

Project Summary

Meadow Substation

The citizens of Longmont, Colorado had serious issues with the way that local electrical Substations around town looked. They all contained large transformers and were surrounded by 6 to 8 foot tall chain-link fences that were re-enforced with barbed wire. Obviously, homeowners didn't want these "eyesores" in their neighborhood, and they started to complain.

The city of Longmont officials also had other issues regarding the chain-link fencing. For one, the transformers emitted a loud buzz, and the chain-link fences had absolutely no noise abatement. Secondly, there was a security issue. Chain-link fencing is easy to cut, and therefore, some of the Substations were being broken into. The Longmont officials needed a cost-effective solution that would satisfy both the needs of the citizens, as well as their own.



PROJECT NAME & LOCATION

Meadow Substation, Longmont, CO

PRODUCT

AB Fence

PROJECT SIZE

10,440 square feet
870 ft (265 m) in length
12 ft (3.66 m) in height

LOCAL ENGINEER

Landmark Engineering

GENERAL CONTRACTOR & WALL BUILDER

Landmark Landscapes

ALLAN BLOCK

MANUFACTURER

Basalite - Denver, CO

PLAN

After much consideration, the city officials decided that a twelve foot tall concrete fence was going to look nicer, provide the necessary noise reduction, and enhance the security of their Substations. In a previous project, they had used a pre-cast concrete panel system that was only 2.5 inches thick, and so didn't provide the desired noise abatement. Another disadvantage of the pre-cast system was its durability, or lack thereof. It simply did not provide the rigidity that Longmont considered necessary. Lastly, the pre-cast system was expensive. When the AB Fence was presented as a possible solution for the Meadows Substation, the city officials were enthusiastic about the benefits it offered.

For one, the AB Fence was aesthetically pleasing. The various colors and design options meant that they could give the wall a unique appearance. Secondly, the thicker blocks and hollow cores allowed for higher noise reduction. Because the Meadow Substation was adjacent to two different neighborhoods, being able to suppress the buzzing noise from the transformers was extremely important. Thirdly, the AB Fence provided the desired security benefits. There are no foot holds for climbing and the rigidity of the system meant the only way in was by extreme force.



Once the city approved the system, Landmark Landscapes, a certified AB Fence installer, was contacted to submit a bid. They were ultimately able to beat out the competitors by a substantial sum. The city of Longmont was already reaping the cost savings that the AB Fence provides. With the bid awarded, work at the Meadow Substation was ready to begin.

DESIGN

Landmark Engineering of Loveland, Colorado, with help from Allan Block and Basalite Concrete Products, designed the AB Fence for the Meadow Substation. The site location allowed the engineer to use exposure B with 90 mph wind loading. Due to site conditions and the height of the wall, four bond beams were required and post spacing was limited to 11.5 feet (3.5 m). Expansive soils led to pile depths of 8 ft (2.4 m).



BUILD



In building the AB Fence at Meadow Substation, Landmark Landscapes did have one major obstacle to overcome, and that was working around all of the electrical equipment. Live wires were buried all over the site, so a lot of caution had to be taken when digging the 8 ft (2.4 m) piers. One of those wires was eventually nicked by the auger, but damage was minimal and no one was hurt. Other than that, the site was relatively flat and there was plenty of room for product and raw materials making for a convenient installation process.

In installing the fence, Landmark Landscapes precisely followed the steps laid out in the AB Fence Installation Guide.

Spacing jigs were constructed for proper post spacing, base rock was compacted and leveled, and the

grout in the bond beams was vibrated for good consolidation. Knowing that this project could possibly lead to future projects with the city of Longmont, Landmark took no short cuts. All of the extra attention to detail made the project a complete success.

Every entity associated with the Meadow Substation fence project came out on top. The neighborhood got a wall that both looks great and reduces noise. The city officials saved money by going with AB Fence and they made the citizens happy. Landmark Landscapes have since built another Substation perimeter wall for Longmont with the possibility of more in the future. The AB Fence proved to be the obvious solution and clearly satisfied everyone's needs.



“The wall has received many compliments from citizens who regularly walk on the path adjacent to the Substation. We are very pleased with the design you recommended and as an added bonus, the sound suppression of our noisiest transformer. This was a pleasant surprise and we realized that the hollow blocks contributed to the sound deadening.

Unlike the solid panel wall at our Harvard Substation, this design does absorb a majority of the sound. We are also pleased with the progress of your contractor, Landmark Landscapes at the new County Line Substation”. - - **Project Manager/Electrical Engineer, City of Longmont Power & Communications.**