INVITATION FOR BIDS (IFB)

COVE CREEK ROAD AQUATIC ORGANISM PASSAGE

NATIONAL FOREST STATE ROAD 809
COVE CREEK CAMPGROUND

RELEASE DATE: MAY 12, 2020
BID DUE DATE: JUNE 23, 2020 BY 4:00PM EST
MANDATORY PRE-BID MEETING: THURSDAY, MAY 28TH 3:00PM
TRANSYLVANIA COUNTY ADMINISTRATION COMMISSIONERS
CHAMBERS
QUESTIONS DUE: JUNE 9, 2020 BY 5:00PM EST
INTRODUCTION

Transylvania County, hereby referred to as (Owner) will be accepting bids from licensed contractors hereby referred to as (contractor) for **THE COVE CREEK ROAD AQUATIC ORGANISM PASSAGE, NATIONAL FOREST STATE ROAD 809, COVE CREEK CAMPGROUND.**

SCOPE OF WORK

The project consists of replacing the current approach with an aquatic organism passage as detailed in the attached Cove Creek AOM issued by the USDA Forest Service Region 8.

This information with be reviewed in full detail at the mandatory pre-bid meeting on Tuesday, March 24th at 2pm at Transylvania County Administration Building located at 101 South Broad Street, Brevard, NC 28712.

***SEE DRAWINGS AND ATTACHED DOCUMENTS FOR MORE INFORMATION ABOUT THE SCOPE OF WORK***

Hard copies can be picked up at the MANDATORY PRE BID MEETING.

GENERAL CONDITIONS

Materials, Equipment and Employees

The Contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, and incidentals necessary for the completion of his work; install, maintain, and use all equipment and other utensils required for construction in a safe, proper and lawful manner and remove same from the site upon completion; construct in the best and most workmanlike manner a complete job and everything incidental thereto, as described in the attached Scope of Work, and in accordance with the requirements of the contract documents.

Any proposed work that is beyond the defined Scope of Work must be approved in writing by the Owner prior to its commencement.

Any and all subcontractors that perform work on behalf of the Contractor must be listed in the Bid Form and approved by the Owner. Any changes to the subcontractor listing in the Bid Form, whether it be the subcontractor themselves or the type of work performed by a listed subcontractor must be approved in writing by the Owner prior to them beginning work.

The Contractor shall direct the work or designate a superintendent who shall direct the work and who has the authority to act for the Contractor. The Owner may appoint one or more representatives to act on the County’s behalf.

All work under this contract shall conform to the current North Carolina Building Code and other state and national codes as are applicable.

Safety Requirements

The Contractor shall be responsible for and provide all the necessary protections for persons and property as required by laws or ordinances governing such conditions and as required by the Owner. Contractor shall adhere to the rules, regulations, and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry, the AGC Accident Prevention Manual in Construction, and North Carolina Building Code requirements.
Contractor shall be responsible for any damage to the landowner's property or that of others on the job, by himself or his personnel and shall make good such damages. Contractor shall be responsible for and pay for any claims against the Owner arising from such damages.

The Contractor shall take reasonable precautions for safety of and shall provide reasonable protection to prevent damage, injury or loss to the following:

1. Employees on the work and other persons who may be affected
2. Work materials and equipment to be incorporated therein, whether in storage on or off site under care and custody of the contractor
3. Any property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction.

Contractor shall clearly mark or post signs warning of hazards existing, and shall barricade excavations and similar hazards, and shall protect against damage or injury resulting from falling materials. Contractor shall maintain all protective devices and signs throughout the progress of the work, clearly mark or post signs warning of hazards existing, and shall barricade excavations and similar hazards. Contractor shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.

**General Insurance Requirements**

The Contractor must have, or obtain, and maintain an insurance policy that meets the following minimum requirements:

1. shall be issued by an insurance carrier acceptable to the Owner;
2. shall be kept in force throughout performance of the General Contractor’s services and for one (1) year after the end of such performance;
3. shall be an occurrence policy; and,
4. shall be evidenced by a certificate of insurance acceptable to the Owner which provides that the coverage evidenced thereby shall not be substantially modified or canceled without twenty-eight (28) calendar days prior written notice to the Owner. Transylvania County must be listed as an additional insured on the certificate with a notation of the project name.
5. Limits of coverage to be included on certificate of insurance are:
   - General Liability: $1,000,000 per Occurrence / $2,000,000 Aggregate
   - Automobile Liability: $1,000,000 per occurrence
   - Worker’s Compensation: $500,000

**Clean Up**

The Contractor shall keep the site and surrounding area reasonably free from rubbish at all times and shall remove debris from the site from time to time or when directed to do so by the Owner. Before final inspection and acceptance of the project, the Contractor shall thoroughly clean the site, and completely prepare the project and site for use by Transylvania County.

**Permits**

It will be the responsibility of the Owner to apply for and acquire any and all applicable permits.
Mediation and Arbitration

Should a claim or dispute arise related to this contract, the Owner and the Contractor agree to follow the procedure described by North Carolina in its Alternative Dispute Resolution Program, whereby the parties make a good faith effort to resolve conflicts through mediation or, in the event mediation fails, through binding arbitration before legal action is initiated. The costs of mediation and binding arbitration are shared equally by the parties.

BID PROCESS AND INSTRUCTIONS TO BIDDERS

Standard Form Requirements

Contractors submitting a Bid represent that they have read and understand this Invitation for Bid (IFB), have visited the site, are qualified to perform the work described in the Scope of Work, and agree to comply with the stipulations presented in the General Conditions.

