

MEETING MINUTES
ELM STREET ROCK SLIDE, PROGRESS MEETING NO. 10
conducted at the site trailer on Elm Street, Montpelier, VT
Wednesday, March 22, 2006
10:00 a.m. - 11:00 a.m.

Attendance:

Tom McArdle, City of Montpelier	David Marcoux – Janod Contractors
Steven Millard, Golder Associates Inc.	Jay Smerekanicz – Golder Associates Inc.
Charlie Pelletier – City of Montpelier	Pete Ingraham – Golder Associates Inc.
Drew Gelfenbein - VTrans	

Topics of Discussion:

1. Parking Lot area southwest of Area 4B:
 - o The City has established a limit of work for the southwest side of Area 4B. The limit is the edge of the slope defined by four in-place rock blocks. The parking lot area is not owned by the City.
 - o The City has requested Golder to prepare a letter recommending the parking lot property owner seek expert advice from a geotechnical engineer on the needs for slope stabilization and remediation of his property. Similar geologic conditions exist in the parking lot area as in the rest of the work area. Because the funding for the project is federal, only impacts to Elm Street can be included in the work. The City requested that the Golder letter also document that the current project work will not impact the stability of the slopes in the parking lot area. The City requested that the letter be submitted prior to project completion.
2. Area 4B:
 - o Golder is preparing a cost-comparison letter regarding four options for rockfall pieces that may ravel from the rock and soil slope above the sidewalk in Area 4B. The four options are 1) no protection; 2) shotcrete facing; 3) rockfall drape; and 4) rock catchment fence.
 - o Golder recommended that the rock fall drape is the most desirable option, based on ease of construction, long-term maintenance and cost. As there is little room for a rockfall catch ditch between the rock slope and the sidewalk, Golder recommends a low-height chain link fence (four feet high) be placed about one foot from the sidewalk to act as a ditch to contain accumulated debris (small rock flakes) raveling from beneath the rockfall drape.
 - o The City requested that the rockfall drape option be designed by Golder and estimated construction costs be submitted by Janod as a change orders to the project.
3. Drilling:

- Janod started drilling the Tecco anchors for Area 3A. The boreholes for the anchors are staying open, and casings will likely not be needed to prevent borehole collapse in the soil interval.
 - Golder will lay out the Tecco anchor locations for Area 4B late this week or early next week.
 - Janod has nearly completed the drilling and anchor installation for Area 4A.
 - Janod has obtained a test jack and apparatus for the two test anchors near the bottom of Area 2. Testing will likely be performed later this week or next week.
4. Stumps in Tecco Areas:
- Golder stated that ideally the oak tree stumps in the Tecco areas be removed, as the stumps will be the source of new sucker growth over the next few years. The City no longer uses herbicides for stump growth control. Janod has or will cut the stumps flush with the ground level and will tie-down the Tecco system around the stumps. As part of the recommendations/maintenance section in the as-built report, Golder will include removal of woody sucker growth from the stumps for the Tecco areas.
5. Area Northeast of Area 2:
- The City asked Janod and Golder to review the northeast rock slope edge at Area 2. Rock flakes about 1/3 down the slope will need dental shotcrete and pins for stabilization. To prevent long-term root jacking, the trees within six feet of the slope edge should be removed. Janod estimates that due to the voids associated with the flakes, about 20 yards of dental shotcrete may be needed.
 - Field observation indicates that the rock slope further to the northeast periodically sheds rocks onto the residential structure. The trees above the house actually slow down rock fall in this area, and Golder recommends the trees should remain. At the Elm Street grade, Golder recommends that the City consider placing a chain link fence, about 6 feet high, from the edge of the City's rock wall to the low rock retaining wall at the residence to impede rocks rolling from the toe of the slope towards the sidewalk and roadway.
6. Design:
- Janod has verbally requested the use of more robust steel reinforcement (i.e., larger rebar, and larger gauge welded wire fabric) for the remainder of the Cliff Street shotcrete wall. This change was requested as there would be a delay in ordering the remaining steel reinforcement due to the rarely used sizes in the design (i.e., Janod's supplier does not stock some of the steel included in the design). Golder evaluated the change in steel reinforcement and has taken no exception to the proposed changes. There will be no cost increase due to the change in reinforcement steel. However, Golder requested Janod to summarize the proposed changes in a letter so that we can document the change in design for the as-built report.
 - Golder still needs to submit the revised quantity sheet to Janod.
 - A design sheet is planned to be submitted for the Area 4B rock fall drape, as well as estimated drape construction quantities.
7. Testing:
- Janod may bring in a crew from Atlantic Underground Services to complete the shotcrete work for the Cliff Street shotcrete wall. If a new nozzleman is brought

onto the project, a new test panel and core testing will be needed. The City requested VTrans to evaluate if the nozzleman's certification is typically needed for VTrans projects.

8. Drilling Dust:

- There have been no complaints regarding drilling dust and noise thus far. Drilling typically starts around 7:30 a.m. every morning, including Saturdays.

9. Cliff Street:

- The easement for the permanent anchor installation beneath the property at 11 Cliff Street (i.e., the Bartram's) has been signed.
- The City has placed an asphalt curb in front of the temporary jersey barriers to help contain sheet flow from precipitation.
- Golder recommended the final asphalt layer on Cliff Street be crack free to prevent inflow of sheet flow below the street. Any cracks that appear after construction (e.g., due to frost heave) should be sealed.

10. Cliff Street permanent jersey barrier anchorage:

- Golder is still evaluating the anchors for the permanent jersey barrier placement. The City stated that for the anchor design, Golder should use a maximum vehicle speed of 20 mph, and vehicle size equivalent to a single-axle propane delivery truck. The City requested that the jersey barrier anchorage should be equivalent to the previous guard rail system, as appropriate in accordance with AASHTO roadway design guidelines (2002).

11. Elm Street:

- The City is planning to clean up the rock debris on Elm Street soon.
- In the next few weeks, Dubois will be mobilized to the site again to fix the stone wall in front of Area 2. The hoe-ram in the parking lot will be demobilized this week or next week.
- Janod and Golder recommend keeping the rock catchment fence in place until drilling is complete. In the unlikely event of a drill falling off the face, the fence will act as protection for the residential structures below.
- The City will survey the as-drilled locations of the anchors (posts and tie-backs) placed for the rock catchment fence. Janod will cut the anchors flush with the street after the fence is removed; however, the City may need to excavate the asphalt surface 12 to 16 inches in order to cut the anchors further, bearing in mind future asphalt milling operations. The anchors are grouted into rock and cannot be removed easily. As-drilled survey data will be forwarded to Golder for the as-built report documentation.

Action Items:

1. Golder will forward the Area 4B letter and design quantities to Janod and the City.