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Floodplain Assessment for the Lower Los Alamos Canyon Gaging Station E110.7 Installation



Newport News Nuclear BWXT-Los Alamos, LLC (N3B), under the U.S. Department of Energy Office of Environmental Management Contract No. 89303318CEM000007 (the Los Alamos Legacy Cleanup Contract), has prepared this document. The public may copy and use this document without charge, provided that this notice and any statement of authorship are reproduced on all copies.

1.0 INTRODUCTION

This floodplain assessment was prepared in accordance with 10 Code of Federal Regulations (CFR) Part 1022, "Compliance with Floodplain and Wetland Environmental Review Requirements." According to 10 CFR Part 1022, a floodplain is defined as "the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands" and has a 1 in 100 chance of being equaled or exceeded by a flood event in any 1-yr period.

The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office (EM-LA) is directing the installation of the Lower Los Alamos Canyon Gaging Station (E110.7) and removal of former Gaging Station E109.9, which was destroyed in 2013 during the 1000-yr flood event. This project was initiated by a request for EM-LA to provide notification of storm water flows in Lower Los Alamos Canyon. Gaging Station E110.7 will transmit real-time flow/no flow information to Buckman Direct Diversion (BDD) and the Pueblo de San Ildefonso. EM-LA has prepared this floodplain assessment to evaluate the potential impacts of implementing the proposed actions within a floodplain.

2.0 PROJECT DESCRIPTION

2.1 Gaging Station E109.9 History

E109.9 was a storm water gaging station that monitored flow in the Los Alamos Canyon watershed. Early notification of flows during storm events enabled precautionary measures to be taken downstream by the Buckman Direct Diversion (BDD) water diversion operations center. E109.9 provided those notifications, but was damaged during the 2013 1000-yr flood event and has not been operated since. E109.9 will be removed, and the site will be restored to natural grade.

2.1.1 Gaging Station E109.9 Removal

Removal of the out-of-service Gaging Station E109.9 will follow the following steps:

1. Cut stilling well corrugated metal pipe 12 in. below grade and backfill with native sand.
2. Cut angle iron anchors for wire-enclosed riprap flush with ground to remove tripping hazards.
3. Remove loose gabion stabilizing wire.
4. Remove Greenlee boxes.
5. Metal debris will be recycled at Los Alamos County Eco Station.
6. Site will be restored to natural grade.

2.2 Gaging Station E110.7 Installation Preferred Alternative Scope

E110.7 will be installed into the bank of the channel in Lower Los Alamos Canyon to detect flows from Los Alamos Canyon watershed into the Rio Grande during storm water events. Flows will be detected with a radar system to minimize interference with the channel and impact on the floodplain. It is estimated that 6 ft³ of soil will be removed during the installation of the gaging station. See section 3.0, Floodplain Impacts, for further description of expected impacts and mitigation.

Installation of Gaging Station E110.7 will follow the following steps:

1. Clear necessary vegetation at installation site to allow for placement of new gaging station.
2. Remove 6 in. of soil and frame/pour a 3 ft by 3 ft concrete platform (See Figure 1).
3. Install radar support frame as shown on drawings and at location flagged in the field. This will require digging a hole and pouring concrete to steel support column (See Figure 2).
4. Install equipment box frame and solar panel support as shown on drawings and at location flagged in the field; this structure will be mounted on the concrete platform (See Figure 1).

3.0 FLOODPLAIN IMPACTS

Ground disturbance activities will occur during removal activities at Gaging Station E109.9 and installation of Gaging Station E110.7. Removal and installation are expected to occur between July 8, 2022 and October 30, 2022, with E110.7 installation occurring in July and E109.9 removal occurring once fire restrictions have been lifted. After installation of E110.7, the gaging station will continue to have a small footprint in the floodplain (See Figure 3).

Minor, long-term impacts are expected from the location of E110.7, as the station is partially located in a defined water flow channel for Waters of the United States (WOTUS). The nature of this work is described under Clean Water Act Section 404 Nationwide Permit 5 “Scientific Measurement Devices.” The gaging station has been designed to comply with all general conditions of the nationwide permit and to minimize disturbance to the channel. No preconstruction notification is required for projects covered under Nationwide Permit 5. The project will not impact any buildings or parking areas, and the gaging station site will be reinforced to minimize erosion, sediment transport, or flooding following completion of the project. No impacts to lives or property associated with the floodplain disturbance are anticipated.

Long-term, positive impacts to the floodplain include monitoring that can be used to assess the canyon’s surface water flow. Other positive impacts for the gaging station functionality include the ability to notify the downstream BDD water diversion operations center of storm water flows in Los Alamos Canyon watershed so that they can decide whether to cease diversion from the Rio Grande during such events.

Negative, short-term impacts from the project will be mitigated and minimized by the implementation of the following best management practices for work in floodplains during construction:

- Any disturbed areas outside of the identified project areas will be revegetated or stabilized. Approved stabilization methods include revegetation with native seed mix and planting within 30 days or at the beginning of the growing season after construction is complete.
- Hazardous materials, chemicals, fuels, and oils will not be stored within the floodplain.
- Work in a floodplain will not take place when the soil is too wet to adequately support equipment.
- Equipment will be refueled at least 100 ft from any drainage, including dry arroyos.

