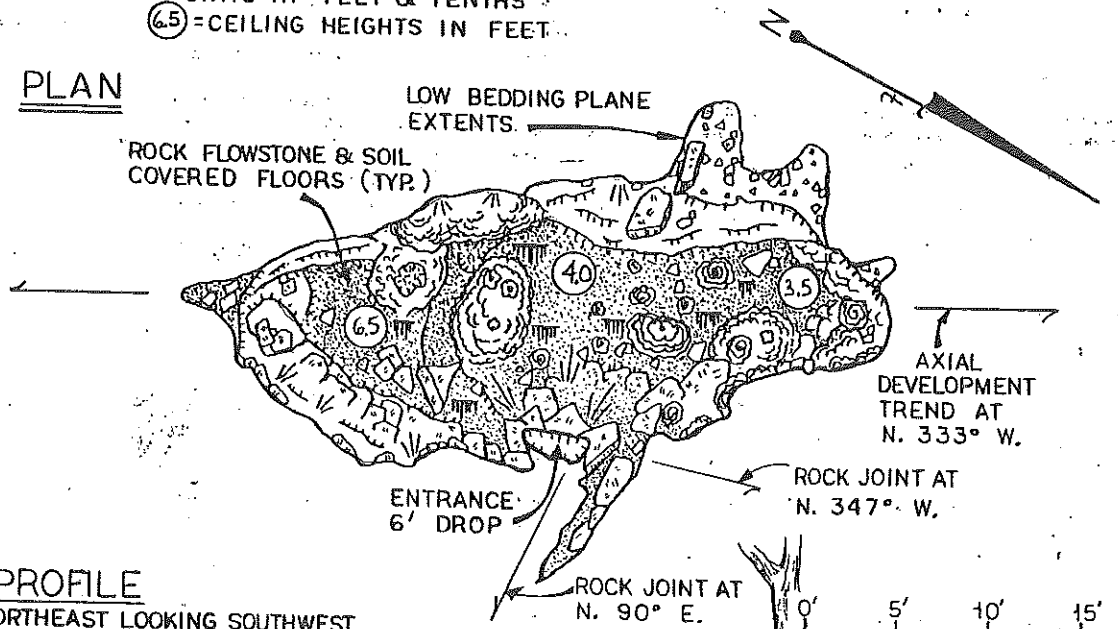
HOLLOW OAK CAVE

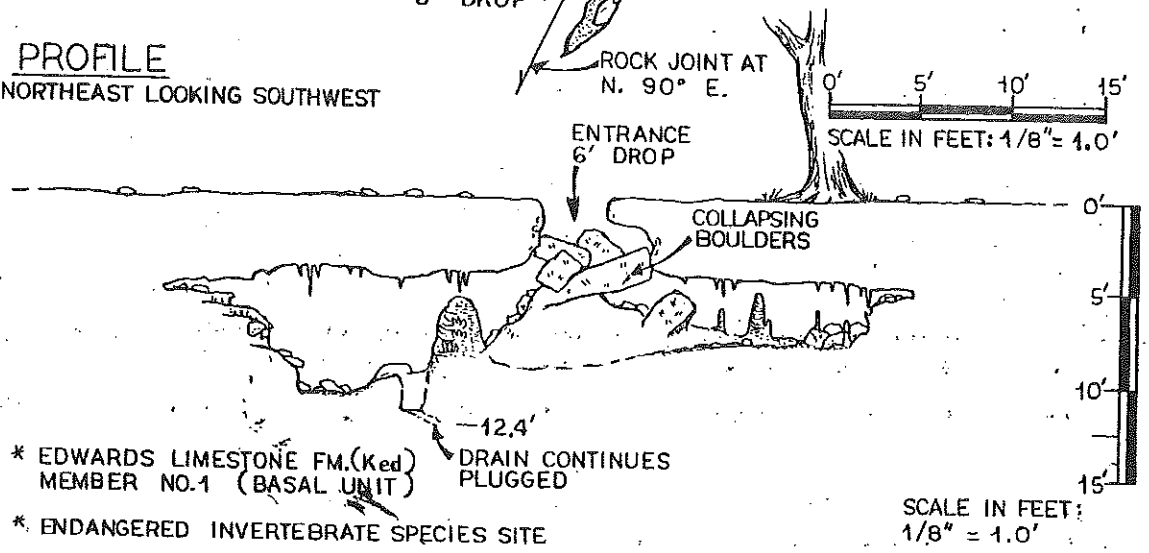
WILLIAMSON COUNTY, TEXAS

SUUNTOS & TAPE SURVEY · MARCH 16, 1996
PERSONNEL: MIKE WARTON & ASSOCIATES: C. WARTON · M. WARTON ·
DRAFT BY: M. WARTON
LENGTH: 46.7' DEPTH: 12.4
CONFIGURATION OF: 38'X 26'
UNITS IN FEET & TENTHS
(6.5) = CEILING HEIGHTS IN FEET

