



Engineer's Report

SUBJECT:

Assessment of structural conditions

2002 Scenic Drive, Austin, Texas

JOB NUMBER:

21206.01

DATE OF REPORT:

June 20, 2022

At the request of Ryan Street Architects, I have visited the site twice to review existing conditions of structural elements and to offer an opinion about the suitability for reuse in a renovation. This report is a summary of my observations and refers to photos in the June 21, 2022 report by Ryan Street Architects.

Apartment

The degradation of the roof and windows has allowed water into the building for an unknown but obviously prolonged period of time. The wood roof framing has obvious rot in areas exposed by holes, and I believe it is likely that further investigation will reveal that none of the roof framing is salvageable. Given the excessive deflection of the roof (photo on page 12) and the concerns about the floor joists mentioned below, I caution against entering this building until the roof and floor can be adequately shored.

The existing floor joists are supported in slots gouged into the face of the exposed limestone cut (photo 1, page 16), which was leaching water (photo 3, page 16) during my visits despite no antecedent rainfall. The ends of the joists are spliced onto the original joists as part of a previous repair which was undoubtedly caused by previous similar rot. The splices are not adequate and show clear signs of deflection and distress. The repair ends are now showing signs of rot. These structural connections are inadequate and dangerous.

The stone wall on the second floor is supported on an inverted steel railroad rail, which is not properly supported at points of bearing or against rotation. The elevated concrete slab over the garage also appears to use steel railroad rails as reinforcement, and the steel shows severe corrosion. Again, I recommend caution under and on this slab until it can be properly shored.

The walls are load-bearing, uncoursed random rubble masonry that do not meet the minimum requirements of modern or recent building codes for thickness and for height-to-thickness ratios. These walls cannot be reused as load-bearing in the renovation.

Two Story House

The exterior walls are load-bearing, uncoursed random rubble masonry, similar in construction and deficiencies to the apartment. These walls cannot be reused as load-bearing in the renovation.

Additionally, the reuse of the existing masonry walls as non-load-bearing is not possible. The south wall has a significant crack (photo on page 19) that was previously patched and continues to move. This wall is noticeably out-of-square and out-of-plumb. Foundation movement is likely occurring. Further investigation will be required, but if the foundation is rubble, which is typical for the era, less invasive stabilization techniques will not be possible. The masonry walls will need to be removed so that the foundation can be rebuilt with reinforced concrete.

Similar to the apartment, widespread water leaks in the roof have damaged wood framing to the point that total replacement will likely be necessary for the roof. The damage may include the floor in several locations, and more investigation will be required to make this determination.

For the floor over the large room (photo on page 22), significant deflection is apparent from above and below. The beams and joists will likely need to be reinforced to support modern loads.

Pool And Landscape

The pool geometry violates modern code requirements, particularly where concrete was added along the east edge, apparently to divert rain runoff around the pool (photo on page 29). Cracks in the shell are significant enough that the basin will not hold water.

The walls of the changing rooms support the slab of the pool deck. These walls and slab have failed (photos on page 30). Again, the load-bearing, uncoursed random rubble masonry has no definable capacity once it cracks and displaces like these walls have. I recommend not allowing anyone on or around these walls and slab until they are shored or demolished. The pool and deck are not suitable for reuse.

Summary


The wood framing has been severely damaged by water and immediate shoring or demolition is recommended.

The masonry walls are not adequate for load-bearing, and their reuse as a non-load-bearing veneer is not practical.

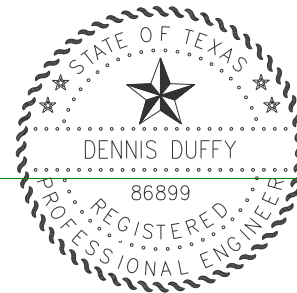
The foundation is questionable and likely not adequate for reuse in an extensive renovation.

Other considerations that are not part of this structural assessment but important to the practicality of a renovation are waterproofing, building envelope and site drainage. All have obvious challenges with no reliable solutions without complete demolition.

