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October 01, 2004

Name Deleted, Esq.
address
city & state

Your client: **Mr. Name Deleted**
address
city & state

Your File #

At the request of **Name Deleted, Esq.**, a limited visual inspection of the patio area of the **name deleted** residence located at **address deleted** was conducted by Jagger Enterprises, Inc. dba Buckeye Home Inspections on September 29, 2004. The inspector was Jim Jagger. **Name deleted** was present at the time of the inspection.

Name deleted indicated that he had recently contracted for installation of a concrete patio at the rear of his residence

Weather at the time of the inspection was in the mid 60^{o}'s. Skies were partly cloudy.

Name deleted residence is a one story, ranch style residence. Please assume that the residence faces South.

Definitions-

Crack control joint **-** A formed, sawed or tooled groove in a concrete

structure. The purpose of this groove is to create a weakened plane and to regulate the location of fracturing resulting from the dimensional change of concrete due to shrinkage. Shrinkage is cause by the normal drying of concrete as water evaporates into the atmosphere.

Curing Agent **-** A sprayed on sealer or membrane designed to slow down the rate of water evaporation from newly poured concrete.

Expansion joint **-** A space or gap (commonly filled with a compressible material such as ana asphalt impregnated wide fibre strip) which allows for safe and inconsequential relative movement cause by thermal variation or other conditions

Frost heaving **-** The lifting of a concrete slab due to freezing of water in the underlying soil

Isolation joint **-** A space or gap positioned so as to separate concrete from adjacent surfaces (such as preexisting concrete).

Observations-

Numerous defects were noted in name deleted patio. Examples include (but are not limited to) :

a) Bottom left hand corner is discolored and appears to have been patched with some type of contaminated concrete. Craters (large pits) were noted in this area.

b) Patio was installed without requisite ***expansion and/or isolation joints***. Areas where expansion and/or isolation joints are absent include:

1) the intersection between the concrete block foundation of the residence and the recently poured concrete

2) the intersection of older (preexisting) patio) recently poured concrete.
c) ***Crack control joints*** were installed in a substandard manner. Defects include:

1) Joints are too shallow to be fully effective. Hughes concrete slab is nominally 4" thick. Common practice dictates that control joints are 1/4 the thickness of the slab (1"). Depth of joint was measured and was found to be less than 1/2" in numerous locations.

2) Joints were not cut in a straight line - Deviation as much as 3" from a chalk line (apparently snapped by cement contractor) was noted.

3) ***Crack control joints*** were not installed with adequate frequency - Accepted standards dictate that crack control; joint be installed in a 4" thick slab not less than every 10'. Since the patio is 12' deep, a crack control joint dividing the concrete into two (2) 6' sections would have met the requirement. Such a control joint is missing.

4) Crack control joints are lacking in concrete border poured around what was described as a preexisting (12'x10') patio.

d) Broom finish texture of the concrete is irregular - lump, bumps and other visible defects mar the surface of the slab.

e) The perimeter of the slab was not neatly finished with an edging tool. A broom appears to have been dragged across the edge of the slab after it was tooled (shaped by an edging tool or "edger").

f) No evidence of the application of a ***curing agent*** was noted. It is common practice to use a sprayed on curing agent to allow the concrete to harden and hydrate correctly.

g) An aluminum downspout and adapter fitting is partially buried in the concrete and taped up with duct tape. Proper procedure would have been to install a 4" PVC drain pipe for downspout in such a manner to extend to point approximately 16" above the surface of the concrete. **Appearance of downspouting (as installed) is very amateurish.**

Further Comments -

a) The 4"x4" treated lumber supporting posts (quantity, 2) for a large canopy appear to not have not been secured in a safe and substantial manner. Evidence of a hazard was noted.

-Upper end of these 4”x4” posts appear to have been secured only with two (2) drywall screws into bottom of referenced canopy.

- No visible evidence of attachment to concrete pad under lower end of 4”x4” posts was visible.

-**Name deleted was advised that awning may fall (with dire consequences) if posts if inadequately secured are bumped. Inspector recommended that Name deleted take immediate action to properly secure these 4”x4” posts with appropriate pins, masonry fasteners, brackets, etc.**

b) It is the inspector’s understanding (per information provided by **Name deleted**) that concrete patio was attached to foundation via horizontal rods which were cemented into place when the patio was poured. Based on information supplied by **Name deleted** it is likely that ***frost heaving*** of patio will damage the foundation of the residence.

Recommendation - Have a a cutting and breaking company (someone who saws concrete) cut the patio in such a manner so that patio slab is disconnected from the residence. Time is of the essence. If patio goes through freeze/thaw cycles, damage to foundation is likely.

Summary -

a) Name deleted patio was installed in a substandard manner. Concrete was not finished in a good and workmanlike manner according to local standards and practices.

b) It is very likely that concrete patio and foundation of residence will be damaged by frost heaving.

c) Appearance of patio is amateurish. The essential decorative (appearance) value of the patio has been substantially compromised.

d) Accelerated deterioration of patio is very probable.

Suggested Remedy -

1) Remove and replace entire concrete patio (12'x43.5'x4" thick)

2) Provide all labor and materials necessary to install new patio which meets accepted (professional) workmanship standards.

3) Secure awning posts in a good, workmanlike, safe, adequate manner.

4) Clean up the job site and haul away all debris.

Suggested Remedy -

<u>Contractor to refund all monies paid by Name Deleted.</u> Due to defects listed above (to include substantial appearance issues) patio installation has negative value for intended recreational purpose.

Please note that latent or concealed deficiencies may exist. Only non-destructive testing was conducted. Portions of the mechanical and structural systems were not able to be fully examined. This inspection is not intended to be nor is it represented as technically exhaustive. This report is not intended to be nor is it represented as an Engineer's survey. We suggested consulting all local, state, federal or other regulatory agencies to determine if facilities are in compliance with appropriate regulations. This report does not constitute an offer to perform above suggested repairs. We do not perform contracting or repair work nor do we make referrals to those who do. Contractors set their own prices and prices among contractors vary widely. We suggest acquiring three (3) competing bids from qualified contractors before making final decisions or hiring and/or employing contractors or tradespersons.

This report prepared and respectfully submitted by,

James Jagger
President

photos accompany this report

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