

MEETING MINUTES
ELM STREET ROCK SLIDE, PROGRESS MEETING NO. 13
conducted at the site trailer on Elm Street, Montpelier, VT
Wednesday, April 12, 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.

Chris Benda – VTrans

Topics of Discussion:

1. Drilling:

- Janod has added a 3rd wagon drill and an accompanying 2-man drill crew to the project. Janod has also mobilized a high-pressure compressor (250 psi at 1150 cfm) to the site. The high pressure compressor is intended to make the drilling more efficient. Additional compressors will be used to power the shotcrete plants.
- The addition of a 3rd drill, and the increase in air pressure, has increased the amount of drilling dust. There have been no complaints regarding the dust. (Note: A complaint about dust was received on Friday, April 14th. The problem has since been addressed.)

2. Rock Catchment Fence Anchors on Elm Street:

- On Monday of this week (April 10, 2006), Janod removed the rock catchment fence on Elm Street. Janod is planning to cut the steel anchors used for the catchment fence posts flush with the street level. The anchors need to be cut to reduce tripping hazards and to allow final clean-up of the street. The anchors will need to be surveyed by VSE either before or after Janod cuts the anchors for as-built information.
- After the anchors are cut and surveyed, the City will remove the pavement around each anchor cluster (4 anchors per cluster), excavate the subgrade soils, cut the anchors further, and backfill the excavations so that future maintenance activities will not be impacted by anchor projections.

3. Shotcrete:

- Janod has mobilized a shotcrete subcontractor crew and shotcrete plant (Atlantic Underground Services Inc. – AUS) to accelerate the shotcrete wall construction. Janod plans to bring in another AUS crew next week to operate Janod's shotcrete plant. Next week Janod plans to have two AUS nozzle men working on the shotcrete wall concurrently. The AUS crews will also install the remaining reinforcing steel. The AUS work will be billed under Janod's existing shotcrete billing rate.
- As there will be two new shotcrete nozzle men, additional test panels will need to be shot. The first test panel will consist of only fiber reinforced shotcrete, and the

second will consist of fiber reinforced shotcrete and steel reinforcement (i.e., steel welded wire fabric and rebar).

- VTrans will conduct the coring and testing of the shotcrete test panels.
4. Grout/Shotcrete Testing Results:
 - For the remainder of the project, VTrans will forward grout and shotcrete testing results via e-mail to Golder directly.
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 5. Rock Nail Testing:
 - Janod tested two sacrificial rock dowels this past Saturday (April 8, 2006) using a hydraulic jack, and Golder observed the testing procedures and recorded the testing results. Both anchors passed the rock-grout bond test (minimum 4 kips/ft) and the creep test (creep less than 0.04 inches over a 10 minute period at 133% design load). The testing results will be presented with the as-built report to be submitted after the project is completed.
 6. Tecco System:
 - Janod expected a delivery of 3 mm dia. Tecco mesh on Wednesday April 12, 2006. VTrans has requested copies of the mill and corrosion protection certifications for the Tecco mesh. There currently is no proposed testing of the Tecco mesh.
 7. Area 4B Rock Drape:
 - Golder submitted a draft working drawing of the Area 4B rock drape design at the meeting. The rock drape design incorporates the Maccaferri double-twist mesh. Golder asked for comments and edits be submitted from the field team, VTrans and the City soon so the final drawing can be issued next week.
 8. Cliff Street Guide Rail Design:
 - Golder also submitted draft working drawings and details of the proposed Cliff Street guide rail system. The rail design incorporates a steel-reinforced concrete moment slab and curb (8 ft wide, and 15 inches thick), with a steel post guide rail and hand rail system. An asphalt overlay of 2 to 3 in. will be placed on the moment slab.
 - After a cursory review of the design drawings, the following issues pertaining to the moment slab design were discussed:
 - The current design would need two design sheets; the City would like to have a map/plan of the proposed system. Golder will add a map, likely using the latest VSE survey map of Cliff Street as a base map.
 - The shotcrete wall will be shot a few inches below this level to produce a flat construction joint, and after VSE provides control points on the flat joint, the shotcrete will be brought up to the moment slab grade.
 - The current design incorporates styrofoam as a moment slab bond breaker between the slab and underlying shotcrete. Golder will evaluate the potential for friction need between the slab, styrofoam and shotcrete. Additionally, the use of cork, asphalt paper or other materials will be evaluated as a bond breaker.
 - The steel post spacing is 6 ft 3 in. Janod is not planning to remove any more of the existing wooden posts. For quantity estimating purposes,

Golder will measure the distance between the wooden posts to estimate the length of the moment slab.

- Construction joints placed about every 20 ft along the length of the slab will be needed. The construction joints will not be placed at the locations of the steel posts.
- VTrans will provide a chamfer detail for the construction joint.
- Golder will evaluate the use of #8 steel bars as reinforcement, as field bending of bars this large will be difficult. The use of #4 or #6 bars will be evaluated.
- Golder will specify that the steel reinforcing bars be epoxy coated or will incorporate other corrosion protection.
- Golder will provide estimated quantities and specifications for the moment slab construction.
- The asphalt overlay will likely require construction joints as well (i.e., saw cut and seal).
- Golder will also evaluate the need for waterproofing of the exposed moment slab and underlying finished shotcrete face.
- The City may wish to have a black-colored hand rail.

9. Limits of Work Letters:

- Golder is in the process of preparing limit of work letters for the City. Golder plans to submit draft letters next week to the City for review and comment.

10. Areas 3B and Northeast Corner (upper right) of Area 2:

- The City is requesting Janod perform the slope stabilization construction in these areas as described in Golder's April 3, 2006 letter. The City will forward letters of authorization to Janod and Golder for these areas. Golder will provide an estimate of the engineering fees associated with the design in these areas. The City has chosen the consolidation shotcrete option and pinning for Area 2. Janod will need to drill additional temporary anchors above Area 2 to provide drilling access for the dilated rock blocks.

11. Schedule:

- Janod is anticipating completion of the remaining stabilization work within three weeks, as they have other commitments in May. This will require work continuing on Saturdays. A small Janod crew may remain in Montpelier to address the rock slope stabilization on Route 302.

Action Items:

1. Golder is planning to finalize the Area 4B rock drape design early next week, followed by the Cliff Street guard rail design.