Bidding Documents

Contractors may pick up all necessary Bidding Documents from the Owner in person at the County’s Finance Office at 101 South Broad Street, Brevard, NC 28712. The Owner does not assume responsibility for errors of misinterpretation resulting from the use of incomplete documents. It is the responsibility of each contractor to inquire directly with the Owner about any aspect of the Bidding Documents that is not fully understood or is believed to be susceptible to more than one interpretation. Transylvania County will accept all questions following the mandatory pre-bid meeting regarding this IFB in writing until 5:00 pm EST on JUNE 9, 2020. Written questions can be submitted to Jennifer Galloway, 101 South Broad Street, Brevard, NC 28712 or emailed to jennifer.galloway@transylvaniacounty.org.

Mandatory Pre-Bid Meeting will be held on THURSDAY, MAY 28TH, AT 3PM EST in TRANSYLVANIA COUNTY ADMINISTRATION BUILDING.

Interpretations, corrections and changes of Bidding Documents will be made by Addendum. Revisions to Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

Each Bidder shall ascertain prior to submitting a Bid that he has received all Addenda issued and shall acknowledge their receipt on the Bid Form. Failure to acknowledge receipt of all addenda may cause the bid to be considered non-responsive, and therefore rejected.

Submission of Bid

Transylvania County will receive bids by mail or delivered in person no later than 4:00 PM EST on JUNE 23, 2020 at the address below. Bids received after this time will not be accepted.

One (1) copy of the bid is to be submitted on the Bid Form provided in the Bid Package. Submit bids addressed to:

Jennifer Galloway, Purchasing Agent
Transylvania County
101 South Broad Street
Brevard, NC 28712
Please clearly label envelope with Project Name, Bidders Name, and License Number on the outside of envelope. Transylvania County reserves the right to waive irregularities and to reject any and all bids.

All information requested on the attached Bid Form must be provided. If an item is not applicable, please indicate so by writing in “N/A”.

Incomplete forms may cause the bid to be considered non-responsive, and therefore rejected.

Consideration of Bids
Transylvania County will review and evaluate the Bids on the following criteria:

- Ability to comply with General Conditions in the IFB and the General Information in the Specifications.
- References
- Cost
- Projected completion date of project/ the number of days estimated to complete project.

Award and Notification
The award will be granted to the Contractor who submits the best overall bid as determined by Transylvania County using the evaluation criteria outlined above. The contract shall be awarded to the lowest responsible, responsive bidder, taking into consideration quality, performance, and the ability to complete the project within given scheduling constraints. The Owner will notify the selected bidder in writing. The Contractor should be prepared to have the bid incorporated, along with all other written correspondence concerning this IFB, into the contract. Any false or misleading statements found in the bid will be grounds for disqualification. All bids submitted shall be valid for a period of 45 days from the deadline for submitting the bid.

Right to Reject Bids
Transylvania County reserves the right to reject any or all bids, with or without cause, when such rejection is determined to be in the interest of the Owner. Transylvania County also reserves the right to reject the bid of a Bidder who has previously failed to perform properly or complete on time contracts of a similar nature, or who is not in a position to provide the terms and conditions of the project as determined by the Owner.

CONTRACT

It is expressly understood by bidders that a contractual agreement must be properly signed and executed by the Owner and the Contractor to consummate the transaction prior to commencement of work on the project.

Contract Requirements

Contract
Upon acceptance and award of a contractor’s bid, the contract between the Contractor and the Owner shall be comprised of (a) the IFB and addenda, (b) the selected bid (response to the IFB by the Contractor) and any attachments thereto, (c) the contract documents as defined in the IFB and (d) all other written communications between the Owner and the Contractor concerning the transactions. The IFB will govern in the event of conflict between the IFB and the selected bid.

The contract shall constitute the entire and only agreement and shall supersede all prior negotiations, commitments, understandings, or agreements, whether oral or written.

**Bidder Incurred Costs**

The Owner will not be liable for any cost incurred by Bidders prior to the contract award date.

**Payment**

Payment terms will be negotiated with the awarded Bidder. Preferred method is net 30.

**Default**

In case of default by the Contractor, the Owner may procure the articles and/or services called for in the contract from other sources and hold the Contractor responsible for any excess cost associated therewith. The performance of the contract may be terminated by Transylvania County in accordance with this clause, in whole or in part, in writing whenever the County shall determine that the Contractor has failed to meet performance requirements of the contract.

**Assignment**

The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of its agreements with the Owner; its rights, title, or interest herein; or its power to execute such agreement to any other person, company, or corporation without the previous consent and approval in writing by Transylvania County.

**Governing Law and Forum**

The contract between the Owner and the Contractor shall be governed in accordance with the laws of the State of North Carolina.

**Amendments and Modifications of Contract; Waiver of Contract Terms**

The contract between the Owner and the Contractor shall not be amended or modified, nor any of its terms waived, except in writing and executed by the party against whom enforcement of the amendment, modification, or waiver is sought.

**Indemnification**

The Contractor shall indemnify and hold Transylvania County, its officers, agents, and employees harmless from liabilities, obligations, losses, claims, damages, actions, suits, proceedings, costs, and expenses, including attorneys’ fees that (a) arise out of, are connected with, or result directly or indirectly from the Contractor’s failure to perform any of its obligations under this IFB; or (b) result from any negligent act or omission of the Contractor, its employees or agents in the performance of services; or (c) are a result of breach of any of the Contractor’s warranties. The indemnification responsibilities created by this section shall survive and be enforceable after the contract between the Owner and the Contractor terminates or expires, and they shall be terminated only by the written agreement of the Contractor and the Owner.
BID FORM

TO: Jennifer Galloway
Transylvania County Finance Office
101 South Broad Street
Brevard, NC 28712

I have received the documents entitled: COVE CREEK AOP
I have received Addenda #____ #____ #____ and have included their provisions in my Proposal. I have examined both the documents and the site and submit the following proposal. This proposal includes all work as indicated in the Drawings and Specifications.

