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A PRELIMINARY " REPORT OF FINDINGS " FOR:

THE KARST TERRAINS FEATURE KNOWN AS " RUGH " CAVERN, LOCATED ALONG NORTHERN " SECO " CREEK, NORTHWESTERN MEDINA COUNTY, TEXAS.

DATE: AUGUST 23, 1993

PERPARED FOR:

THE EDWARDS UNDERGROUND WATER DISTRICT
(E. U. W. D.)
1615 NORTH ST. MARYS, P.O. BOX 15830
SAN ANTONIO, TEXAS 78212 - 9030

ATTN: MR. ROBERT BADER:

THE " GATING " AND EXPLORATION OF " RUGH " CAVERN, MEDINA COUNTY, TEXAS.

A Preliminary Report by: Mike Warton

AUGUST 23, 1993

Introduction:

In March of 1993, I recieved a phone call from the EDWARDS UNDERGROUND WATER DISTRICT (E.U.W.D.) in San Antonio, Texas. This call was about a Medina County Rancher who had requested need for a Cave Gate to be placed over a mysterious hole in the bed of " SECO " Creek approx. 1.5 Miles upstream of The " Valdina Farms Sinkhole " Area. The Land owners concern was to prevent a loss of life/ or cattle from being sucked down into this Feature during periods of Insurging Recharge. Naturally, I found that my ears were still firmly attached to my curiousity. I believe my only reply was.... " When do we go "?

Was this a known Cave? Where exactly is this again? Upstream from Valdina Farms Sinkhole.....How far? Was it perhaps " Rote " Cave? No, He said the entrance was in the bed of the Creek! Hummm..... My mind drifted off into the past to the time of my only visit to Valdina Farms Sinkhole. It was springtime 1967, I was only 17, " Shreiks ".... I remembered rapelling into the Cave. It was full of bats and the air was thick with gnats. It was hard to breath from all the amonia, but somehow we adjusted to it at the bottom. I could recall walking down large passage tripping over loose boulders, and wading in water. Beyond that the memory becomes foggy. I couldn't recall anything else about the area that might clue me to this seemingly new hole upstream on " SECO " Creek.

Within a few days, arrangements had been made to visit this Site, at which time I would briefly investigate the hole and take measurements for a Recharge Cave Gate. On the day of our visit, Cindy and I were treated to a quick visit to The Valdina Farms Sinkhole and the Dam on " SECO " Creek. I had seen video footage of the Recharge channel project in 1982, but still marveled at all of the actual changes since the 1960's.

A short while later, we arrived at the Site area of the newly reported feature. At this point, approaching the the Creek from the WEST is across flat pasture land and there is certainly nothing dramatic looking about the Creek Terrain. As we soon found out, a 10 to 12 Foot high clay & gravel Creek bank was keeping all the channeled stream flow and drama completely hidden from our sight until we walked down to the edge of this vertical bank and looked over. Seconds before looking over, the sound of roaring,crashing water became audible. There is some wonderful quality about Excitement that made all of us suddenly run down the creek bank and scramble off the side at the first easy place without uttering a single word. The Creek is 50 Feet wide and completely dry wherewe came down. The roar of a stream vanishes into the unknown just ahead. We reached the edge of the Entrance shaft and stood " Spellbound in Silence " for several minutes as we observed with fascination a Ten Foot wide by One Foot deep torent of water turn into the bank changing to a powerful Four sided waterfall and disappear from sight. These powerful arches of water overlapped and blocked completely any possible furtherview down the shaft. I estimated the Insurgent flow to be between 8 to 10 C.F.S. (Cubic Feet per Second) through a 3.5' X 4.0' Foot hole, and without question far too dangerous to enter in that condition. At the time, it was not possible to determine that there was any more than an approx. 10 inches to one foot of solid rock around the top edge of the hole. The way the water fell, gave an impression that the edges were severley undercut immediately beneath the surface. A friend of the Rancher remarked that she had looked at this hole approx. a year earlier when the creek was dry. She said that the opening was much smaller then and was surrounded by a funnel of gravel. She said that she thought

she could see a rock floor about 10 or 12 Feet down, but no one had ever attempted to er it. Since then, the opening had been steadily growing in size.

I carefully began attempting to take measurements of the opening, realizing that if I e to slip and fall in, that if the fall didnt do me in, i'd surely drown in some dark ess. I finishes the opening measurements and then tied a stone onto the end of my survey el and lowered it over the edge. Even as small as the stone was, and the thinness of the pe, I felt a stout tug on my arms as I lowered the tape. I was able to plumb the entrance op at approx. 13 Feet, but of course there was no way to tell if this was a solid floor, breakdown pile, or merely a ledge on the edge of yet a deeper pit. Some gut feeling told it was the latter. I measured the width of the creek at this point to be 53' Feet, and ok some readings on the strong rock joint that crosses the creek. Approx. 40' Feet back from the creek bank is a large sinkhole in a gravel and clay matrix measuring approx. 0' Feet in diameter funneling to the top of a trash pile in the bottom about 12 Feet down. noticed how this Feature lined up nicely with the rock joint trend that crosses the creek t the cave entrance.

Well, nothing further to do but wait and wonder about how long it would be before it would stop flowing enough to become enterable again. We left being thoroughly impressed and more than intrigued about the prospects for a future visit. There were several nights to follow that as I drifted off to sleep, wondering where all of that water went easily took the place of counting sheep!

THE " GATING " PROJECT

With nearly 50 days of no rainfall in the area, I recieved the next call near mid-August informing us that the Rancher had stated that the water had stopped flowing into the mouth of the Cave. I was further given approval to begin building the Recharge Gate for the Feature.

