

PENSTOCK DEMOLITION AND SITE PREPARATION

****From Cabot-Danville FEGC F 028-3(26) C/1**

- xx. DESCRIPTION. This work shall consist of demolition and removal of the existing wood stove penstock and preparing the site for new penstock construction at the locations indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans and the Kleinschmidt "Green Mountain Power Corporation, Colchester, Vermont, Marshfield Hydroelectric Station 2009 Steel Penstock Replacement Project, Technical Specifications, March 2009".

- xx. GENERAL REQUIREMENTS. The extent of site preparation is as detailed in the Plans and includes excavating and backfilling for the new penstock. The new penstock, drain, and culvert under the new penstock will be installed by Green Mountain Power (GMP), their construction manager Pizzagalli Construction Company (PCC), and their designated contractor. The existing penstock will be dewatered by GMP between September 1st and November 1st.

- xx. MATERIALS. Materials shall meet the following requirements:

- (a) General. Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations. Restrictions on use of embedment and backfill materials and earth soil migration resistance shall be governed by AWWA M45 Chapter 6 and VTrans.
- (b) Backfill material shall meet the requirements of Subsection 703.04.
- (c) Pipe bedding material shall meet the requirements of Subsection 704.08.
- (d) Excavation and placement of materials shall performed in accordance with Section 204.

- xx. CONSTRUCTION REQUIREMENTS. The work under this Section shall be performed as directed by the Engineer and includes, but is not limited to, the following:

- (a) Coordinating with the GMP contractor regarding penstock layout and phasing necessary to maintain traffic.
- (b) Installing and maintaining erosion prevention and sediment control measures as detailed in the Contract Documents.
- (c) Clearing and grubbing as necessary to allow for adequate access for the installation of the new penstock.
- (d) Excavating to expose the existing buried penstock. Existing penstock may be encased in concrete.

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- (e) Demolishing, removing, and legally disposing of existing wood stove penstock, including concrete encasement, steel pipe sections, and metal bands.
- (f) Developing a contaminated materials management plan to include: discovery and assessment, interim storage, and characterization and disposal that must be implemented if creosote contaminated soils and debris, including creosote contaminated wood, are encountered. The plan shall be submitted to the Engineer for approval prior to commencement of the work.
- (g) Backfilling, compacting, and restoring the existing penstock trench.
- (h) Excavating the new penstock trench to penstock subgrade.
- (i) Upgrading site access roads to allow for the delivery of construction materials and constructing additional site access roads and or crane pads as necessary for the placement of new penstock sections.
- (j) Backfilling, compacting, placing topsoil, and grading to completely cover the penstock as detailed in the Plans.
- (k) Performing site restoration, including seeding and mulching, road top dressing, and additional means to restore the area to a condition equal to the existing conditions.
- (l) Dewatering of excavations as necessary and diverting stormwater surface runoff.
 - (1) Do not allow water to accumulate in excavations. Remove water to prevent softening of trench bottoms, undercutting of existing improvements, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 - (2) Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations or pipelines as temporary drainage ditches.
- (m) Disposing of unacceptable and excess excavated material to a VTrans approved location. Unacceptable soils include mud, silt, or soil which contains debris, organic or frozen material, or soils which clearly will not provide appropriate support.
- (n) Accommodating compaction testing/quality control to be performed by GMP/PCC.
 - (1) Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed. Perform field density tests in accordance with ASTM D 1556 (sand cone method), ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear

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Methods (Shallow Depth), or ASTM D 2167 (rubber balloon method), as applicable.

- (2) If in the opinion of GMP, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.
- (o) Performing site layout, including horizontal and vertical control lines. Coordinate with baseline layout provide by GMP/PCC.
- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Penstock Demolition and Site Preparation) to be measured for payment will be on a lump sum basis in the complete and accepted work.
- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Penstock Demolition and Site Preparation) will be paid for at the Contract lump sum price. Payment will be full compensation for demolishing and removing the existing wood stave penstock, including developing and implementing a contaminated materials management plan and disposing of said materials in accordance with Section 105; performing site preparation necessary for installation of the new penstock; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Penstock Demolition and Site Preparation)	Lump Sum