In submitting this proposal, I agree:

1. To hold my bid open for 90 days.
2. To enter into and execute a Contract, if awarded, on the basis of this proposal.
3. To accomplish the work in accordance with the Contract Documents.
4. To provide all required documentation regarding sales tax information associated with this project to the Owner in accordance with government requirements in order for the Owner to receive reimbursement.
5. To provide Transylvania County with Certificate of Insurance with coverages as outlined in the bid package.
6. TO BE ABLE TO BEGIN WORK BETWEEN THE DATES OF APRIL 16 TO APRIL 30.

For consideration of your bid, please provide the following information.

BUSINESS INFORMATION
Name of business and location(s) of business:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Please provide current NC Contractors License number(s): ____________________________

REFERENCES

Please provide information on three projects completed within the past five years that demonstrate experience and expertise in the types of work outlined in the Scope of Work.

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Owner Name</th>
<th>Phone Number</th>
<th>Email Address</th>
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OFFER

Having read the IFB and examined the site of the Project Site and reviewed the bid documents, I hereby offer to enter into a contract to perform the repairs as presented in the Scope for COVE CREEK AOP Located at Community Services Building, 106 Morgan Street, Brevard, NC 28712.

ESTIMATED START DATE: __________________________

ESTIMATED COMPLETION DATE: __________________________

BASE BID - I will construct this project for the lump-sum price of:

$____________________  __________________________________________________

Numerical amount                Written amount

It is understood that the lump-sum price will include required labor, tools, equipment, transportation, services and incidentals; the erection, application or installation of an item of the work being performed, and overhead and profit.

DATE:________________  SIGNED:________________________________________

(name and position with business)

BUSINESS

NAME:________________________________________________________________

ADDRESS:________________________________________________________________

PHONE NUMBER:_____________ E-MAIL ADDRESS:__________________________

BIDDERS CHECK LIST:

1. One Copy of Bid Form
   a. Note Addenda Received (all Addenda issued by number)
   b. E-VERIFY
   c. Bid Form must be completely filled in to be considered responsive and responsible.
1. For the project standard specifications for construction of roads and bridges on federal primary projects and special project specifications will be used, after notice to the contractor.

2. Storage of all equipment on site will be at the contractor's risk and at a location approved by the contracting officer.

3. Construction equipment shall be confined to the roadway, unless otherwise approved by the contracting officer.

4. All excavation is considered to be unclassified regardless of material encountered.

5. Contractor shall be responsible for repair of damage to national forest roads due to transportation of contractors' equipment and/or materials.

6. Contractor shall be responsible for diversion of water during construction as required by the contracting officer.

7. Each culvert's location, length, and slope shall be field verified by the contractor and approved by the contracting officer prior to moving.

8. All permanent signs may be secured with tamper-resistant hardware approved by the contracting officer.


10. The contractor is responsible for all temporary signage and protection of the public. Signage beyond those shown on the drawings may be required.

11. The contractor shall submit a traffic control plan to the C.O.R. for approval.

12. Traffic control signs shall conform to modified specifications.

13. All drainage structures constructed/reconstructed/conditioned shall be constructed/reconstructed/conditioned to drain.

14. Stations/designs identified for aggregate placement are full depth. Contractor shall take aggregate as shown on plans or, if not shown, taken to design and back of defined station/design, for a smooth transition.

15. All states and flagging in the field that were used for project implementation shall be gathered and removed (except in national forests) by the contractor prior to final acceptance of the project.

16. National forest standards shall be followed. Use of approved materials and workmanship is required. Any deviation from these standards must be approved in writing by the contracting officer.

17. The project will be inspected by the contracting officer and other agencies as required.

18. All materials used on the project must be approved by the contracting officer.

19. All structures constructed/reconstructed/conditioned shall be constructed/reconstructed/conditioned to drain.

20. Final acceptance of the project shall be the responsibility of the contractor.

21. Final acceptance of the project shall be the responsibility of the contractor.

22. Design loading = HL-93 live load, dead load, loads due to earth pressure.
NC GRID NAD 83 (NSRS 2011)

TP #5 - 60D NAIL
LOCALIZED GROUND COORDINATES:
N: 580,395.94'
E: 860,953.91'
ELEV.: 2,562.91'

TP #6 - 60D NAIL
LOCALIZED GROUND COORDINATES:
N: 580,311.51'
E: 860,883.99'
ELEV.: 2,561.26'

TP #7 - 60D NAIL
LOCALIZED GROUND COORDINATES:
N: 580,248.00'
E: 860,869.78'
ELEV.: 2,557.36'

WCLS TP #2 - #5 REBAR w/ ID CAP
"WCLS, PA"
LOCALIZED GROUND COORDINATES:
N: 580,258.87'
E: 860,953.29'
ELEV.: 2,557.81'

FOOTBRIDGE
2+51.42
2+50
2+00
1+50
1+00
0+50
0+00

COVE CREEK
(a/k/a CANEY BOTTOM CREEK)

