYARDS. OSHA 1926, Subpart E, Section 104. Lifelines, safety belts and lanyards independently attached or attended, shall be used when performing such work as the following when the requirements of 6.1 or 6.2 above cannot be met.

- (a) Work on stored material in hoppers, bins, silos, tanks, or other confined spaces.
- (b) Work on hazardous slopes, structural steel, or poles; erection or dismantling of safety nets, tying reinforcing bars; and work from Bosman's chairs, swinging scaffolds, or other unguarded locations at elevations greater than 6 feet.
- (c) Work on skips and platforms used in shafts by crews when the skip or cage does not block the opening to within 1 foot of the sides of the shaft, unless cages are provided.

Official Bid Packet available at
Athens County Engineer's Office

Deep Hollow Rd EWP Items of work

Spec No	Construction/Mat'l Spec.	Bid Item	Items/specs. subsidiary to bid item	Compensation included in bid item
4	Channel Clearing and Shaping	1	6,21,23	
5	Pollution Control			2
6	Seeding, Sprigging and Mulching			1
8	Mobilization and Demobilization	2	5,9,94	
9	Traffic Control			2
11	Removal of Water			3,4,5,6
21	Excavation			1
23	Earthfill			1
24	Drainfill	3	4,5	
34	Steel Reinforcement	-	-	
61	Rock Riprap	4	11,24	
62	Grouted Rock Riprap	5		-
64	Woven Wire Mesh Gabions	6		
94	Contractor Quality Control			2

See Section VI for the NRCS Construction and Material Specifications

For Review Only
 Official Bid Packet available at
 Athens County Engineer's Office

DEEP HOLLOW ROAD EWP

ATHENS COUNTY, OHIO

SECTION II

BID DOCUMENTS

THE FOLLOWING PAGES CONTAIN DOCUMENTS THAT MUST BE COMPLETED AND SUBMITTED BY THE BIDDER AT THE TIME OF BID.

ALSO REQUIRED AT THE TIME OF BID ARE:

- Contractor's Certificate of Insurance (ACORD form)
- Contractor's Workers Compensation Certificate

BID PROPOSAL

Proposal of _____
(hereinafter called "Bidder"), organized and existing under the laws of the State of Ohio, doing business as

(Individual, Partnership or Corporation)

To the Board of County Commissioners of Athens County, Ohio, (hereinafter called "Owner").

In compliance with your Advertisement for Bids, Bidder hereby proposes to perform all work for the construction of the **DEEP HOLLOW ROAD EWP**, in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated on the following pages.

By submission of this Bid, each Bidder certifies, and in the case of a Joint Bid, each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and to **fully complete the Project by August 20th, 2021**. Bidder further agrees **to pay as liquidated damages (\$400 per day)** in accordance with Section 108.07 of the State of Ohio Department of Transportation's Construction and Materials Specifications, January 1, 2016 version.

Bidder acknowledges receipt of the following Addendum:

No.	Date	No.	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

UNIT PRICES

The blank spaces in the proposal must be filled in correctly, where indicated, and typed or written in ink. Erasures, strikeovers and/or whiteout shall void bid.

The bidder is required to enter a unit price bid in the "Unit Price Bid" column and to multiply the unit price bid times the quantity set forth for the "Reference No." and then to enter the result in the "Total" column. The bidder is further required to enter a lump sum bid in the "Total" column for each "Reference No." which requires a "Lump Sum Bid". The bidder shall then add all of the figures in the "Total" column and enter the sum in the three (3) spaces provided for the "TOTAL AMOUNT OF THE BID".

Failure by a bidder to enter a unit price or lump sum price for each item set forth in the bid proposal will render the bid informal.

CONTRACTOR: _____

BID SCHEDULE

Deep Hollow Road - EWP Project

ITEM NO.	WORK OR MATERIALS	SPEC NO.	QUANT	UNIT	UNIT PRICE	AMOUNT
1	Channel Clearing & Shaping	4	1	JOB	_____	_____
2	Mobilization/Demobilization	8	1	JOB	_____	_____
3	Drainfill	24	107	C.Y.	_____	_____
4	Rock Riprap	61	371	TONS	_____	_____
5	Grouted Rock Riprap	62	115	C.Y.	_____	_____
6	Woven Wire Mesh Gabions	64	172	C.Y.	_____	_____
				Total	_____	_____

Grand Total Project in Words _____

UNIT PRICE shall govern over TOTAL in case of discrepancy. If the plans or other quantity estimates shown herein differ from this unit price bid form, bid as shown on this sheet. Final payment will be based on actual quantities at the bid unit price.

The above unit prices for the Bid shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for within the drawings and specifications.

Bidder understands that the owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required by the Contract Documents. The bid security attached is to become the property of the owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the owner caused thereby.

Respectfully Submitted by:

Signature: _____

Printed Name: _____

Title: _____

Date: _____

Company Name: _____

Address: _____

Federal Tax I.D. Number: _____

email address: _____

Phone number: _____

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

BID GUARANTY AND CONTRACT BOND

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned, _____

as Principal and _____

as Surety, are hereby held and firmly bound unto _____

hereinafter called the Obligee, in the penal sum of the dollar amount of the bid submitted by the Principal to the obligee on _____ to undertake the project known as:

The penal sum referred to herein shall be the dollar amount of the Principal's bid to the Obligee, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to the Obligee, which are accepted by the Obligee. In no case shall the penal sum exceed the amount of _____ DOLLARS (\$ _____).

If this item is left blank, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if completed, the amount stated must not be less than the full amount of the bid, including alternatives in dollars and cents. A percentage is not acceptable.

For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above named Principal has submitted a bid on the above referred to project,

NOW, THEREFORE, if the obligee accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the Principal pays to the Obligee the difference not to exceed ten percent of the penalty hereto between the amount specified in the bid and such larger amount for which the obligee may in good faith contract with the next lower bidder to perform the work covered by the bid; or in the event the Obligee does not award the contract to the next lower bidder and resubmits the project for bidding, the Principal will pay the Obligee the difference, not to exceed ten percent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation

Here insert full name or legal title of Contractor and address

Here insert full name or legal title of Surety

Here insert full name or legal title of Owner

shall be null and void, otherwise to remain in full force and effect. If the obligee accepts the bid of the Principal and the Principal within ten days after the awarding of the contract, enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of material, which said contract is made a part of this bond the same as though set forth herein; and

IF THE SAID Principal shall well and faithfully perform each and every condition of such contract; and indemnify the Obligee against all damage suffered by failure to perform such contract according to the provisions thereof and in accordance with the plans, details, specifications, and bills of materials therefore; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract: we agreeing and assenting that this undertaking shall be for benefit of any materialman or laborer having a just claim, as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of said contract or in or to the plans and specifications therefore shall in any way affect the obligations of said Surety on this bond, and it does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the work or to the specifications.

SIGNED AND SEALED This ____ day of _____, 20__.

Principal

By: _____

Title: _____

Surety

By: _____
Attorney-in-Fact

Surety Company Address

Surety Agent's Name and Address

Official Bid Packet available at
Athens County Engineer's Office

Instructions for Completion of the Bid Guaranty & Contract Bond

The Bid Guaranty and Contract Bond, meeting the requirements of Section 153.54 (B) of the Ohio Revised Code, as furnished by Athens County, shall be used and submitted by the bidder without change of wording.

The amount of the Bid Guaranty and Contract Bond must be for the full amount of the bid.

The Bid Guaranty and Contract Bond must be signed by an Authorized Agent of an acceptable Surety Bonding Company, and by the Bidder. The Bid Guaranty and Contract Bond must be countersigned by a Resident Agent of the Bonding Company as required by Section 3905.41 of the Ohio Revised Code. The Corporate Seal is to be affixed to all copies. The name and address of both the Surety and the Surety's Agent must appear on the Guaranty form.

A power of attorney of the Agent shall be attached to and submitted with the Bid Guaranty and Contract Bond.

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

BID AFFIDAVIT

(To be filled in and executed if Contractor is a Corporation)

STATE OF _____)

)ss

COUNTY OF _____)

_____ being duly sworn, deposes and says that he is Secretary of
_____ a corporation organized and existing under and by virtue of the laws of
the State of _____ and having its principal Office at

_____ Number and Street

_____ County, _____

_____ State

City

Name of County

State

Affiant further says that he is familiar with the records, minute books and by-laws of

_____ Name of Corporation

Affiant further says that _____ of the

Name of Officer

Title

corporation is duly authorized to sign the contract for _____ for

said corporation by virtue of _____

State whether a provision of by-laws or a resolution of the Board of Directors. If by a resolution, give date of adoption.

Signature of Officer

Sworn to before me and subscribed in my presence this _____ day of

_____, 20____.

Notary Public in and for

_____ County, Ohio

My Commission expires _____

NON-COLLUSION AFFIDAVIT

STATE OF _____)
)SS.

COUNTY OF _____)

_____, being first duly sworn,

deposes and says that he is _____
sole owner, partner, president, etc.

of _____ the party making the foregoing proposal or bid; that such bid is genuine and not collusive of sham; that said bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to put in a sham bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or any other bidder, or to fix any overhead, profit, or cost element of said bid price, or of that of any other bidder, or to secure any advantage against _____ or any person or persons interested in the proposed contract; and that all statements contained in said proposal or bid are true, and further, that such bidder has not, directly or indirectly submitted this bid or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

For Review Only
Official Bid Packet available at
Athens County Engineers Office

Affiant

Sworn to and subscribed before me this _____ day of _____, 20 _____.

Notary Public in and for _____ County, Ohio

My commission expires _____

NO FINDINGS FOR RECOVERY AFFIDAVIT

(O.R.C. Section 9.24)

THIS FORM MUST BE COMPLETED IN ITS ENTIRETY AND NOTARIZED

I _____, _____, _____
(NAME) (TITLE) (NAME OF COMPANY)

affirm that at the time that I submitted the bid for _____
(BID TITLE)

to the Board of Athens County Commissioners on _____ that
(DATE)

_____ HAS / HAS NO unresolved finding for recovery from
(NAME OF COMPANY) (CIRCLE ONE)

the State Auditor per Ohio Revised Code 9.24.

(If there is a unresolved finding for recovery from the State Auditor, please complete the following section)

The amount of unresolved finding for recovery due the State Auditor is _____ and unpaid penalties and interest are _____.
(AMOUNT) (AMOUNT)

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

(SIGNATURE)

(COMPANY)

(DATE)

Sworn to and subscribed before me this _____ day of, _____ 20____. (SEAL)

(NOTARY)

My Commission Expires:

(DATE)

CONTRACTORS ARE REQUIRED TO STATE IN THE SPACES PROVIDED BELOW, THEIR EXPERIENCE IN CONSTRUCTING PROJECTS OF THIS TYPE OR SIMILIAR IN NATURE. FAILURE TO FILL IN THIS FORM MAY DISQUALIFY YOUR BID.

PROJECT NAME: _____ **CONTACT:** _____
ADDRESS _____ **PHONE:** _____

FAX: _____

EMAIL: _____

DATE OF PROJECT: _____

DESCRIPTION OF WORK: _____

PROJECT NAME: _____ **CONTACT:** _____
ADDRESS _____ **PHONE:** _____

FAX: _____

EMAIL: _____

DATE OF PROJECT: _____

DESCRIPTION OF WORK: _____

PROJECT NAME: _____ **CONTACT:** _____
ADDRESS _____ **PHONE:** _____

FAX: _____

EMAIL: _____

DATE OF PROJECT: _____

DESCRIPTION OF WORK: _____

PROJECT NAME: _____ **CONTACT:** _____
ADDRESS _____ **PHONE:** _____

FAX: _____

EMAIL: _____

DATE OF PROJECT: _____

DESCRIPTION OF WORK: _____

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

DEEP HOLLOW ROAD EWP

ATHENS COUNTY, OHIO

SECTION III

CONTRACT DOCUMENTS

*For Review Only
Official Bid Packet available at
Athens County Engineer's Office*

CONTRACT

THIS AGREEMENT, made and entered into this _____ day of _____, 2021, by and between the Board of County Commissioners of Athens County, Ohio acting by and through Lenny Eliason, President, hereinafter designated the Owner, and _____ of the City of _____, County of _____ and State of _____, hereinafter designated the Contractor:

WITNESSETH: That the parties to these present, each in consideration of the undertakings, promises and agreements on the part of the other herein contained, have undertaken, promised and agreed and do hereby undertake, promise and agree, the owner for itself, its successors and assigns, and the contractor for itself and its heirs, executors, administrators, successors and assigns, as follows:

That the contractor, in consideration of the sums of money herein specified to be paid by said owner to said contractor, shall and will at its own cost and expense furnish all labor, materials and equipment necessary to complete the entire DEEP HOLLOW ROAD RWP in accordance with the Proposal submitted on _____ and in accordance with the Specifications, General Provisions and Special Provisions and the Drawings therein mentioned which Specifications, General Provisions, Special Provisions and Drawings, together with Advertisement, Information for Bidders, Proposal and Bonds are hereby made a part of this Agreement, and incorporated by reference herein, all of said work to be fully completed to the satisfaction of the Engineer and to the acceptance of the Board of County Commissioners, Athens County, Ohio.

Attest:

Contractor: _____

Board of Commissioners, Athens County, Ohio

Date

Lenny Eliason Date

Printed Name Title

Charlie Adkins Date

Witness

Chris Chmiel Date

Official For Review Only
Athens County Engineer's Office

CERTIFICATE OF PROSECUTING ATTORNEY

The above contract has been approved by me as to form this _____ day of _____, 2021.

Prosecuting Attorney, Athens County, Ohio

CERTIFICATE OF COUNTY AUDITOR

I, _____, County Auditor of Athens County,

Ohio do hereby certify that there is in the Treasury or in the process of collection, the sum of:

_____ Dollars (\$ _____), to

pay for the contract between _____ and the Athens County Commissioners,

Athens County, Ohio and that said funds are un-appropriated for any other purpose.

Athens County Auditor

Purchase Order No. _____

Account No. _____

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

CERTIFICATE OF BOARD OF COMMISSIONERS

We, the Board of Commissioners of Athens County, in formal session, hereby approve these plans and specifications and certify that the right of way necessary for this improvement is available and declare that the making of this improvement is necessary and in the public interest.

Board of County Commissioners

Date: _____

CERTIFICATE OF COUNTY ENGINEER

I hereby approve these plans and specifications and declare that the making of this improvement will not require the closing of traffic of the highway and that provisions for the maintenance and safety of traffic have been provided for.

Official Bid Packet available at
Athens County Engineer's Office

R. Jeff Maiden, P.E., P.S.
Athens County Engineer

WAIVER OF LIENS AFFIDAVIT

State of _____

County of _____

TO WHOM IT MAY CONCERN:

The undersigned on behalf of _____

of the City of _____ State of _____, the Contractor

having a contract dated _____ with the _____

_____ to perform and/or furnish labor, materials, appliances, tools, utilities, fuel or equipment as set forth in said contract, for the installation or construction of

located at _____

hereby makes oath and says that all bills for labor, material, fuel or anything of any purpose which a lien or liens may or can be filed under the laws of the place in which this building or project is constructed, arising out of or in connection with the aforementioned tract, have been paid, that there are no claims of subcontractors, laborers or material men for which a lien or liens can be filed or claims made against the Owner.

CONTRACTOR: _____

By: _____ (s)

Name: _____

Title: _____

Date: _____

Sworn to before me and subscribed in my presence at _____

this _____ day of _____, 20____.

Notary Public (s)

My commission expires _____, 20____.

OHIO LABOR STANDARDS AFFIDAVIT

State of _____

County of _____

The undersigned on behalf of _____

of the City of _____, State of _____, the Contractor having a

contract dated _____ with the _____

to perform and/or furnish labor, materials, appliances, tools, utilities, fuel or equipment as set forth in said contract, for the installation or construction of _____

located at _____

hereby makes oath and says that he and all of his subcontractors have complied fully with all requirements of Chapter 4115 of the Ohio Revised Code.

CONTRACTOR _____

By: _____ (s)

Name: _____

Title: _____

Date: _____

Sworn to before me and subscribed in my presence at _____

this ____ day of _____, 20 ____.

Notary Public (s)

My commission expires _____, 20 ____.

DEEP HOLLOW ROAD EWP

ATHENS COUNTY, OHIO

SECTION IV

Athens County General Conditions

*For Review Only
Official Bid Packet available at
Athens County Engineer's Office*

**SECTION IV – ATHENS COUNTY
GENERAL CONDITIONS**

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1. DEFINITIONS

Whenever the words defined in this paragraph, or pronouns used in their stead, occur in this contract they shall have the meaning given:

- (a) County or Owner shall mean the County of Athens acting through its authorized representative, the Board of County Commissioners.
- (b) Contractor or bidder shall mean any person, firm or corporation entering into the Contract or Contracts covered under these specifications for the performance of the work required by it or agent appointed to act for said party in the performance of the work.
- (c) Engineer shall mean the duly elected, qualified and acting Engineer of Athens County, Ohio, or such assistants as he may appoint, authorize and assign to administer the contract.
- (d) Or Equal. Wherever a particular brand, make of material, device or equipment is specified, it is to be regarded as a standard. The contractor may proffer for acceptance other makes, brands, devices or equipment in place of those specified. If in the opinion and judgment of the Owner, the items offered and the work proposed is considered to be a satisfactory equal to that called for in the specifications, the Owner may approve of the use of the substitute offered, and it will be accepted for the work provided; further, that all materials, methods and workmanship shall be appropriate and in accordance with best modern practice as determined by Owner, who shall be the sole judge.
- (e) Wherever in the specifications or upon the drawings the word "direction, required, permitted, ordered, designated, prescribed" or words of like import are used, it shall be understood that the direction, requirements, permission, order, designation, or prescription of the Owner is intended and similarly the words approved, acceptable, or satisfactory to the Owner unless otherwise expressly stated.

2. INTENT

It is the intent of these General Specifications to cover the governing conditions of work, labor, materials, detailed drawings, methods, measures, safety rules and factors applicable in whole or in part to this contract or contracts.

3. CONTRACT DOCUMENTS

The following shall constitute the Contract Documents and shall be deemed the Contract made pursuant to this invitation to bid:

- (a) The bid advertisement, Notice and Information to Bidder to bid, General Conditions, detail specifications. Drawings, and Special Provisions, as are included in the bid package.
- (b) Affidavit of non-collusion
- (c) The Bid or Proposal
- (d) All required bonds and certificates of insurance
- (e) All provisions required by law to be inserted in the contract, whether actually inserted or not
- (f) Contract
- (g) Affidavit for corporate bidders

4. INTERPRETATION OF CONTRACT DOCUMENTS

- a) If any person, firm or corporation contemplating submitting a bid for this Contract is in doubt as to the true meaning of any part of the Drawings, Specifications or other Contract Documents, he may submit to the County Engineer a written request for an interpretation thereof. The person, firm or corporation submitting the request shall be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by an Addendum duly issued by the Engineer and a copy of such Addendum will be mailed or delivered to each person securing a set of the Contract Documents, provided that a sufficient period of time is available for the issuance of such Addendum prior to the receipt of bids.
- b) The specifications are duplicates of those on file in the office of the County Commissioners and County Engineer
- c) Any doubts which may arise after letting the contract shall be referred to the Engineer and County who shall decide the question at issue, and their decision shall be final and binding upon the parties to the contract.
- d) The drawings and specifications are complementary and what is called for by either one shall be as binding as if called for by both.
- e) In unit price contracts the quantities listed in the Proposal are to be considered as approximate and are to be used for the comparison of bids only. The unit prices to be tendered by the Bidders are to be tendered expressly for the scheduled quantities as they may be increased or decreased as hereinafter provided. Payments, except for lump sum items in unit price contracts, will be made to the Contractor for the actual quantities only of work performed or materials furnished in accordance with the plans and specifications and it is understood that scheduled quantities for work to be done and materials to be furnished may each be increased or diminished as hereinafter provided without in any way invalidating the unit bid prices. Where there is a conflict between the unit bid price and the extension thereof made by the Bidder, the unit price shall govern and the County shall be authorized to make a correct extension in comparing bids.
- f) If the work is let on the basis of a lump sum contract, the estimated quantities are only approximate, although the result of calculations may be in error and the Bidder must obtain and be responsible for the data upon which he bases his bid. He shall not be entitled to any additional compensation in case the quantities of work actually done to fulfill the contract and complete the project are greater than said estimated quantities.

5. FEDERAL-AID PROVISIONS

When the United States Government pays for all or any portion of the Project's cost, the Work is subject to the inspection of the appropriate Federal agency.

Such inspections will not make the Federal Government a party to this Contract. The inspections will in no way interfere with the rights of either party to the Contract.

Federal Highway Language, requirements, and prohibitions overrides or trumps that of any other Federal or state agency (e.g. HUB, Public Works).

6. OBLIGATIONS OF THE CONTRACTOR

The Contractor shall do all work and shall furnish all the labor, materials, tools, appliances and equipment except as herein otherwise specified, necessary or proper for performing and completing the work required by this contract, in the manner and within the time hereinafter specified.

If, at any time before the commencement or during the progress of the work or any part of it, the Contractor's methods or appliances appear to the Engineer to be unsafe, insufficient or inadequate for securing the safety of the workmen, the quality of the work or the progress required, he may order the Contractor to increase their safety and efficiency or to improve their character, and the Contractor shall comply with such order; but the failure of the Engineer to make such demand shall not relieve the Contractor of his obligations to secure the safe conduct, the quality of the work and the progress required by the contract, and the Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances and methods.

All the work to be done and the labor and materials to be furnished under this contract shall be done and furnished strictly pursuant to and in conformity with the specifications and the drawings therein referred to under the direction of the Engineer as given by him from time to time during the progress of the work, and under the terms of this contract, and the Contractor shall complete the entire work to the satisfaction of the Owner and at the prices and time herein agreed upon and fixed therefore.

7. PERMITS, LAWS, AND REGULATIONS

The contractor shall comply with all applicable laws of the federal government, the State of Ohio, and Municipal Corporations pertaining to wages, public liability and property damage. Workmen's Compensation and insurance of employees, current wage scales, payment for material, subcontract relations, and any other local, state or federal laws or ordinances concerned with contracts of this nature. Ignorance of legislation as described will in no way excuse the Contractor from full compliance with all statutes and regulations. Attention is directed to Section 1311.28 thru 1311.33 Revised Code of Ohio, which provides for retention by the Owner of additional payments due the Contractor in the event the Contractor fails to pay legal labor, materials and equipment bills out of monies previously received from the Owner. Claims against the Contractor must be properly authenticated and supported by the claimant before the Owner can take action.

The Contractor shall keep himself fully informed of all Federal State and Municipal laws and ordinances and regulations in any manner affecting those engaged or employed in the work or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency should be discovered in this contract, or in the drawings or specifications herein referred to, in relation to any such law, ordinance, regulation, order or decree, he shall forthwith report the same in writing to the Engineer. He shall at all times himself observe and comply with, and shall cause all his agents and employees to observe and comply with all such existing and future laws, ordinances, regulations, orders, and decrees, and shall protect and indemnify the Owner and its officers and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by themselves or by their employees.

The contractor shall be responsible for securing at his own expense any and all licenses, permits and certificates of inspection required by law, or by the contract documents.

8. STRUCTURES ENCOUNTERED AND PROTECTION OF PROPERTY

- a) The contractor shall, at his own expense, support and protect all buildings, bridges, conduits, wires, water pipes, gas pipes, sewers, pavements, curbing, sidewalks, equipment and fixtures of all kinds and all other public or private property, whether of this or another contract that may be encountered or endangered in the prosecution of the work herein contemplated and that are not otherwise provided for. He shall repair and make good any damage caused to such property by reason of his operations, leaving all work in approved condition at the completion of the contract.

