

Middle Bald Mountain Proposed Site Construction Summary

Attachments:

1. Larimer County, Colorado Division of Public Works, Public Works Project, Middle Bald Mountain Radio Tower Final Plans February 2011.
2. Engineers Estimate – PN8068
3. Middle Bald Power Line Evaluation 1-7-2011
4. Microwave Systems feasibility Report, Larimer County Pole Mt-Crow Creek to Middle Bald

In the summer of 2010 Larimer County was granted a special use permit in order to gather engineering data needed to develop a specific design for the proposed public safety radio facility on Middle Bald Mountain. The specific design details for the proposed radio facility to include access road, building, generator and tower location, tower type, height and foundation details, power line route and type of construction are included in attachments 1 through 4. A summary of the main features of the proposed project follows.

ACCESS ROAD

The proposed new access road would start on Forest Service road 517, run through a previously logged over area, through a band of standing timber to the meadow near the Kilpecker Trail and across the meadow to the proposed building and generator location. (see sheet 3, attachment 1). The access road would be 2,900 feet long and 10' wide. Access road construction would be in accordance with USFS guidelines. All details for grade, erosion control, soil stabilization, etc. are included in attachment 1.

FACILITY LAYOUT AND LOCATION

A result of the engineering evaluation was the determination that the original facility and tower location proposed by the Technical Communications Department was not optimal from a civil engineering/construction perspective. The county Engineering staff proposed and designed a different location and layout for the site equipment shelter, generator and tower.

General Site Layout – The original site layout had the building, generator and tower located as close as possible to the summit of Middle Bald Mountain. Based on soil make-up and gradients our engineering department recommended the site be move about 220' west and slightly north of the peak of the mountain. This location would provide for a shorter access road with a more level grade. It would also provide for easier construction for the site(see sheet 5, attachment 1).

Equipment Shelter – The equipment shelter would be a pre-fabricated structure approximately 12'x16'. The exterior finish and color would conform to USFS specifications. The shelter would be placed on a 20'x 16' concrete pad.

Generator - The standby generator would be a diesel unit with an integrated EPA approved double wall fuel tank. The generator measures about 10'x6'.

Tower – The tower would be located about 190' away from the shelter, uphill to the east. This location provides a good compromise between ease of construction, tower height and feedline length. The original proposal was for a 60' tower located at the peak of Middle Bald. The location proposed in this design is bout 30' lower than the peak. The relationship between the tower location and the summit of Middle Bald can be seen on sheet 10 of attachment 1. RF coverage modeling shows that a 70' tower at this location will give the same radio coverage as would be provided by the originally proposed tower location. A feasibility study for the microwave link between Middle bald and Pole Mountain/Crow Creek was conducted by Alcatel-Lucent and is included as attachment 4. This report shows that the microwave link will work with the antenna (6' dish) located 30' above ground level. The feedlines between the

tower and the equipment shelter would run in galvanized steel cable tray 12" wide and 3" tall. The cable tray would be mounted on pre-fab concrete anchors spaced 10' feet apart.

Attachment 2 is the Engineers Estimate for materials and cost for the construction of the access road, concrete pads and tower foundation.

POWER LINES

Poudre Valley REA 's evaluation of possible power line routes is attachment 3. They recommend the power line run from the vicinity of Red Feather Lakes west along Larimer County Road 162 to Forest Service Road 300 (the Kilpecker road). South on Forest Service road 300 to Forest Service road 517. The east to the new access road. Then along the new access road the proposed facility. They also recommend overhead (pole) construction for the bulk of the route as being less environmentally damaging. The final stretch of power line across the meadow (about 1,000 feet) would be a buried primary line installed by Larimer County. As noted in attachment 1, this line would be buried under the access road to minimize environmental disturbance. The overhead power line would require a minimum tree clearance of 10' on each side of the power line. The Forest Service has provided an estimate of 29 acres of trees requiring removal for a clearance this wide along a route of about 11.9 miles. It is worth noting that the Forest Service stated they intend to clear all trees for 50' on both side of the Kilpecker road in 2011 for beetle kill mitigation.