

**Cherne, Curtis**

**To:** Vince Carrica  
**Cc:** Diane\_Souder@nps.gov; Lewis, James L.  
**Subject:** RE: Sundance Estates - Phase 1A & B Storm Drain Outfall Structure to Piedres Marcadas

Vince,

I walked the site yesterday to verify the erosion that is happening on the monument property. The damage is clearly occurring from drainage from Sundance Estates Subd. I walked up and down the arroyo to see if this erosion was occurring elsewhere and it wasn't.

I do not think the proposed energy dissipator will work, because of the height of the outlet above the bottom of the escarpment and the volume/flow that is coming out of the pipe. The flow needs to be spread over an area equal to a sheet flow condition or the flow should be choked back considerably so that the flow that does come out of the pipe will spread in that small area on top before it goes over the edge. The amount of flow would equate to a sheet flow condition.

James Lewis at Parks and Rec needs to be involved in the approval process for this outfall. I will require an e-mail from him that he is OK with the solution that is proposed.

Curtis Cherne, P.E.  
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Development and Building Services  
Planning Department, COA  
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**From:** Vince Carrica [mailto:VCarrica@tierrawestllc.com]  
**Sent:** Tuesday, March 01, 2011 7:28 PM  
**To:** Cherne, Curtis  
**Subject:** Sundance Estates - Phase 1A & B Storm Drain Outfall Structure to Piedres Marcadas

Curtis,

Here is what we had given to Brad previously for replacement of the pond outfall structure to the monument. It is larger than the one that is in place now and designed to fit in with the surrounding escarpment (more so than the grey concrete structure in place). The runoff leaves the energy dissipater structure and travels across a solid rock shelf before running off the escarpment. Call me if you have any questions.

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3/2/2011

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