## SPSRW-XX: CHANNEL PLUG

Version Date: 10/20/2023 Revision Date: XX/XX/XXXX by XXX

### Description

Channel plug(s) are used in locations where the former and new stream channels intersect to prevent the stream flow from re-activating the old channel. Install stream channel plugs to the dimensions detailed at all locations where the new channel departs from the old stream channel, as specified in the Contract Documents or as directed by the Engineer.

The quantity of channel plugs to be constructed will be affected by the actual conditions that occur during the construction of the project. The quantity of channel plugs may be increased, decreased, or eliminated entirely as directed by the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

### Materials

Materials that will function as impervious barriers to water movement shall be a silt or clayey soil material meeting the requirements of AASHTO M 145 for soil classification A-2, A-6, and A-7 provided such materials do not have a Liquid Limit (LL) greater than 50.

Material used in Channel Plug shall be such that the Plasticity Index shall equal or exceed that of the natural soils surrounding the stream. The material in the channel plug shall be compacted to a density of at least 90% as obtained by compacting a sample of material in accordance with AASHTO T99. Lift thickness shall not exceed 1.0 foot. Compaction shall be achieved by heavy equipment or compaction equipment. Organic material in the plug shall not exceed 10% of the total volume of fill used. To maintain soil workability for placement and compaction, the following criteria shall apply for Plasticity Index (PI):

|  |  |
| --- | --- |
| **Position of borrow material** | **Constraints on Plasticity Index (PI)** |
| Below the water table | Must be greater than 7 and less than 25 |
| Above the water table | Must be greater than 7 and less than 35 |

Plasticity Index shall be determined in accordance with AASHTO T90, and Liquid Limit shall be determined in accordance with AASHTO T89.

(The Contractor is cautioned that soils tend to become less workable as the PI increases above 20. Although a PI of 35 may be acceptable, the Contractor shall be aware that additional efforts may be necessary to work the soil in order to achieve minimum compaction standards.)

### Methods

ENGINEER TO UPDATE IF THEY FEEL THAT THIS SPECIFICATION IS INADEQUATE FOR SITE CONDITIONS.

Channel horizontal and vertical control is tied to the proposed channel thalweg. Directions “left” and “right” are determined relative to the channel as if facing downstream. Channel construction shall proceed from upstream to downstream.

Stake the elevation and location of the proposed channel plug for review by the Engineer prior to proceeding with the work. The Contractor may install additional survey control, as needed, to complete the work in accordance with the Contract Documents.

Clearing and grubbing operations shall be performed concurrently with channel plug construction operations. Over excavation during clearing and grubbing of the existing channel bottom and/or banks shall be minimal and limited to the location of proposed channel plug. Clear and grub the stream channel cross-section on all sides to remove all vegetation and root mat material, as directed by the Engineer, to an elevation which is at least one foot below the elevation of the existing stream channel cross-section.

After clearing and grubbing is complete, place and compact soil material to the dimensions, density, lines, grades and typical sections shown on the plans. The compaction method, sequence and density requirements shall be as specified by the Engineer.

Finish grade the adjacent streambed, channel banks, and/or floodplain to provide a smooth even grade transition between channel plug and the existing and/or proposed ground surface.

In locations where exposed bedrock and/or other existing feature extends to and/or within the limits of the proposed work, the channel plug construction shall be field adjusted to incorporate the bedrock/existing feature, into the finished work. The Engineer shall be contacted as soon as the presence of bedrock and/or other existing feature is field identified, to determine the appropriate method of incorporation. Site conditions may require slight deviation from the plan and shall be approved by the Engineer.

### Measurement and Payment

There will be no separate measurement or payment for “Channel Plugs”. The costs associated with “Channel Plugs” for the project shall be included in the contract lump sum for “Comprehensive Grading”.

No separate payment will be made for the materials, labor, stockpiling material, clearing and grubbing, on-site and off-site backfill material, grading, or excavation necessary to construct stream channel plugs, as the cost shall be included in the price for "Comprehensive Grading".