Compliance with the Migratory Bird Treaty Act restricts vegetation removal during the peak bird breeding season (May 15–July 31) unless Newport News Nuclear BWXT-Los Alamos, LLC, biological resources subject matter experts have conducted a nest check to ensure that there are no nesting birds present. If active nests are found, the nest tree or shrub will be preserved until nesting is complete. Any bollards or open pipes will be capped to ensure birds are not caught inside.

4.0 ALTERNATIVES

The only alternative evaluated for floodplain impacts was a no-action alternative. A no-action alternative was not selected as it could have potential impacts to human health and environment resulting from the BDD operating during runoff events from Los Alamos Canyon. An active gaging station will allow BDD to better assess when to open and close intakes. In order to have a functional, accurate flow-monitoring gage, the site has to be in close proximity to the watercourse, necessitating a gaging station within the floodplain.

5.0 CONCLUSIONS

This project will minimize any long-term, adverse impacts to the floodplain through the implementation of best management practices to mitigate potential impacts. The majority of impacts will conclude upon the installation of Gaging Station E110.7. Gaging Station E110.7 will provide flow notifications to the Buckman Direct Diversion operation center for water diversion. To accurately determine flows, the gaging station will be located in the floodplain and partially within the ordinary high-water mark of the stream channel. Best management practices will be implemented to minimize and mitigate any impacts to the floodplain and stream channel. This proposed project will not significantly modify existing topography or flow paths within the floodplain upstream or downstream of the project sites. Therefore, post-project conditions will not significantly deviate from pre-project conditions or result in other long-term, negative impacts to the floodplain and its functionality. No impacts to lives and property associated with floodplain modifications are anticipated.

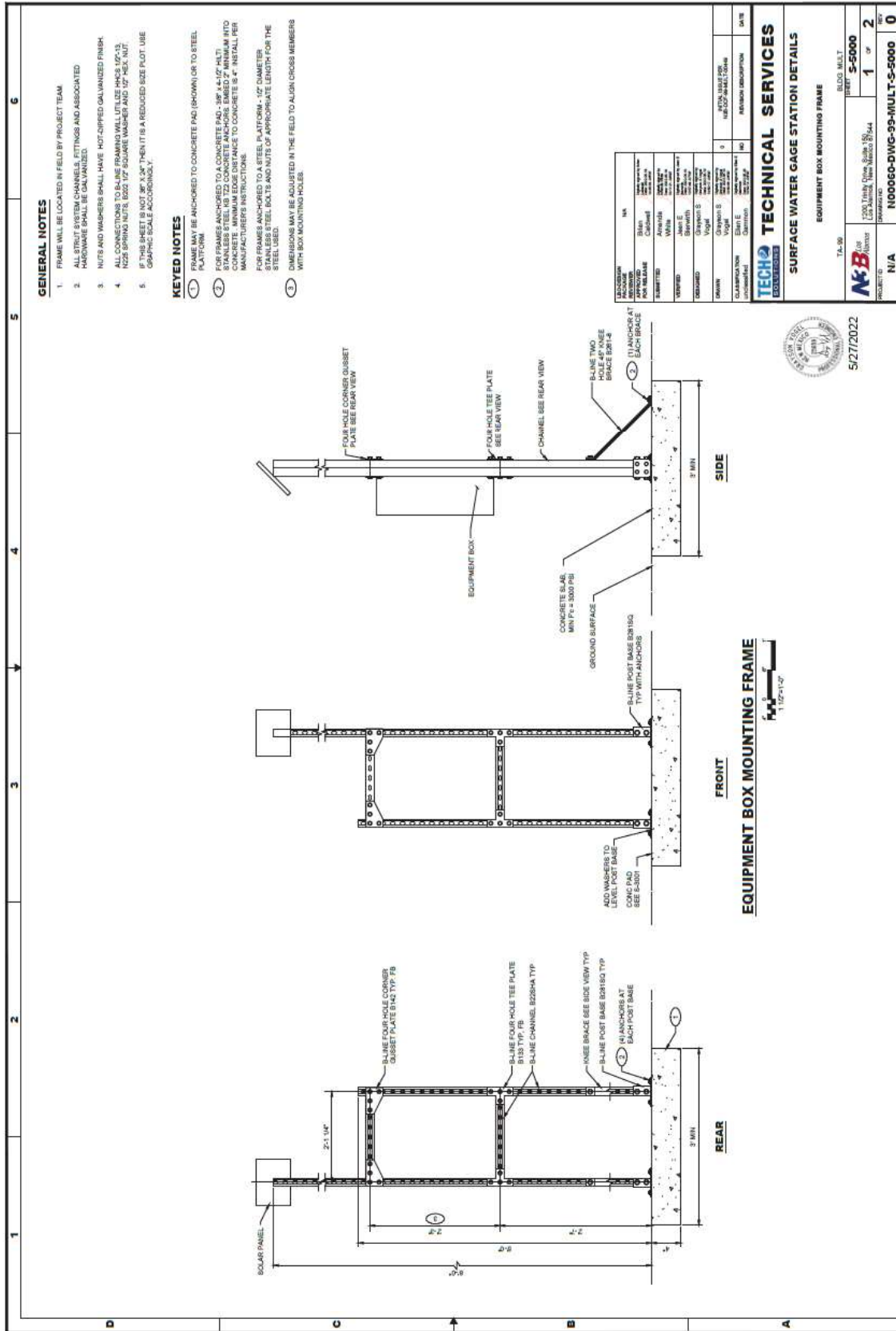


Figure 1: Equipment box mounting frame for E110.7

