

Attachment K.1a

Cathodic Protection Rectifiers Narrative

Completeness Attachment K.1.a

The Water Bureau and project design team have confirmed the need to provide cathodic protection at three general locations along the pipelines: the Multnomah Connection, the intertie, and the FW pipeline connections to existing conduits. Broadly, cathodic protection rectifiers (“CPRs”) protect the pipelines against corrosion by applying a small electric current that prevents the corrosive reactions between the metal of the pipelines and the environment that would otherwise naturally occur. These CPRs are pipeline appurtenances that were not explicitly shown or discussed in the original pipeline applications (Application Narrative Section 2 through 2.D) and are therefore proposed to be added as described below.

Defined terms used in this narrative are provided in the overall application Introduction or defined herein. The application narrative notes the presence of existing CPRs (rectifiers) in the study area (page 5, Narrative Section 2.A):

Today, the existing Bull Run Conduits 2, 3, and 4 traverse the study area through land in and around Lusted Road. There are over 10 miles of existing Water Bureau pipelines in the study area. There are also 176 existing Water Bureau pipeline appurtenances in the study area and 95 are at ground level or above ground, which include: [...]

- 16 rectifiers

Like other appurtenances within the study area, CPRs are typical of existing pipeline appurtenances and other utility equipment in the area. These appurtenances are found along each of the Water Bureau’s existing water conduits. Examples of CPRs along Lusted Road are shown on Figures 1 and 2 below. The proposed CPRs have the same function as existing Water Bureau CPRs in the project area and are similar to utility equipment seen along county roads, including existing utility cabinets, pole-mounted utility boxes, power poles, and similar infrastructure.

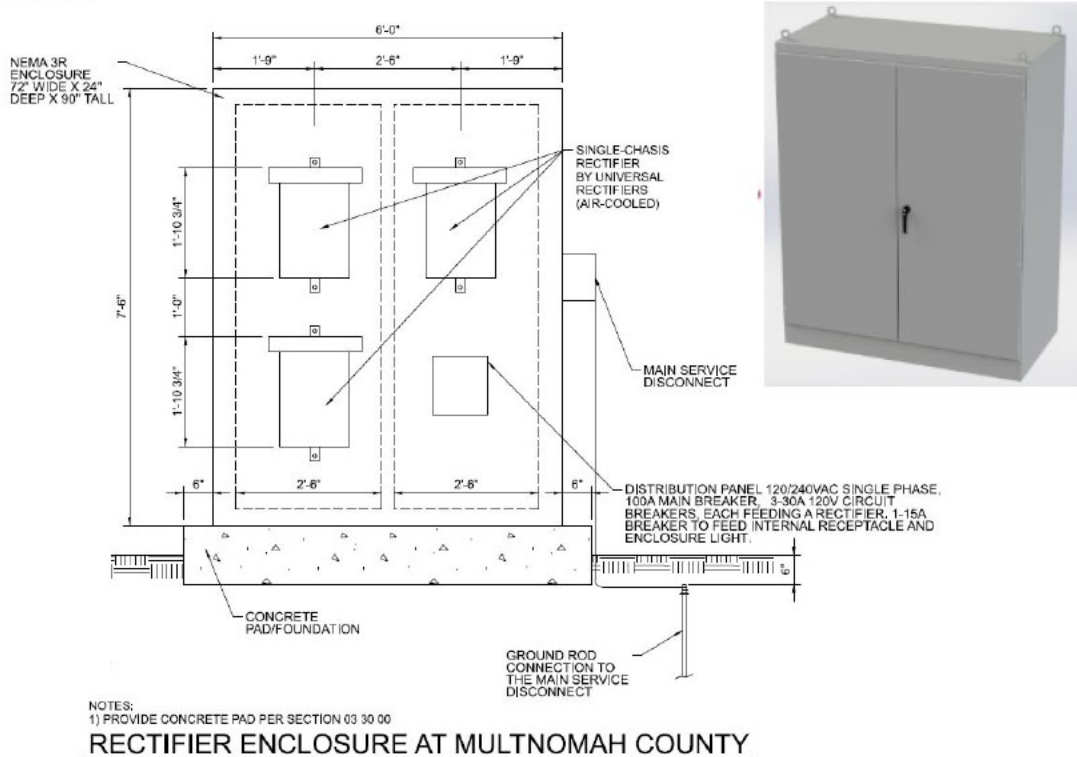


Figures 1 and 2. Existing pole-mounted CPRs and utility structures along Lusted Road

**Bull Run Filtration Projects Land Use Applications
Cathodic Protection Rectifiers Narrative**

Proposed CPRs

West of the Multnomah Connection on Lusted Road, three CPRs are proposed in a single utility cabinet adjacent to the RW pipelines. This is located in the RR zone. The cabinet will house the CPRs and a small distribution panel, as illustrated in Figure 3. The cabinet will be located along a driveway on tax lot 1400 (1S4E23C) and set back a minimum of 30 feet from the Lusted Road ROW. The cabinet will be similar to other utility cabinets in the area. It will be approximately 24" by 72" by up to 90" high and placed on a small concrete pad.



NOTES:
1) PROVIDE CONCRETE PAD PER SECTION 03 30 00

RECTIFIER ENCLOSURE AT MULTNOMAH COUNTY

Figure 3. CPR cabinet proposed along the RW pipelines with approximate dimensions

At the FW intertie, located in the MUA-20 zone, five CPRs will be station-mounted on the side of the intertie vault, extending no more than 30 inches above ground (Figure 4). Like the vault that supports them, these CPRs will be screened by perimeter vegetation and not be visible from off site.