New drawing
Post by Administrator on 8/11/05 at 16:25

An updated drawing/specification is now available at http://users.wpi.edu/~skwirl/HardwareGuide/New/Ready/Systems/sec01.pdf . The components are linked from the specification page.

Re: New drawing
Post by cheimbecker on 8/12/05 at 8:55

Sheet 1 - Elevation - Add hatch to concrete anchor to differentiate between that and the excavation pit.

Sheet 3 - Detail A - Maybe add text leader to the rebar/j-bolts in the concrete anchor block. Possibly add placement dimensions and material specifications for the rebar reinforcement/j-bolts - so long as there is room and it is not redundant information to what is shown on the POF03 detail.

Re: New drawing - cable terminal
Post by Terry Hale on 8/12/05 at 9:06

I feel a need to apologize on behalf of New York State. The newly posted cable terminal details accurately reflect our current standard sheet drawings. Unfortunately, we are not happy with our details. While the safety function of this terminal has been good, it has given us some maintenance problems. Specifically, the base of the first post is shown embedded in the anchor block. When the run of rail has experienced a solid hit anywhere in its length, very high tension forces have been transmitted along the cable, creating a bending force in the first post. As maximum bending in a cantilever will be at the fixed support, we have seen bending of the post assembly just above the surface of the concrete block. This has resulted in damage to the portion of the post (its embedded base) below the slip base. As this part of the assembly is embedded, we have been left with a damaged base embedded in concrete, making repair a real problem.
Washington State has improved on this portion of our design. They replaced the base portion below the slip base with a short stub of post welded to a base plate which is then fastened by bolts to the anchor block. When the stub is damaged, the plate can be unbolted and replaced.
Speaking for New York, we recommend that the Washington detail be used. We have not updated our own standards to reflect this change as our staffing levels are critically low and the matter is not safety-related.
As a separate issue, the anchor block details need to be addressed. Several years ago, New York went to a more massive anchor block system as we have seen some of the earlier blocks get lifted by a combination of the constant cable tension and the seasonal frost heave forces. As the new block is quite heavy, we allowed an option for the block to be precast as two separate pieces, which are then mated on site. A key detail of the mating is that the blocks be locked together relative to the forces that will be applied. To do this, there is a tapered key between the two pieces. The taper is arranged to prevent the half of the block to which the cables are attached from sliding up relative to the half that the first post is in. As posted here, the block half appear to be separated by a simple flush joint. That will not be appropriate as the tension in the cable could easily cause the outside half block to lift.
In practice, we have had most contractors opt for one massive block, which is probably preferable.

Re: New drawing
Post by Administrator on 8/22/05 at 13:46

8/12/05 at 9:06, Terry Hale wrote:

> While the safety function of this terminal has been good, it has given us some maintenance problems. ...

The NYS version has been successfully crash-tested. Would these changes affect the crash test results?