SIGNED:



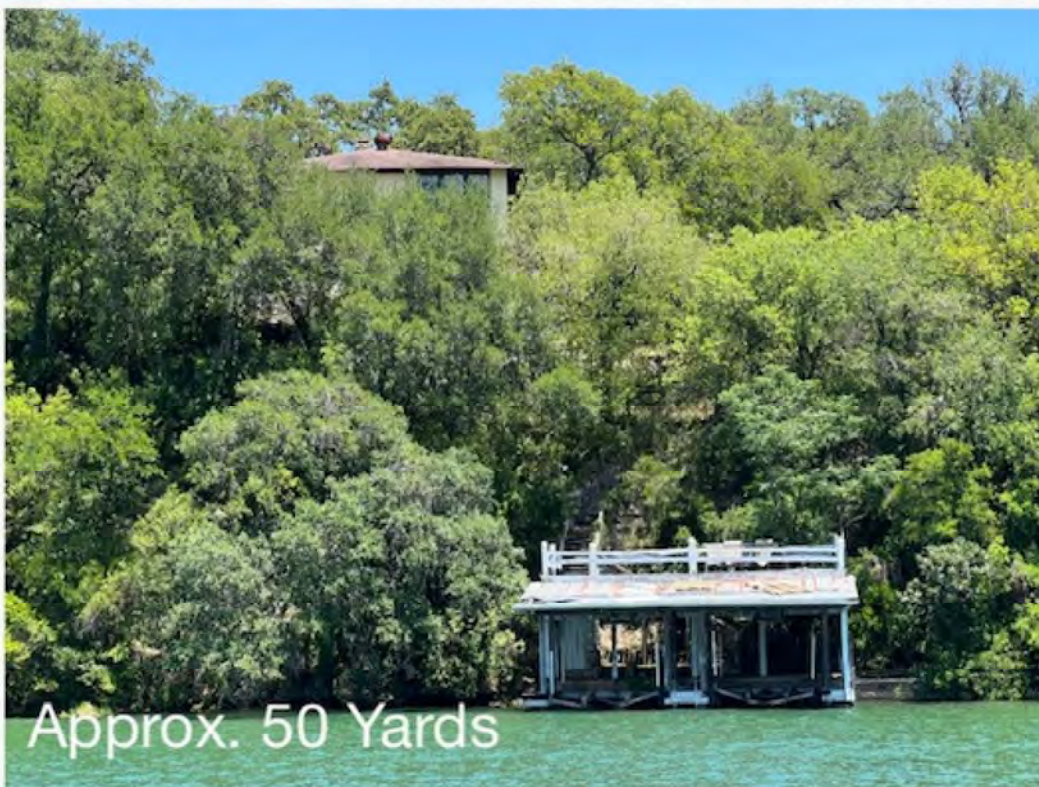
Dennis Duffy, PE



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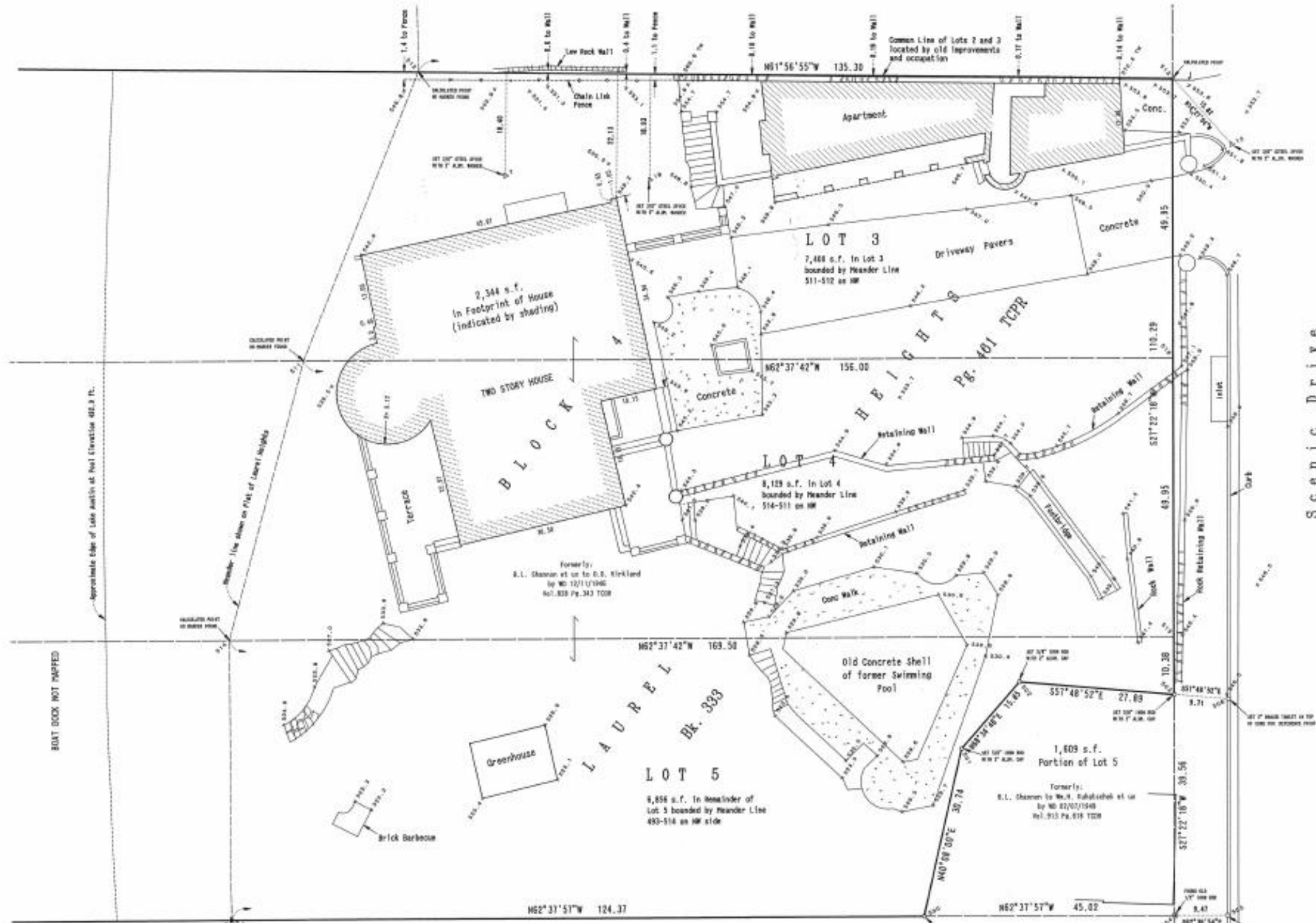
RYAN STREET
ARCHITECTS

2002 SCENIC DRIVE RESIDENCE, EXISTING CONDITIONS | JUNE 28, 2022



2002 SCENIC DRIVE
EXISTING CONDITIONS

Lake Austin / Colorado River





A p a r t m e n t



APARTMENT EXTERIOR

1. ROOF DAMAGE INDICATED BY DISPLACED, DAMAGAGED AND MISSING SHINGLES. HOLES IN THE ROOF POINT TO BROAD WATER DAMAGE WITHIN AND POTENTIAL DAMAGE TO STRUCTURE.
2. WOOD WINDOWS - JAMBS, SILLS, AND FRAME ARE ROTTED. BROKEN PANES THROUGHOUT.



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APARTMENT EXTERIOR

1. METAL IS RUSTED AND VINES ARE ENTERING INTO APARTMENT.
2. WOOD WINDOWS - JAMBS, SILLS, AND FRAME ARE ROTTED. BROKEN PANES THROUGHOUT. VINES ARE OVERGROWN AND ARE ENTERING INTO THE INTERIOR.



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APARTMENT EXTERIOR

1. THE ROOF IS FALLING APART AND IS SHOWING SIGNS OF WATER DAMAGE.
2. THE ROOF IS SLANTING, WHICH IS A SIGN OF STRUCTURAL FAILURE AND MATERIAL DETERIORATION.



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APARTMENT EXTERIOR

1. THE UNDERSIDE OF THE GARAGE ROCK WALL IS SHOWING SIGNS OF MOLDING.
2. THE ROOF OF THE GARAGE IS MOLDING AND HAS WATER DAMAGE.



