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

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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," which was promulgated to implement the U.S. Department of Energy (DOE) requirements under Executive Order 11988, "Floodplain Management." 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.

DOE Environmental Management Los Alamos Field Office (EM-LA) is directing the installation of the Lower Los Alamos Canyon Gaging Station (E110.7) to replace former Gaging Station E109.9, which was destroyed in 2013 during the 1000-yr flood event. This project was initiated by a request from EM-LA in order 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). EM-LA has prepared this floodplain assessment to evaluate the potential impacts of implementing the proposed actions within a floodplain, as required by DOE requirements under Executive Order 11988 and 10 CFR Part 1022.

2.0 PROJECT DESCRIPTION

2.1 Gaging Station E109.9 History

E109.9 was a storm water gaging station that monitored flow from the Los Alamos Canyon watershed. High flows during storm events could potentially move contaminated sediment out of the canyon and early notification of high flows allowed precautionary measures to be taken downstream. E109.9 provided those notifications but it was damaged during the 2013 1000-yr flood event and has not been operated since. It 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 CMP 12 in. belowgrade 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. Cut loose steel platform supporting Greenlee boxes and transport to E110.7 location for reuse (to be completed with a loader).
5. All 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 in order to best detect flows 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 expected 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 of E110.7 will follow the following steps:

1. Clear necessary vegetation at installation site to allow for placement of new gaging station.
2. Place salvaged steel platform (from E109.9) as directed by Storm Water Team Lead (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 may be mounted to the salvaged steel platform from Gaging Station E109.9 (See Figure 1).

3.0 FLOODPLAIN IMPACTS

Ground disturbance activities will occur during removal of E109.9 and the installation of E110.7. Removal and installation are expected to occur from May 16, 2022 through June 6, 2022. After installation of E110.7, the monitoring station will continue to have a small footprint in the floodplain, due to the nature of the gage and its intent to measure water flow during storm events (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). This nature of this work is described under a 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 data that can be used to assess the canyon's surface water flow. Other positive impacts for restoring the gaging station functionality include the ability to alert downstream users of potentially contaminated flows from Los Alamos Canyon during high flow storm water events. The specific intent of these notifications is to allow the BDD to be closed during periods of potential contamination.

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 flows. In order to have a functional flow-monitoring gage, the site has to be in close proximity to the watercourse for accurate measurements, 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 warnings to downstream water intake, preventing contamination of drinking water. In order 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.

EM-LA will take into account all substantive comments received on the notification of this proposed floodplain action before executing the proposed action. In accordance with 10 CFR Part 1022, and before implementing the proposed action, EM-LA will provide a statement of findings to state, tribal, and local governments, and other public stakeholders to solicit comments on the proposed floodplain action. This statement will include a brief description of the proposed project, an explanation of why it is located in a floodplain, the alternatives considered, a statement indicating if the project activities conform to state and local floodplain requirements, and a brief description of the steps to be taken to minimize potential harm within the floodplain.



Figure 1: Equipment box mounting frame for E110.7

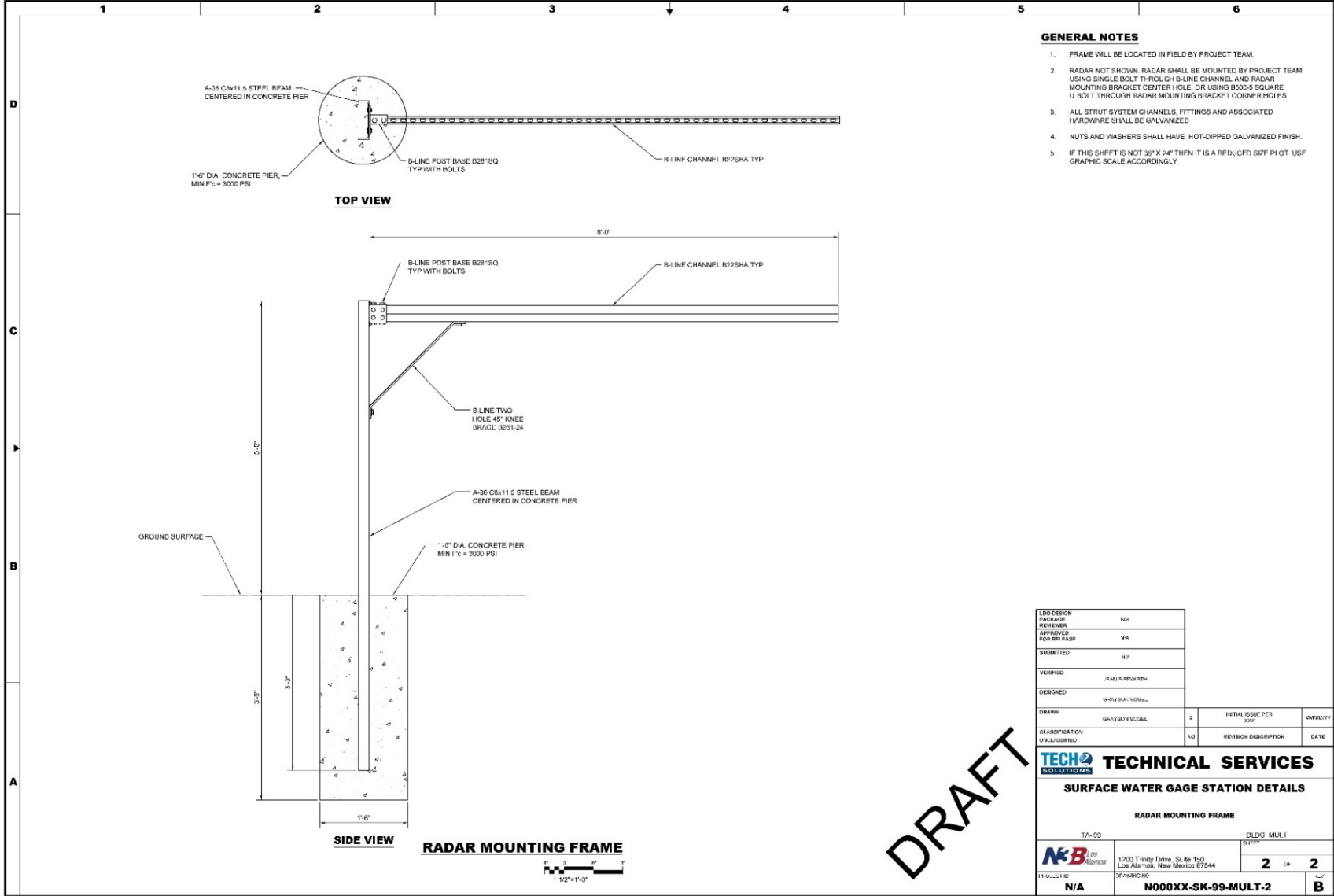


Figure 2: Radar mounting frame for E110.7



Figure 3: Locations of E109.9 and E110.7 in Lower Los Alamos Canyon