

**STATEMENT OF WORK**  
**Aquatic Organism Passage (396)**  
**TENNESSEE**

**These deliverables apply to this individual practice. For other planned practice deliverables refer to those specific Statements of Work.**

## **DESIGN**

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### **Deliverables:**

1. Design documentation that will demonstrate that the criteria in NRCS practice standard have been met and are compatible with other planned and applied practices.
  - a. Practice purpose(s) as identified in the conservation plan
  - b. List of required permits to be obtained by the client(e.g. 404, ARAP, TVA 26A)
  - c. Impacts on adjacent properties and structures.
  - d. Compliance with NRCS national and state utility safety policy (NEM Part 503-Safety, Subpart A - Engineering Activities Affecting Utilities 503.00 through 503.06)
  - e. List of additional required and/or facilitating practices necessary for this practice to address resource concerns and meet client objectives
  - f. Practice standard criteria related computations and analyses to develop plans and specifications including but not limited to:
    - i. Hydrology/Hydraulics
    - ii. Structural
    - iii. Vegetation
2. Written plans and specifications including sketches and drawings shall be provided to the client that adequately describes the requirements to install the practice.
3. Design Report and Inspection Plan as appropriate (NEM Part 511, Subpart B Documentation, 511.11 and Part 512, Subpart D Quality Assurance Activities, 512.30 through 512.32).
4. Operation and Maintenance Plan
5. Certification that the design meets practice standard criteria and comply with applicable laws and regulations (NEM Subpart A, 505.03 (a) (3)).
6. Design modifications during installation as required.
7. Target Species
8. Environmental evaluation and completion of TN NRCS CPA-52.

## **INSTALLATION**

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### **Deliverables**

1. Pre Installation conference with client and contractor.
2. Verification that client has obtained required permits.
3. Staking and layout according to plans and specifications including applicable layout notes.
4. Installation inspection (according to inspection plan as appropriate).
  - a. Actual materials used (Part 512, Subchapter D Quality Assurance Activities, 512.33)
  - b. Inspection records
5. Facilitate and implement required design modifications with client and original designer
6. Advise client/NRCS on compliance issues with all federal, state, tribal, and local laws, regulations and NRCS policies during installation.
7. Certification that the installation process and materials meets design and permit requirements.

Note: Provide written documentation of any modification of the approved design. Certify that the modification meets practice standard on appropriate NRCS form and/or letter of certification as applicable. At a minimum, documentation will include quantities and amounts. The location of the applied practice will be identified on the conservation plan map for non-structural practices.

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## CHECK OUT

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### Deliverables

1. As-Built documentation.
  - a. Extent of practice units applied
  - b. Drawings
  - c. Final quantities
2. Certification that the installation meets NRCS standards and specifications and is in compliance with permits (NEM Subpart A, 505.03 (c) (1)).
3. Progress reporting.
4. Note: Meet with client to review practice operation and maintenance. Certify the conservation practice has been installed according to practice design and specifications.

## REFERENCES

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- [Aquatic Nuisance Species Information](#). 2006. (per Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 [16 U.S.C. 4701]).
- Bell, M.C. 1990. *Fisheries Handbook of Engineering Requirements and Biological Criteria*. United States Army Corps of Engineers, Fish Passage Development and Evaluation Program, Portland, OR. 290 p.
- Clay, C.H. 1995. *Design of Fishways and Other Fish Facilities*. Second Edition. CRC Press, Inc. Boca Raton, FL. 248 pp.
- Jungwirth, M., S. Schmutz, and S. Weiss, editors. 1998. *Fish Migration and Fish Bypasses*. Fishing News Books, Oxford, UK. 438 pp.
- NRCS. 2006. Fish passage and screening designs. Technical Supplement 14-N to NEH-654 – Stream Restoration Design Handbook.
- Taylor, R.N. and M. Love. 2003. [Fish passage evaluation at stream crossings](#). Part IX in: California Stream Habitat Restoration Manual, 3<sup>rd</sup> edition, 1998. Prepared by G. Flosi, S. Downie, J. Hopelain, M. Bird, R. Coey, and B. Collins. Sacramento, CA. 100 electronic pp.
- TN NRCS Field Office Technical Guide (eFOTG), Section IV, Conservation Practice Standard - Wetland Creation, 658.
- Tennessee Environmental Permitting Handbook
- United States Forest Service (USFS). 2006. Low water crossings: Geomorphic, biological, and engineering design considerations. 0625 1808, SDTDC, San Dimas, CA.
- USFS. 2008. Stream Simulation: An ecological approach to providing passage for aquatic organisms at road-stream crossings. 0877 1801P, NTDP, San Dimas, CA.
- Washington Department of Fish and Wildlife (WDFW). 2000. [Fishway guidelines for Washington State](#). Olympia, WA. 57 pp.
- WDFW. 2000. [Fish passage barrier and surface water diversion screening and prioritization manual](#). WDFW Habitat Program, Environmental Restoration Division, Salmon Screening, Habitat Enhancement and Restoration Section, Olympia, WA. 158 pp.