**SP-XX, ROCK REMOVAL**

Version Date: 9/4/2020 Revision Date: XX/XX/XXXX by XXX

**1.0 Description**

Work covered by this special provision consists of the removal and disposal of rock encountered within the construction limits.

**2.0 Construction Methods**

Rock shall be defined as any subsurface material (except foundations and pavements) which cannot be excavated by a backhoe, or track hoe which is capable of producing 31,000 pounds of curling force.

When rock is encountered, the Engineer shall be notified to:

* verify that the material cannot be removed as defined above or incorporated into the project feature
* determine the measurement limits

Removal methods include, but are not limited to, drilling, pneumatic hammering, blasting, etc. or as directed by the Engineer.

Blasting shall be performed as specified in Article 220-3 of the Standard Specifications.

Disposal shall be in accordance with Section 802 in the Standard Specifications.

**3.0 Measurement**

The quantity of rock removal to be paid for will be the actual number of cubic yards of rock, measured in its original position and computed by the average end area method, which has been removed and disposed of.

Measurements for the determination of actual quantities of rock removed shall be computed as described below or as directed by the Engineer:

 Storm Drainage

* Pipe
	+ Horizontally – as illustrated in NCDOT 300.01;
	+ Lower Limit – as illustrated in NCDOT 300.01
* Box Culverts/Bends/Bottomless Culverts
	+ Horizontally – outer width of culvert or footer plus six (6) feet (3 feet each side);
	+ Lower Limit – one (1) foot below the bottom of the barrel or footing;

 Channels

* Two (2) feet below the finished grade or;
* Stream/channel structures – as directed by the Engineer.

 Ponds

* Below normal pool – to finished grade;
* Above normal pool – two (2) feet below finished grade;

Structures

*(Includes but not limited to: headwalls, drainage structures (catch basins, drop inlets, risers, etc.), rip rap aprons, flared end sections, retaining walls, etc.)*

* To the subgrade elevation as shown on the plans or details;
* Horizontally – two (2) feet from each exterior surface (outer wall of the structure or footer; boulder or rip rap extents, as approved for stream structures and rip rap aprons)

Roadways, Yards, Etc.

* Two (2) feet below finished grade;

Charlotte Water Utilities

* Refer to Charlotte Water Design Manual

There will be no measurement of quantities of rock removed beyond these limits. Where the Engineer makes a recommendation for incorporating the encountered rock material into the project feature, there shall be no separate payment for incorporating the in situ rock into the project feature.

**4.0 Payment**

The quantity of rock removal, measured as provided above, will be paid for at the contract unit price per cubic yard for "Rock Removal." Such payment will be full compensation for all work covered by this special provision including but not limited to drilling, pneumatic hammering, blasting (including complying with Article 220-3 of the Standard Specifications), excavating, and disposing of rock encountered within the pay limits of the project.

 Payment will be made under:

**ROCK REMOVAL CY**