LEGEND:
- BOULDER
- WCLS CONTROL POINT
- SPOT ELEVATION
- THALWEG
- EDGE OF WATER (E.O.W.)
- CONTROL BASELINE
- TOP OF BANK
- CROSS-SECTION LINE
- DL DITCH
- INDEX CONTOUR
- INTERIM CONTOUR

TOPO SURVEY PROVIDED BY
WES COLE LAND SURVEYING, PA

EXISTING SITE SURVEY FROM
WES COLE LAND SURVEYING

FILE NAME:
LAST REVISION:
NATIONAL FORESTS IN NORTH CAROLINA
PISGAH RANGER DISTRICT
NFSR #809 COVE CREEK RD
AQUATIC ORGANISM PASSAGE

USDA FOREST SERVICE
REGION 8

NCDA&CS DIVISION OF SWC
TECHNICAL SERVICES

IN COOPERATION WITH
USDA FOREST SERVICE
REGION 8
NCDA&CS DIVISION OF SWC
TECHNICAL SERVICES
NATIONAL FORESTS IN NORTH CAROLINA
PISGAH RANGER DISTRICT
NFSR #809 COVE CREEK RD
AQUATIC ORGANISM PASSAGE

FILE NAME:
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USDA FOREST SERVICE
REGION 8
NCDA&CS DIVISION OF SWC
TECHNICAL SERVICES
NATIONAL FORESTS IN NORTH CAROLINA
PISGAH RANGER DISTRICT
NFSR #809 COVE CREEK RD
AQUATIC ORGANISM PASSAGE

FILE NAME:
LAST REVISION:
3
15
1. This dewatering & sediment control plan shows the minimum acceptable criteria, and may require additional measures. The contractor will submit a design plan to the C.O.R. for approval that meets or exceeds the standards shown herein.

2. Maintaining water turbidity downstream (not exceeding the turbidity of the upstream water) is the responsibility of the contractor throughout the duration of the project.

3. Pumps capable of pumping stream flow shall be on-site until stream is flowing on approved finished streambed.

4. Overnight pumping is not permitted. Operate "brown-water" sump at end of work day until sump water is clear.

5. Material handling bags may be used, instead of sandbags, where they are more effective.

6. The contractor is responsible for maintaining the new construction area in as dry a condition as possible during construction.

The schematic shown here consists of sandbags stacked at least 18\" higher than streamflow elevation during construction. An impervious membrane overlaid on the sandbags and keyed into the streambed 1 foot deep prevents water from entering the right bank during work on this side. The sandbag berm would be disassembled and reconstructed on the left side of the stream after work is completed on the right side. Provisions shall be made to ensure that construction does not result in sedimentation downstream and to ensure that the work area remains dry.

Note: This drawing is a graphic representation of a typical water diversion installation. After the award of the construction contract, the contractor will provide a design plan to meet or exceed the standards shown here and to meet the approval of the C.O.R. This plan is for example only - not required - consider as guidance.
INSIDE SPAN

ANCHOR BOLTS

SUPER-COR BASE CHANNEL

3/4 x 2" BOLT & NUT

SPACED @ 15" C-C

USE LOWER HOLES FOR ASSEMBLY ALIGNMENT FILL WITH BOLTS

SUPER-COR SIDE / HAUNCH PLATE

CONCRETE FOOTING

3/4" x 4" x 9" ANCHOR BOLT c/w DBL. NUTS

SPACED @ 15" C-C

1 1/2" PROJECTION

SIDE ANGLE= 10.07°

FOOTING DEPTH VARIES BASED ON BEDROCK

36" MINIMUM, BOTTOM ELEVATION OF FOOTINGS MAY VARY WITH BEDROCK ELEVATION. A FOOTING DEPTH OF 36 INCHES SHALL BE MAINTAINED ON THE BEDROCK.

CEASE DOWNWARD EXCAVATION WHEN BEDROCK IS ENCOUNTERED & NOTIFY COR (LATERAL EXCAVATION ABOVE BEDROCK SURFACE MAY CONTINUE) COR WILL MAKE FINAL ADJUSTMENTS OF FOUNDATION ELEVATIONS AFTER ENTIRE BEDROCK SURFACE IS EXPOSED & WILL NOTIFY CONTRACTOR IN WRITING WHEN FINAL FOOTING OR PIPE INVERT ELEVATIONS ARE DETERMINED.

NOTES:

1. EXCAVATE BEDROCK TO PLACE FOOTINGS (36" MINIMUM), BOTTOM ELEVATION OF FOOTINGS MAY VARY WITH BEDROCK ELEVATION. A FOOTING DEPTH OF 36 INCHES SHALL BE MAINTAINED ON THE BEDROCK.

2. CULVERT IS ALUMINUM STRUCTURAL PLATE SINGLE RADIUS ARCH OR APPROVED EQUAL.

3. CONTRACTOR SHALL SUBMIT THREE COPIES OF ANY CHANGE OF MANUFACTURER FOR APPROVAL OF SPAN, RISE, BASE CONNECTION AND OTHER RELATED MATERIALS.

SPECIFICATION - ALUMINUM STRUCTURAL PLATE

Scope: This specification covers the manufacture and installation of the aluminum structural plate structure detailed in the plans.

Material: The aluminum structural plate structure shall consist of plates and appurtenant items as shown on the plans and shall conform to the requirements of AASHTO M19 and ASTM B761. The corrugated plate (and ribs if required) shall be curved and bolt holes punched in the plant. Plate thickness and rib spacings shall be as indicated on the plans. All manufacturing processes including corrugating, punching, curving and galvanizing shall be performed within the United States using raw materials made in the United States.

