This figure is only meant to define the minimum information required by the City of Charlotte to be included in a detail for this type of technique. This figure is not meant to represent a standard design method for this type of technique and shall not be used as such.
1. Step pool structures shall be installed in newly graded channel sections and/or in existing channel sections, as specified by the designer. They are generally used in steep, confined locations, such as a transition from one stream type to another.

2. Elevation control points shall be designated at the beginning and end of step-pool structures and at each step-pool invert boulder to establish part of the profile of the channel. Survey of control points shall be required to establish accurate step-pool installation within the tolerance specified by the designer.

3. Backfill material, if needed to establish a step-pool subpavement and/or to raise the channel bed due to scour/incision, shall be of a type, size, and gradation as specified by the designer. Backfill shall be placed such that the addition of the specified thickness of step-pool material shall achieve the designated grades.

4. Step-pool material shall be of a type, size, and gradation as specified by the designer to be mobile or non-mobile as the conditions in the channel warrant (i.e., clean-water discharge environment, high bedload system, etc.). Step-pool material may be excavated, stockpiled, and re-used from abandoned channel sections. Otherwise step-pool material shall be slightly rounded. “River-type” rock, unless other rock characteristics are appropriate for the channel. Logs and other woody debris may be incorporated into the step-pool materials.

5. Step-pool inverts shall consist of boulders of a size specified by the designer. Inverts shall be set at a drop/rose from the adjacent upstream/downstream invert to accommodate the passage of fish. The inverts shall form the thalweg of the step-pool structure. Pools shall be formed between the inverts to the dimensions specified by the designer.

6. The bench of the step-pool structure shall be formed beside the pool at the dimensions specified by the designer. The bench shall be formed of step-pool materials placed to a depth such that their surface matches the step-pool invert immediately upstream.

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