PLAN



PROFILE
NORTHEAST LOOKING SOUTHWEST



* EDWARDS LIMESTONE FM. (Ked) MEMBER NO. 1 (BASAL UNIT)

*. ENDANGERED INVERTEBRATE SPECIES SITE

SCALE IN FEET: 1/8" = 1.0'

PREPARED BY: MIKE WARTON & ASSOCIATES

T.S.S. 1996

Mike Warton & Associates

GEOLOGIST / KARST TERRAINS SPECIALIST / NATIONAL CAVE GATE CONSULTANT
MIKE WARTON
P.O. BOX # 1313
CEDAR PARK, TEXAS 78630-1313
(512) 250-0705
FAX (512) 250-0706
SPECIALIST IN TEXAS' ENVIRONMENTAL KARST RESEARCH & SERVICES

COPY

No. 2 to Blake McGee Co.

RE: BLAKE MCGEE COMPANY
816 CONGRESS AVE., SUITE # 1100
AUSTIN, TEXAS 78701
AC (512) 473-3667
ATTN: MR. BLAKE MCGEE,
Principal Executive

SUBJECT: KARST FEATURE INVESTIGATION OF THE "STONE CANYON" RESIDENTIAL DEVELOPMENT PROPERTY, "WHITEWATER COVE", LOT # 8, LOCATED ALONG R.M. HWY. 620 NORTH, ROUND ROCK AREA, WILLIAMSON COUNTY, TEXAS.

* " REPORT OF FINDINGS "

CONFIDENTIAL

" REPORT OF FINDINGS "

KARST FEATURE INVESTIGATION OF THE " STONE CANYON " RESIDENTIAL DEVELOPMENT PROPERTY, "WHITEWATER COVE " , LOT # 8 , LOCATED ALONG R.M. 620 NORTH, ROUND ROCK AREA, WILLIAMSON COUNTY, TEXAS.

DATE: MARCH 19, 1996

INTRODUCTION:

The following "Report of Findings" of an individual karst feature investigation of the described property is prepared for the client to address Environmental issues and compliance for " Endangered Invertebrate Species Habitat(s) ", and " Point Recharge Loss ".

The discovery of this feature occurred after initial karst environmental surveys and field work of the property was completed, of which preceed the date of this report. The site location of this feature is Lot # 8 of "Whitewater Cove" of the "Stone Canyon" residential subdivision development property. No surface indicator or expression of a potential cave was present prior to the discovery of a cave at this location. As this lot became cleared by machinery for home site construction, a weak point of the underlying bedrock collapsed and exposed an open void beneath. The site developer contacted our office promptly to report this discovery and requested our assistance in investigating this feature.

KARST FEATURE DESCRIPTION:

The investigation of this feature revealed the presence of a shallow

cave developed within solution zone # 2 of the " EDWARDS LIMESTONE FORMATION ", (Ked) MEMBER NO. 1 (Basal Unit). The roof of this cave is 4.0' feet beneath ground surface level. An inspection of the entrance collapse and interior roof revealed that a rock joint intersection was present in the roof of the cave at the point of the collapse. This joint intersection had created a weak point in the roof and collapsed under the pressure of the machinery clearing the lot. Further inspection of the roof and cave's interior revealed that at least Two (2) small natural avens to the surface were present, however, each were completely filled and sealed by packed soil and rocks. Thus, the cave was not detectable in the inital karst survey of the property, and the cave is not an " interstitial " void. Because these small natural avens were present, even though they were only a few inches in diameter and completely filled, the infiltration of water and sediment with organic matter still occurred being transported to the cave's interior.