Bolts and nuts shall conform to the requirements of ASTM A307 or ASTM A449.

Assembly: The structure shall be assembled in accordance with the shop drawings provided by the manufacturer and per the manufacturer’s recommendations. Bolts shall be tightened using an applied torque of between 100 and 150 ft.-lbs.

Installation: The structure shall be installed in accordance with the plans and specifications, the manufacturer's recommendations, and the AASHTO Standard Specifications for Highway Bridges, Section 26 (Division II).

Representative: A representative of the manufacturer shall be on site to assist the contractor's crew in assembly and installation of the culvert & headwall system.

Note: Construction loads that exceed highway load limits are not allowed on the structure without approval from the Contracting Officer.

This specification covers the design, manufacturing and installation of the ALUMINUM STRUCTURAL PLATE 9 inch X 2-1/2 inch corrugated aluminum structural plate structure detailed in the plans.

Aluminum Single Radius Arch, 26' x 8'-7" x 36' Long

Opening: 161.4 sq.ft

Thickness: 0.218" Thick

Type 4 Ribs @ 18"

Headwall Cover: 3.2" / 23

Square Ends with 9" x 3" Hookbolts at ends to tie structure to concrete headwalls and Super-Cor receiving channel to attach structure to concrete footings.

CULVERT DETAILS

CULVERT OBELIQUE VIEW
FORMLINER FINISH (TYPICAL) ON ALL EXPOSED FACES AND A MINIMUM OF 1 FOOT FROM TOP OF HEADER AND WING WALLS ON THE ROAD CENTERLINE SIDE. SEE FORMLINER NOTES ON SHEET 2.

11.6'
8'
5.6'
6'

UPSTREAM EDGE OF STREAMBED AT CULVERT CENTERLINE TO BE SET BY COR / FOREST HYDROLOGIST.

HEADWALL / WINGWALL ELEVATION
NOT TO SCALE

STREAM SECTION VIEW
SEE SPECIFICATION 648 FOR ADDITIONAL DETAILS REGARDING STREAM BED WITHIN CULVERT

GENERAL NOTES:
1. ALL CONCRETE SHALL HAVE A MINIMUM DESIGN STRENGTH OF 4000 PSI AND CONFORM TO FP-14 STRUCTURAL CONCRETE.
2. REINFORCEMENT SHALL CONFORM TO 554, REINFORCING STEEL.
3. ELEVATIONS RELATE TO BENCH MARKS SHOWN ON PLAN.
4. EXCAVATE BEDROCK TO PLACE FOOTINGS, BOTTOM ELEVATION OF FOOTINGS MAY VARY, CONFORMING TO BEDROCK ELEVATION.
5. A MINIMUM FOOTING DEPTH OF 36" DEPTH SHALL BE MAINTAINED ON THE BEDROCK.

IMPORTED STREAM BED MATERIAL SHALL BE RIVER STONE BED CLASS 8

EXISTING & IMPORTED STREAMBED MATERIAL
FINISHED SUBGRADE
EXISTING STREAMBED ELEVATION (~2' BELOW TOP OF FOOTER ELEVATION)
30 - BOULDERS - CLASS CR-7

PROPOSED TOP OF FOOTER ELEVATION = 2556.1'
SEE SECTION 705.08 OF SPECIFICATIONS - TABLES 705-4 AND 705-5 FOR STONE SIZES

TOP OF ARCH = 2564.7'
500 YEAR STORM = 2563.1'
100 YEAR STORM = 2560.6'
TOP OF FOOTER AT 2556.1'

5" X 16" X VARIOUS LENGTH CAP STONE. LEAVE TOP SURFACE "ROUGH" FOR APPLICATION OF CAP ROCKS

FORMLINER DETAIL
NOT TO SCALE

FORMLINER FINISH (TYPICAL) ON ALL EXPOSED FACES

A.O.P. CULVERT END VIEW
AND CROSS SECTIONS
FOOTING & WINGWALL LAYOUT - PLAN VIEW

NOTE: FOOTING SHALL BE 36" MIN. DEPTH

HEADWALL / WINGWALL / FOOTING DETAIL

NOT TO SCALE
NOTE: FOOTING DEPTH SHALL BE 36" MINIMUM

CAP ROCKS ARE TO BE NORTH CAROLINA FIELD STONE, 12" X 16" BY VARIOUS LENGTHS. PAYMENT FOR CAP STONE IS INCIDENTAL TO CONCRETE PLACEMENT.

#4 @ 12" O.C.
#6 @ 12" O.C.
EXTEND INTO CULVERT FOOTING
VARIES
#5 CONT. @ 12" O.C.
#5 U-BARS
OVERLAP L-BARS AT TOP AND BOTTOM
3" CLEAR COVER (TYPICAL)
36" MIN. DEPTH
STEP & VARY FOOTING AS NECESSARY TO CONFORM TO BEDROCK AND FOOTING BASE
#5 REBAR @ 12" O.C.
#5 U-BARS
OVERLAP L-BARS AT TOP AND BOTTOM
24" MINIMUM FOOTING DEPTH
#6 @ 12" O.C.
EXTEND INTO CULVERT FOOTING
#4 @ 12" O.C.

ALUMINUM PLATE
CONCRETE FOOTING SECTION
NOT TO SCALE

CONCRETE FOOTING / WINGWALL TYPICAL & CONCRETE HEADWALL OVER TOP OF CULVERT TYPICAL
NOT TO SCALE

ALUMINUM STRUCTURAL PLATE

EXPOSED WALL FACE: ANTETAM DRystack, Random Rough Stacked By Fitzgerald Formlines - (800) 547-7700

STEP & VARY FOOTING AS NECESSARY TO CONFORM TO BEDROCK AND FOOTING BASE
#5 REBAR @ 12" O.C.