9. TIME OF ESSENCE

Since this contract is for a needed improvement, the provisions relating to the time of performance and time of completion of the work included in this contract are of the essence of this contract. The Contractor shall begin work promptly and complete the work by the day specified in the "Information for Bidders" and shall prosecute the work diligently so as to assure completion of the work not later than the time specified therefore.

10. CONTRACT

The bidder to whom the award is made will be required to execute a written Contract with the Owner, and to furnish and maintain good and approved surety bonds, as herein specified, within ten (10) days after notification of the acceptance of his bid. The Contract shall be in the form hereto attached. If the bidder to whom an award is made fails to enter into a contract as herein provided, the award may be annulled and the Contract let to the next lowest and best bidder in the opinion of the Owner; and such bidder shall fulfill every stipulation embraced herein, as if he were the original party to whom the award was made.

If the bidder to whom the award is made is a corporation, the Secretary of said corporation shall execute an affidavit, in the form hereto attached, stating that the officer or agent of said corporation signing the Contract for said corporation was authorized to do so, by either a provision of the corporation By-laws or by the adoption of a resolution of the Board of Directors of the corporation, whichever the case may be.

Contracts shall be let upon the basis of lump sum bids or upon the basis of unit price bids as set forth in the Proposal, at the discretion of the County.

The Engineer may cancel a Contract award at any time before all parties sign the Contract without liability to the Engineer.

11. EXAMINATION OF SITE

Prior to submitting a bid, bidders are required to satisfy themselves by personal examination at the site of the work and by an examination and study of the contract documents as to the conditions existing and the difficulties likely to be encountered in the construction of the work.

12. ESTIMATED QUANTITIES

The Contractor agrees that the estimated quantities are only for the purpose of comparing, on a uniform basis, the bids offered for the work under this Contract, and he further agrees that he is satisfied with and will at no time dispute the said estimated quantities as a means of comparing the bids aforesaid; that he will make no claim for anticipated profits or loss of profits because of a difference between the quantities of the various classes of work actually furnished and the said estimated quantities; and he agrees that the Owner shall not be held responsible if, in the construction of the

work, any of the said estimated quantities should be found to vary from the quantities shown, or the Engineer without alteration or modification of this contract increases, decreases, or omits the amount of any class or portion of work as may be deemed necessary.

13. PROGRESS SCHEDULE

The Contractor shall furnish a bar chart progress schedule to the Engineer for review at or before the pre-construction conference. The Engineer will review the schedule and within 14 calendar days of receipt, will either accept the schedule or provide the Contractor with comments. Acceptance of the schedule does not revise the Contract Documents. Provide clarification or any needed additional information within 10 days of a written request by the Engineer. The County will withhold Estimates until the Engineer accepts the schedule. The Engineer will not measure or pay for the preparation of the schedule and schedule updates directly, but the cost of preparing and updating the schedule is incidental to all Contract Items.

Provide a working day schedule that shows the various activities of Work in sufficient detail to demonstrate a reasonable and workable plan to complete the Project by the Completion Date. Show the order and the sequence for accomplishing the Work. Describe all activities in sufficient detail so that the Engineer can readily identify the Work and measure the progress of each activity. The bar chart schedule must reflect the scope of work, required phasing, maintenance of traffic requirements, interim completion dates, the Completion Date, and other project milestones established in the Contract Documents. Include activities for submittals, working and shop drawing preparation, submittal review time for the County, material procurement and fabrication, and the delivery of materials, plant, and equipment, and other similar activities. The schedule must be detailed on letter or legal sized paper.

14. CHANGE ORDERS

- a) The County may, by written instructions to the Contractor, make alterations in the plans involving increases or decreases in the quantities of work as may be necessary or desirable, in either unit price or lump sum contracts. Such alterations shall not be considered as a waiver to any of the conditions of the contract, nor invalidate any of the provisions thereof.
- b) The cost of increases or decreases in quantities of items shall be computed at the unit price bid and shall be added or deducted from the original contract, only upon written change order by the County.
- c) In the event the desired alterations in the plans or specifications involve items for which a unit price has not been established, the County shall request the Contractor to furnish a proposal for such items. If said proposal is acceptable, the County shall issue a written change order covering same. In the event that no agreement as to price can be arranged between the parties to the contract, the County shall determine and set up a fair price for the work and materials at issue and their decision shall be final and binding upon all parties concerned. No claims shall be made for extra work, unless the same shall have been done in pursuance of a written change order by the County and at a price previously agreed upon and approved by the County Commissioners.

15. EXTRA WORK NOT COMTEMPLATED BY CONTRACT

Wherever extra work due to unforeseen condition not contemplated by Contract becomes necessary for the construction of the project, a change order in writing for such extra work shall be first entered into before such work is performed. Such extra work shall be performed in accordance with

the contract prices and if the items herein do not cover such work, a price mutually agreed upon shall prevail.

16. SIGNIFICANT CHANGES IN THE CHARACTER OF WORK

- a) The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.
- b) If the alterations or changes in quantities significantly change the character of the work under the contract, whether such alterations or changes are in themselves significant changes to the character of the work or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the Engineer may determine to be fair and equitable.
- c) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.
- d) The term "significant change" shall be construed to apply only to the following circumstances:
 1. When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
 2. When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

17. COMPETENT MEN TO BE EMPLOYED

The Contractor shall employ competent, skillful men to do The Work, and whenever the Engineer shall notify the Contractor in writing, that any man on The Work, is in his opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, or refuses to carry out the provisions of this contract, or to stop doing bad work when so ordered, or uses threatening or abusive language to any official having supervision of the work, such man shall be discharged from the work, and shall not again be employed on it, except with the written consent of the Engineer.

18. ANTI-DISCRIMINATION [R.C. 153.59]

The Contractor hereby agrees that in the hiring of employees for the performance of work under this contract or any subcontract, the Contractor, nor any subcontractor, nor any person acting on his behalf, shall by reason of race, creed, sex, disability, as defined in Section 4112.01 of the Revised Code, or color, discriminate against any citizen of the state in the employment of labor or workers who are qualified and available to perform the work to which the employment relates.

The Contractor also agrees that the Contractor, nor any subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, sex, disability, as defined in Section 411.01 of the Revised Code, or color.

19. FORFEITURE FOR PROHIBITED DISCRIMINATION [R.C. 153.60]

If the Contractor breaches any of the above provisions against discrimination, there shall be deducted from the amount payable to the Contractor under this contract, a forfeiture of twenty-five dollars for each person who is discriminated against or in violation of this contract. If there is a second violation of breach of the provisions against discrimination, the contract shall be cancelled or terminated by the County and all of the money due for such subsequent violations of this discrimination clause may be forfeited.

20. MINIMUM WAGE RATES

The minimum wage to be paid to all skilled labor, intermediate grade labor, and unskilled and common labor employed on this contract shall be in accordance with the prevailing wage rates on Public Improvements in Athens County as determined by the Ohio Department of Commerce, Bureau of Wage and Hour Administration, 614.644.2239.

21. PAYROLL RECORDS

Keep payroll records as specified in ORC 4115.07 or as required by Federal law. Authorized representatives of the Engineer may inspect the certified payroll and other payroll records. Upon completion of the Work and before receiving the final estimate and when required by ORC 4115.07, submit an affidavit stating that wages have been paid according to the minimum rates specified in the Contract Documents.

22. MATERIALS AND WORKMANSHIP

The materials shall be of the best quality and especially adapted to the service required, and wherever the characteristics of any materials are not particularly specified, such material shall be used as is customary in first class work of a nature for which the material is employed. All materials shall, if required, be tested and shall fulfill the requirements specified. The Owner shall make physical test, but the Contractor shall furnish test pieces and samples, in the number, shape, size, and finish and required by the Engineer. The failure of test specimens to fully conform to the requirements of the specifications shall be sufficient cause for the rejection of the whole melt, pour, or stock from which the samples were obtained. The workmanship shall be of the highest class throughout.

23. DEFECTIVE WORK AND MATERIALS

The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill his contract as herein prescribed, and defective work shall be made good and unsuitable material shall be rejected, notwithstanding that such work and materials have been previously overlooked by the Engineer and accepted or estimated for payment. If the work, or any part thereof, shall be found defective before the final acceptance of the whole work, the Contractor shall forthwith make good such defects without compensation, in a manner satisfactory to the Engineer, and if any of the material brought upon the ground for use in the work, or selected for the same, shall be condemned by the Engineer as unsuitable or not in conformity with the specifications; the Contractor shall forthwith discard such materials and remove them to a satisfactory distance from the vicinity of the work, and shall not again submit the same. If the Contractor shall fail to replace any defective work or materials after reasonable notice, the Engineer may cause such defective work or materials to be replaced and the expense thereof shall be deducted from the amount to be paid to the Contractor.

24. OWNERS RIGHT TO SUSPEND OR TERMINATE CONTRACT

- a) The Engineer may cause the work to be suspended whenever in his opinion the weather is not suitable for doing the work or for any other just or reasonable cause. Upon any suspension of the work, the Contractor shall snugly pile all material and he shall immediately thereafter remove all rubbish and surplus material from the place of work. In case of such suspension, the time within which the Contractor shall finish the work may be extended by as many days as he may have thus been delayed.
- b) If the Contractor shall at any time abandon the work, or if at any time the Engineer shall be of the opinion, and shall so certify to the Contractor and the County, that the work or any portion of it is unnecessarily delayed, or that the Contractor is willingly or knowingly violating any portion of his contract or executing it in bad faith, as far as claims of the Contractors are concerned, and the materials delivered at the site, and/or incorporated into the work shall become the property of Athens County.

25. FAILURE TO COMPLETE WORK ON TIME

If the Contractor fails to complete the work within the time allowed by the Contract, or extension thereof, the County Engineer shall keep accurate account of all expenditures for inspection, supervision, and all other similar engineering services in connection with the improvement and same shall be charged to the contractor. The amount of such expenditures shall be retained out of any estimates due or to become due to such Contractor.

26. EXTENSION OF TIME

If the Contractor is obstructed or delayed in the prosecution or completion of the work by neglect, delay, or default of any other contractor for adjoining contiguous work, or by any damage that may happen thereto by the unusual action of the elements, or by the abandonment of the work by the employees in general strike, or by any delay on the part of the Owner in doing the work, or furnishing the material to be done and furnished by it, the Contractor shall have no claim for damage for any such cause or delay, but, he shall in such case be entitled to such extension of time specified herein for the completion of work as the Engineer shall, in writing, certify to be just and proper, provided, however; that claim for such extension of time is made by the Contractor, in writing, within one (1) week from the time when such alleged cause for delay shall occur.

When a delay occurs due to unforeseen causes beyond the control and without fault, or negligence of the Contractor, including but not restricted to: acts of God, acts of the public enemy, acts of Government, acts of the State, or any political subdivision thereof; fires, floods, epidemics, strikes except those caused by improper acts or omissions of the Contractor, extraordinary delays in delivery of materials caused by strikes, lockouts, wrecks, freight embargoes, (acts of governments), or acts of God, the time of completion shall be extended in whatever amount is determined by the County to be equitable.

An act of God is construed to mean an earthquake, flood, cloudburst, cyclone, or other cataclysmic phenomenon of nature beyond the power of the Contractor to foresee or to make preparation in defense of: A rain, windstorm, or other natural phenomenon of normal intensity, based on U.S. Weather Bureau reports; for the particular locality and for the particular season of the year in which The Work is being prosecuted shall not be construed as an "act of God", and no extension of time will be granted for the delay's resulting there from.

27. WORK ON SUNDAYS AND HOLIDAYS

No Work shall be permitted on Sundays or legal Holidays except to save property or life, or in case of extraordinary emergency and then only as authorized or directed by the Engineer.

28. WORK TO BE SUBLET

In the event that the Contractor elects to sublet a part, or a portion of this contract, he shall first give written notice to the Owner. No part of the Contract shall be sublet without the written approval of the Owner.

Make payment to each subcontractor and supplier within 10 Calendar Days after receipt of payment from the County for Work performed or materials delivered or incorporated into the Project, according to ORC 4113.61, provided that the pay estimate prepared by the Engineer includes Work performed or materials delivered or incorporated into the public improvement by the subcontractor or supplier.

Also require that this contractual obligation be placed in all subcontractor and supplier contracts that it enters into and further require that all subcontractor and suppliers place the same payment obligation in each of their lower tier contracts. If the Contractor, subcontractors, or supplier subject to this provision fail to comply with the 10 Calendar Day requirement, the offending party shall pay, in addition to the payment due, interest in the amount of 18 percent per annum of the payment due, beginning on the eleventh Calendar Day following the receipt of payment from the County and ending on the date of full payment of the payment due plus interest.

Repeated failures to pay subcontractors and suppliers timely pursuant to this subsection will result in a finding by the County that the Contractor is in breach of Contract and subject to all legal consequences that such a finding entails. Further, repeated failures to pay timely pursuant to this subsection will result in a lower evaluation score for the Contractor and those subcontractors who are subject to evaluation by the County.

29. TRAFFIC TO BE MAINTAINED

Unless authorized by the Contract Documents for the Specific Contract, the Contractor shall not close to traffic any bridge, or culvert, or any portion of the highway during the progress of the work. To facilitate the maintaining of traffic, temporary site detours, bypasses, bridges, or culverts may be constructed when provided for by the Contract or authorized by the Engineer. The Engineer must approve any such construction before being put into service. The Contractor shall maintain such temporary construction in the manner necessary to facilitate safe and expeditious flow of traffic, and the Engineer shall be the final judge as to whether or not such temporary construction meets these conditions.

30. ENVIRONMENTAL PROTECTION

Comply with all Federal, State, and local laws and regulations controlling pollution of the environment. Avoid polluting streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, sediments, or other harmful materials, and avoid polluting the atmosphere with particulate and gaseous matter.

Fording of streams is prohibited. Causeways for stream and river crossings or for Work below a bridge are permitted provided:

- a) The causeway is constructed according to 207.03.B.8.b.

b) The causeway complies with the requirements of the 404 Permit the Department obtained for the Project.

c) The Contractor obtains a 404 Permit from the U.S. Army Corps of Engineers if the Department has not obtained such a permit. Obtain the 404 Permit prior to beginning construction of the causeway. The Department does not guarantee that the Contractor will be able to obtain a 404 Permit.

Comply with all current provisions of the Ohio Water Pollution Control Act, (OWPCA), (ORC Chapter 6111). The County will obtain a storm water permit under the OWPCA provisions when the plan work acreage requires a permit. The storm water permit will not cover the Contractor's work outside the Project limits shown on the Plans. Apply for a permit to cover operations outside the Project limits shown on the plans as required by the OWPCA provisions. When the County has not applied for a permit on the Project and a permit is required under the provisions of the OWPCA because of the total area of the Contractor's work, apply for, obtain, and comply with the required permit for both the Work within Project limits and the Contractor's work.

The County has obtained the required permits from the U.S. Army Corps of Engineers and Ohio EPA for Work in the "Waters of the United States" and isolated wetlands under ORC Chapter 6111. Comply with the requirements of these permits.

When equipment is working next to a stream, lake, pond, or reservoir, spill response equipment is required in the event of a hydraulic leak. Do not stockpile fine material next to a stream, lake, pond, or reservoir.

Take precautions to avoid demolition debris and discharges associated with the excavation and hauling of material from entering the stream. Remove any material that does fall into the stream as soon as possible.

When excavating in or adjacent to streams, separate such areas from the main stream by a dike or barrier to keep sediment from entering the stream. Take care during the construction and removal of such barriers to minimize sediment entering the stream.

Accomplish control of ground water and water in excavations in a manner that prevents the degradation of the water quality of any surface water. Install wells and well points with suitable screens and filters where necessary to prevent the continuous pumping of fines. Pump sediment-laden water in a manner to prevent degradation of streams, lakes, ponds, or other areas of water impoundment. Such prevention may involve but is not limited to the means and methods described in Item 207. Use the current version of the *Sediment and Erosion Control Handbook* to plan this work. Use the methods necessary to prevent adverse effects to surface waters as provided in OAC-3745-1-04. The cost of constructing and maintaining these measures is incidental to the Contract.

Contain, collect, characterize and legally dispose of all waste water and sludge generated during the work. Do not mix waste water with storm water. Do not discharge any waste water without the appropriate regulatory permits. Manage waste water and sludge in accordance with ORC Chapter 6111 and all other laws, regulations, permits and local ordinances relating to this waste. Waste water management is incidental to the Work unless otherwise specified in the contract.

Control the fugitive dust generated by the Work according to OAC-3745-17-07(B), OAC-3745-17-08, OAC-3745-15-07, and OAC-3745-17-03 and local ordinances and regulations. In addition, use dust control measures when fugitive dust creates unsafe conditions as determined by the Engineer. Perform this work without additional compensation except for Item 616.

Perform open burning according to 105.16.

31. BARRICADES, LIGHTING AND WATCHMEN

The Contractor at his own expense shall place proper Barricades and other proper Traffic Control Devices along and around all construction where hazards and danger to traffic exists, and shall

take such other precautions as are necessary to protect life and property, and shall place and maintain sufficient Lights at night for protection of the public. Watchmen shall be provided where safety requirements indicate.

32. ALTERNATE PLANS

In the event the County Commissioners elect to advertise for and receive Alternate Plans for the construction or erection of a bridge or structure, the bidder may at his option submit an alternate plan or plans for a different type of structure, or structures than that submitted by the County Engineer. Such plan or plans together with specifications shall be filed in the office of the County Engineer for a period of fifteen (15) days, prior to the date for receiving bids. Such plans and specifications shall show the number of spans, the length of each, the nature, quantity, quality, and size of materials to be used, the length of the structure when completed, and whether there is any patent on the proposed plan, or any part thereof, and if so, on what part thereof.

33. REMOVED MATERIALS

Unless otherwise provided for in the Contract, all existing road or bridge materials taken from the work shall be the property of Athens County. These materials shall be placed by the Contractor at his expense, at or on an area along the side of the road designated by the Engineer, for removal by the County.

34. PATENTS

The Contractor shall indemnify, keep and save harmless the Owner from all liabilities, judgments, costs, damages, and expenses which may in any wise come against the Owner by devices, equipment, or processes furnished, or used in the performance of the work under this Contract, by reason of the use of Patented designs furnished by the Contractor and accepted by the Owner.

In the event that any claim, suit or action at law, or in equity of any kind whatsoever, is made or brought against the Owner involving any such Patents, then the Owner shall have the right to retain from the money due and to become due the Contractor, a sufficient amount of money as shall be considered necessary by the Owner to protect itself against loss until such claim, suit, or action shall have been settled and evidence to that effect shall have been furnished to the satisfaction of the Owner.

35. PREVENTION OF, AND INDEMNIFICATION FOR, ACCIDENTS

The Contractor, during the performance of the work, shall take all necessary precautions and place proper guards, or signs for the prevention of accidents, and shall put up and keep suitable and sufficient lights and other signals; and shall Indemnify and save harmless the County and its officers, agents and employees from all damages and costs, to which they may be put by reason of injury to person or property of another resulting from his negligence, or carelessness in the performances of the work, or in guarding the same, or from any improper materials, implements, or appliances used in its construction, or by, or on account of any act, or omission of the Contractor or his agents. The whole or so much of the moneys due under and by virtue of this Contract as shall be considered necessary by the Owner may, at his option, be retained by the Owner until all suits, or claims for damages as, aforesaid, shall have been settled, and evidences to that effect furnished to the satisfaction of the Owner.

36. INSURANCE AND WORKERS' COMPENSATION

Contractor shall indemnify and save harmless the State and all of its representatives, municipalities, counties, public utilities, any affected railroad or railway company, and any fee owner from whom a

temporary Right-of-Way was acquired for the Project from all suits, actions, claims, damages, or costs of any character brought on account of any injuries or damages sustained by any person or property on account of any negligent act or omission by the Contractor or its subcontractors or agents in the prosecution or safeguarding of the Work.

The Contractor shall procure and maintain insurance for liability for damages imposed by law and assumed under this Contract, of the kinds and in the amounts hereinafter provided from insurance companies authorized to do business in the State by the Ohio Department of Insurance. The cost of insurance is incidental to all contract items. Before the execution of the Contract by the Engineer, furnish to the County a certificate or certificates of insurance in the form satisfactory to the Department demonstrating compliance with this subsection. Provide an insurance certificate or certificates that show that the Contractor's liability and auto policies coverage are not reduced, restricted, or canceled until 30 days written notice has been given to the Department by the insurer.

Mail all certificates and notices to: Athens County Engineer, 16000 Canaanville Rd, Athens Ohio, 45701. Upon request, the Contractor shall furnish the County with a certified copy of each policy, including the provisions establishing premiums.

The types and minimum limits of insurance are as follows:

A. Workers' Compensation Insurance. Comply with all provisions of the laws and rules of the Ohio Bureau of Workers' Compensation covering all operations under Contract with the Department whether performed by it or its subcontractors. In addition, if a portion of the Work is performed from a barge or ship or requires unloading material from a barge or ship on a navigable waterway of the United States, it is the responsibility of the Contractor to arrange coverage for that portion of the Work under the Longshore and Harborworkers' Compensation Act [33 USC Section 901 *et seq.*] and the Jones Act [5 USC Section 751 *et seq.*] and provide proof of coverage to the Department.

B. Commercial General Liability Insurance. The minimum limits for liability insurance are as follows:

General Aggregate Limit - \$2,000,000
Products - Completed Operations
Aggregate Limit \$2,000,000
Personal and Advertising Injury Limit \$1,000,000
Each Occurrence Limit \$1,000,000

Obtain the above minimum coverages through primary insurance or any combination of primary and umbrella insurance. In addition, the Department will require the General Aggregate Limit on a per project basis.

Ensure that the Commercial General Liability Insurance policy names the County of Athens, Engineer, its officers, agents, and employees as additional insureds with all rights to due notices in the manner set out above. Obtain Explosion, Collapse, and Underground (XCU) coverage at the same limits as the commercial general liability insurance policy. In addition, if blasting is to be performed, obtain XCU coverage providing a minimum Aggregate Limit of \$5,000,000 and Each Occurrence Limit of \$1,000,000. Submit proof of insurance, endorsements, and attachments to the Engineer prior to starting the Work.

C. Comprehensive Automobile Liability Insurance. The Comprehensive Automobile Liability policy shall cover owned, non-owned, and hired vehicles with minimum limits as follows:

Bodily Injury and Property Damage Liability Limit
Each Occurrence \$1,000,000

Insurance coverage in the minimum amounts set forth neither relieves the Contractor from liability in excess of such coverage, nor precludes the County from taking such other actions as are available to it under any other provisions of this Contract or otherwise in law.

Clearly set forth all exclusions and deductible clauses in all proof of insurance submitted to the County. The Contractor is responsible for the deductible limit of the policy and all exclusions consistent with the risks it assumes under this Contract and as imposed by law.

If the Contractor provides evidence of insurance in the form of certificates of insurance, valid for a period of time less than the period during which the Contractor is required by terms of this Contract, then the County will accept the certificates, but the Contractor is obligated to renew its insurance policies as necessary. Provide new certificates of insurance from time to time, so that the County is continuously in possession of evidence that the Contractor's insurance is according to the foregoing provisions.

If the Contractor fails or refuses to renew its insurance policies or the policies are canceled or terminated, or if aggregate limits have been impaired by claims so that the amount available is under the minimum aggregate required, or modified so that the insurance does not meet the requirements of 107.12.C, the County may refuse to make payment of any further monies due under this Contract or refuse to make payment of monies due or coming due under other contracts between the Contractor and the County. The County in its sole discretion may use monies retained pursuant to this subsection to renew or increase the Contractor's insurance as necessary for the periods and amounts referred to above. Alternatively, should the Contractor fail to comply with these requirements, the County may default the Contractor and call upon the Contractor's Surety to remedy any deficiencies. During any period when the required insurance is not in effect, the Engineer may suspend performance of the Contract. If the Contract is so suspended, the Contractor is not entitled to additional compensation or an extension of time on account thereof.