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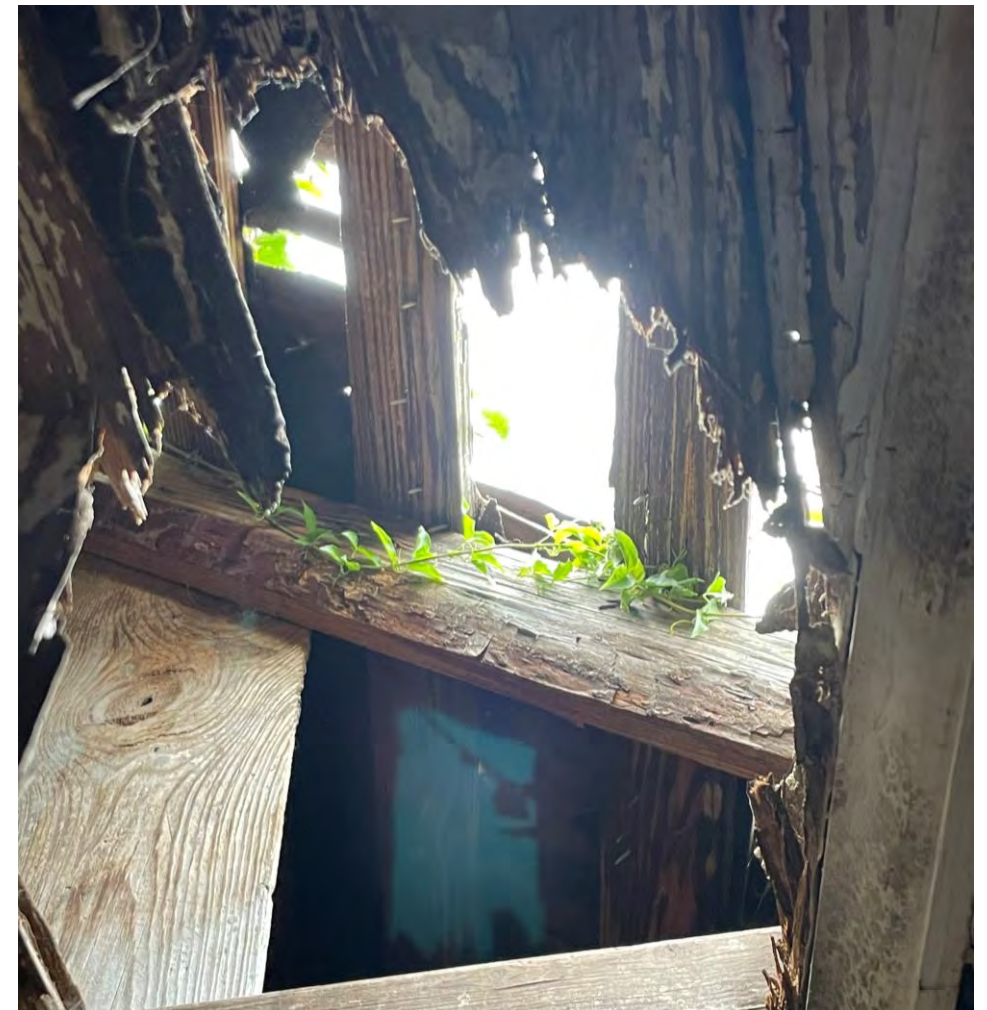


APARTMENT INTERIOR

1. HOLES IN CEILING AND ROOF – SKY VISIBLE THROUGH INTERIOR CEILINGS AND ROOF. VINES HAVE INVADDED STRUCTURE THROUGH BOTH ROOF AND BROKEN WINDOWS.
2. WATER DAMAGE – EVIDENCE OF LONG-TERM WATER DAMAGE APPARENT ON CEILINGS, WALLS, AND FLOORS.



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APARTMENT INTERIOR

1. DISCOLORATION AND ROT SHOWS SIGNS OF WATER DAMAGE.
2. WATER DAMAGE - DISCOLORATION AND DEBRIS INDICATE LONG-TERM WATER DAMAGE ON CEILINGS, WALLS, AND FLOORS.



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APARTMENT INTERIOR

1. THE CEILING IS BOWED AND SHOWS SIGNS OF WATER DAMAGE AND DETERIORATION.
2. DUE TO THE CEILING FAILURE, DIRT AND DEBRIS ARE COLLECTING ON THE FLOOR BELOW.



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APARTMENT INTERIOR

1. DEBRIS HAS COLLECTED INSIDE THE BATHTUB, SHOWING WATER DAMAGE AND CEILING FAILURE.
2. THE CEILING HAS MOLD GROWING ON THE SURFACE OF THE WOOD, WHICH IS CAUSING FAILURE AND COMPROMISING THE MATERIAL.