ROCK ANCHORS - USE ONLY IF REQUIRED BY THE COR. TOTAL VARIES FOR EACH SIDE OF PLATE. #8 THREADED REBAR - GALVANIZED (ROCK DRILL AND EPOXY INTO BEDROCK). NOTE: ANCHORS ARE INCIDENTAL TO THE FOOTING. ANCHORS SHALL BE 24 INCHES ON CENTER IF BEDROCK IS ENCOUNTERED.

ROCK ANCHORS - USE ONLY IF REQUIRED BY THE COR. TOTAL VARIES FOR EACH SIDE OF PLATE. #8 THREADED REBAR - GALVANIZED (ROCK DRILL AND EPOXY INTO BEDROCK). NOTE: ANCHORS ARE INCIDENTAL TO THE FOOTING. ANCHORS SHALL BE 24 INCHES ON CENTER IF BEDROCK IS ENCOUNTERED.

3" CLEAR COVER (TYPICAL)
36" MIN. DEPTH
STEP & VARY FOOTING AS NECESSARY TO CONFORM TO BEDROCK AND FOOTING BASE
#5 REBAR @ 12" O.C.
#5 U-BARS
OVERLAP L-BARS AT TOP AND BOTTOM

ALUMINUM PLATE
CONCRETE FOOTING SECTION
NOT TO SCALE

CONCRETE FOOTING / WINGWALL TYPICAL & CONCRETE HEADWALL OVER TOP OF CULVERT TYPICAL
NOT TO SCALE

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#5 REBAR @ 12" O.C.

ROCK ANCHORS - USE ONLY IF REQUIRED BY THE COR. TOTAL VARIES FOR EACH SIDE OF PLATE. #8 THREADED REBAR - GALVANIZED (ROCK DRILL AND EPOXY INTO BEDROCK). NOTE: ANCHORS ARE INCIDENTAL TO THE FOOTING. ANCHORS SHALL BE 24 INCHES ON CENTER IF BEDROCK IS ENCOUNTERED.

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ALUMINUM PLATE
CONCRETE FOOTING SECTION
NOT TO SCALE

CONCRETE FOOTING / WINGWALL TYPICAL & CONCRETE HEADWALL OVER TOP OF CULVERT TYPICAL
NOT TO SCALE

ALUMINUM STRUCTURAL PLATE

EXPOSED WALL FACE: ANTETAM DRystack, Random Rough Stacked By Fitzgerald Formlines - (800) 547-7700

STEP & VARY FOOTING AS NECESSARY TO CONFORM TO BEDROCK AND FOOTING BASE
#5 REBAR @ 12" O.C.

ROCK ANCHORS - USE ONLY IF REQUIRED BY THE COR. TOTAL VARIES FOR EACH SIDE OF PLATE. #8 THREADED REBAR - GALVANIZED (ROCK DRILL AND EPOXY INTO BEDROCK). NOTE: ANCHORS ARE INCIDENTAL TO THE FOOTING. ANCHORS SHALL BE 24 INCHES ON CENTER IF BEDROCK IS ENCOUNTERED.

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**Typical Road Sections**

**Proposed Road Shall Be Graded According to These Details and Guidance From the C.G.R.**

**Drawings Not to Scale**

<table>
<thead>
<tr>
<th>Number</th>
<th>Type</th>
<th>Length</th>
<th>Radius</th>
<th>Measured Lane Width (FT)</th>
<th>Start Station</th>
<th>End Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Line</td>
<td>20.37'</td>
<td>54.79'</td>
<td>17.5</td>
<td>0+00.00</td>
<td>0+20.38'</td>
</tr>
<tr>
<td>2</td>
<td>Curve</td>
<td>26.63'</td>
<td>63.052'</td>
<td>NA</td>
<td>0+20.38'</td>
<td>0+47.01'</td>
</tr>
<tr>
<td>3</td>
<td>Line</td>
<td>51.51'</td>
<td>68.949'</td>
<td>15</td>
<td>0+47.01'</td>
<td>1+04.25'</td>
</tr>
<tr>
<td>4</td>
<td>Curve</td>
<td>5.72'</td>
<td>54.217'</td>
<td>17</td>
<td>1+04.25'</td>
<td>1+30.44'</td>
</tr>
<tr>
<td>5</td>
<td>Line</td>
<td>26.19'</td>
<td>54.642'</td>
<td>18.5</td>
<td>1+30.44'</td>
<td>1+47.12'</td>
</tr>
<tr>
<td>6</td>
<td>Curve</td>
<td>11.72'</td>
<td>NA</td>
<td>20.8</td>
<td>1+47.12'</td>
<td>1+96.09'</td>
</tr>
<tr>
<td>7</td>
<td>Line</td>
<td>11.39'</td>
<td>NA</td>
<td>20.8</td>
<td>1+96.09'</td>
<td>2+31.97'</td>
</tr>
<tr>
<td>8</td>
<td>Curve</td>
<td>35.87'</td>
<td>NA</td>
<td>20.8</td>
<td>2+31.97'</td>
<td>2+74.98'</td>
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</tbody>
</table>
EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO BEGINNING EARTH DISTURBING ACTIVITIES IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY CONTRACTING OFFICER. MEASURES SHOWN ON THIS SHEET ARE SCHEMATIC AND NOT DESIGNED TO REPRESENT THE ENTIRE CONSTRUCTION PROCESS.