Nothing in the Contract Documents and insurance requirements is intended to create in the public or any member thereof a third party beneficiary hereunder, nor is any term and condition or other provision of the Contract intended to establish a standard of care owed to the public or any member thereof.

37. CLEANING UP

Upon completion of the work all surfaces disturbed during the work shall be restored in a satisfactory manner, and all tools, plant and equipment, and other property belonging to the Contractor, shall be removed and the site of the work left clear, and in a condition equal to that existing prior to the beginning of work under the Contract.

38. LUMP SUM PRICES

Where work is to be paid for by the Lump Sum, it is hereby, expressly agreed that in said Lump Sum shall be included all materials, labor, tools, and equipment required to fully complete the work, notwithstanding, that while the work may be fully shown on the Drawings, it may be partially described in other parts of the Contract Documents and vice versa.

39. PARTIAL PAYMENTS

The Contractor will be paid in accordance with Ohio Revised Code Sections 153.12, 153.13, and 153.14

40. FINAL ESTIMATE

The Engineer shall, as soon as practicable after the final acceptance of the work done under this Contract, make a Final Estimate of the amount of the work done, and the value thereof. Such Final Estimate shall be approved by the Owner, after which, the Owner, shall pay the sum so found to be due hereunder, after deducting there from, all previous payments, and all amount to be withheld under the Contract. All prior partial Estimates may be subjected to correction in the Final Estimate and payment.

41. UNDERGROUND UTILITIES

If the construction area may involve underground utility facilities, the Contractor, at least two working days prior to commencing construction operations in the construction area, shall cause notice to be given to the registered underground utility protection services and the owners of any underground utility facilities shown on the plans. The notice shall be in writing, by telephone, or in person. If the contractor gives written notice, it shall be by certified mail, return receipt requested. Identity and Location of Utilities are specified in the plans.

42. ADDITIONAL SPECIFICATIONS INCORPORATED HEREIN BY REFERENCE

Construction and Materials Specifications as set forth in the latest issue of the "State of Ohio, Department of Transportation, Construction and Materials Specifications" (ODOT CMS) and all supplemental specifications thereto, not otherwise provided for in these General Specifications, are incorporated herein by reference, and made a part of these General Specifications. Where a conflict exists between these specifications and the ODOT CMS, these specifications and the project plans shall govern.

The terms "engineer" or "county" shall be substituted as appropriate where the ODOT CMS refers to the "department".

43. GUARANTEE

The Contractor shall guaranty that all materials and equipment furnished and work performed under this contract are free from all defects for a period of one (1) year from the date of final payment. The provisions of Paragraphs 18 and 19 shall apply to any defect in the work, materials, apparatus or workmanship of the project or failure in the operation or performance of any part thereof or guarantees required hereunder determined by the Engineer to have occurred, developed or appeared during the guaranty period. Ten percent (10%) of the Performance Bond shall remain in full force and effect through the guaranty period and until all defects detected during the guaranty period have been corrected to the satisfaction of the Owner. The Owner shall evidence release of the Performance Bond in writing and the Bond shall be in effect until said release has been obtained from the Owner.

The Contractor shall be required to show proof of insurance coverage meeting the requirements of Paragraph 31 prior to performing any work on the project during the guaranty period.

44. RELEASE OF OWNER

The end of the guaranty period shall be and shall operate as a release by the Contractor of all claims against and all liability of the Owner by reason of this Contract, and all things done or performed by the Contractor there under.

45. UNBALANCED BIDDING

Bid all items correctly and price each quantity as indicated in the Bid Documents. The County will reject a mathematically unbalanced bid if the bid is also materially unbalanced. A mathematically unbalanced bid is one that contains lump sum or unit price items that do not include reasonable labor, equipment, and material costs plus a reasonable proportionate share of the bidder's overhead costs, other indirect costs, and anticipated profit. A bid is materially unbalanced when the County determines that an award to the bidder submitting a mathematically unbalanced bid will not result in the lowest ultimate cost to the County.

46. DISPUTES AND CLAIMS

When a contractor (sub-contractors must pursue dispute through the contractor) feels there is additional work beyond the scope of the project due to changing site conditions or other unforeseen cause, he shall address his concern to the on site project representative who will contact the project engineer for on site dispute resolution. If an on site resolution cannot be reached, the contractor shall submit the issue in writing to the County Engineer who will investigate and meet with the contractor to try to resolve the issue. The Engineer will notify the contractor in writing of his decision and the contractor may accept the decision or he may file a claim with the appropriate Court.

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

DEEP HOLLOW ROAD EWP

ATHENS COUNTY, OHIO

SECTION V

State of Ohio Wage Rates

*For Review Only
Official Bid Packet available at
Athens County Engineer's Office*

Prevailing Wage Determination Cover Letter

County: ATHENS
Determination Date: 04/30/2021
Expiration Date: 07/30/2021

THE FOLLOWING PAGES ARE PREVAILING RATES OF WAGES ON PUBLIC IMPROVEMENTS FAIRLY ESTIMATED TO BE MORE THAN THE AMOUNT IN O.R.C. SEC. 4115.03 (b) (1) or (2), AS APPLICABLE.

Section 4115.05 provides, in part: "Where contracts are not awarded or construction undertaken within ninety days from the date of the establishment of the prevailing wages, there shall be a redetermination of the prevailing rate of wages before the contract is awarded." The expiration date of this wage schedule is listed above for your convenience only. This wage determination is not intended as a blanket determination to be used for all projects during this period without prior approval of this Department.

Section 4115.04, Ohio Revised Code provides, in part: "Such schedule of wages shall be attached to and made a part of the specifications for the work, and shall be printed on the bidding blanks where the work is done by contract..."

The contract between the letting authority and the successful bidder shall contain a statement requiring that mechanics and laborers be paid a prevailing rate of wage as required in Section 4115.06, Ohio Revised Code.

The contractor or subcontractor is required to file with the contracting public authority upon completion of the project and prior to final payment therefore an affidavit stating that he has fully complied with Chapter 4115 of the Ohio Revised Code.

The wage rates contained in this schedule are the "Prevailing Wages" as defined by Section 4115.03, Ohio Revised Code (the basic hourly rates plus certain fringe benefits). These rates and fringes shall be a minimum to be paid under a contract regulated by Chapter 4115 of the Ohio Revised Code by contractors and subcontractors. The prevailing wage rates contained in this schedule include the effective dates and wage rates currently on file. In cases where future effective dates are not included in this schedule, modifications to the wage schedule will be furnished to the Prevailing Wage Coordinator appointed by the public authority as soon as prevailing wage rates increases are received by this office.

"There shall be posted in a prominent and accessible place on the site of work a legible statement of the Schedule of Wage Rates specified in the contract to the various classifications of laborers, workmen, and mechanics employed, said statement to remain posted during the life of such contract." Section 4115.07, Ohio Revised Code.

Apprentices will be permitted to work only under a bona fide apprenticeship program if such program exists and if such program is registered with the Ohio Apprenticeship Council.

Section 4115.071 provides that no later than ten days before the first payment of wages is due to any employee of any contractor or subcontractor working on a contract regulated by Chapter 4115, Ohio Revised Code, the contracting public authority shall appoint one of his own employees to act as the prevailing wage coordinator for said contract. The duties of the prevailing wage coordinator are outlined in Section 4115.071 of the Ohio Revised Code.

Section 4115.05 provides for an escalator in the prevailing wage rate. Each time a new rate is established, that rate is required to be paid on all ongoing public improvement projects.

A further requirement of Section 4115.05 of the Ohio Revised Code is: "On the occasion of the first pay date under a contract, the contractor shall furnish each employee not covered by a collective bargaining agreement or understanding between employers and bona fide organizations of Labor with individual written notification of the job classification to which the employee is assigned, the prevailing wage determined to be applicable to that classification, separated into the hourly rate of pay and the fringe payments, and the identity of the prevailing wage Coordinator appointed by the public authority. The contractor or subcontractor shall furnish the same notification to each affected employee every time the job classification of the employee is changed."

Work performed in connection with the installation of modular furniture may be subject to prevailing wage.

THIS PACKET IS NOT TO BE SEPARATED BUT IS TO REMAIN COMPLETE AS IT IS SUBMITTED TO YOU. (Reference guidelines and forms are included in this packet to be helpful in the compliance of the Prevailing Wage law.)

wh1500

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Millwright Local 1755

Change # : LCN01-2010mmLoc1755

Craft : Carpenter Effective Date : 07/21/2010 Last Posted : 07/21/2010

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Millwright	\$30.50		\$6.15	\$6.25	\$1.10	\$0.00	\$1.45	\$0.00			\$45.45	\$60.70
Apprentice	Percent											
1st year	60.00	\$18.30	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$27.25	\$36.40
2nd year 1st 6 months	65.00	\$19.82	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$28.78	\$38.69
2nd year 2nd 6 months	70.00	\$21.35	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$30.30	\$40.98
3rd year 1st 6 months	75.00	\$22.87	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$31.82	\$43.26
3rd year 2nd 6 months	80.00	\$24.40	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$33.35	\$45.55
4th year 1st 6 months	85.00	\$25.92	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$34.88	\$47.84
4th year 2nd 6 months	90.00	\$27.45	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$36.40	\$50.13
8th 6 months	95.00	\$28.97	\$6.15	\$0.25	\$1.10	\$0.00	\$1.45	\$0.00			\$37.93	\$52.41

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

5 Journeymen to 2 Apprentice employed
3 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ATHENS, WASHINGTON

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter & Piledriver SC District Hwy

Change # : LCN01-2020fbLoc200

Craft : Carpenter Effective Date : 05/07/2020 Last Posted : 05/07/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	\$29.71		\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$49.19	\$64.04
Piledriver	\$29.07		\$6.57	\$7.78	\$0.36	\$0.00	\$1.51	\$0.10	\$0.00	\$0.00	\$45.39	\$59.93
Apprentice	Percent											
1st 6 months	60.00	\$17.83	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$37.31	\$46.22
2nd 6 months	65.00	\$19.31	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$38.79	\$48.45
3rd 6 months	70.00	\$20.80	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$40.28	\$50.68
4th 6 months	75.00	\$22.28	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$41.76	\$52.90
5th 6 months	80.00	\$23.77	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$43.25	\$55.13
6th 6 months	85.00	\$25.25	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$44.73	\$57.36
7th 6 months	90.00	\$26.74	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$46.22	\$59.59
8th 6 months	95.00	\$28.22	\$7.50	\$9.58	\$0.40	\$0.00	\$1.88	\$0.12	\$0.00	\$0.00	\$47.70	\$61.82

Special Calculation Note : Other is UBC National Fund

Ratio :

1 Journeymen to 1 Apprentice

An employer shall have the right to employ one (1) Apprentice for one (1) Journeyman Carpenter in its employment for the first Apprentice employed, and 1 (1) Apprentice for two (2) Journeyman Carpenter for additional Apprentices employed.

Thereafter, every third additional carpenter hired shall be an apprentice, if available, and if practical for the type of work being performed.

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GUERNSEY, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING, MADISON, MARION, MEIGS, MORGAN, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, ROSS, SCIOTO, UNION, VINTON, WASHINGTON

Special Jurisdictional Note : **Highway Construction, Airport Construction, Heavy Construction

but not limited to: (Tunnels, subways, drainage projects, flood control, reservoirs). Railroad Construction, Sewer Waterworks & Utility Construction but not limited to: (storm sewers, waterlines, gaslines). Industrial & Building site, Power Plant, Amusement Park, Athletic stadium site, Sewer and Water Plants. When the contractor furnishes the necessary underwater gear for the diver, the diver shall be paid one and one half (1 & 1/2) times the journeyman rate for the time spent in the water.

Details :

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter, Pile Driver & Floorlayer Local 356 SC District B

Change # : LCN01-2020fbLoc356

Craft : Carpenter Effective Date : 05/07/2020 Last Posted : 05/07/2020

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter	\$28.25		\$7.50	\$11.78	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$51.60	\$65.73
Pile Driver	\$29.71		\$7.50	\$11.78	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$53.06	\$67.91
Apprentice paid at % of each class above plus fringes listed	Percent											
1st 6 Months	60.00	\$16.95	\$7.50	\$1.00	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$29.52	\$38.00
2nd 6 Months	65.00	\$18.36	\$7.50	\$1.00	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$30.93	\$40.11
3rd 6 Months	70.00	\$19.77	\$7.50	\$2.00	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$33.35	\$43.23
4th 6 Months	75.00	\$21.19	\$7.50	\$2.00	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$34.76	\$45.35
5th 6 Months	80.00	\$22.60	\$7.50	\$2.00	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$43.71	\$55.01
6th 6 Months	85.00	\$24.01	\$7.50	\$10.10	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$45.68	\$57.69
7th 6 Months	90.00	\$25.42	\$7.50	\$10.66	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$47.65	\$60.37
8th 6 Months	95.00	\$26.84	\$7.50	\$11.22	\$0.38	\$0.00	\$3.47	\$0.22	\$0.00	\$0.00	\$49.63	\$63.05

Special Calculation Note : Other is UBC National Fund

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ATHENS, HOCKING, VINTON, WASHINGTON

Special Jurisdictional Note :

Details :

CARPENTERS duties shall include but not limited to the milling, fashioning, joining, assembling, erecting, fastening, or dismantling of scaffolding and of material of wood, plastic, metal, fiber, cork and composition,

and all other substitute materials. The handling, cleaning, erecting, installing and dismantling of machinery, equipment and all materials used by carpenters.

The building and setting of all concrete forms and decking, and dismantling the same; the setting of templates for anchor bolts for structural members and for machinery, and the placing, leveling and bracing of these bolts; the making of all forms for bulkheads, figures, post, balusters and ornaments. The erection and installation of cooling towers assembled onsite. The building of all barricades and handling of rough lumber and drywall. The installation of all required blocking and all toilet accessories, including but not limited to grab bars, napkin dispensers and receptacles, mirrors and soap dispensers. The installation of metal studs and the welding of studs and other fastenings to receive material being applied by carpenters. The installation of all material used in drywall construction such as plasterboard, transite and other composition boards. The installation of carpet, artificial turf, wood and Resilient floors shall consist of and include the laying of all special designs of wood, wood block, wood composition, cork, linoleum, asphalt, mastic, plastic and rubber tile, whether nailed or laid in, or with linoleum paste or glue compositions. The installation of garage and overhead doors. The installation of fixtures, cabinets, shelving, racks, louvers, etc. The assembling and setting of all seats in theaters, halls, churches, schools, auditoriums, grandstands and other buildings. Our claim of jurisdiction, therefore, extends over the following subdivisions of the trade. Carpenters and Joiners; Bridge, Dock and Wharf Carpenters, Divers, Underpinners, Timbermen and Core Drillers; Shipwrights, Boat Builders, Ship Carpenters, Joiners and Caulkers, Cabinet Makers, Bench Hands, Stair Builders; Millmen; Wood and Resilient Floor Layers and Finishers; Carpet Layers; Shinglers; Siders; Insulators; Acoustic and Drywall Applicators; Shorers and House Movers; Loggers, Lumber and Sawmill Workers; Furniture Workers; Reed and Rattan Workers; Shingle Weavers; Casket and Coffin Makers; Box Makers; Railroad Carpenters; and Car Builders, regardless of material used, and all those engaged in the operation of woodworking or other machinery required in the fashioning, milling or manufacturing of products used in the trade, or engaged as helpers to any of the above divisions or subdivisions, and the handling, erecting and installing of material on any of the above divisions or subdivisions; burning welding, rigging and the use of any instrument or tool for layout work incidental to the trade. When the term "Carpenter" and "Joiner" is used, it shall mean all the subdivisions of the trade.

PILEDRIIVER:

Where piling is used in the construction and repair of all wharves, docks, piers, trestles, caissons, cofferdams, the erection of all sea walls and breakwaters.

The placing of all walling, bumper guards of wood or metal. The framing, boring, drilling or burning of all holes in the same, all tie and hog rods in connection with Piledrivers work.

The driving, bracing, plumbing, cutting-off and capping of all piling whether wood, steel sheeting, metal pipe piling, composite or concrete.

The heading and splicing of wood piling and the making of woodsheet piling, The welding, cutting or burning of any metal and wood piling and shoring and underpinning in connection with Piledriver work.

The loading and unloading of all piling and other material used in connection with Piledrivers work.

The loading, unloading, erecting, framing, dismantling, moving and handling of all drivers, derrick, cranes and other piledriving equipment used in the work. Drilling in piling or drilled in caissons where a steel liner is used.

All machinery used for handling spuds or anchors on floating equipment used in our work shall be operated by our members. Where swing lines or derricks are used, members shall be used as watchmen.

All underwater and marine work on all bulkheads, wharves, docks, shipyards, caissons, piers, bridges, pipeline work, viaducts, marine cable and trestles, as well as salvage and reclamation work where divers are employed. All clamming work that is done by floating derricks.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor Hwy 3

Change # : LCN01-2021fbLocalHwy3

Craft : Laborer Group 1 Effective Date : 05/01/2021 Last Posted : 04/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$33.27		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.22	\$61.86
Group 2	\$33.44		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.39	\$62.11
Group 3	\$33.77		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.72	\$62.61
Group 4	\$34.22		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$46.17	\$63.28
Watch Person	\$26.00		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$37.95	\$50.95
Apprentice	Percent											
0-1000 hrs	60.00	\$19.96	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$31.91	\$41.89
1001-2000 hrs	70.00	\$23.29	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$35.24	\$46.88
2001-3000 hrs	80.00	\$26.62	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$38.57	\$51.87
3001-4000 hrs	90.00	\$29.94	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$41.89	\$56.86
More than 4000 hrs	100.00	\$33.27	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.22	\$61.86

Special Calculation Note : Watchmen have no Apprentices. Tunnel Laborer rate with air-pressurized add \$1.00 to the above wage rate.

Ratio :

- 1 Journeymen to 1 Apprentice
- 3 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN,

MORROW, MUSKINGUM, NOBLE, PAULDING,
PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM,
RICHLAND, ROSS, SCIOTO, SENECA, SHELBY,
TUSCARAWAS, UNION, VAN WERT, VINTON,
WARREN, WASHINGTON, WAYNE, WILLIAMS,
WYANDOT

Special Jurisdictional Note : Hod Carriers and Common Laborers - Heavy, Highway, Sewer, Waterworks, Utility, Airport, Railroad, Industrial and Building Site, Sewer Plant, Waste Water Treatment Facilities Construction

Details :

Group 1

Laborer (Construction); Plant Laborer or Yardman, Right-of-way Laborer, Landscape Laborer, Highway Lighting Worker, Signalization Worker, (Swimming) Pool Construction Laborer, Utility Man, *Bridge Man, Handyman, Joint Setter, Flagperson, Carpenter Helper, Waterproofing Laborer, Slurry Seal, Seal Coating, Surface Treatment or Road Mix Laborer, Riprap Laborer & Grouter, Asphalt Laborer, Dump Man (batch trucks), Guardrail & Fence Installer, Mesh Handler & Placer, Concrete Curing Applicator, Scaffold Erector, Sign Installer, Hazardous Waste (level D), Diver Helper, Zone Person and Traffic Control.

*Bridge Man will perform work as per the October 31, 1949, memorandum on concrete forms, by and between the United Brotherhood of Carpenters and Joiners of America and the Laborers' International Union of North America, which states in; "the moving, cleaning, oiling and carrying to the next point of erection, and the stripping of forms which are not to be re-used, and forms on all flat arch work shall be done by members of the Laborers' International Union of North America"

Group 2

Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air), Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous Waste (level B), ***Lead Abatement, Hazardous Waste (level C)

***Includes the erecting of structures for the removal, including the encapsulation and containment of Lead abatement process.

Group 3

Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarnier, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

Group 4

Miner,Welder, Gunitite Nozzle Person

A.) The Watchperson shall be responsible to patrol and maintain a safe traffic zone including but not limited to barrels, cones, signs, arrow boards, message boards etc.

The responsibility of a watchperson is to see that the equipment, job and office trailer etc. are secure.

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor Local 83

Change # : LCR01-2020fbLoc83

Craft : Laborer Effective Date : 06/01/2020 Last Posted : 05/21/2020

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$37.15		\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$48.64	\$67.21
Group 2	\$37.40		\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$48.89	\$67.59
Group 3	\$37.55		\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$49.04	\$67.82
Apprentice	Percent											
0-1000 hrs	60.00	\$22.29	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$33.78	\$44.92
1001-2000 hrs	70.00	\$26.00	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$37.49	\$50.50
2001-3000 hrs	80.00	\$29.72	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$41.21	\$56.07
3001-4000 hrs	90.00	\$33.44	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$44.92	\$61.64
More than 4000 hrs	100.00	\$37.15	\$7.00	\$3.80	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$48.64	\$67.21

Special Calculation Note : Other is LEAD-CAP

Ratio :

1 Journeymen to 1 Apprentice
4 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, GALLIA, HIGHLAND,
JACKSON, LAWRENCE, MEIGS, PIKE, ROSS,
SCIOTO, VINTON

Special Jurisdictional Note :

Details :

Group 1

Building & Construction Laborers, Signalman, Plaster Tenders, Carpenter Tenders, Mason Tenders, Mortar Mixers, Pipe Layers, Bottom Man, Sheeting & Shoring Men, Watchmen & Waterboy.

Group 2

Air & Machine Driver Tool Operators, Hand Spikers, Chain Saws, Powered Concrete Buggies, Asphalt Rakers & Smoothers, Form Setters (Street & Highway) Burning & Cutting Torches

Group 3

Gunnite Machine Operator, Gunnite Nozzle Man, Powder Men & Blasters, Miners (Tunnel & Caisson)
Muckers (Tunnel & Caisson).

All Hazardous & High Work performed in excess of 25 ft. above solid base shall pay .25 per hour above Classification.

In the erection, alteration, repair or demolition of reinforced concrete chimneys, masonry chimneys, silos, and furnaces, the following rates shall apply:

25- 100 ft. \$1.00 per hour/over base rate 150-200 ft. \$1.50 per hour/over base rate
100-150 ft. \$1.25 per hour/over base rate 200-250 ft. \$1.75 per hour/over base rate
Over 250 ft. \$2.00 per hour/over base rate

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

Prevailing Wage Rate Skilled Crafts

Name of Union: Operating Engineers - HevHwy Zone II

Change # : LCN01-2020fbLoc18hevhwyl

Craft : Operating Engineer Effective Date : 05/14/2020 Last Posted : 05/14/2020

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Class 1	\$38.24		\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.69	\$72.81
Class 2	\$38.12		\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.57	\$72.63
Class 3	\$37.08		\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$52.53	\$71.07
Class 4	\$35.90		\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$51.35	\$69.30
Class 5	\$30.44		\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$45.89	\$61.11
Class 6	\$38.49		\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.94	\$73.18
Apprentice	Percent											
1st Year	50.00	\$19.12	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$34.57	\$44.13
2nd Year	60.00	\$22.94	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$38.39	\$49.87
3rd Year	70.00	\$26.77	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$42.22	\$55.60
4th Year	80.00	\$30.59	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$46.04	\$61.34
Field Mech Trainee Class 2												
1st year	49.85	\$19.06	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$34.51	\$44.04
2nd year	59.80	\$22.87	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$38.32	\$49.75
3rd year	69.77	\$26.68	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$42.13	\$55.47
4th year	79.75	\$30.50	\$8.51	\$6.00	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$45.95	\$61.19

Special Calculation Note : Other: Education & Safety Fund is \$0.09 per hour.

