

Crystal River Country Estates, engineer guidelines for compaction at bridge abutments.

From: Marijean Frymoyer <marijeanf@sgm-inc.com>

Sent: Wednesday, August 14, 2024 1:16 PM

To: angela confluencearchitecture.com <angela@confluencearchitecture.com>

Cc: Kim Clinco - RMAS <kim@rmas.co>; Gracie Orf (gracie.orf@gmail.com) <gracie.orf@gmail.com>; 'Jim Hamlin' (jhamlin@sopris.net) <jhamlin@sopris.net>; andy@roaringforkresidential.com (andy@roaringforkresidential.com) <andy@roaringforkresidential.com>; Jennifer Pintar <jennifer.pintar@gmail.com>

Subject: RE: Bridge Inspection Report

Angela,

Bridge Abutments:

-At both bridge abutments there is 14' to 16' ("W") long section of concrete pavement (note this was not shown in the 1985 bridge drawings)

-Vibratory equipment will not be operating on the concrete pavement

-Per the 1985 bridge drawings, the abutments are 13' tall ("H")

-Since the roadway compaction equipment will be operating a horizontal distance of more the height of the abutment away (i.e. "W" > "H"), **the equipment will result in minimal horizontal loading to the abutment**

Bridge Wingwalls:

-The 1985 bridge plans, show the existing abutment and wingwalls to remain in place, we do not have the original bridge drawings in our records, so we do not have dimensions/details

-The existing wingwalls retain the roadway fill and are in poor condition

-Recommend that CAT compaction equipment is not used within a horizontal distance "H" of the wingalls

-Since plans are not available I would assume "H" = the exposed height of the wingwall (on the river side) + 3 feet (assumed buried depth)

-Hand vibratory equipment may used

Alternatively, the HOA may want to consider extending the concrete pavement an additional 10' at each abutment to reduce the need for roadway compaction near the wingwalls

General recommendations:

-Do not run compaction equipment when the ground is saturated (i.e. after the heavy rains we have recently received)

-Monitor abutment wingwalls during compaction operations for movement (i.e. at the existing crack locations are the gaps opening or closing)

-Monitor steep slopes adjacent to the roadway for signs of instability (soil sloughing or cracks)

Let me know if you have any questions.

Thanks,

Marijean

From: angela.confluencearchitecture.com

Sent: Wednesday, July 10, 2024 1:41 PM

To: Marijean Frymoyer <marijeanf@sgm-inc.com>

Cc: Kim Clinco - RMAS <kim@rmas.co>; Gracie Orf (gracie.orf@gmail.com) <gracie.orf@gmail.com>; 'Jim Hamlin' (jhamlin@sopris.net) <jhamlin@sopris.net>; andy@roaringforkresidential.com (andy@roaringforkresidential.com)

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Hello Marijean-

Here is a response for our roadwork contractor below. Here is a link to the specifications of the machine. <https://h-cpc.cat.com/cmms/v2?&f=product&it=product&cid=406&lid=en&sc=US&gid=290&pid=751737&nc=1>

Angela,

Machine we compact with is a

Caterpillar CS-323C smooth drum roller. One of the smallest ride-on compactors Cat makes.

If a contractor was installing new water or sewer in any municipality, compacting with similar equipment would be required for every 12" of backfill placed over the pipe. This means, if you buried a water main 6ft. deep, you would make several passes with vibratory compacting equipment directly around the pipe, and over the pipe, and again 6 more times as you backfilled the trench. It's also required when you backfill around concrete footings and stem walls.

I would not claim to be the expert on the direct effect of vibratory equipment around pipelines or concrete structures, but in my experience, I have never seen or heard of any pipeline ruptures, or concrete foundations collapsing, due to proper and yes, required compaction. Maybe if someone was using such equipment very close to an old historic wooden bridge or building from the 1800's.....

If using vibratory compacting during roadwork (which every road contractor on earth uses) is just too much for the residents of CRCE, we can certainly stop .

But, I believe the quality and durability of the current road in CRCE sort of speaks for itself, considering the high traffic and steeper pitches in places.

Thank You,

Matthew Piffer

(970) 366-0595



Crystal River Estates

Roadway compaction recommendations