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3. THE CEILING IN THE BATHROOM IS DETERIORATING AND MOLDING.
4. THE CEILING OVER THE BATHTUB IS DETERIORATING AND ALLOWING DEBRIS TO COLLECT IN THE TUB.



APARTMENT INTERIOR

1. WOOD CEILING IS ROTTED, FALLING APART, AND SEPERATING.
2. CEILING FAILURE HAS OPENDED THE INTERIOR UP TO EXTERIOR LIGHT, WATER, AND AIR. WATER DAMAGE CAN BE SEEN ON THE WALL AND CEILING.
3. THE KITCHEN CEILING AND STRUCTURE HAS DETERIORATED AND IS FALLING APART.



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APARTMENT INTERIOR

1. CEILING FAILURE HAS ALLOWED DEBRIS AND DIRT TO COLLECT INSIDE THE APARTMENT. THE WOODEN FLOOR IS CRACKING AND DETERIORATING FROM WATER DAMAGE.
2. THE WOODEN FLOOR IS FALLING APART AND SEPERATING FROM THE WALL.



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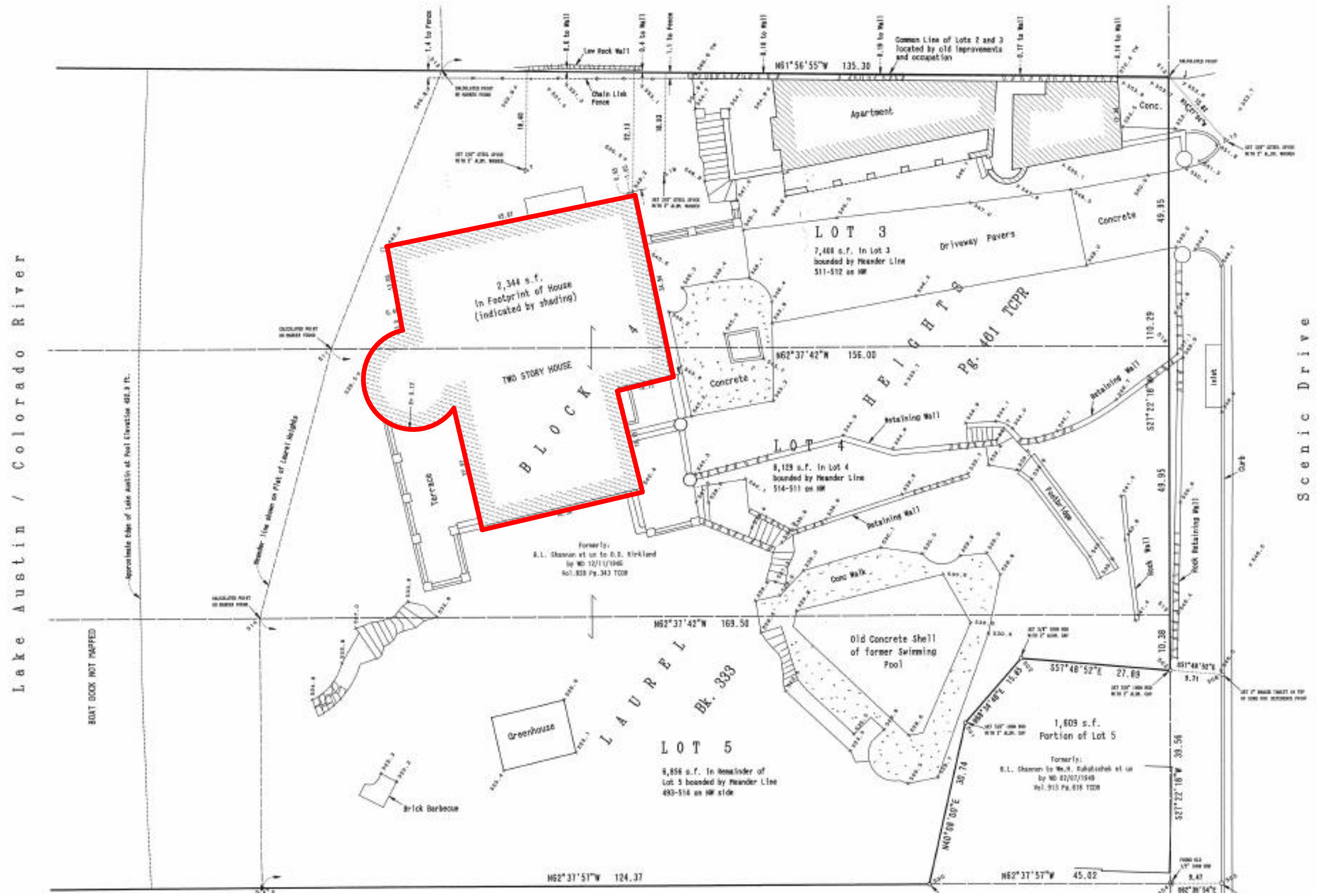