Ratio :

For every (3) Operating Engineer Journeymen employed by the company, there may be employed (1) Registered Apprentice or Trainee Engineer through the referral when they are available. An Apprentice, while employed as part of a crew per Article VIII, paragraph 65 will not be subject to the apprenticeship ratios in this collective bargaining agreement

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS,

MADISON, MARION, MEIGS, MERCER, MIAMI,
MONROE, MONTGOMERY, MORGAN,
MORROW, MUSKINGUM, NOBLE, OTTAWA,
PAULDING, PERRY, PICKAWAY, PIKE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK,
TUSCARAWAS, UNION, VAN WERT, VINTON,
WARREN, WASHINGTON, WAYNE, WILLIAMS,
WOOD, WYANDOT

Special Jurisdictional Note :

Details :

**Apprentices will receive a 10% increase on top of the percentages listed above provided they are operating mobile equipment. Mechanic Trainees will receive 10% increase if they are required to have CDL.

Class 1 - Air Compressors on Steel Erection; Barrier Moving Machine; Boiler Operators, on Compressors or Generators, when mounted on a rig; Cableways, Combination Concrete mixers & Towers; Concrete Pumps; Concrete Plants (over 4 yd capacity); Cranes (all types, including Boom Trucks, Cherry Pickers); Derricks; Draglines, Dredgers (dipper, clam or suction); Elevating Graders or Euclid Loaders; Floating Equipment (all types); Gradalls, Helicopter Crew (Operator- hoist or winch); Hoes (all types); Hoisting Engines, on shaft or tunnel work; Hydraulic Gantry (lifting system); Industrial - Type Tractors; Jet Engine Dryers (D8 or D9), Diesel Tractors; Locomotives (standard gage); Maintenance Operators (class A); Mixers, paving (single or double drum); Mucking Machines; Multiple Scrapers; Piledriving Machines (all types); Power Shovels, Prentice Loader; Quad 9 (double pusher); Rail Tamper (with automatic lifting and aligning device); Refrigerating Machines (freezer operation); Side Booms; Slip Form Pavers; Tower Dericks; Tree Shredders; Truck Mounted Concrete Pumps; Tug Boats, Tunnel Machines, and /or Mining Machines; Wheel Excavators. Rough Terrain Fork-lift with Winch/Hoist, Compact Cranes, track rubber over 4,000 pound capacity, self-erecting cranes; stationary, track or truck (all configurations) Bucket trench machines (over 24 inches wide).

Class 2 - Asphalt Pavers; Automatic Subgrade Machines, self-propelled (CMI-type); Bobcat-type and /or skid steer loader with hoe attachment greater than 7000 lbs.; Boring Machine Operators (more than 48 inches); Bulldozers; Endloaders; Hydro Mining Machine; Kolman-type Loaders (production type-dirt); Lead Greasemen; Maintenance Operators, Class B (Portage and Summit Counties only); Pettibone-Rail Equipment; Power Graders; Power Scrapers; Push Cats; Lighting and Traffic Signal Installation Equipment includes all groups or classifications; Trench Machines (24inch wide and under); Vermeer Type Concrete saw. Material Transfer Equipment (Shuttle buggy) Asphalt; All rotomills,grinders and planers of all types. Horizontal Directional Drill (Over 50,000 ft.lbs.thrust and over)

Class 3 - A-Frames; Air Compressors, on tunnel work (low Pressure); Asphalt Plant Engineers; Bobcat-type and/or skid steer loader with or without attachments; Power Boilers (15 lbs pressure and over); Highway Drills (all types); Rollers, asphalt; Pump Operators (installing or operating well Points); Hydro Vac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Pumps (4 inch and over discharge); Railroad Tie Inserter/Remover; Rotator (lime-soil Stabilizer), Switch & Tie Tampers (without lifting and aligning device); Locomotives (narrow gage); Mixers, concrete (more than one bag capacity); Mixers, one bag capacity (side loader); Utilities Operators, (small equipment); Welding Machines; Material hoist/elevators. Articulating/straight bed end dumps if assigned (minus \$4.00 per hour).

Class 4 -Ballast Re-locator; Backfillers, Batch Plants; Bar and Joint Installing Machines; Boring Machine Operators (48 inch or less); Bull Floats; Burlap and Curing Machines; Concrete Plants (capacity 4 yd and under); Conveyors (highway); Concrete Saws (multiple); Crushers; Deckhands; Farm type tractors, with

attachments (highway), except masonry; Finishing Machines; Firemen, Floating Equipment (all types); Fork Lifts (highway); Form Trenchers; Hydro Hammers; Hydro Seeders; Pavement Breakers; Plant Mixers; Post Drivers; Post Hole Diggers (power auger); Power Brush Burners; Power Form Handling Equipment; Road Widening Trenchers; Rollers (brick, grade, macadam); Self-Propelled Power Spreaders; Self-Propelled Sub-Graders; Tractors; pulling sheepsfoot rollers or graders; Steam Firemen; Vibratory Compactors, with integral power

Class 5 - Compressors (portable, Sewer, Heavy and Highway); Generators; Inboard-Outboard Motor Boat Launches; Masonry Fork Lifts; Oilers/Helpers; Power Driven Heaters; Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalmen; Drum Fireman (in Asphalt Plant); Oil Heaters (Asphalt Plant); Tire Repairmen; VAC/ALLS; Fueling and greasing (Primary Operator with Specialized CDL Endorsement Add \$3.00/ hour), compact cranes: track or rubber under 4,000 pounds.

Class 6 – Master Mechanic

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Prevailing Wage Rate Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 1
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : OCRO1-2019fbBldgHevHwy

Craft : Truck Driver Effective Date : 09/11/2019 Last Posted : 09/11/2019

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Truck Driver CLASS 1 4 wheel service, dump, and batch trucks, Oil Distributor - Asphalt Distributor-Tandems	\$28.04		\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.14	\$57.16
Apprentice	Percent											
First 6 months	80.00	\$22.43	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.53	\$48.75
7-12 months	85.00	\$23.83	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.93	\$50.85
13-18 months	90.00	\$25.24	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.34	\$52.95
19-24 months	95.00	\$26.64	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.74	\$55.06
25-30 months	100.00	\$28.04	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.14	\$57.16

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN,

HARRISON, HENRY, HIGHLAND, HOCKING,
HOLMES, HURON, JACKSON, JEFFERSON,
KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN
WERT, VINTON, WARREN, WASHINGTON,
WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

** Asphalt - Oil spray bar man when operating from cab shall receive \$0.20 cents per hour above their Basic Hourly Rate.

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Prevailing Wage Rate

Skilled Crafts

Name of Union: Truck Driver Bldg & HevHwy Class 2
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCRO1-2019-fbBldgHevHwy

Craft : Truck Driver Effective Date : 10/16/2019 Last Posted : 10/16/2019

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Truck Driver CLASS 2 Tractor Trailer-Semi Tractor Trucks-Pole Trailers-Ready Mix Trucks-Fuel Trucks- Asphalt-Oil Spray bar men- 5 Axle & Over -Belly Dumps-End Dumps-Articulated Dump Trucks- Low boys-Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation-Truck Mechanics (when needed)	\$28.46		\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.56	\$57.79
Apprentice	Percent											
First 6 months	80.00	\$22.77	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.87	\$49.25
7-12 months	85.00	\$24.19	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.29	\$51.39
13-18 months	90.00	\$25.61	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.71	\$53.52
19-24 months	95.00	\$27.04	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.14	\$55.66
25-30 months	100.00	\$28.46	\$7.00	\$7.90	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.56	\$57.79

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA,
 ATHENS, AUGLAIZE, BELMONT, BROWN,
 BUTLER, CARROLL, CHAMPAIGN, CLARK,
 CLERMONT, CLINTON, COLUMBIANA,
 COSHOCTON, CRAWFORD, DARKE, DEFIANCE,
 DELAWARE, ERIE, FAIRFIELD, FAYETTE,
 FRANKLIN, FULTON, GALLIA, GREENE,
 GUERNSEY, HAMILTON, HANCOCK, HARDIN,

HARRISON, HENRY, HIGHLAND, HOCKING,
HOLMES, HURON, JACKSON, JEFFERSON,
KNOX, LAWRENCE, LICKING, LOGAN, LORAIN,
LUCAS, MADISON, MAHONING, MARION,
MEDINA, MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, OTTAWA, PAULDING,
PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE,
PUTNAM, RICHLAND, ROSS, SANDUSKY,
SCIOTO, SENECA, SHELBY, STARK, SUMMIT,
TRUMBULL, TUSCARAWAS, UNION, VAN
WERT, VINTON, WARREN, WASHINGTON,
WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

** Asphalt - Oil spray bar man when operating from cab shall receive \$0.20 cents per hour above their Basic Hourly Rate.

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DEEP HOLLOW ROAD EWP

ATHENS COUNTY, OHIO

SECTION VI

**NRCS CONSTRUCTION AND
MATERIAL SPECIFICATIONS**

*For Review Only
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Athens County Engineer's Office*

INDEX OF CONSTRUCTION AND MATERIAL SPECIFICATIONS

<u>SPEC. NO.</u>	<u>CONSTRUCTION SPECIFICATIONS</u>	<u>MATERIAL SPECIFICATIONS</u>
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5	Pollution Control	522 Aggregates for Portland Cement Concrete
6	Seeding, Sprigging, and Mulching	523 Rock for Riprap
8	Mobilization and Demobilization	531 Portland Cement
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11	Removal of Water	533 Chemical Admixtures for Concrete
21	Excavation	534 Concrete Curing Compound
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Construction Specification 4—Channel Clearing and Shaping

1. Scope

The work consists of clearing designated areas by the removal and disposal of trees, logs, stumps, shrubs, brush, and rubbish, and the shaping of the channel.

2. Protection of existing vegetation

Trees and other vegetation designated to remain undisturbed shall be protected from damage throughout the duration of the construction period. Any damages resulting from the contractor's operations or neglect shall be repaired by the contractor.

Earthfill, stockpiling of materials, vehicle or equipment parking, and excessive foot or vehicle traffic shall not be allowed within the drip line of vegetation designated to remain in place. Vegetation damaged by any of these or similar actions shall be replaced with viable vegetation of the same species, similar condition, and like size unless otherwise approved by the contracting officer.

Any cuts, skins, scrapes, or bruises to the bark of the vegetation shall be carefully trimmed and local nursery accepted procedures used to seal damaged bark.

Any limbs or branches 0.5 inch or larger in diameter that are broken, severed, or otherwise seriously damaged during construction shall be cut off at the base of the damaged limb or branch flush with the adjacent limb or tree trunk.

All roots 1 inch or larger in diameter that are cut, broken, or otherwise severed during channel shaping shall have the end smoothly cut perpendicular to the root. Roots exposed during channel shaping operations shall be covered with moist soil as soon as possible to prevent roots from drying out.

3. Marking

The limits of the area(s) to be cleared and shaped are marked by stakes, flags, paint, tree markings, or other suitable methods or as specified in section 8 of this specification, or they will be shown on the drawings. Trees to remain standing, undisturbed, and uninjured are designated by special markings.

4. Clearing

Trees and other vegetation marked for clearing shall be cut off as near the ground surface as conventional tools and equipment normally permit. All trees not marked for preservation and all snags, logs, brush, shrubs, stumps, and rubbish shall be cleared from within the area limits identified.

5. Disposal

All woody material, vegetation, and rubbish resulting from clearing from designated areas shall be disposed of at the locations and in a manner shown on the drawings, or as specified in section 8 of this specification.

6. Shaping

The channel bottom and side slopes shall be shaped as shown on the drawings. The resulting shaped channel surface shall be reasonably smooth. Material excavated during the channel shaping operation shall be removed from the channel and disposed of as specified in section 8 of this specification.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established by the contract, the designated cleared and shaped area is measured and the area determined to the nearest 0.1 acre. Payment for clearing and shaping is made at the contract unit price for the item and shall constitute full compensation for all labor, equipment, tools, applicable permits and associated fees for burning and disposal of refuse, and all other items necessary and incidental to the satisfactory completion of the work.

Method 2—For items of work for which specific unit prices are established by the contract, the length of the cleared and shaped channel designated is measured to the nearest 100 feet. Payment for clearing and shaping is made at the contract unit price for the item and shall constitute full compensation for all labor, equipment, tools, applicable permits and associated fees for burning and disposal of refuse, and all other items necessary and incidental to the satisfactory performance of the work.

Method 3—For items of work for which specific unit prices are established by the contract, the cleared and shaped area(s) is measured and the area determined to the nearest 0.1 acre. The designated cleared and shaped area(s) is determined from the measured width at representative sections and the distance between the sections. Payment for clearing and shaping is made at the contract unit price for the item and shall constitute full compensation for all labor, equipment, tools, applicable permits and associated fees for burning and disposal of refuse, and all other items necessary and incidental to the satisfactory completion of the work.

Method 4—For items of work for which specific lump sum prices are established by the contract, the extent of clearing and shaping is not measured or determined for payment. Payment for clearing and shaping is made at the contract lump sum price for the item and shall constitute full compensation for all labor, equipment, tools, applicable permits and associated fees for burning and disposal of refuse, and all other items necessary and incidental to the satisfactory completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and items to which they have been made subsidiary are identified in section 8 of this specification.

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

a. Bid Item 1 -Channel Clearing and Shaping

1. This item shall consist of removal and disposal of trees, logs, stumps, brush, and rubbish within the channel cross-section, and the shaping of the channel, as shown and described in the drawings.
2. The organic and non-indigenous material shall be disposed of, off site, at an approved dump site.
3. All standing trees shall be left unless they are marked for removal with white flagging.
4. The beginning and ending of the clearing and shaping will be marked in the field with stakes and ribbons.
5. Fill material (if needed) placed behind or under the rock riprap, the grouted rock riprap, and the gabion baskets shall be obtained from within the existing channel banks.
6. Measurement and payment shall be by Method 4.
7. Items subsidiary to this bid item are:
 - a. Seeding and Mulching - Construction Specification - 6
 - b. Excavation - Construction Specification - 21
 - c. Earthfill - Construction Specification - 23

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Athens County Engineers Office

Construction Specification 5—Pollution Control

1. Scope

The work consists of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air from construction activities.

The following BioPreferred® product categories are applicable to this specification: — mulch and compost materials, erosion control materials, fertilizers, dust suppressants, agricultural spray adjuvants

2. Material

Silt fence shall conform to the requirement of Materials Specification 592, Geotextile. All other material furnished shall meet the requirements of the material specifications listed in section 8 of this specification.

3. Erosion and sediment control measures and works

The measures and works shall include, but are not limited to, the following:

Staging of earthwork activities—The excavation and moving of soil materials shall be scheduled to minimize the size of areas disturbed and unprotected from erosion for the shortest reasonable time.

Seeding—Seeding to protect disturbed areas shall occur as soon as reasonably possible following completion of that earthwork activity.

Mulching—Mulching to provide temporary protection of the soil surface from erosion.

Diversions—Diversions to divert water from work areas and to collect water from work areas for treatment and safe disposition. They are temporary and shall be removed and the area restored to its near original condition when the diversions are no longer required or when permanent measures are installed.

Stream crossings—Culverts or bridges where equipment must cross streams. They are temporary and shall be removed and the area restored to its near original condition when the crossings are no longer required or when permanent measures are installed.

Sediment basins—Sediment basins collect, settle, and eliminate sediment from eroding areas from impacting properties and streams below the construction site(s). These basins are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Sediment filters—Straw bale filters or geotextile silt fences trap sediment from areas of limited runoff. Sediment filters shall be properly anchored to prevent erosion under or around them. Silt fences shall be installed and maintained in accordance with ASTM D6462. These filters are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Waterways—Waterways for the safe disposal of runoff from fields, diversions, and other structures or measures. These works are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Other—Additional protection measures as specified in section 8 of this specification or required by Federal, State, or local government.

4. Chemical pollution

The contractor shall provide watertight tanks or barrels or construct a sump sealed with plastic sheets to collect and temporarily contain chemical pollutants, such as drained lubricating or transmission fluids, grease, soaps, concrete mixer washwater, or asphalt, produced as a by-product of the construction activities. Pollutants shall be disposed of in accordance with appropriate state and Federal regulations. At the completion of the construction work, tanks, barrels, and sumps shall be removed and the area restored to its original condition as specified in section 8 of this specification. Sump removal shall be conducted without causing pollution.

Sanitary facilities, such as chemical toilets, or septic tanks shall not be located next to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water source. At the completion of construction activities, facilities shall be disposed of without causing pollution as specified in section 8 of this specification.

5. Air pollution

The burning of brush or slash and the disposal of other materials shall adhere to state and local regulations.

Fire prevention measures shall be taken to prevent the start or spreading of wildfires that may result from project activities. Firebreaks or guards shall be constructed and maintained at locations shown on the drawings.

All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall ensure safe construction operations at all times. If chemical dust suppressants are applied, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommended application procedures shall be provided to the engineer 5 working days before the first application.

6. Maintenance, removal, and restoration

All pollution control measures and temporary works shall be adequately maintained in a functional condition for the duration of the construction period. All temporary measures shall be removed and the site restored to near original condition.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, each item is measured to the nearest unit applicable. Payment for each item is made at the contract unit price for that item. For water or chemical suppressant items used for dust control for which items of work are established in section 8 of this specification, measurement for payment will not include water or chemical suppressants that are used inappropriately or excessive to need. Such payment will constitute full compensation for the completion of the work.

Method 2—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds and supported by invoices presented by the contractor that reflect actual costs. If the total of all progress payments is less than the lump sum contract price for this item, the balance remaining for this item will be included in the final contract payment. Payment of the lump sum contract price will constitute full compensation for completion of the work.

Method 3—For items of work for which lump sum prices are established in the contract, payment will be prorated and provided in equal amounts on each monthly progress payment estimate. The number of months used for prorating shall be the number estimated to complete the work as outlined in the contractor's approved construction schedule. The final month's prorate amount will be provided with the final contract payment. Payment as described will constitute full compensation for completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items, and the items to which they are made subsidiary, are identified in section 8 of this specification.

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8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Subsidiary Item - Pollution Control

1. The Contractor is not required to provide the Contracting Officer's Technical Representative with a written Pollution Control Plan of Operations for this project.
2. The Contractor shall perform the work of this project in a manner consistent and in conformance required by Federal, State, or Local Government, to protect the site and downstream areas from degradation.
3. Method of Payment.

Section 7 Measurement and Payment does not apply. No separate payment will be made for Pollution Control. Compensation for this item will be included in the payment for Bid Item 2 -Mobilization / Demobilization.

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Construction Specification 6—Seeding, Sprigging, and Mulching

1. Scope

The work consists of preparing the area for treatment; furnishing and placing seed, sprigs, mulch, fertilizer, inoculant, lime, and other soil amendments; and anchoring mulch in designated areas as specified.

The following BioPreferred® product categories are applicable to this specification:

- Mulch and compost materials
- Erosion control materials
- Fertilizers
- Agricultural spray adjuvants

2. Material

Seed—All seed must conform to the current rules and regulations of the State where it is being used and must be from the latest crop available. It must meet or exceed the standard for purity and germination listed in section 7.

Seed must be labeled in accordance with State laws and U.S. Department of Agriculture rules and regulations under the Federal Seed Act in effect on the date of invitations for bids. Bag tag figures are evidence of purity and germination. No seed may be accepted with a test date of more than 9 months before the date of delivery to the site.

Seed that has become wet, moldy, or otherwise damaged in transit or storage will not be accepted. The percent of noxious weed seed allowable must be as defined in the current State laws relating to agricultural seeds. Each type of seed must be delivered in separate sealed containers and fully tagged unless an exception is granted in writing by the contracting officer.

Fertilizer—Unless otherwise specified, the fertilizer must be a commercial-grade fertilizer. It must meet the standard for grade and quality specified by State law. Where fertilizer is furnished from bulk storage, the contractor must furnish a supplier's certification of analysis and weight. When required by the contract, a representative sample of the fertilizer must be furnished to the contracting officer for chemical analysis.

Inoculants—The inoculant for treating legume seeds must be a pure culture of nitrogen-fixing bacteria prepared specifically for the species and must not be used later than the date indicated on the container or as otherwise specified. A mixing medium, as recommended by the manufacturer, must be used to bond the inoculant to the seed. Two times the amount of the inoculant recommended by the manufacturer must be used, except that four times the amount must be used when seed is applied using a hydraulic seeder. Seed must be sown within 24 hours of treatment and must not remain in the hydraulic seeder longer than 4 hours.

Lime and other soil amendments—Lime must consist of standard ground agriculture limestone, or approved equivalent. Standard ground agriculture limestone is defined as ground limestone meeting current requirements of the State department of agriculture. Other soil amendments must meet quality criteria and application requirements specified in section 7.

Mulch tackifiers—Asphalt emulsion tackifiers must conform to the requirements of ASTM

D977, Specification for Emulsified Asphalt. The emulsified asphalt may be rapid setting, medium setting, or slow setting. Nonasphaltic tackifiers required because of environmental considerations must be as specified in section 7.

Straw mulch material—Straw mulch must consist of wheat, barley, oat or rye straw, hay, grass cut from native grasses, or other plants as specified in section 7. The mulch material must be air-dry, reasonably light in color, and must not be musty, moldy, caked, or otherwise of low quality. The use of mulch that contains noxious weeds is not permitted. The contractor must provide a method satisfactory to the contracting officer for determining weight of mulch furnished.

Other mulch materials—Mulching materials, such as wood cellulose fiber mulch, mulch tackifiers, synthetic fiber mulch, netting, and mesh may be required for specialized locations and conditions. These materials, when specified, must be accompanied by the manufacturer's recommendations for methods of application.

3. Seeding mixtures, sod, sprigs, and dates of planting

The application rate per acre for seed mixtures, sprigs, or sod and date of seeding or planting must be as shown on the plans or as specified in section 7.

4. Seedbed preparation and treatment

Areas to be treated must be dressed to a smooth, firm surface. On sites where equipment can operate on slopes safely, the seedbed must be adequately loosened (4 to 6 inches deep) and smoothed. Depending on soil and moisture conditions, disking or cultipacking, or both, may be necessary to properly prepare a seedbed. Where equipment cannot operate safely, the seedbed must be prepared by hand methods by scarifying to provide a roughened soil surface so that broadcast seed will remain in place.

If seeding is to be accomplished immediately following construction operations, seedbed preparation may not be required except on a compacted, polished, or freshly cut soil surface. Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance operations must be removed or disposed of as specified in section 7. Seedbed preparation must be discontinued when soil moisture conditions are not suitable for the preparation of a satisfactory seedbed as determined by the responsible engineer.

5. Seeding, sprigging, fertilizing, mulching, and stabilizing

All seeding or sprigging operations must be performed in such a manner that the seed or sprigs are applied in the specified quantities uniformly in the designated areas. The method and rate of seed application must be as specified in section 7. Unless otherwise specified, seeding or sprigging must be accomplished within 2 days after final grading is completed and approved. Fertilizer, lime, and other soil amendments must be applied as specified in section 7. When specified, the fertilizer and soil amendments must be thoroughly incorporated into the soil immediately following surface application.

The rate, amount, and kind of mulching or mesh must be as specified in section 7. Mulches must be applied uniformly to the designated areas. They must be applied to areas seeded not later than 2 working days after seeding has been performed. Straw mulch material must be stabilized within 24 hours of application using a mulch crimper or equivalent anchoring tool or by a suitable tackifier. When the mulch crimper or equivalent anchoring tool is used, it must have straight blades and be the type manufactured expressly for and capable of firmly punching the mulch into

the soil. Where the equipment can be safely operated, it must be operated on the contour. Hand methods must be used where equipment cannot safely operate to perform the work required.

The tackifier must be applied uniformly over the mulch material at the specified rate, or it must be injected into the mulch material as it is being applied. Mesh or netting stabilizing materials must be applied smoothly but loosely on the designated areas. The edges of these materials must be buried or securely anchored using spikes or staples as specified in section 7.

The contractor must maintain the mesh or netting areas until all work under the contract has been completed and accepted. Maintenance must consist of the repair of areas damaged by water erosion, wind, fire, or other causes. Such areas must be repaired to reestablish the intended condition and to the design lines and grades required by the contract. The areas must be refertilized, reseeded, and remulched before the new application of the mesh or netting.

6. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, each area treated is measured as specified in section 7 and the area is calculated to the nearest 0.1 acre. Payment for treatment is made at the contract unit price for the designated treatment, which will constitute full compensation for completion of the work.

When specified as an item of work, mesh or netting is measured to the nearest square yard of surface area covered and accepted. Payment is made at the contract unit price and will constitute full compensation for completion of the work.

Method 2—For items of work for which specific lump-sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for this item is made at the contract lump-sum price for the item and constitutes full compensation for the completion of the work.

Method 3—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds. Progress payments are determined as specified in section 7. Payment of the lump sum contract price constitutes full compensation for completion of the work.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 7.

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Subsidiary Item- Seeding, Sprigging and Mulching

This item shall include seeding and mulching of all disturbed areas within the construction limits shown on the drawings.

1. Fertilizer.

All areas shall have fertilizer uniformly applied at the following rates:

Nitrogen (N) 150 pounds per acre

Phosphorus P₂O₅ 150 pounds per acre

Potassium K₂O 150 pounds per acre

This specification can be met by applying fertilizer having an analysis of 15-15-15 at the rate of 1000 pounds per acre or 23 pounds per thousand square feet.

2. Seed.

All seed shall be labeled, tagged or marked in accordance with Section 907.03 of the Revised Code of Ohio. Seed tags showing germination and purity shall be attached to all bags. No pre-mixed seed shall be used unless the following conditions are met:

a. The weight, purity, and germination for each kind of seed is specified on the tag for each lot of seed. Seeding rates shall be adjusted for Pure Live Seed (PLS) at the time of seeding. Pure Seed (PLS) = percent germination. Seed shall have the equivalent of a minimum of 80% pure live seed.

When the percent purity multiplied by the percent germination gives a percentage less than 80, the rate of seeding will be increased to provide a minimum PLS of 80.

b. Seeding mixtures and rates per acre:

All areas -

Kentucky 31 Tall Fescue -60 lbs per acre or 1.5 lbs per 1000 square ft.

Annual Ryegrass -10 lbs per acre or 0.25 lbs per 1000 square ft.

3. Seedbed Preparation.

Seedbed preparation shall be completed within 48 hours after application of fertilizer. All areas accessible to equipment shall be disked to incorporate fertilizer and to prepare a seedbed a minimum of three inches deep. The final seedbed preparation operation shall be performed across the slope and immediately prior to seeding. Suitable equipment shall be used to smooth the seedbed prior to seeding. On areas inaccessible to a disk, a one-inch minimum seedbed will be prepared using suitable tillage tools or hand tools. All rocks greater than 3 inches in size shall be removed.

4. Sowing the Seed.
Seeding shall be completed as soon as practical after final grading. Broadcast the seed and cover approximately 1/4-inch deep with a light harrow, cultipacker, or other suitable equipment, operated across the slope. On areas too steep or otherwise inaccessible to equipment, the seed shall be covered with a hand rake, or other suitable equipment.
5. Mulch and Method of Anchoring.
Mulch shall consist of (wheat, rye, or barley) straw and shall be applied uniformly at 2 air dried tons per acre or 100 lbs. per 1000 square feet. Mulch shall be applied within 48 hours after making seeding. All wire and string shall be removed from the seeded and mulched areas. No anchoring is required.
- 6 Method of Payment.
Section 6 Measurement and Payment does not apply. No separate payment will be made for Seeding, Sprigging, and Mulching. Compensation for this item will be included in the payment for Bid Item 1 –Channel Clearing and Shaping.

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Construction Specification 8—Mobilization and Demobilization

1. Scope

The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

2. Equipment and material

Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable; and other items specified in section 4 of this specification.

Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this contract.

This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which the contractor is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

3. Payment

Payment will be made as the work proceeds, after presentation of paid invoices or documentation of direct costs by the contractor showing specific mobilization and demobilization costs and supporting evidence of the charges of suppliers, subcontractors, and others. When the total of such payments is less than the lump sum contract price, the balance remaining will be included in the final contract payment. Payment of the lump sum contract price for mobilization and demobilization will constitute full compensation for completion of the work.

Payment will not be made under this item for the purchase costs of materials having a residual value, the purchase costs of materials to be incorporated in the project, or the purchase costs of operating supplies.

4. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Bid Item 2 - Mobilization and Demobilization

1. This item shall consist of mobilizing and demobilizing all forces and equipment necessary for performing the work required under this contract.
2. The ingress/egress areas must be returned to the condition existing prior to construction.
3. A written and detailed construction schedule will be required prior to beginning work.
4. Access to site #4 staging area shall not utilize the existing culvert near the south end of the work limits. The contractor shall install and remove a temporary culvert and/or earthfill along Deep Hollow Road to access the staging area.
5. The fence at site #4 shall be removed as indicated on the drawings. All of the fence components shall be disposed of, offsite, at an approved site.
6. Items subsidiary to this bid item are
 - a. Pollution Control -Construction Specification 5
 - b. Traffic Control -Construction Specification 9
 - c. Contractor Quality Control -Construction Specification 94

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Construction Specification 9—Traffic Control

1. Scope

The work shall consist of establishing traffic control and maintaining safe, convenient use of public roads and rights-of-way.

2. Traffic and access

The contractor's operations shall cause no unnecessary inconvenience to the public. The public rights-of-way shall be maintained at all times unless interruption is authorized by proper local authority. Contractor's authorized closing or detour plans shall be provided to the engineer for approval.

Safe and adequate access shall be provided and maintained to all public protection devices and to all critical utility control locations. Facility access shall be continuous and unobstructed unless otherwise approved.

3. Storage of equipment and material in public streets

Construction materials and equipment shall not be stored or parked on public streets, roads, or highways. During any material or equipment loading or unloading activities that may temporarily interfere with traffic, an acceptable detour shall be provided for the duration of the activity. Any associated expense for this activity is the responsibility of the contractor.

Excavated material, including suitable material that is intended for adjacent trench backfill or other earth backfill as specified in section 5 of this specification, shall not be stored on public streets, roads, or highways that remain in service for the public. Any waiver of this requirement must be obtained from the proper local authority and approved by the engineer. All excess and unsuitable material shall be removed from the site as soon as possible. Any spillage shall be removed from roadways before they are used by the public.

4. Street closures, detours, and barricades

The contractor shall comply with the requirements of all applicable responsible units of government for closure of any street, road, or highway. The contractor shall provide the required barriers, guards, lights, signs, temporary bridges, and flaggers together with informing the public of any detours and construction hazards by the most suitable means available, such as local newspapers or radio stations. The contractor is also responsible for compliance with additional public safety requirements that may arise during construction. The contractor shall furnish, install, and, upon completion of the work, promptly remove all signs, warning devices, and other materials used in the performance of this work.

Unless otherwise specified, the contractor shall notify, in writing, the fire chief, police chief, county sheriff, state patrol, schools that operate school buses, or any other government official as may be appropriate no less than 7 days before closing, partly closing, or reopening any street, road, or highway.

Unless otherwise specified, the contractor shall furnish to the engineer a written plan showing the proposed method of signing, barricading for traffic control, and safety for street detours and closures.

All temporary detours will be maintained to ensure use of public rights-of-way is provided in a safe manner. This may include dust control, grading, and graveling as required in section 7 of this specification.

5. General and specific references

All signs, signals, barricades, use of flaggers, and other traffic control and public safety devices shall conform to the general requirements set forth in the Manual of Uniform Traffic Control Devices (MUTCD) and the latest edition of *Standard Highway Signs and Standard Alphabets for Highway Signs* and/or *OSHA Construction Industry Standards (29 CFR Part 1926), Subpart G, Signs, Signals, and Barricades* unless otherwise specified in section 7 of this specification.

6. Measurement and payment

For items of work for which specific lump sum prices are established in the contract, payment for the work is made at the contract lump sum price. Progress payments will be made based upon the percentage of estimated total time that traffic control will be required unless otherwise specified in section 7 of this specification. Payment will constitute full compensation for all flaggers, labor, materials, equipment, and all other items necessary and incidental to completion of the work.

Compensation for any item of work described in the contract, but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and items to which they are made subsidiary are identified in section 7 of this specification.

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Athens County Engineers Office

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Subsidiary Item - Traffic Control

1. The Contractor shall contact the Athens County Engineer's Office when normal road usage is affected during construction hours. Temporary blockages of the road are permitted with proper flagging provisions. A minimum of one lane traffic shall be maintained at all times, with normal traffic restored after work hours. Contact the Athens County Engineer at (740)– 593-5514.
2. Method of Payment.
Section 6 Measurement and Payment does not apply. No separate payment will be made for Traffic Control. Compensation for this item will be included in the payment for Bid Item 2 -Mobilization and Demobilization.

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Construction Specification 11—Removal of Water

1. Scope

The work consists of the removal of surface water and ground water as necessary to perform the construction required by the contract in accordance with the specifications. It shall include: (1) constructing, installing, building, and maintaining all necessary temporary water containment facilities, channels, and diversions; (2) furnishing, installing, and operating all necessary pumps, piping, and other facilities and equipment; and (3) removing all such temporary works and equipment after their intended function is no longer required.

2. Diverting surface water

The contractor shall install, maintain, and operate all cofferdams, channels, flumes, sumps, and all other temporary diversion and protective works needed to divert streamflow and other surface water through or around the construction site. Control of surface water shall be continuous during the period that damage to construction work could occur. Unless otherwise specified and/or approved, the diversion outlet shall be into the same drainageway that the water would have reached before being diverted.

The contractor shall furnish the contracting officer, in writing, a proposed plan for diverting surface water before beginning any construction activities for which a diversion is required, unless waived in section 8 of this specification. Acceptance of this plan or the waiving of the plan requirement will not relieve the contractor of the responsibilities related to this activity during the process of completing the work as specified.

3. Dewatering the construction site

Foundations, cutoff trenches, and all other parts of the construction site shall be dewatered and kept free of standing water and muddy conditions as necessary for the proper execution of the work. The contractor shall furnish, install, operate, and maintain all drains, sumps, pumps, casings, well points, and all other equipment required to properly dewater the site as specified. Dewatering systems that cause a loss of soil fines from the foundation areas will not be permitted.

The contractor shall furnish the contracting officer, in writing, a proposed plan for dewatering before commencing with any construction activity for which dewatering may be required, unless waived in section 8 of this specification. Acceptance of this plan or the waiving of the plan requirement will not relieve the contractor of the responsibilities for completing the specified work.

4. Dewatering borrow areas

The contractor shall maintain all borrow areas free of surface water or otherwise provide for timely and effective removal of surface and subsurface water that accumulates within the borrow area, unless waived in section 8 of this specification. Borrow material shall be processed as necessary to achieve proper and uniform moisture content at the time of placement.

If pumping to dewater borrow areas is included as a bid item of work in the bid schedule, each pump discharge pipe shall be equipped with a water meter. The meter shall be such that the measured quantity of water is accurate within 3 percent of the true

quantity. The contractor shall provide necessary support to perform accuracy tests of the water meter when requested by the contracting officer.

5. Erosion and pollution control

Removal of water from the construction site, including the borrow areas, shall be accomplished so that erosion and the transporting of sediment and other pollutants are minimized. Dewatering activities shall be accomplished in a manner that the water table water quality is not altered. Pollution control activities shall not conflict with the requirements of Construction Specification 5, Pollution Control, if it is a part of this contract.

6. Removal of temporary works

When temporary works are no longer needed, the contractor shall remove and return the area to a condition similar to that which existed before construction. Areas where temporary works were located shall be graded for slightly appearance with no obstruction to natural surface waterflows or the proper functioning and access to the works of improvement installed. The contractor shall exercise extreme care during the removal stages to minimize the loss of soil sediment and debris that was trapped during construction.

Pipes, casings, and any other material used to dewater the site shall be removed from temporary wells. The wells shall be filled to ground level with clean gravel or other suitable material approved by the contracting officer. The contractor shall exercise extreme care to prevent pollution of the ground water by these actions.

7. Measurement and payment

Method 1—Items of work listed in the bid schedule for removal of water, diverting surface water, and dewatering construction sites and borrow areas are paid for at the contract lump sum prices. Such payment will constitute full compensation for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work.

Method 2—Items of work listed in the bid schedule for removal of water, diverting surface water, dewatering construction sites, and dewatering borrow areas are paid for at the contract lump sum prices. Such payment will constitute full compensation for furnishing, installing, operating, and maintaining the necessary trenches, drains, sumps, pumps, and piping and for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work. The exception is that additional payment for pumping to dewater borrow areas and the removal of water will be made as described in the following paragraph.

If pumping to dewater borrow areas is a contract bid item, payment is made at the contract unit price, which shall be the price per 1,000 gallons shown in the bid schedule. Such payment will constitute full compensation for pumping only. Compensation for equipment and preparation and for other costs associated with pumping is included in the lump sum payment for removal of water or the lump sum payment for dewatering the borrow areas. Payment is made only for pumping that is necessary to dewater borrow areas that cannot be effectively drained by gravity or that must have the water table lowered to be usable as a suitable borrow source. Pumping for other purposes will not

be included for payment under this item.

All Methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the contract line item to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8 of this specification.

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8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Subsidiary Item - Removal of Water

1. This item shall consist of all dewatering required for the work under this contract.
2. A written dewatering plan is required.
3. Method of Payment.
Section 6 Measurement and Payment does not apply. No separate payment will be made for Removal of Water. Compensation for this item will be included in the payment for:
 - a. Bid Item 3 - Drainfill
 - b. Bid Item 4 - Rock Riprap
 - c. Bid Item 5 - Grouted Rock Riprap
 - d. Bid Item 6 - Woven Wire Mesh Gabions

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Construction Specification 21—Excavation

1. Scope

The work shall consist of the excavation required by the drawings and specifications and disposal of the excavated materials.

2. Classification

Excavation is classified as common excavation, rock excavation, or unclassified excavation in accordance with the following definitions.

Common excavation is defined as the excavation of all materials that can be excavated, transported, and unloaded using heavy ripping equipment and wheel tractor-scrapers with pusher tractors or that can be excavated and dumped into place or loaded onto hauling equipment by excavators having a rated capacity of one cubic yard or larger and equipped with attachments (shovel, bucket, backhoe, dragline, or clam shell) appropriate to the material type, character, and nature of the materials.

Rock excavation is defined as the excavation of all hard, compacted, or cemented materials that require blasting or the use of ripping and excavating equipment larger than defined for common excavation. The excavation and removal of isolated boulders or rock fragments larger than 1 cubic yard encountered in materials otherwise conforming to the definition of common excavation shall be classified as rock excavation. The presence of isolated boulders or rock fragments larger than 1 cubic yard is not in itself sufficient cause to change the classification of the surrounding material.

For the purpose of these classifications, the following definitions shall apply:

Heavy ripping equipment is a rear-mounted, heavy duty, single-tooth, ripping attachment mounted on a track type tractor having a power rating of at least 250 flywheel horsepower unless otherwise specified in section 10.

Wheel tractor-scraper is a self-loading (not elevating) and unloading scraper having a struck bowl capacity of at least 12 cubic yards.

Pusher tractor is a track type tractor having a power rating of at least 250 flywheel horsepower equipped with appropriate attachments.

Unclassified excavation is defined as the excavation of all materials encountered, including rock materials, regardless of their nature or the manner in which they are removed.

3. Blasting

The transportation, handling, storage, and use of dynamite and other explosives shall be directed and supervised by a person(s) of proven experience and ability who is authorized and qualified to conduct blasting operations.

Blasting shall be done in a manner as to prevent damage to the work or unnecessary

fracturing of the underlying rock materials and shall conform to any special requirements in section 10 of this specification. When specified in section 10, the contractor shall furnish the engineer, in writing, a blasting plan before blasting operations begin.

4. Use of excavated material

Method 1—To the extent they are needed, all suitable material from the specified excavations shall be used in the construction of required permanent earthfill or rockfill. The suitability of material for specific purposes is determined by the engineer. The contractor shall not waste or otherwise dispose of suitable excavated material.

Method 2—Suitable material from the specified excavations may be used in the construction of required earthfill or rockfill. The suitability of material for specific purposes is determined by the engineer.

5. Disposal of waste materials

Method 1—All surplus or unsuitable excavated materials are designated as waste and shall be disposed of at the locations shown on the drawings.

Method 2—All surplus or unsuitable excavated materials are designated as waste and shall be disposed of by the contractor at sites of his own choosing away from the site of the work. The disposal shall be in an environmentally acceptable manner that does not violate local rules and regulations.

6. Excavation limits

Excavations shall comply with OSHA Construction Industry Standards (29CFR Part 1926) Subpart P, Excavations, Trenching, and Shoring. All excavations shall be completed and maintained in a safe and stable condition throughout the total construction phase. Structure and trench excavations shall be completed to the specified elevations and to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work. Excavations outside the lines and limits shown on the drawings or specified herein required to meet safety requirements shall be the responsibility of the contractor in constructing and maintaining a safe and stable excavation.

7. Borrow excavation

When the quantities of suitable material obtained from specified excavations are insufficient to construct the specified earthfills and earth backfills, additional material shall be obtained from the designated borrow areas. The extent and depth of borrow pits within the limits of the designated borrow areas shall be as specified in section 10 or as approved by the engineer.

Borrow pits shall be excavated and finally dressed to blend with the existing topography and sloped to prevent ponding and to provide drainage.

8. Overexcavation

Excavation in rock beyond the specified lines and grades shall be corrected by filling the resulting voids with portland cement concrete made of materials and mix proportions approved by the engineer. Concrete that will be exposed to the atmosphere when construction is completed shall meet the requirements of concrete selected for use

under Construction Specification 31, Concrete for Major Structures, or 32, Structure Concrete, as appropriate.

Concrete that will be permanently covered shall contain not less than five bags of cement per cubic yard. The concrete shall be placed and cured as specified by the engineer.

Excavation in earth beyond the specified lines and grades shall be corrected by filling the resulting voids with approved, compacted earthfill. The exception to this is that if the earth is to become the subgrade for riprap, rockfill, sand or gravel bedding, or drainfill, the voids may be filled with material conforming to the specifications for the riprap, rockfill, bedding, or drainfill. Before correcting an overexcavation condition, the contractor shall review the planned corrective action with the engineer and obtain approval of the corrective measures.

9. Measurement and payment

For items of work for which specific unit prices are established in the contract, the volume of each type and class of excavation within the specified pay limits is measured and computed to the nearest cubic yard by the method of average cross-sectional end areas or by methods outlined in section 10 of this specification. Regardless of quantities excavated, the measurement for payment is made to the specified pay limits except that excavation outside the specified lines and grades directed by the engineer to remove unsuitable material is included. Excavation required because unsuitable conditions result from the contractor's improper construction operations, as determined by the engineer, is not included for measurement and payment.

Method 1—The pay limits shall be as designated on the drawings.

Method 2—The pay limits shall be defined as follows:

- a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earthfill.
- b. The lower and lateral limits shall be the neat lines and grades shown on the drawings.

Method 3—The pay limits shall be defined as follows:

- a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified ground surface resulting from the specified previous excavation or earthfill.
- b. The lower and lateral limits shall be the true surface of the completed excavation as directed by the engineer.

Method 4—The pay limits shall be defined as follows:

- a. The upper limit shall be the original ground surface as it existed before the start of construction operations except that where excavation is performed within areas designated for previous excavation or earthfill, the upper limit shall be the modified

- ground surface resulting from the specified previous excavation or earthfill.
- b. The lower limit shall be at the bottom surface of the proposed structure.
 - c. The lateral limits shall be 18 inches outside of the outside surface of the proposed structure or shall be vertical planes 18 inches outside of and parallel to the footings, whichever gives the larger pay quantity, except as provided in d below.
 - d. For trapezoidal channel linings or similar structures that are to be supported upon the sides of the excavation without intervening forms, the lateral limits shall be at the underside of the proposed lining or structure.
 - e. For the purposes of the definitions in b, c, and d, above, any specified bedding or drainfill directly beneath or beside the structure will be considered to be a part of the structure.

All methods—The following provisions apply to all methods of measurement and payment.

Payment for each type and class of excavation is made at the contract unit price for that type and class of excavation. Such payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the performance of the work except that extra payment for backfilling overexcavation will be made in accordance with the following provisions.

Payment for backfilling overexcavation, as specified in section 8 of this specification, is made only if the excavation outside specified lines and grades is directed by the engineer to remove unsuitable material and if the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10 of this specification.

10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Subsidiary Item -Excavation - Unclassified

1. This item shall consist of all excavation required to construct this project. This includes excavation under and behind, the rock riprap, grouted rock riprap, and gabion baskets.
2. All excavation on this project is designated as "unclassified excavation" and shall consist of all materials encountered regardless of their nature or the manner in which they are removed.
3. Use of excavated material shall be by Method 1.
4. Disposal of waste material shall be by Method 2.
5. Method of Payment.

Section 9 Measurement and Payment does not apply. No separate payment will be made for Excavation. Compensation for this item will be included in the payment for Bid Item 1 -Channel Clearing and Shaping.

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Construction Specification 23—Earthfill

1. Scope

The work consists of the construction of earth embankments, other earthfills, and earth backfills required by the drawings and specifications.

Earthfill is composed of natural earth materials that can be placed and compacted by construction equipment operated in a conventional manner.

Earth backfill is composed of natural earth material placed and compacted in confined spaces or adjacent to structures (including pipes) by hand tamping, manually directed power tampers or vibrating plates, or their equivalent.

2. Material

All fill material shall be obtained from required excavations and designated borrow areas. The selection, blending, routing, and disposition of material in the various fills shall be subject to approval by the engineer.

Fill materials shall contain no frozen soil, sod, brush, roots, or other perishable material. Rock particles larger than the maximum size specified for each type of fill shall be removed prior to compaction of the fill.

The types of material used in the various fills shall be as listed and described in the specifications and drawings.

3. Foundation preparation

Foundations for earthfill shall be stripped to remove vegetation and other unsuitable material or shall be excavated as specified.

Except as otherwise specified, earth foundation surfaces shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise acceptably scored and loosened to a minimum depth of 2 inches. The moisture content of the loosened material shall be controlled as specified for the earthfill, and the surface material of the foundation shall be compacted and bonded with the first layer of earthfill as specified for subsequent layers of earthfill.

Earth abutment surfaces shall be free of loose, uncompacted earth in excess of 2 inches in depth normal to the slope and shall be at such a moisture content that the earthfill can be compacted against them to produce a good bond between the fill and the abutments.

Rock foundation and abutment surfaces shall be cleared of all loose material by hand or other effective means and shall be free of standing water when fill is placed upon them. Occasional rock outcrops in earth foundations for earthfill, except in dams and other structures designed to restrain the movement of water, shall not require special treatment if they do not interfere with compaction of the foundation and initial layers of the fill or the bond between the foundation and the fill.

Foundation and abutment surfaces shall be no steeper than one horizontal to one vertical unless otherwise specified. Test pits or other cavities shall be filled with compacted earthfill conforming to the specifications for the earthfill to be placed upon the foundation.

4. Placement

Earthfill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by the engineer. Earthfill shall not be placed upon a frozen surface nor shall snow, ice, or frozen material be incorporated in the earthfill matrix.

Earthfill shall be placed in approximately horizontal layers. The thickness of each layer before compaction shall not exceed the maximum thickness specified in section 10 or shown on the drawings. Materials placed by dumping in piles or windrows shall be spread uniformly to not more than the specified thickness before being compacted.

Hand compacted earth backfill shall be placed in layers whose thickness before compaction does not exceed the maximum thickness specified for layers of earth backfill compacted by manually directed power tampers.

Earth backfill shall be placed in a manner that prevents damage to the structures and allows the structures to assume the loads from the earth backfill gradually and uniformly. The height of the earth backfill adjacent to a structure shall be increased at approximately the same rate on all sides of the structure.