The cave consists of a single room measuring 31' feet long by 16' feet in width. Ceiling heights range from 3.5' feet on the Northwestern side to 6.5' feet on the Southeastern side. The interior of this room is decorated with spelothems (stalactites and flowstones). The floor of the cave is composed of rock breakdown slabs, flowstones, stalagmites, and patches of dark soil and reddish clay deposits. Interior conditions were mostly dry with a few moist areas in low point floor areas, and along the far Southeast wall at which reddish clay deposits were found. The entrance to this cave is located exactly 50' feet back from the existing curb line of the street, and 45' feet from the Southside lot line. The " Footprint " of the cave is easily contained within this lot, and no extensions of the cave extend outside of this lot.

KARST FEATURE DOCUMENTATIONS:

GEOPHYSICAL PROPERTIES:

The cave, although shallow developed, was determined to be structurally stable and would remain so if it receives no further disturbance. In the collapsed area of the entrance, several large boulders and ceiling slabs have only partially collapsed and are extremely dangerous in their present positions.

HYDROGEOLOGIC PROPERTIES:

The cave was found to be developed entirely within the solution zone # 2 layer or horizon, with no deeper development below this level, and only small low horizontal bedding plane extents outwards of the single chamber. No surface sink catchment basin is associated with this feature. Meteoric water enters the cave by means of saturation of the roof layer only. The feature has been evaluated as very marginal towards " Point Recharge ", and is catagorized as a " Minor " Point Recharge Feature. Floor drains in the cave are against the West wall of the room, and are massively plugged with infilling materials. The ultimate direction of sub-grade water flow path would be to the Northeast, however, it is highly doubtful that such deeper development or flow paths exists from this feature.

BIOLOGICAL COLLECTIONS:

As the site inspection revealed that natural surface connection avens

were present, a thorough biological collection was conducted in all parts of the cave. Although the cave's interior was dry, several species of cave invertebrates were found primarily in what moist areas were located. This collection yeilded the following results:

Spiders: Cicurina, undetermined.
Springtails: Collembola, undetermined.
Snails: Gastropoda, undetermined.
Cave Crickets: Ceuthophilus, undetermined.
Geotettix, undetermined.
Ground Bettles: Rhadine subterranea subterranea (Van Dyke)
(troglobite)
Harvestmen: Texella reyesi (Bone Cave Harvestman)
(troglobite) * Endangered Invertebrate Species

Collections from the cave have been transported to the Invertebrate laboratory at the " Pickle " Research Center for Positive Identifications by Dr. James Reddell.

CAVE SURVEY/ MAPPING:

Due to the present of a endangered invertebrate species (Bone Cave Harvestman) found in the biological collection from the cave, The cave was surveyed and mapped for delineation of cave "Footprint" and habitat. *A copy of the cave map is enclosed within this report.

CONCLUSIONS & RECOMMENDATIONS:

This feature has been given the official identification name of " HOLLOW OAK " CAVE. Two (2) Oak trees are near the cave's entrance at the front of the lot. One of these contains a distinctive hollow center or core and has a striking appearance.

The cave is a small and classically developed solution zone cave of which is typical of the regional area. The cave is well contained within the present lot # 8 of "Whitewater Cove" (Street). The cave is evaluated as a " Marginal " Endangered Invertebrate Species Habitat. From a surface and subsurface view, the extent of this lot should be adequate for the protection/surface buffer for this feature, however, such final decision must come from the U.S. FISH & WILDLIFE SERVICE (Austin Office).

In the cave's present condition, the newly created entrance is EXTREMELY DANGEROUS due to large boulders ready to collapse at the slightest disturbance. If a decision is rendered that this feature must be preserved, a protective cave gate would be recommended. As to the present time, and until such decision is made, a temporary covering such as a large slab boulder should be placed over the entrance to keep people out and reduce potential liability issues of the owner/ site developer. The condition of this cave's entrance warrants an immediate action. Mike Warton & Associates cannot maintain and responsibilities towards this feature beyond the completion of it's investigative services.

The feature has been evaluated as an endangered invertebrate species site, however, as a "Minor" Point Recharge classification, we do not feel that any site drainage control measures need be imposed upon this lot.

Enclosure: Cave Map of
"HOLLOW OAK" CAVE

Respectfully,

MIKE WARTON, Principal Executive
GEOLOGIST/ KARST TERRAINS SPECIALIST
NATIONAL CAVE GATE CONSULTANT
MIKE WARTON & ASSOCIATES

MIKE WARTON
MIKE WARTON & ASSOCIATES
P.O. BOX #1313
CEDAR PARK, TEXAS 78630-1313