2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER WORK HAS CEASED.

3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED EVERY SEVEN (+) DAYS OR AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE-HALF (+1/2) INCH. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED.

4. CONTRACTOR SHALL PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED TO CONTROL SOIL EROSION DURING ROAD CONSTRUCTION.

5. SEDIMENT SHALL BE REMOVED FROM BEHIND TEMPORARY SILT FENCING WHEN THE DEPTH OF SEDIMENT REACHES 6 INCHES.

6. ALL DISTURBED AREAS WHERE EARTH IS EXPOSED SHALL BE CLEANED, GRADED SMOOTH, SHAPED TO DRAIN, AND SEEDED.

7. SEE SUPPLEMENTAL SPECIFICATION 715 - "ROADSIDE IMPROVEMENT MATERIAL" FOR SEED & FERTILIZER MIXTURE. WHEN SECTION 42B IS NOT INCLUDED IN THE BIG SCHEDULE, SEEDING IS CONSIDERED INCIDENTAL TO OTHER WORK AND THERE WILL BE NO SEPARATE PAYMENT. REPAIR SEEDING IF INITIAL SEEDING DOES NOT ESTABLISH SATISFACTORY COVER TO CONTROL EROSION, REPAIR WASHES, PREPARE SOIL, SEED AND MULCH AS BEFORE.

8. ALL TEMPORARY SEDIMENT CONTROL MEASURES AND PRACTICES SHALL BE REMOVED WITHIN TWO (+) TWO MONTHS AFTER THE FOREST SERVICE HAS ACCEPTED THE PROJECT.

EROSION CONTROL SITE SCHEMATIC

FILE NAME: 18E_PISGAH_RANGER_DISTRICT_2018
LAST REVISION: 07/02/2018
NC GRID NAD 83 (NSRS 2011)
TOPO SURVEY PROVIDED BY WES COLE LAND SURVEYING, PA

TP #5 - 60D NAIL
LOCALIZED GROUND COORDINATES:
N: 580,395.94’
E: 860,953.91’
ELEV.: 2,562.91’

TP #6 - 60D NAIL
LOCALIZED GROUND COORDINATES:
N: 580,311.51’
E: 860,883.99’
ELEV.: 2,561.26’

TP #7 - 60D NAIL
LOCALIZED GROUND COORDINATES:
N: 580,248.00’
E: 860,869.78’
ELEV.: 2,557.36’

EROSION CONTROL
SITE SCHEMATIC

PISGAH RANGER DISTRICT
NFSR #809 COVE CREEK RD
AQUATIC ORGANISM PASSAGE

12
15
NATIONAL FORESTS IN NORTH CAROLINA
PISGAH RANGER DISTRICT
NFSR #809 COVE CREEK RD
AQUATIC ORGANISM PASSAGE

FILE NAME:
FILE-DIST_1877-3-27.PDF
LAST REVISED:
07/13/93 3:10 PM

1. SEDIMENT BASIN:
   A. All sediment basin cut and fill slopes shall be 2:1 or flatter.
   B. All disturbed areas shall be seeded according to applicable specifications.
   C. Clearing limits shall be approved by the contracting officer prior to construction.
   D. Material from excavation shall be used to construct basin as shown or shall be
      incorporated into the road bed as approved by the contracting officer.

2. SILT FENCE:
   A. The sift to be anchored in a trench 8" deep and 4" wide with backfill compacted.
   B. Silt fence shall be prefabricated with 1-1/4" square hardwood posts, wire silt fence or
      equal.
   C. Install as needed for erosion control or as directed by the contracting officer.

3. TEMPORARY SEDIMENT TRAP:
   A. To be installed at end of diversion ditch.
   B. Filter fabric shall be placed into ground at a depth of 8" and compacted by hand
      tamping.
   C. Sediment traps shall be placed prior to excavation and removed as directed by
      the contracting officer.
   D. Use a minimum of 4 bales for each trap.
   E. Loose rocks shall be appropriate size to retain fabric in place.

4. SEDIMENT CONTROL MEASURES TO BE USED AT LOCATIONS REQUIRED BY THE EROSION CONTROL PLAN,
   AS SHOWN ON THESE PLANS, AND AS DIRECTED BY THE CONTRACTING OFFICER.
TEMPORARY ACCESS NOTES:
1. TEMPORARY ACCESS WILL BE LIMITED TO AUTHORIZED USERS WITH A RESERVATION TO ACCESS THE COVE CREEK GROUP CAMP SITE.
2. TEMPORARY ACCESS CAN BE TEMPORARILY CLOSED WITH PERMISSION FROM THE C.O.R. TO FACILITATE CONSTRUCTION TRAFFIC AND STAGING.
3. SAFETY SHALL BE PARAMOUNT AND THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR MAY IMPLEMENT ADDITIONAL SAFETY MEASURES AND/OR SIGNS WITH THE PERMISSION OF THE C.O.R.
5. THE TEMPORARY ACCESS ROAD SHALL BE CLOSED, REGRADED TO CREATE SEEDBED, SEEDED, AND MULCHED UPON COMPLETION OF THE ROAD OVER THE PROPOSED BOTTOMLESS ARCH CULVERT.
6. THE TEMPORARY ACCESS ROAD WILL BE THE PRIMARY LOCATION OF ONSITE FILL MATERIAL TO BE INSTALLED ON THE PROPOSED BOTTOMLESS ARCH CULVERT.