Earthfill and earth backfill in dams, levees, and other structures designed to restrain the movement of water shall be placed to meet the following additional requirements:

- (a) The distribution of materials throughout each zone shall be essentially uniform, and the earthfill shall be free from lenses, pockets, streaks, or layers of material differing substantially in texture, moisture content, or gradation from the surrounding material. Zone earthfills shall be constructed concurrently unless otherwise specified.
- (b) The surface of each layer shall be scarified parallel to the axis of the fill to a depth of not less than 2 inches before the next layer is placed.
- (c) The top surface of embankments shall be maintained approximately level during construction with two exceptions: A crown or cross-slope of about 2 percent shall be maintained to ensure effective drainage, or as otherwise specified for drainfill or sectional zones.
- (d) Dam embankments shall be constructed in continuous layers from abutment to abutment except where openings to facilitate construction or to allow the passage of streamflow during construction are specifically authorized in the contract.
- (e) Embankments built at different levels as described under (c) or (d) above shall be constructed so that the slope of the bonding surfaces between embankment in place and embankment to be placed is not steeper than 3 feet horizontal to 1 foot vertical. The bonding surface of the embankment in place shall be stripped of all material not meeting the requirements of this specification and shall be scarified, moistened, and recompacted when the new earthfill is placed against it. This ensures a good bond with the new earthfill and obtains the specified moisture content and density at the contact of the in-place and new earthfills.

5. Control of moisture content

During placement and compaction of earthfill and earth backfill, the moisture content of the material being placed shall be maintained within the specified range.

The application of water to the earthfill material shall be accomplished at the borrow areas insofar as practicable. Water may be applied by sprinkling the material after placement on the earthfill, if necessary. Uniform moisture distribution shall be obtained by disking.

Material that is too wet when deposited on the earthfill shall either be removed or be dried to the specified moisture content prior to compaction.

If the top surface of the preceding layer of compacted earthfill or a foundation or abutment surface in the zone of contact with the earthfill becomes too dry to permit suitable bond, it shall either be removed or scarified and moistened by sprinkling to an acceptable moisture content before placement of the next layer of earthfill.

6. Compaction

Earthfill—Earthfill shall be compacted according to the following requirements for the class of compaction specified:

Class A compaction—Each layer of earthfill shall be compacted as necessary to provide the density of the earthfill matrix not less than the minimum density specified in Section 10 or identified on the drawings. The earthfill matrix is defined as the portion of the earthfill material finer than the maximum particle size allowed in the reference compaction test method specified (ASTM D698 or ASTM D1557).

Class B compaction—Each layer of earthfill shall be compacted to a mass density not less than the minimum density specified.

Class C compaction—Each layer of earthfill shall be compacted by the specified number of passes of the type and weight of roller or other equipment specified or by an approved equivalent method. Each pass shall consist of at least one passage of the roller wheel or drum over the entire surface of the layer.

Earth backfill—Earth backfill adjacent to structures shall be compacted to a density equivalent to that of the surrounding in-place earth material or adjacent required earthfill or earth backfill. Compaction shall be accomplished by hand tamping or manually directed power tampers, plate vibrators, walk-behind, miniature, or self-propelled rollers. Unless otherwise specified heavy equipment including backhoe mounted power tampers or vibrating compactors and manually directed vibrating rollers shall not be operated within 3 feet of any structure. Towed or self-propelled vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from a crane or hoist is not permitted.

The passage of heavy equipment will not be allowed:

- Over cast-in-place conduits within 14-days after placement of the concrete
- Over cradled or bedded precast conduits within 7 days after placement of the concrete cradle or bedding
- Over any type of conduit until the backfill has been placed above the top surface of the structure to a height equal to one-half the clear span width of the structure or pipe or 3 feet, whichever is greater, except as may be specified in section 10.

Compacting of earth backfill adjacent to structures shall not be started until the concrete has attained the strength specified in section 10 for this purpose. The strength is determined by compression testing of test cylinders cast by the contractor's quality

control personnel for this purpose and cured at the work site in the manner specified in ASTM C 31 for determining when a structure may be put into service.

When the required strength of the concrete is not specified as described above, compaction of earth backfill adjacent to structures shall not be started until the following time intervals have elapsed after placement of the concrete.

Structure interval	Time (days)
Vertical or near-vertical walls with earth loading on one side only	14
Walls backfilled on both sides simultaneously	7
Conduits and spillway risers, cast-in-place (with inside forms in place)	7
Conduits and spillway risers, cast-in-place (inside forms removed)	14
Conduits, pre-cast, cradled	2
Conduits, pre-cast, bedded	1
Cantilever outlet bents (backfilled both sides simultaneously)	3

7. Reworking or removal and replacement of defective earthfill

Earthfill placed at densities lower than the specified minimum density or at moisture contents outside the specified acceptable range of moisture content or otherwise not conforming to the requirements of the specifications shall be reworked to meet the requirements or removed and replaced by acceptable earthfill. The replacement earthfill and the foundation, abutment, and earthfill surfaces upon which it is placed shall conform to all requirements of this specification for foundation preparation, approval, placement, moisture control, and compaction.

8. Testing

During the course of the work, the contractor shall perform quality control tests, as applicable, to identify earthfill and earth backfill materials; determine the reference maximum density and optimum moisture content; and document that the moisture content of material at the time of compaction and the density of earthfill and earth backfill in place conform to the requirements of this specification.

Determining Reference Maximum Density and Optimum Moisture Content—For Class A compaction, the reference maximum density and optimum moisture content shall be determined in accordance with the compaction test and method specified on the drawings or in section 10.

Documenting Specification Conformance—In-place densities of earthfill and earth backfill requiring Class A compaction shall be measured in accordance with ASTM D1556, D2167, D2937, or D6938. Moisture contents of earthfill and earth backfill at the

time of compaction shall be measured in accordance with ASTM D2216, D4643, or D6938. Values of moisture content determined by ASTM D2216 are considered the true value of the soil moisture. Values of moisture content determined by ASTM D4643 or D6938 shall be verified by comparison to values obtained by ASTM D2216. Values of in-place density and moisture content determined by these tests shall be compared to the minimum density and moisture content range specified on the drawings or in section 10.

Correction for Oversize Particles—If the materials to be used for earthfill or earth backfill contain more than 5 percent by dry weight of oversize rock particles (particles larger than those allowed in the specified compaction test and method), corrections for oversize particles shall be made using the appropriate procedures explained in ASTM D4718.

9. Measurement and payment

For items of work for which specific unit prices are established in the contract, the volume of each type and compaction class of earthfill and earth backfill within the specified zone boundaries and pay limits is measured and computed to the nearest cubic yard by the method of average cross-sectional end areas. Unless otherwise specified in section 10, no deduction in volume is made for embedded items, such as, but not limited to, conduits, inlet structures, outlet structures, embankment drains, sand diaphragm and outlet, and their appurtenances.

The pay limits shall be as defined below, with the further provision that earthfill required to fill voids resulting from overexcavation of the foundation, outside the specified lines and grades, will be included in the measurement for payment only under the following conditions:

- Where such overexcavation is directed by the engineer to remove unsuitable material, and
- Where the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Earthfill beyond the specified lines and grades to backfill excavation required for compliance with OSHA requirements will be considered subsidiary to the earthfill bid item(s).

Method 1—The pay limits shall be as designated on the drawings.

Method 2—The pay limits shall be the measured surface of the foundation when approved for placement of the earthfill and the specified neat lines of the earthfill surface.

Method 3—The pay limits shall be the measured surface of the foundation when approved for placement of the earthfill and the measured surface of the completed earthfill.

Method 4—The pay limits shall be the specified pay limits for excavation and the specified neat lines of the earthfill surface.

Method 5—The pay limits shall be the specified pay limits for excavation and the measured surface of the completed earthfill.

Method 6—Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work.

Method 7—Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work except furnishing, transporting, and applying water to the foundation and earthfill material. Water applied to the foundation and earthfill material is measured and payment made as specified in Construction Specification 10.

All methods—The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10 of this specification.

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10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefor are:

Subsidiary Item -Earthfill Class C

1. This item shall consist of the placement of the Class "C" Earthfill as shown on the drawings.
2. The fill shall be placed in 12" lifts.
3. Class C Compaction applies. The entire surface of each lift shall be traversed with 2 passes of the placing and spreading equipment.
4. The moisture content of the fill material shall be suitable for compaction.
5. The top 12" of material shall be soil capable of supporting grass. The amount of rock present in the top 12" shall meet the requirements of Specification 6 Seeding, Sprigging and Mulching.
6. Section 9 Measurement and Payment does not apply. No separate payment will be made for Earthfill Class C. Compensation for this item will be included in Bid Item 1 - Channel Clearing and Shaping.

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Construction Specification 24—Drainfill

1. Scope

The work consists of furnishing, placing, and compacting drainfill required in the construction of structure drainage systems.

2. Material

Method 1—Drainfill material shall conform to the requirements of Material Specification 521, Aggregates for Drainfill and Filters. A minimum of 30 days before delivery of materials to the site, the contractor shall inform the engineer in writing of the source(s) from which drainfill material will be obtained. The contractor shall provide the engineer free access to the source(s) for the purpose of obtaining samples for testing.

Method 2—Drainfill material shall be sand, gravel, or crushed stone, or mixtures thereof, obtained from the specified sources. The material shall be selected as necessary to avoid the inclusion of organic matter, clay balls, excessive fine particles, or other substances that would interfere with their free-draining properties.

3. Base preparation

Foundation surface and trenches shall be clean and free of organic matter, loose soil, foreign substance, and standing water when the drainfill is placed. Earth surfaces upon or against which drainfill will be placed shall not be scarified.

4. Placement

Drainfill shall not be placed until the subgrade has been inspected and approved by the engineer. Drainfill shall not be placed over or around pipe or drain tile until the installation of the pipe or tile has been inspected and approved.

Drainfill shall be placed uniformly in layers not to exceed 12 inches thick before compaction. When compaction is accomplished by manually controlled equipment, the layers shall not exceed 8 inches thick. The material shall be placed to avoid segregation of particle sizes and to ensure the continuity and integrity of all zones. No foreign material shall be allowed to become intermixed with or otherwise contaminate the drainfill.

Traffic shall not be permitted to cross over drains at random. Equipment cross-overs shall be maintained, and the number and location of such crossovers shall be established and approved before the beginning of drainfill placement. Each crossover shall be cleaned of all contaminating material and shall be inspected and approved by the engineer before the placement of additional drainfill material.

Any damage to the foundation surface or the trench sides or bottom occurring during placement of drainfill shall be repaired before drainfill placement is continued.

The upper surface of drainfill constructed concurrently with adjacent zones of earthfill shall be maintained at a minimum elevation of 1 foot above the upper surface of adjacent earthfill.

Drainfill over and/or around pipe or drain tile shall be placed to avoid any displacement in line or grade of the pipe or tile.

Drainfill shall not be placed adjacent to structures until the concrete has attained the strength specified in section 9 of this specification. The strength shall be determined by compression testing of concrete test cylinders cast and field cured at the project site in accordance with ASTM Method C 31 for determining when a structure may be placed into service.

When the required strength of the concrete is not specified as described above, placement of drainfill adjacent to concrete structures shall not be commenced until the following item intervals have elapsed following placement of the concrete:

Structure type	Time interval (days)
Vertical or near-vertical wall with earth loading on one side only (retaining walls and counterforts)	14
Walls backfilled on both sides simultaneously	7
Conduits and galleries, cast-in-place (with inside forms in place)	7
(inside forms removed)	14
Conduits, precast, cradled	2
Conduits, precast, bedded	1
Cantilever outlet bents backfilled on both sides simultaneously	3

5. Control of moisture

The moisture content of drainfill material shall be controlled as specified in section 9 of this specification. When additional water is required, it shall be applied in a manner to avoid excessive wetting to adjacent earthfill. Except as specified in section 9 of this specification, control of moisture content will not be required.

6. Compaction

Drainfill shall be compacted according to the following requirements for the class of compaction specified:

Class A compaction—For drainfill materials with more than 70 percent passing the 3/4 inch sieve, each layer of drainfill shall be compacted to a minimum dry density of not less than the density specified in section 9 of this specification as determined by ASTM D 698. For drainfill materials with 70 percent or less passing the 3/4 inch sieve, each layer of drainfill shall be compacted to a relative density of not less than 70 percent as determined by ASTM D 4254.

Class I compaction—Each layer of drainfill shall be compacted by a minimum of two passes over the entire surface with a steel-drum vibrating roller weighing at least 5 tons and exerting a vertical vibrating force of not less than 20,000 pounds at a minimum frequency of 1,200 times per minute, or by an approved equivalent method.

Class II compaction—Each layer of drainfill shall be compacted by one of the following methods or by an approved equivalent method. (A pass is defined as at least one complete coverage of the roller wheel, tire, or drum over the entire surface for each layer.)

- a. A minimum of two passes over the entire surface with a pneumatic-tired roller exerting a minimum pressure of 75 pounds per square inch.
- b. A minimum of four passes over the entire surface with the track of a crawler-type tractor weighing at least 20 tons.
- c. Controlled movement of the hauling equipment so that the entire surface is traversed by not less than one tread track of the loaded hauling equipment.

Class III compaction—No compaction will be required beyond that resulting from the placing and spreading operations.

When compaction other than Class III compaction is specified, material placed in trenches or other locations inaccessible to heavy equipment shall be compacted by manually controlled pneumatic or vibrating tampers as specified in section 9 of this specification.

Heavy equipment shall not be operated within 2 feet of any structure. Vibrating rollers shall not be operated within 5 feet of any structure. Compaction by means of drop weights operating from cranes, hoists, or similar equipment will not be permitted.

7. Testing

The contractor shall conduct such tests as necessary to verify that the drainfill material and the in-place drainfill meets the specification requirements.

The engineer shall be granted access to perform such tests as are required to verify that the drainfill materials and the drainfill in place meets the requirements of the specifications. These tests are not intended to provide the contractor with information needed to assure that the materials and workmanship meet the specification requirements. These verification tests will not relieve the contractor of the responsibility of performing required tests for that purpose.

8. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the volume of drainfill within the neat lines shown on the drawings are measured and computed to the nearest cubic yard. Where the engineer directs placement of drainfill outside the neat lines to replace unsuitable foundation material, the volume of such drainfill is included. The volume included is only to the extent that the unsuitable condition is not a result of the contractor's improper construction operation in the determination of the engineer.

Payment for drainfill is made at the contract unit price for each type of drainfill, complete in place. Except as otherwise specified in section 9 of this specification, such payment will constitute full compensation for all labor, equipment, material, and all other items necessary and incidental to the performance of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of drainfill placed within the specified limits is computed to the nearest 0.1 ton by actual weight. Where the engineer directs placement of drainfill outside the neat lines to replace unsuitable foundation material, the weight of such drainfill is included. The weight included is only to the extent that the unsuitable condition is not a result of the contractor's improper construction operation in the determination of the engineer.

Payment for drainfill is made at the contract unit price for each type of drainfill, complete in place. Except as otherwise specified in section 9 of this specification, such payment will constitute full compensation for all labor, equipment, material, and all other items necessary and incidental to the performance of the work.

Compensation for any item of work described in the contract, but not included in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 9 of this specification.

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9. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Bid Item 3 - Drainfill

1. This item shall consist of furnishing and placing the No. 57 stone behind the Gabion Baskets as shown and described in the drawings.
2. Material shall be crushed limestone from any source.
3. Materials shall be by Method 2, as stated in section 2.
4. Drainfill furnished under this bid item shall meet the gradation requirements for No.57, Table 703-1 of the State of Ohio Department of Transportation, Construction and Material Specifications, January 2019.
5. Class III compaction is required, as stated in section 6.
6. Measurement and Payment shall be by Method 1, as stated in section 8.

Subsidiary Item – Drainfill – No. 57 Stone

1. This item shall consist of furnishing and placing the No. 57 stone behind and below the Grouted Rock Riprap, ODOT Type "C" Rock Riprap, and ODOT Type "D" Rock Riprap as shown and described in the drawings.
2. Material shall be crushed limestone from any source.
3. Materials shall be by Method 2, as stated in section 2.
4. Drainfill furnished under this bid item shall meet the gradation requirements for No.57, Table 703-1 of the State of Ohio Department of Transportation, Construction and Material Specifications, January 2019.
5. Class III compaction is required, as stated in section 6.
6. Section 8 Measurement and Payment does not apply. No separate payment will be made for Drainfill – No. 57 Stone. Compensation for this item will be included in the payment for:
 - a. Bid Item 4 - Rock Riprap
 - b. Bid Item 5 - Grouted Rock Riprap

Construction Specification 61—Rock Riprap

1. Scope

The work consists of the construction of rock riprap revetments and blankets, including filter or bedding where specified.

2. Material

Rock riprap must conform to the requirements of Material Specification 523, Rock for Riprap, or if so specified, must be obtained from designated sources. It must be free from dirt, clay, sand, rock fines, and other material not meeting the required gradation limits.

At least 30 days before rock is delivered from other than designated sources, the contractor must designate in writing the source from which rock material will be obtained and provide information satisfactory to the contracting officer that the material meets contract requirements. The contractor must provide the responsible engineer free access to the source for the purpose of obtaining samples for testing. The size and grading of the rock must be as specified in section 8.

Rock from approved sources must be excavated, selected, and processed to meet the specified quality and grading requirements at the time the rock is installed.

Based on a specific gravity of 2.65 (typical of limestone and dolomite) and assuming the individual rock is shaped midway between a sphere and a cube, typical size/weight relationships are:

Sieve size of rock	Approx. weight of rock	Weight of test pile
16 inches	300 pounds	6,000 pounds
11 inches	100 pounds	2,000 pounds
6 inches	15 pounds	300 pounds

When specified in section 8 or when it is necessary to verify the gradation of the rock riprap, a particle size analysis must be performed in accordance with ASTM D5519, Test Method A or B. The analysis must be performed at the work site on a test pile of representative rock. The mass of the test pile must be at least 20 times the mass of the largest rock in the pile. The results of the test are compared to the gradation required for the project. Test pile results that do not meet the construction specifications must be cause for the rock to be rejected. The test pile that meets contract requirements must be left on the job site as a sample for visual comparison. The test pile must be used as part of the last rock riprap to be placed.

Filter or bedding aggregates when required must conform to Material Specification 521, Aggregates for Drainfill and Filters, unless otherwise specified. Geotextiles must conform to Material Specification 592, Geotextile.

3. Subgrade preparation

The subgrade surface on which the rock riprap, filter, bedding, or geotextile is to be placed must be cut or filled and graded to the lines and grades shown on the drawings.

When fill to subgrade lines is required, it must consist of approved material and must conform to the requirements of the specified class of earthfill.

Rock riprap, filter, bedding, or geotextile must not be placed until the foundation preparation is completed and the subgrade surface has been inspected and approved.

4. Equipment-placed rock riprap

The rock riprap must be placed by equipment on the surface and to the depth specified. It must be installed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying material. The rock for riprap must be delivered and placed in a manner that ensures the riprap in place is reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks. Some hand placing may be required to provide a neat and uniform surface.

Rock riprap must be placed in a manner to prevent damage to structures. Hand placing is required as necessary to prevent damage to any new and existing structures.

5. Hand placed rock riprap

The rock riprap must be placed by hand on the surface and to the depth specified. It must be securely bedded with the larger rocks firmly in contact one to another without bridging. Spaces between the larger rocks must be filled with smaller rocks and spalls. Smaller rocks must not be grouped as a substitute for larger rock. Flat slab rock must be laid on its vertical edge except where it is laid like paving stone and the thickness of the rock equals the specified depth of the riprap course.

6. Filter or bedding

When the contract specifies filter, bedding, or geotextile beneath the rock riprap, the designated material must be placed on the prepared subgrade surface as specified. Compaction of filter or bedding aggregate is not required, but the surface of such material must be finished reasonably smooth and free of mounds, dips, or windrows.

7. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest ton by actual weight. The volume of each type of filter or bedding aggregate is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas. For each load of rock riprap placed as specified, the contractor must furnish to the responsible engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is considered full compensation for completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest 0.1 ton by actual weight. The quantity of each type of filter or bedding aggregate delivered and placed within the specified limits is computed to the nearest 0.1 ton. For each load of rock riprap placed as specified, the contractor must

furnish to the engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton. For each load of filter or bedding aggregate, the contractor must furnish to the responsible engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is considered full compensation for completion of the work.

Method 3—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap and filter or bedding aggregate is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap, filter, or bedding. Such payment is considered full compensation for completion of the work.

Method 4—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap, including filter and bedding aggregate, is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap, including filter and bedding. Such payment is considered full compensation for completion of the work.

Method 5—For items of work for which specific unit prices are established by the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest ton by actual weight. For each load of rock for riprap placed as specified, the contractor must furnish to the responsible engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton.

Payment is made at the contract unit price for each type of rock riprap, and includes compensation for any aggregate or geotextile installed as specified for filter or bedding. Such payment is considered full compensation for completion of the work.

Method 6—For items of work for which specific unit prices are established by the contract, the volume of each type of rock riprap is measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Payment is made at the contract unit price for each type of rock riprap and includes compensation for any aggregate or geotextile installed as specified for filter or bedding. Such payment is considered full compensation for completion of the work.

All methods—The following provision applies to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 8.

No separate payment is made for testing the gradation of the test pile. Compensation for testing is included in the appropriate bid item for riprap.

8. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Bid Item 4 - Rock Riprap

1. This item shall consist of furnishing and placing the equipment placed Type C and Type D riprap as shown in the drawings.
2. Type C Riprap furnished under this item shall meet the gradation requirements for: Type C, section 703.19 of the State of Ohio Department of Transportation, Construction and Material Specifications, January 2019. At least 85% of the material by weight shall be larger than a 6-inch but less than a 18-inch square opening. At least 50% of the material by weight shall be larger than an 12-inch square opening. The material smaller than a 6-inch square opening shall consist predominantly of rock spalls and rock fines and shall be free of soil.
3. Type D riprap furnished under this item shall meet the gradation requirements for: Type D, section 703.19 of the State of Ohio Department of Transportation, Construction and Material Specifications, January 2019. At least 85% of the material by weight shall be larger than a 3-inch but less than a 12-inch square opening. At least 50% of the material by weight shall be larger than an 6-inch square opening. The material smaller than a 3-inch square opening shall consist predominantly of rock spalls and rock fines and shall be free of soil.
4. Approved sources for the riprap are all suppliers specified in the most current Ohio Department of Transportation list of Certified Suppliers. Certified Suppliers may be searched at this address:
<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Materials/Pages/CertifiedSuppliers.aspx>
4. The finished surface of the riprap shall not project more than 3" above the planned surface.
5. Measurement and Payment shall be by Method 5.
6. Items subsidiary to this bid item are:
 - a. Drainfill -Construction Specification 24 - Subsidiary Item – Drainfill –No. 57 Stone
 - b. Removal of Water -Construction Specification 11 - Subsidiary Item – Removal of Water

Construction Specification 62—Grouted Rock Riprap

1. Scope

The work consists of furnishing, transporting, and the installation of grouted rock riprap revetments and blankets, including filter or bedding where specified.

2. Material

Rock for riprap shall conform to the requirements of Material Specification 523, or, if so specified, shall be obtained from designated sources. It shall be free from dirt, clay, sand, rock fines, and other material not meeting the required gradation limits.

At least 30 days before rock is delivered from other than designated sources, the contractor shall designate, in writing, the source from which rock material will be obtained and provide information satisfactory to the engineer that the material meets contract requirements. The contractor shall provide the engineer free access to the source for the purpose of obtaining samples for testing. The size and grading of the rock shall be as specified in section 13 of this specification.