APARTMENT INTERIOR

1. WATER IS LEAKING THROUGH THE RETAINING WALL AND INTO THE APARTMENT. WATER CAN ACTIVELY BE SEEN DRIPPING DOWN THE ROCK WALL.
2. IN ORDER TO HOLD UP THE SECOND FLOOR, RAILWAY TIES ARE USED AS STEEL BEAMS.
3. WATER IS DRIPPING DOWN THE ROCK AND FINDS ITS WAY TO THE STRUCTURE'S CONCRETE BASE.



Two Story House





TWO STORY HOUSE EXTERIOR

1. THERE IS A CRACK THAT STARTS AT THE ROOF, GOES THROUGH THE STUCCO SECOND FLOOR, AND CONTINUES THROUGH THE STONE WALL TO THE GROUND. IT HAS BEEN FILLED AND COVERED WITH PLASTER. THE BOTTOM OF THE STONE WALL SHOWS WATER DAMAGE.



1.



TWO STORY HOUSE EXTERIOR

1. THERE IS A CRACK THAT STARTS AT THE STUCCO SECOND FLOOR WALL AND RUNS DOWN FROM THERE.
2. THE CRACK CONTINUES THROUGH THE ROCK FIRST FLOOR WALL. THE WATER DAMAGED STONE CAN BE SEEN AT THE BOTTOM OF THE WALL.



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TWO STORY HOUSE EXTERIOR

1. THE ROOF SOFFIT IS DETERIORATING AND FALLING APART.
2. THE WOOD STRUCTURE WITHIN THE ROOF IS EXPOSED.



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TWO STORY HOUSE INTERIOR

1. A STRUCTURAL ENGINEER HAS INDICATED THAT THESE BEAMS ARE INADEQUATE OF BEING STRUCTURALLY CAPABLE TO HOLD THE LOAD OF THE SECOND FLOOR.



JUNE 28, 2022
22

RYAN STREET
ARCHITECTS

2002 SCENIC DRIVE RESIDENCE
Two Story House - Interior



TWO STORY HOUSE INTERIOR

1. THE FLOOR IS DAMAGED AND FLAKING. ON THE EXTERIOR, THE HEIGHT OF THE GROUND IS HIGHER THAN THE HEIGHT OF THE WINDOW SILL, ALLOWING WATER TO FLOW INTO THE HOUSE.
2. WATER IS DAMAGING THE CEILING IN LARGE AREAS. BLACK MOLD IS EVIDENT IN MULTIPLE LOCATIONS.
3. IN THIS LOCATION THE WATER DAMAGE IS ESPECIALLY EVIDENT AND DESTRUCTIVE. MOLD IS A POTENTIAL HEALTH HAZARD AND WOULD REQUIRE AN EXTENSIVE MITIGATION EFFORT.



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TWO STORY HOUSE INTERIOR

1. THE PLASTER DRYWALL IS FALLING APART AND CRACKING. THE DOOR IS TOO SMALL AND IS UP AGAINST STONE STAIRS.
2. THE PLASTER IS CRACKED AND FALLING APART.



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TWO STORY HOUSE INTERIOR

1. THE PLASTER AND THE TRIM ARE FALLING APART AND EXPOSING THE WALL BENEATH.
2. THE PLASTER IS CRACKING.



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TWO STORY HOUSE INTERIOR

1. THE WINDOWSILL IS FALLING APART AND IS DROPPING DEBRIS ONTO THE WINDOW SILL AND FLOOR.
2. THE FLOOR IS BOWING DUE TO THE LACK OF STRUCTURAL SUPPORT BELOW.



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Pool and Landscape