**PROPOSED AQUATIC ORGANISM PASSAGE LOCATION**

- **INSTALL 26' WIDE X 8.58' TALL X 36' LONG BOTTOMLESS ARCH CULVERT**
- **PROVIDE 3.5' MINIMUM COVER OVER CULVERT AT TRAVEL WAY AND SHOULDER**
- **CULVERT NOT DRAWN TO SCALE - SEE DETAILS**

**TOPO SURVEY PROVIDED BY WES COLE LAND SURVEYING, PA**

**NC GRID NAD 83 (NSRS 2011)**

**FILE NAME:**

**INTERMEDIATE POINTS:**

<table>
<thead>
<tr>
<th>Point</th>
<th>X Coord.</th>
<th>Y Coord.</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP #5</td>
<td>600.00'</td>
<td>580.395</td>
<td>2,562.91'</td>
</tr>
<tr>
<td>TP #6</td>
<td>600.00'</td>
<td>580.311</td>
<td>2,561.26'</td>
</tr>
<tr>
<td>TP #7</td>
<td>600.00'</td>
<td>580.248</td>
<td>2,557.36'</td>
</tr>
</tbody>
</table>

**TEMPORARY ACCESS ROAD:**

- **APPROXIMATELY 1470 SQUARE FEET**
- **GRADE TYPICAL OPTIMUM SECTION = AGGREGATE SURFACE AND INSTALL 1" LAYER OF ABC STONE (38 TONS)**

**PROPOSED AQUATIC ORGANISM PASSAGE LOCATION:**

- **INSTALL 26' WIDE X 8.58' TALL X 36' LONG BOTTOMLESS ARCH CULVERT**
- **PROVIDE 3.5' MINIMUM COVER OVER CULVERT AT TRAVEL WAY AND SHOULDER**
- **CULVERT NOT DRAWN TO SCALE - SEE DETAILS**
NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE PUBLIC. ADDITIONAL TRAFFIC CONTROL MEASURES AND WARNING SIGNS WILL LIKELY BE NECESSARY.
2. ALL TRAFFIC CONTROL DEVICES SHALL BE CONSTRUCTED, LOCATED, INSTALLED, AND MAINTAINED ACCORDING TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (MUTCD) LATEST EDITION.
3. SIGNS SHALL BE MADE FROM SUITABLE MATERIALS WHICH ARE IN ACCORDANCE WITH ALL STATE AND FEDERAL SPECIFICATIONS.
4. ALL WARNING SIGNS SHALL BE BLACK ON ORANGE.
5. REFER TO FL-14 PARAGRAPH 719.01 FOR RETROREFLECTIVE SHEETING, USE ASTM D 4959 TYPE I "ENGINEERING GRADE", OR BETTER, FOR POSTED SPEEDS GREATER THAN 35 MPH IN USE TYPE III "SUPER-HIGH-INTENSITY, PRIVACY SHEETING".
6. SIGN SUBSTRATE MAY BE WOOD, METAL, POLYFILM, FABRIC OR MATERIAL APPROVED BY THE CONTRACTING OFFICER.
7. SIGNS SHALL BE LOCATED WHERE THEY WILL BE CONSPICUOUSLY VISIBLE DAY AND NIGHT ALONG THE RIGHT HAND SIDE OF APPROACHING TRAFFIC.
8. WHEN A SIGN IS REQUIRED FOR AN EXTENDED PERIOD, IT SHALL BE FASTENED TO 4 X 4 POSTS WITH 2 EACH 3/8" SAE CARRIAGE BOLTS. PORTABLE SUPPORTS ARE PERMITTED FOR SHORT PERIODS PROVIDED THE SIGN IS SUCH THAT NO OTHER AGENTS CAN BEHEAVY UNDER THE SIGN.
9. SIGNS WARNING OF CONSTRUCTION SHALL BE PLACED ON ALL MAJOR INTERSECTIONS ACCESSING THE WORK AREA.
10. SELECTION AND PLACEMENT OF ALL SIGNS SHALL BE SUBJECT TO APPROVAL OF THE CONTRACTING OFFICER. SIGNS OTHER THAN THOSE MENTIONED MAY BE USED PROVIDED THEY ARE IN CONFORMITY WITH MUTED STANDARDS AND APPROVED IN WRITING BY THE CONTRACTING OFFICER.
11. IF REQUIRED BY THE CONTRACTING OFFICER, LICHTING DEVICES SUCH AS FLASHERS, TORCHES, LIGHTERS AND ELECTRIC LIGHTS SHALL BE PLACED AND MAINTAINED FROM SUNSET TO SUNRISE AT ALL POINTS OF HAZARD AND AT ALL SIGNS INDICATING CAUTION.
12. ADDITIONAL SIGNS MAY BE REQUIRED AS DIRECTED BY THE CONTRACTING OFFICER.
13. ALL SIGNS ARE TEMPORARY. SIGNAGE SHALL BE REMOVED WITHIN TWO WEEKS OF FINAL ACCEPTANCE.
14. TYPE III BARRIERS SHALL BE PLACED ON EITHER SIDE OF UNCOMPLETED CONSTRUCTION SITES WHEN NO CONSTRUCTION ACTIVITIES ARE IN PROGRESS AS APPROVED BY THE CONTRACTING OFFICER.

1. R11-2 SIGNS SHALL BE BLACK ON WHITE. R11-3A AND W20-1 SIGNS SHALL BE BLACK ON ORANGE.
2. ADDITIONAL PERMANENT SIGNS MAY BE REQUIRED BY THE C.O.R.
3. ADDITIONAL TEMPORARY SIGNS MAY BE REQUIRED BY THE C.O.R.