Rock from approved sources shall be excavated, selected, and processed to meet the specified quality and grading requirements at the time the rock is installed.

When specified in section 13 of this specification or when requested by the contracting officer, a gradation quality control check shall be made by the contractor and subject to inspection by the engineer. The test shall be performed at the work site in accordance to ASTM D 5519 Test Method B Size, Size-Range Grading, on a test pile of representative rock. The weight or size of the test pile shall be large enough to ensure a representative gradation of rock from the source and to provide test results within a 5 percent accuracy.

Based on a specific gravity of 2.65 (typical of limestone and dolomite), and assuming the individual rock is shaped midway between a sphere and a cube, typical size/weight relationships are:

Sieve size	Approx. weight of rock	Weight of test pile
16 inches	300 pounds	6,000 pounds
11 inches	100 pounds	2,000 pounds
6 inches	15 pounds	300 pounds

The results of the test shall be compared to the gradation required for the project. Test pile results that do not meet the construction specifications shall be cause for the rock to be rejected. The test pile that meets contract requirements shall be left on the job site as a sample for visual comparison. The test pile shall be used as part of the last rock riprap to be placed.

Filter or bedding aggregates, when required, shall conform to Material Specification 521, Aggregates for Drainfill and Filters, unless otherwise specified.

Portland cement shall conform to the requirements of Material Specification 531 for the specified type.

Pozzolan conforming to Specification ASTM C 618, Class C or F, in amounts not to exceed 25 percent based on absolute volume, may be substituted for an equivalent amount of portland cement in the grout mixture unless otherwise specified in section 13 of this specification.

Aggregates shall conform to the requirements of Material Specification 522, Aggregates for Portland Cement Concrete, except that the grading for coarse aggregate shall be as specified in section 13 of this specification.

Water shall be clean and free from injurious amounts of oils, acid, alkali, organic matter, or other deleterious substances.

Air-entraining admixtures shall conform to the requirements of Material Specification 533, Chemical Admixtures for Concrete.

Curing compound shall conform to the requirements of Material Specification 534, Concrete Curing Compound.

Other admixtures, when required, shall be as specified in section 13 of this specification.

Geotextiles shall conform to the requirements of Material Specification 592.

3. Subgrade preparation

The subgrade surface on which the grouted rock riprap, filter, bedding, or geotextile is to be placed shall be cut or filled and graded to the lines and grades shown on the drawings. When fill to subgrade lines is required, it shall consist of approved material and shall conform to the requirements of the specified class of earthfill.

Rock riprap, filter, bedding, or geotextile shall not be placed until the foundation preparation is completed and the subgrade surface has been inspected and approved.

4. Placement of rock riprap

Method 1 Equipment-placed rock—The rock riprap shall be placed by equipment on the surface and to the depth specified. It shall be installed to the full section thickness in one operation and in such a manner as to avoid serious displacement of the underlying material. The rock for riprap shall be delivered and placed in a manner that ensures that the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks. Some hand placing may be required to provide a neat and uniform surface.

Rock riprap shall be placed in a manner to prevent damage to structures. Hand placing is required as necessary to prevent damage to any new and existing structures.

Method 2 Hand-placed rock—The rock riprap shall be placed by hand on the surface and to the depth specified. It shall be securely bedded with the larger rocks firmly in contact one to another without bridging. Spaces between the larger rocks shall be filled with smaller rocks and spalls. Smaller rocks shall not be grouped as a substitute for larger rock. Flat slab rock shall be laid on its vertical edge except where it is installed like paving stone and the thickness of the rock equals the specified depth of the riprap section.

5. Filter or bedding

When the contract specifies filter, bedding, or geotextile beneath the rock riprap, the designated material shall be placed on the prepared subgrade surface as specified. Compaction of filter or bedding aggregate is not required, but the surface of such material shall be finished reasonably smooth and free of mounds, dips, or windrows.

6. Design of the grout mix

The mix proportions for the grout mix shall be as specified in the construction details in section 13 of this specification. During installation, the engineer may require adjustment of the mix proportions whenever necessary. The mix shall not be altered without the approval of the engineer.

7. Handling and measurement of grout material

Material shall be stockpiled and batched by methods that prevent segregation or contamination of aggregates and ensure accurate proportioning of the mix ingredients.

Except as otherwise provided in section 13 of this specification, cement and aggregates shall be measured as follows:

- Cement shall be measured by weight or in bags of 94 pounds each. When cement is measured in bags, no fraction of a bag shall be used unless weighed.
- Aggregates shall be measured by weight. Mix proportions shall be based on the batch weight of each aggregate saturated surface-dry weight plus the weight of surface moisture it contains at the time of batching.
- Water shall be measured, by volume or by weight, to an accuracy within 1 percent of the total quantity of water required for the batch.
- Admixtures shall be measured within a limit of accuracy of plus or minus 3 percent.

8. Mixers and mixing

The mixer, when operating at capacity, shall be capable of combining the ingredients of the grout mix into a thoroughly mixed and uniform mass and of discharging the mix with a satisfactory degree of uniformity.

The mixer shall be operated within the limits of the manufacturer's guaranteed capacity and speed of rotation.

The time of mixing after all cement and aggregates have been combined in the mixer shall be a minimum of 1 minute for mixers having a capacity of 1 cubic yard or less. For larger capacity mixers, the minimum time shall be increased 15 seconds for each cubic yard or fraction thereof of additional capacity. The batch shall be so charged into the mixer that some water will enter in advance of the cement and aggregates, with the

balance of the mixing water introduced into the mixer before a fourth of the total minimum mixing time has elapsed.

When ready-mix grout is furnished, the contractor shall furnish to the engineer at the time of delivery a ticket showing the time of loading and the quantities of material used for each load of grout mix delivered.

No mixing water in excess of the amount required by the approved job mix shall be added to the grout mix during mixing or hauling or after arrival at the delivery point.

9. Conveying and placing

The grout mix shall be delivered to the site and placed within 1.5 hours after the introduction of the cement to the aggregates. In hot weather or under conditions contributing to accelerated stiffening of the concrete, the time between the introduction of the cement to the aggregates and complete discharge of the grout batch shall be a maximum of 45 minutes. The engineer may allow a longer time provided the setting time of the grout is increased a corresponding amount by the addition of an approved set-retarding admixture. In any case concrete shall be conveyed from the mixer to the final placement as rapidly as practicable by methods that prevent segregation of the aggregates, loss of mortar, displacement of the rock riprap, or a combination of these.

Grout mix shall not be allowed to free fall more than 5 feet unless suitable equipment is used to prevent segregation.

The grout mix shall not be placed until the rock riprap has been inspected and approved by the engineer for the placement of grout.

Rock to be grouted shall be kept moist for a minimum of 2 hours before grouting.

The rock riprap shall be flushed with water before placing the grout to remove the fines from the rock surfaces. The rock shall be kept moist before the grouting and without placing in standing or flowing water. Grout placed on inverts or other nearly level areas may be placed in one operation. On slopes, the grout shall be placed in two nearly equal applications consisting of successive lateral strips about 10 feet in width starting at the toe of the slope and progressing upward. The grout shall be delivered to the place of final deposit by approved methods and discharged directly on the surface of the rock. A metal or wood splash plate is used to prevent displacement of the rock directly under the grout discharge. The flow of grout shall be directed with brooms, spades, or baffles to prevent grout from flowing excessively along the same path and to assure that all intermittent spaces are filled. Sufficient barring shall be conducted to loosen tight pockets of rock and otherwise aid in the penetration of grout to ensure the grout fully penetrates the total thickness of the rock blanket. All brooming on slopes shall be uphill. After the grout has stiffened, the entire surface shall be rebroomed to eliminate runs and to fill voids caused by sloughing. The surface finish, following the completion of grout installation, shall consist of one-third of the rock extended above the level of grout. The exposed rock will not have a plastered appearance.

After completion of any strip or panel, no individual(s) or equipment shall be permitted on the grouted surface for 24 hours. The grouted surface shall be protected from injurious

action by the sun, rain, flowing water, mechanical injury, or other potential damaging activity.

10. Curing and protection

The completed finished surface shall be prevented from drying for a minimum curing period of 7 days following placement. Exposed surfaces shall be maintained in a moist condition continuously for the 7-day curing period or until curing compound has been applied as specified in this section. Moisture shall be maintained by sprinkling, flooding, or fog spraying or by covering with continuously moistened canvas, cloth mats, straw, sand, or other approved material. Water or moist covering shall be used to protect the grout during the curing process without causing damage to the grout surface by erosion or other mechanisms that may cause physical damage.

The grouted rock may be coated with an approved curing compound as an alternative method to maintaining a continuous moisture condition during the curing period. The compound shall be sprayed on the moist grout surface as soon as free water has disappeared and all surface finishing has been completed. The compound shall be applied at a minimum uniform rate of 1 gallon per 175 square feet of surface and shall form a continuous adherent membrane over the entire surface. Curing compound shall not be applied to surfaces requiring bond to subsequently placed grout and/or concrete. If the membrane is damaged during the curing period, the damaged area shall be resprayed at the rate of application specified for the original treatment.

Grout mix shall not be placed when the daily minimum temperature is less than 40 degrees Fahrenheit unless facilities are provided to ensure that the temperature of the material is maintained at a minimum temperature of 50 degrees Fahrenheit and not more than 90 degrees Fahrenheit during placement and the curing period. Grout mix shall not be placed on a frozen surface. When freezing conditions prevail, rock to be grouted must be covered and heated to within a range of 50 to 90 degrees Fahrenheit for a minimum of 24 hours before placing grouting material.

11. Inspecting and testing fresh grout

The grout material shall be checked and tested throughout the grouting operation. Sampling of fresh grout shall be conducted in conformance with ASTM C 172. The volume of each batch will be determined by methods prescribed in ASTM C 138.

The engineer shall have free access to all parts of the contractor's plant and equipment used for mixing and placing grout during the period of the contract. Proper facilities shall be provided for the engineer to sample material and view processes implemented in the mixing and placing of grout as well as for securing grout test samples. All tests and inspections shall be conducted so that only a minimum of interference to the contractor's operation occurs.

For ready-mixed grout, the contractor shall furnish to the engineer a statement-of-delivery ticket for each batch delivered to the site. The ticket shall provide as a minimum: weight in pounds of cement, aggregates (fine and coarse), water; weight in ounces of air-entraining agent; time of loading; and the revolution counter reading at the time batching was started.

12. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the volume of grouted rock riprap, including filter layers or bedding, is determined to the nearest cubic yard from the specified thickness shown on the drawings and the area on which acceptable placement has been installed. Payment for grouted rock riprap is made at the contract unit price. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the grouted rock riprap, filter layers and bedding, and geotextile material.

Method 2—For items of work for which specific unit prices are established in the contract, the volume of riprap and the volume of filter layers or bedding is determined to the nearest cubic yard from the specified thickness shown on the drawings and the area in which acceptable placement has been installed. The volume of grout is determined from the calculated batch volume and the number of mixed batches delivered to the site and placed in accordance with the specification. The area of geotextile is determined to the nearest square yard from measurements of geotextile material installed according to the contract requirements. Payment is made at the contract unit price for each type of rock riprap, filter or bedding, concrete grout, and geotextile. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work.

Method 3—For items of work for which specific unit prices are established in the contract, the quantity of each type of rock riprap placed within the specified limits is computed to the nearest 0.1 ton by actual weight. The quantity of each type of filter or bedding aggregate delivered and placed within the specified limits is computed to the nearest 0.1 ton. For each load of rock riprap placed as specified, the contractor shall furnish to the engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton. For each load of filter or bedding aggregate, the contractor shall furnish to the engineer a statement-of-delivery ticket showing the weight to the nearest 0.1 ton. The volume of grout is determined from the calculated batch volume and the number of mixed batches delivered to the site and placed in accordance with the specifications and drawings. The area of geotextile is determined to the nearest square yard from measurements of geotextile material installed according to the contract requirements. Payment is made at the contract unit price for each type of rock riprap, filter or bedding, concrete grout, and geotextile. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work.

All methods—The following provision applies to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 13 of this specification.

13. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are: a.

Bid Item 5- Grouted Rock Riprap

1. This item shall consist of furnishing and placing the grout and grouted rock riprap as shown in the drawings.
2. Riprap furnished under this item shall meet the gradation requirements for Type C, section 703.19 of the State of Ohio Department of Transportation, Construction and Material Specifications, January 2019. At least 85% of the material by weight shall be larger than a 6-inch but less than an 18-inch square opening. At least 50% of the material by weight shall be larger than a 12-inch square opening. The material smaller than a 6-inch square opening shall consist predominantly of rock spalls and rock fines and shall be free of soil.
3. Approved sources for the riprap are all suppliers specified in the most current Ohio Department of Transportation list of Certified Suppliers. Certified Suppliers may be searched at this address:

<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Materials/Pages/CertifiedSuppliers.aspx>

4. Trucks delivering ODOT Type C riprap to the site shall not line their beds with smaller aggregate which contaminates the riprap.
5. The finished surface of the riprap shall not project more than 3" above the planned surface.
6. Placement of Rock Riprap shall be by Method 1 in Section 4. The final placement shall have enough voids to accommodate the concrete grout.
7. The concrete grout mix shall be as follows:

Cement shall be type I or IA.
Minimum cement content shall be 6 bags per cubic yard.
The water-cement ratio shall not exceed 0.50.
Coarse aggregate shall be Size No. 57 or smaller.
Fine aggregate shall be concrete sand.
Air content shall be 4 to 8 percent.
Ratio of fine to coarse shall be as recommended by the supplier.
Concrete shall be superplasticized.
Curing compound shall be applied to concrete.

8. Curing compound shall comply with ASTM C1315 Type 1, Class A.

9. The slump for the concrete prior to superplastizing shall be a maximum of 3 inches. The maximum slump after adding superplasticizer and prior to placement shall be 7-1/2 inches.
10. The concrete shall be consolidated into the voids with the use of a concrete vibrator. A smooth surface is not to be created by the grouting operation.
11. The concrete grouting operation shall be performed in the presence of the engineer or his representative.
12. Grouted Rock Riprap placement during cold weather shall be as described in Section 10 of this specification. The curing period during which concrete temperature shall be maintained at minimum 50 degrees Fahrenheit shall be 7-days. Concrete surface temperature shall be checked daily with a max/min thermometer, and the temperatures recorded for documentation and provided to the engineer.
13. Measurement and Payment shall be by Method 1, except that the filter or bedding material is subsidiary to this item.
14. Items subsidiary to this bid item are:
 - a. Removal of Water - Construction Specification 11
 - b. Drainfill -#57 Stone - Construction Specification 24

For Review Only
Official Bid Packet available at
Athens County Engineer's Office

Construction Specification 64—Gabions and Gabion Mattresses

1. Scope

The work consists of furnishing, assembling, and installing rock-filled wire-mesh gabion baskets and gabion mattresses. Gabions are at least 12 inches high. Gabion mattresses are no more than 12 inches high.

2. Material Types

Gabions and gabion mattresses shall consist of rectangular wire mesh formed containers filled with rock. Gabions will conform to one of the following types. The wire coating shall be as specified in Section 7.

Twisted-mesh—Nonraveling, double twisted, hexagonal wire mesh consisting of two wires twisted together in two 180-degree turns. Twisted-mesh, fasteners, and stiffeners shall conform to the requirements of ASTM A975.

Lacing wire is the standard fastener for twisted-mesh gabions and gabion mattresses. Ring fasteners may be used and shall be made of stainless steel. Ring fasteners must provide the minimum strength per lineal foot that is specified in ASTM A975 for gabions and gabion mattresses.

Welded mesh—Welded mesh with a uniform square or rectangular pattern and a resistance weld at each intersection. Welded mesh and stiffeners shall conform to the requirements of ASTM A974 with the exception that welded-mesh may be delivered in component form, either rolled or stacked, for assembly at the job site.

Spiral binders are the standard fastener for welded-mesh gabions and gabion mattresses. Spiral binders shall conform to the requirements of ASTM A974. Alternate fasteners for use with welded-mesh gabions and gabion mattresses, such as ring fasteners or lacing wire, shall be formed from wire meeting the same quality and coating thickness requirements as specified for the gabions and gabion mattresses. Ring fasteners shall be made of stainless steel. Standard fasteners and alternate fasteners must provide the minimum strength per lineal foot that is specified in ASTM A974 for gabions and gabion mattresses.

Rock—Rock shall conform to the quality requirements in Material Specification 523, Rock for Riprap, unless otherwise specified in section 7. At least 85 percent of the rock particles, by weight, shall be within the predominant rock size range.

Gabion basket or mattress height	Predominant rock size (in)	Minimum rock dimension (in)	Maximum rock dimension (in)
12-, 18-, or 36-inch basket	4 to 8	4	8
6-, 9-, or 12-inch mattress	3 to 6	3	6

At least 30 days before delivery to the site, the contractor shall inform the engineer in writing of submit in writing the source from which the rock will be obtained. The test data, and other information by which the material was determined by the contractor to meet needed to document that the rock meets the requirements of this specification are included. The contractor shall provide the engineer free access to the source for the purpose of obtaining samples for testing and source approval.

Bedding or filter material—Bedding or filter material, when specified, shall meet the gradation shown on the plans, or as specified in section 7, and the requirements of Material Specification 521, Aggregates for Drainfill and Filters. Geotextile, when specified, shall conform to the requirements specified in section 7 and those of Material Specification 592, Geotextile.

3. Foundation preparation

The foundation on which the gabions and gabion mattresses are to be placed shall be cut or filled and graded to the lines and grades shown on the drawings. Surface irregularities, loose material, vegetation, and all foreign matter shall be removed from the foundation. When fill is required, it shall consist of material conforming to the specified requirements specified in section 7. Fill shall be compacted as specified in section 7. Gabions, gabion mattresses, and bedding or specified geotextiles shall not be placed until the foundation preparation is completed and foundation the subgrade surfaces have been inspected and approved by the COTR meets the requirements of this specification. Compaction of bedding or filter material is required as specified in section 7. The surface of the finished material shall be to grade and free of mounds, dips, or windrows. Geotextile shall be installed in accordance with the requirements of Construction Specification 95.

4. Assembly and placement

Where a gabion or gabion mattress unit must be modified, welded-mesh panels may be cut to fit. Twisted-mesh panels may be folded and neatly wired but shall not be cut.

Assembly—Use ring-type fasteners or lacing wire for the assembly and placement of twisted-mesh panels. Wrap the lacing wire with alternating single and double half-hitches at 4- to 6-inch intervals and secure by tying a double half-hitch at each end. Use spiral or ring type fasteners for the assembly and placement of welded-mesh panels. Where spiral fasteners are used, crimp the ends to secure the spirals in place. Where ring type fasteners are used, install the fasteners at a maximum spacing of 6 inches. Interior diaphragms are required where any inside dimension exceeds 3 feet. Use the same type fasteners and fastening procedures to install interior diaphragms and lids as used in the panel assembly. Diaphragms are installed to assure that no open intervals are present that exceed 3 feet.

Placement—Place the empty gabions or gabion mattresses on the foundation and use lacing wire to interconnect the all adjacent horizontal and vertical edges adjacent gabions along the top, bottom, and vertical edges using lacing wire. Wrap the wire with alternating single and double half-hitches at 4- to 6-inch intervals. Welded-mesh gabions and gabion mattresses may be interconnected with spiral fasteners, ring-type fasteners, or lacing wire. Unless otherwise specified in section 8, lacing wire will be the only

fastener allowed for interconnecting woven mesh gabions. Spiral fasteners, ring type fasteners, or lacing wire. Where spiral fasteners are used, crimp the ends to secure the spirals in place. Where ring type fasteners are used, install the fasteners at a maximum spacing of 6 inches, are commonly used for the assembly and interconnection of welded mesh gabions. Spirals are screwed down at the connecting edges then each end of the spiral is crimped to secure it in place. Lacing may be used as needed to supplement the interconnection of welded mesh gabions and the closing of lids.

Interconnect each layer of gabions and gabion mattresses to the underlying layer of gabions along the front, back, and sides. Stagger the vertical and horizontal joints between the gabions of adjacent rows and layers by at least half one-fourth of a cell length.

5. Filling operation

Twisted-mesh—After adjacent empty twisted-mesh units are set to line and grade and common sides properly connected, they shall be placed in straight line tension and stretched to remove any kinks from the mesh and to gain a uniform alignment. Units may be staked to maintain the established proper alignment before the rock is placed. No stakes shall be placed through geotextile material. Fasteners shall be attached during the filling operation as needed to preserve the strength and shape of the structure. Internal connecting crosstie wires shall be placed in each unrestrained gabion and gabion mattress unit of more than 18 inches in height, including units left temporarily unrestrained. Two internal connecting wires shall be placed concurrently with rock placement at each 12-inch interval of depth. These crossties shall be evenly spaced along the front face and connected to the back face. All crosstie wires shall be looped around two mesh openings and each wire end shall be secured by a minimum of five 180-degree twists around itself after looping.

Welded-mesh—Welded-mesh units do not require stretching. Units may be staked to maintain the established proper alignment before the rock is placed. No stakes shall be placed through geotextile material. Fasteners shall be attached during the filling operation as needed to preserve the strength and shape of the structure. Internal crossties or stiffeners shall be placed in each unrestrained gabion and gabion mattress unit of more than 18 inches in height, including units left temporarily unrestrained. Crossties or stiffeners shall be placed concurrently with rock placement at each 12-inch interval of depth. They shall be placed across the corners of the gabions (at 12 inches from the corners) providing diagonal bracing. Lacing wire or preformed hooked wire stiffeners may be used.

Twisted and welded-mesh—The gabions and gabion mattresses shall be carefully filled with rock in a manner that will ensure alignment, avoid bulges, and provide a compact mass that minimizes voids. Machine placement requires supplementing with hand work to ensure the desired results. The units or cells in any row shall be filled in stages so that the depth of rock placed in any one cell does not exceed the depth of rock in any adjoining cell by more than 12 inches. Along the exposed faces, the outer layer of stone shall be carefully placed and arranged by hand to ensure a neat, compact placement with a uniform appearance.

The last layer of rock shall be uniformly leveled to the top edges of the cells. Lids shall be stretched tight over the rock filling. The use of crowbars or other single point leverage bars for lid closing is prohibited as they may damage the baskets. The lid shall be stretched until it meets the perimeter edges of the front and end panels. The gabion lid shall then be secured to the sides, ends, and diaphragms with lacing wire, spiral binders, or approved alternate fasteners. Lacing wire shall be wrapped with alternating single and double half-hitches at 4- to 6-inch intervals. Where spiral fasteners are used, crimp the ends to secure the spirals in place.

Any damage to the wire or coatings during assembly, placement, and or filling shall be repaired promptly in accordance with the manufacturer's recommendations or replaced with undamaged gabion basket materials.

6. Measurement and payment

Method 1—For items of work for which specific unit prices are established in the contract, the volume of rock is measured within the neat lines of the gabion structure and computed to the nearest cubic yard. Payment for gabions is made at the contract unit price and includes the wire mesh and rock. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to completion of the work.

Method 2—For items of work for which specific unit prices are established in the contract, the volume of the gabions is measured within the neat lines of the gabion structure and computed to the nearest cubic yard. Payment for the gabions is made at the contract unit price and includes the wire mesh, rock, and specified bedding material or geotextile. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work.

Method 3—For items of work for which specific unit prices are established in the contract, the surface area is measured within the neat lines of the gabion mattress structure and computed to the nearest square yard. Payment for the gabion mattress is made at the contract unit price and includes the wire mesh and rock. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work.

Method 4—For items of work for which specific unit prices are established in the contract, the surface area is measured within the neat lines of the gabion mattress structure and computed to the nearest square yard. Payment for the gabion mattress is made at the contract unit price and includes the wire mesh, rock, and specified bedding material or geotextile. Such payment is considered full compensation for all labor, material, equipment, and all other items necessary and incidental to the completion of the work.

All methods—The following provisions apply to all methods of measurement and payment. Unless otherwise specified in section 8, no deduction in volume is made for any void or embedded item (e.g. a pipe passing through a gabion wall). Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Each item and the items to which they are made subsidiary are identified in section 8 of this specification.

7. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

- A. Gabions shall conform to ASTM A975. Twisted wire shall be Zinc-coated and coated with PVC (ASTM A975 Style 3).
- B. Gabions and gabion mattresses shall be manufactured with all components mechanically connected at the production facility with the exception of the mattress lid which is produced separately from the base.
- C. Gabions and gabion mattresses shall be supplied in the collapsed form, folded and bundled.
- D. Gabion length may vary from 6 feet to 12 feet.
- E. Gabions and gabion mattresses shall be assembled on the construction site or at a location approved in writing by the CO.
- F. Each gabion (2 to 4 cells) shall be completely assembled, except lid closure, (ready for filling with rock) prior to interconnecting with another gabion.
- G. Assembly fasteners:
 - a. Lacing Wire -Lacing wire shall have the same coating as the gabions. Secure the end of the wire by a minimum of five wraps, then use alternating single and double half-hitches, then tie the end. The double half-hitch is the same as two singles, side by side, tied in the same direction. Spacing between single and double half-hitches shall be 4 to 6 inches.
 - b. Interlocking Ring -Spacing and maximum number of wires that can be connected shall be per manufacturer's recommendation and certification meeting the required strength.
 - c. Overlapping Ring -Spacing and the number of wires connected shall be per manufacturer's recommendation and certification meeting the required strength.
- H. Ring manufacturers must certify in writing that the rings meet the minimum strength of 1400 lbs. per lineal foot for gabion baskets and 900 lbs. per lineal foot for gabion mattresses. The certification must state the proper interlocking and or ring closure of the ring.
- I. Connecting adjacent gabions, gabions shall be connected along the bottom, vertical edges, and the top of each individual basket.
- J. Baskets shall be stretched and tension shall be maintained during filling operations to minimize bulges and to maintain shape and alignment. Hand facing of baskets shall be required to the extent that a uniform front face, free of voids, is obtained and that only rocks five (5) inches or greater in diameter are placed on the front. Care shall be taken to minimize voids throughout the filling operation.
- K. All woven mesh gabion perimeter cells shall have internal cross tie wires.

- L. Eighteen inch baskets shall have cross ties installed.
- M. When the bottom of the gabion basket is within 6" of bedrock rebar pins are required.

N. Bid Item 6 - Woven Wire Mesh Gabions

1. This item shall consist of furnishing and installing the rock filled woven wire mesh gabions, and mattresses, as shown in the drawings.
2. All woven wire gabions and mattresses shall be PVC coated per manufacturer's specification, including all lacing wire. All ring fasteners shall be stainless steel.
3. All rock will be carefully placed within the baskets so as to not distort the shape of the gabions, nor damage any of the baskets or connecting wire.
4. Rockfill for the gabions furnished under this bid item shall be limestone and be free of soil and excess fines, meeting the size distribution in Section 2.
5. Approved sources for the riprap are all suppliers specified in the most current Ohio Department of Transportation list of Certified Suppliers. Certified Suppliers may be searched at this address:

<http://www.dot.state.oh.us/Divisions/ConstructionMgt/Materials/Pages/CertifiedSuppliers.aspx>

6. Backfill limits are as shown in the drawings.
7. Reinforcing pins if needed shall be 1 inch diameter reinforcing bar, 36 inches long, inserted into a 1 inch diameter hole, drilled 18 inches into the bedrock. One pin per basket cell in the front face is required.
8. The beginning and ending of the gabion placement shall be marked in the field with stakes and ribbons.
9. Measurement and Payment shall be by Method 1.
10. Items Subsidiary to this Bid Item are:
 - a. Removal of Water -Construction Specification 11

Construction Specification 94—Contractor Quality Control

1. Scope

The work consists of developing, implementing, and maintaining a quality control system to ensure that the specified quality is achieved for all materials and work performed.

2. Equipment and materials

Equipment and material used for quality control shall be of the quality and condition required to meet the test specifications cited in the contract. Testing equipment shall be properly adjusted and calibrated at the start of operations and the calibration maintained at the frequency specified. Records of equipment calibration tests shall be available to the engineer at all times. Equipment shall be operated and maintained by qualified operators as prescribed in the manufacturer's operating instructions, the references specified, and as specified in section 10 of this specification. All equipment and materials used in performing quality control testing shall be as prescribed by the test standards referenced in the contract or in section 10.

All equipment and materials shall be handled and operated in a safe and proper manner and shall comply with all applicable regulations pertaining to their use, operation, handling, storage, and transportation.

3. Quality control system

Method 1—The contractor shall develop, implement, and maintain a system of quality control to provide the specified material testing and verification of material quality before use. The system activities shall include procedures to verify adequacy of completed work, initiate corrective action to be taken, and document the final results. The identification of the quality control personnel and their duties and authorities shall be submitted to the contracting officer in writing within 15 calendar days after notice of award.

Method 2—The contractor shall develop, implement, and maintain a system adequate to achieve the specified quality of all work performed, material incorporated, and equipment furnished before use. The system established shall be documented in a written plan developed by the contractor and approved by the contracting officer. The system activities shall include the material testing and inspection needed to verify the adequacy of completed work and procedures to be followed when corrective action is required. Daily records to substantiate the conduct of the system shall be maintained by the contractor. The quality control plan shall cover all aspects of quality control and shall address, as a minimum, all specified testing and inspection requirements. The plan provided shall be consistent with the planned performance in the contractor's approved construction schedule. The plan shall identify the contractor's onsite quality control manager and provide an organizational listing of all quality control personnel and their specific duties. The written plan shall be submitted to the contracting officer within 15 calendar days after notice of award. The contractor shall not proceed with any construction activity that requires inspection until the written plan is approved by the contracting officer.

All methods—The quality control system shall include, but not be limited to, a rigorous examination of construction material, processes, and operation, including testing of material and examination of manufacturer's certifications as required, to verify that work

meets contract requirements and is performed in a competent manner.

4. Quality control personnel

Method 1—Quality control activities shall be accomplished by competent personnel. A competent person is: One who is experienced and capable of identifying, evaluating, and documenting that materials and processes being used will result in work that complies with the contract; and, who has authority to take prompt action to remove, replace, or correct such work or products not in compliance. Off-site testing laboratories shall be certified or inspected by a nationally recognized entity. The Contractor shall submit to the Contracting Officer, for approval, laboratory certification or inspection information. The Contractor shall submit to the Contracting Officer, for approval, the names, qualifications, authorities, certifications, and availability of the competent personnel who will perform the quality control activities.

Method 2—Quality control activities shall be accomplished by competent personnel who are separate and apart from line supervision and who report directly to management. A competent person is one who is experienced and capable of identifying, evaluating, and documenting that material and processes being used will result in work that complies with the contract, and who has authorization to take prompt action to remove, replace, or correct such work or products not in compliance. Offsite testing laboratories shall be certified or inspected by a nationally recognized entity. The Contractor shall submit to the Contracting Officer, for approval, laboratory certification or inspection information. The contractor shall submit to the contracting officer, for approval, the names, qualifications, authorities, certifications, and availability of the competent personnel who will perform the quality control activities.

5. Post-award conference

The contractor shall meet with the contracting officer before any work begins and discuss the contractor's quality control system. The contracting officer and the contractor shall develop a mutual understanding regarding the quality control system, including procedures for correcting quality control issues.

6. Records

The contractor's quality control records shall document both acceptable and deficient features of the work and corrective actions taken. All records shall be on forms approved by the contracting officer, be legible, and be dated and signed by the competent person creating the record.

Unless otherwise specified in section 10 of this specification, records shall include:

- a. Documentation of shop drawings including date submitted to and date approved by the contracting officer, results of examinations, any need for changes or modifications, manufacturer's recommendations and certifications, if any, and signature of the authorized examiner.
- b. Documentation of material delivered including quantity, storage location, and results of quality control examinations and tests.
- c. Type, number, date, time, and name of individual performing quality control activities.
- d. The material or item inspected and tested, the location and extent of such material or item, and a description of conditions observed and test results obtained during

the quality control activity.

- e. The determination that the material or item met the contract provisions and documentation that the engineer was notified.
- f. For deficient work, the nature of the defects, specifications not met, corrective action taken, and results of quality control activities on the corrected material or item.

7. Reporting results

The results of contractor quality control inspections and tests shall be communicated to the engineer immediately upon completion of the inspection or test. Unless otherwise specified in section 10, the original plus one copy of all records, inspections, tests performed, and material testing reports shall be submitted to the engineer within one working day of completion. The original plus one copy of documentation of material delivered shall be submitted to the engineer before the material is used.

8. Access

The contracting officer and the engineer shall be given free access to all testing equipment, facilities, sites, and related records for the duration of the contract.

9. Payment

Method 1—For items of work for which lump sum prices are established in the contract, payment is made as the work proceeds, after presentation by the contractor of invoices showing related costs and evidence of charges by suppliers, subcontractors, and others for furnishing supplies and work performed. If the total of such payments is less than the lump sum contract price for this item, the remaining balance is included in the final contract payment. Payment of the lump sum contract price constitutes full compensation for completion of the work.

Payment is not made under this item for the purchase cost of material and equipment having a residual value.

Method 2—For items of work for which lump sum prices are established in the contract, payment is prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating shall be the number estimated to complete the work. The final month's prorate amount is made with the final payment. Payment as described above constitutes full compensation for completion of the work.

Payment is not made under this item for the purchase cost of material and equipment having a residual value.

All methods—Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in section 10.

10. Items of work and construction details

Items of work to be performed in conformance with this specification and the construction details therefore are:

Subsidiary Item – Contractor Quality Control

1. In Section 3 - Quality control system, Method 1 applies. Verbal notification of the quality control personnel submitted at the beginning of activities is required.
2. In Section 4 – Quality control personnel, Method 1 applies. The project supervisor may act as the contractor's quality control manager.
3. Method of Payment.

Section 9 Payment does not apply. No separate payment will be made for Contractor Quality Control. Compensation for this item will be included in the payment for Bid Item 2 - Mobilization and Demobilization.

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Material Specification 521—Aggregates for Drainfill and Filters

1. Scope

This specification covers the quality of mineral aggregates for the construction of drainfill and filters.

2. Quality

Drainfill and filter aggregates shall be sand, gravel, or crushed stone or mixtures thereof. Aggregates shall be composed of clean, hard, durable, mineral particles free from organic matter, clay balls, soft particles, or other substances that would interfere with the free-draining properties of the aggregates.

Coarse aggregate may be crushed limestone or other material that has limestone particles included. Aggregates from crushed limestone shall be thoroughly washed and screened to remove limestone dust, limestone fines, and fine soil particles. Limestone shall not be used for fine aggregates except in combination with other material, such that not more than 5 percent of the portion finer than the No. 4 sieve shall be limestone.

Aggregates shall be tested for soundness according to ASTM Method C 88 and shall have a weighted average loss in 5 cycles of not more than 12 percent when sodium sulfate is used or 18 percent when magnesium sulfate is used.

3. Grading

Drainfill and filter aggregates shall conform to the specified grading limits after being placed or after being compacted when compaction is specified. Grading shall be determined by ASTM Method C 136. The percentage of material finer than the No. 200 sieve shall be determined by the method in ASTM Designation C 117.

4. Storing and handling

Drainfill and filter aggregates shall be stored and handled by methods that prevent segregation of particle sizes or contamination by mixing with other material.

Material Specification 522-Aggregates for Portland Cement Concrete

1. Scope

This specification covers the quality of fine aggregate and coarse aggregate for use in the manufacture of portland cement concrete.

2. Quality

Aggregate shall conform to the requirements of ASTM Specification C 33 for the specified sizes. Aggregates that fail to meet any requirement may be accepted only when either:

- a. The specified alternate conditions of acceptance can be proven before the aggregates are used on the job and within a period such that no work under the contract will be delayed by the requirements of such proof, or
- b. The specification for concrete expressly contains a provision of special mix requirements to compensate for the effects of the deficiencies.

3. Reactivity with alkalis

The potential reactivity of aggregates with the alkalis in cement shall be evaluated by petrographic examination and, where applicable, the chemical method of test, ASTM Designation C 289, or by the results of previous tests or service records of concrete made from similar aggregates from the same source. The standards for evaluating potential reactivity shall be as described in ASTM Specification C 33, appendix A1.

Aggregates indicated by any of the above to be potentially reactive shall not be used except under one of the following conditions:

- a. Applicable test results of mortar bar tests made according to ASTM Method C 227 are available which indicate an expansion of less than 0.10 percent at 6 months in mortar bars made with cement containing not less than 0.8 percent alkalis expressed as sodium oxide; or
- b. Concrete made from similar aggregates from the same source has been demonstrated to be sound after 3 years or more of service under conditions of exposure to moisture and weather similar to those anticipated for the concrete under these specifications.

Aggregates indicated to be potentially reactive, but within acceptable limits as determined by mortar bar test results or service records, shall be used only with low alkali cement, containing less than 0.60 percent alkalis expressed as sodium oxide.

4. Storing and handling

Aggregates of each class and size shall be stored and handled by methods that prevent segregation of particles sizes or contamination by intermixing with other material.

Material Specification 523—Rock for Riprap

1. Scope

This specification covers the quality of rock to be used in the construction of rock riprap.

2. Quality

Individual rock fragments must be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. Except as otherwise specified, the rock fragments must be angular to subrounded. The least dimension of an individual rock fragment must not be less than one-third the greatest dimension of the fragment. ASTM D4992 provides guidance on selecting rock.

Except as otherwise provided, the rock must be tested and must have the following properties:

Rock type 1

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.5 when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 2 percent when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in five cycles must not be more than 10 percent when sodium sulfate is used or more than 15 percent when magnesium sulfate is used.

Rock type 2

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.5 when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 2 percent when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in five cycles must be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

Rock type 3

- **Bulk specific gravity (saturated surface-dry basis)**—Not less than 2.3 when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Absorption**—Not more than 4 percent when tested in accordance with ASTM D6473 on samples prepared as described for soundness testing.
- **Soundness**—The weight loss in five cycles must be not more than 20 percent when sodium sulfate is used or more than 25 percent when magnesium sulfate is used.

3. Methods of soundness testing

Rock cube soundness—The sodium or magnesium sulfate soundness test for all rock types (1, 2, or 3) must be performed on a test sample of $5,000 \pm 300$ grams of rock fragments, reasonably uniform in size and cubical in shape, and weighing, after sampling, about 100 grams each. They must be obtained from rock samples that are representative of the total rock mass, as noted in ASTM D4992, and that have been sawed into slabs as described in ASTM D5121. The samples must further be reduced in size by sawing the

slabs into cubical blocks. The thickness of the slabs and the size of the sawed fragments must be determined by the size of the available test apparatus and as necessary to provide, after sawing, the approximate 100-gram samples. The cubes must undergo five cycles of soundness testing in accordance with ASTM C88.

Internal defects may cause some of the cubes to break during the sawing process or during the initial soaking period. Do not test any of the cubes that break during this preparatory process. Such breakage, including an approximation of the percentage of cubes that break, must be noted in the test report.

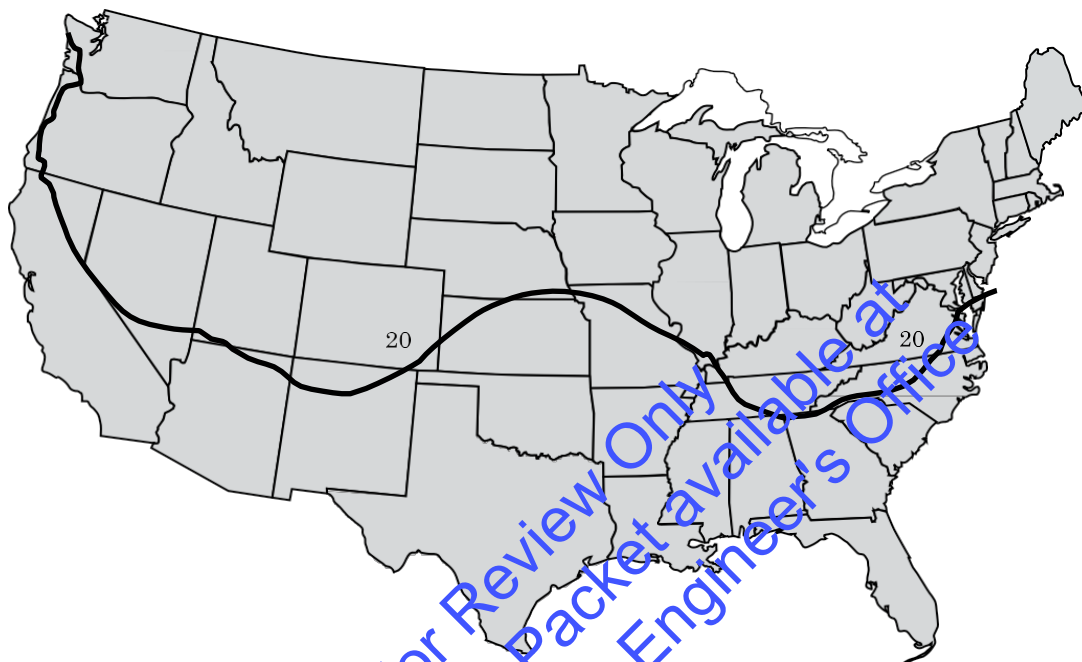
After the sample has been dried following completion of the final test cycle and washed to remove the sodium sulfate or magnesium sulfate, the loss of weight must be determined by subtracting from the original weight of the sample the final weight of all fragments that have not broken into three or more fragments.

The test report must show the percentage loss of the weight and the results of the qualitative examination.

Rock slab soundness—When specified, the rock must also be tested in accordance with ASTM D5240. Deterioration of more than 25 percent of the number of blocks is cause for rejection of rock from this source. Rock must also meet the requirements for average percent weight loss stated below.

- For projects located north of the Number 20 Freeze-Thaw Severity Index Isoline (fig. 523-1), unless otherwise specified, the average percent weight loss for Rock Type 1 must not exceed 20 percent when sodium sulfate is used or 25 percent when magnesium sulfate is used. For Rock Types 2 and 3, the average percent weight loss must not exceed 25 percent for sodium sulfate soundness or 30 percent for magnesium sulfate soundness.
- For projects located south of the Number 20 Freeze-Thaw Severity Index Isoline, unless otherwise specified, the average percent weight loss for Rock Type 1 must not exceed 30 percent when sodium sulfate is used or 38 percent when magnesium sulfate is used. For Rock Types 2 and 3, the average percent weight loss must not exceed 38 percent for sodium sulfate soundness or 45 percent for magnesium sulfate soundness.

Figure 523-1 Number 20 Freeze-Thaw Severity Index Isoline (map approximates the map in ASTM D5312)



4. Field durability inspection

Rock that fails to meet the material requirements stated above (if specified), may be accepted only if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weather, wetting and drying, and erosive forces similar to those anticipated for the rock to be installed under this specification.

A rock source may be rejected if the rock from that source deteriorates in less than 5 years under similar use and exposure conditions expected for the rock to be installed under this specification, even though it meets the testing requirements stated above.

Deterioration is defined as the loss of more than one-quarter of the original rock volume, or severe cracking that would cause a block to split. Measurements of deterioration are taken from linear or surface area particle counts to determine the percentage of deteriorated blocks. Deterioration of more than 25 percent of the pieces is cause for rejection of rock from the source.

5. Grading

The rock must conform to the specified grading limits after it has been placed within the matrix of the rock riprap. Grading tests must be performed, as necessary, according to ASTM D5519, Method A, B, or C, as applicable.

Material Specification 531—Portland Cement

1. Scope

This specification covers the quality of portland cement.

2. Quality

Portland cement shall conform to the requirements of ASTM Specification C 150 for the specific types of cement. When Type I portland cement is specified, Type IS portland blast-furnace slag cement or Type IP portland-pozzolan cement conforming to the requirements of ASTM Specification C 595 may be used unless prohibited by the specifications.

When air-entraining cement is required, the contractor shall furnish the manufacturer's written statement providing the source, amount, and brand name of the air-entraining component.

3. Storage at the construction site

Cement shall be stored and protected at all times from weather, dampness, or other destructive elements. Cement that is partly hydrated or otherwise damaged will not be accepted.

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Material Specification 532—Supplementary Cementitious Materials

1. Scope

This specification covers the quality of supplementary cementitious materials for concrete.

2. Quality

Fly ash used as a partial substitution of Portland cement shall conform to the requirements of ASTM C618, Class Cor F except the loss on ignition shall not exceed 3 percent, unless otherwise specified. Lot-to-lot variation in the loss on ignition shall not exceed 1 per- cent. When specified, fly ash shall conform to one or more of the supplementary optional physical require-ments listed in ASTM C618.

Blast-furnace slag used as a partial substitution of portland cement shall conform to ASTM Standard C989 for ground granulated blast-furnace slag.

Silica fume used as a partial substitution of Portland Cement shall conform to ASTM C1240.

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Material Specification 533—Chemical Admixtures for Concrete

1. Scope

This specification covers the quality of chemical admixtures for manufacturer of Portland cement concrete.

2. Quality

Air-entraining admixtures shall conform to the requirements of ASTM Specification C 260.

Water-reducing and/or retarding admixtures shall conform to the requirements of ASTM Specification C 494, Types A, B, D, F, or G.

Plasticizing or plasticizing and retarding admixtures shall conform to ASTM C 494, Types F or G, or C 1017 as applicable.

Accelerating or water-reducing and accelerating admixtures shall be noncorrosive and conform to the requirements of ASTM Specification C 494, Types C and E. The manufacturer shall provide long-term test data results from an independent laboratory verifying that the product is noncorrosive when used in concrete exposed to continuously moist conditions.

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Material Specification 534—Concrete Curing Compound

1. Scope

This specification covers the quality of liquid membrane-forming compounds suitable for spraying on concrete surfaces to retard the loss of water during the concrete curing process.

2. Quality

The curing compound shall meet the requirements of either ASTM Specification C 309 or C 1315. If Type 1 is specified, a fugitive dye shall be used.

3. Delivery and storage

All curing compounds shall be delivered to the site of the work in the original container bearing the name of the manufacturer and the brand name. The compound shall be stored in a manner that prevents damage to the container and protects water-emulsion types from freezing.

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Material Specification 539—Steel Reinforcement (for concrete)

1. Scope

This specification covers the quality of steel reinforcement for reinforced concrete.

2. Quality

All reinforcement shall be free from loose or flaky rust, soil, oil, grease, paint, or other deleterious matter.

Steel bars for concrete reinforcement shall be grade 40, 50, or 60 deformed bars conforming to one of the following specifications:

- Deformed and plain billet-steel bars for concrete reinforcement—ASTM A 615
- Rail-steel deformed bars for concrete reinforcement—ASTM A 996
- Axle-steel deformed bars for concrete reinforcement—ASTM A 996

Dowels shall be plain round bars conforming to the same specifications listed above for steel bars.

Fabricated deformed steel bar mats for concrete reinforcement shall conform to the requirements of ASTM A 184.

Plain steel welded wire reinforcement for concrete reinforcement shall conform to the requirements of ASTM A 185.

Deformed steel welded wire reinforcement for concrete reinforcement shall conform to the requirements of ASTM A 497.

Epoxy-coated steel bars for concrete reinforcement shall conform to the requirements of ASTM A 775.

3. Dimensions of welded wire reinforcement

Gauges, diameters, spacing, and arrangement of wires for welded steel wire fabric shall be as defined for the specified style designations.

4. Storage

Steel reinforcement inventories at the site of the work shall be stored above the ground surface on platforms, skids, or other supports and shall be kept clean and protected from mechanical injury and corrosion.

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