The Gate was manufactured in sections at our shop to be transported to the Site and be assembled. The Gate consists of an elevated Recharge box measuring 4.0' Feet by 5.0' Feet by 2.0' Feet in height with an access pit door mounted in the top. The primary material used was 2" X 2" X 3/8" Steel Angle. The total Gate would weigh approximately 2,500 lbs. Transporting everything needed to the Site for an extended stay in one trip somehow seemed reminiscent of of a " Beverley Hillbillies " scene as we rolled slowly down the Highway. It took us around 6 Hours to reach the Site after a brief stop in Hondo, Tx. We reached the Site without any problems during the heat of the day feeling a sigh of relief as I eased the truck & Trailer down to within 20 Feet of the Cave entrance.

Any Caver could predict what the next move was as everyone was magically drawn from their vehicles as if by a large magnet down to the Cave entrance. The water had indeed stopped flowing into the Entrance, However, you could still hear it falling inside the Cave further down! A brief look upstream of the entrance provided the answer. The Creek was at very minimal flow and water transmission through the gravel bars upstream was in slow release to a small pool just a few yards upstream. From there, water sinks through the gravel & sand and enters the Cave along the buried rock joint. The minor flow was visible across the floor of the Cave from above.

I felt another immediate relief peering down the entrance. The rock layer at the top was undercut all the way around creating a " Free fall " drop to the floor, but there was approx. 3.5 Feet of solid rock walls before it became strongly undercut. This would provide plenty of structural support and anchors needed for the weight of the Gate. I heard plenty of oooo's and ahhhh's from the Gate crew that were seeing this entrance for the first time. At that point, I stood up looking at the rounded out back wall of the creek bank immediately behind the entrance shaft, and it suddenly dawned on me that I had missed an observation during the first visit that truely " Boggles " the mind!

Earlier, as we had driven in and parked above, I hadheard someone say " Hey, look at this line of flood debris "! This point is easily 20 Feet above the entrance of the Cave. I hadn't paid that much attention or given it another thought until it hit me like a ton of bricks! This curiously rounded eaten away part of the creek bank above the entrance

been caused by the spinning action of a giant whirlpool over the cave entrance during ood stage events! Then I was hit by a second shock wave of realization! Something had en bothering me about the creekbed, because somehow things looked different. I spun ound and looked upstream again and then I noticed the changes. On my first visit there s a trough area against the left bank carrying the stream flow to the entrance. This ough extended as far upstream as you could see. It was bordered by a 4' foot high gravel r near the center of the creek and ran paralell to the left bank also as far as one could e. Well, now the trough ended just beyond the small pool near the entrance, and the 4' avel bar was broken into a series of 4' high bars that extended into the left bank running 30 degree angles toward the opposite side of the creek. The last water that had flowed nto the cave now had come from along the right hand bank turning sharply and crossing over o the Feature. All of this meant that between the time of my first visit in March, and his visit, the creek had severely flooded and the water level had risen a full 18 to 20 eet above the entrance of the Cave. Wow! That is some serious Recharge for that size of n opening. This meant that surely there had to be a " World " of Cave passage below!

The next Two days were spent installing the Gate and welding in over 100 degree heat ith finishing the Gate as priority activity. We erected a large tarp over the entrance rea in an attempt to provide some relief with shade, however it was only a partial relief s the tarp tended to also block breezes and the sauna like temperature of the cave air created a steam bath like working atmosphere. Finishing the gate proved tiring, and we began to realize that exploration of the cave was likely to have the effect of a radical weight loss program! Can't remember ever sweating more. At last the gate was done and followed by a couple of hours of concrete work around the edges. We let the concrete cure for acouple of hours (all that it needed), and began the final stage of applying protective metal coatings over exposed steel. All agreed it looked really good. All slept like logs that night under the canopy of a giant Oak just up the bank.

THE " EXPLORATION " OF " RUGH " CAVERN

Previously, this Feature had been refered to as " RUGH " Sinkhole. With the exploration of the cave, the name has been changed to a well deserved " RUGH " Cavern. The area of the cave appears to be located somewhere atop a fault block with a Major displacement fault only a mile or so to the North, and another to the South in the general vicinity of Valdina Farms Sinkhole. At the Caves location the B.E.G. Geology Sheet has the Formation mapped as The " DEVILS RIVER " LIMESTONE (kdvr), However, regional mapping dissortations present some unclear mapping overlaps that do not match and are confusing at best. From the interior exploration of the cave, and abundance of fossils found, the cave gives an appearance of similarity of other caves that have formed within the Lower GLEN ROSE, and SEGOVIA Formations. The EDWARDS, as it is known from AUSTIN & SAN ANTONIO Regions, just dosen't seem to fit the picture at " RUGH " Cavern. As this article is preliminary in nature, the Site area Geology & Caves Geomorphology is left for further future studies. One fact is very certain, " RUGH " Cavern is a very Major Point Recharge Feature.

Exploration of this Cave began the following day. We grudgingly looked back at all the wetsuit gear we had come equiped with, shrugged our shoulders, and proceeded down the entrance dressed in only knee & elbow pads, and gym shorts! We had measured the caves interior water temperature at 83 Degrees F. and air temperature at 88 Degrees F. We were off to a good sweat by the time we reached the floor area of the Entrance Room.

The Entrance room, developed along the strong rock joint measures approx. 20 ' Feet long by 12' Feet wide. Waterfalls enter the room from each end constriction of the joint. The floor area contains Two Pits. One is constricted at the top, but opens to another landing an additional 12 Feet down. The other pit is semi-blocked by a gravel plug held in position by several rolls of old wire. The second drop enters a similar room in size. At one point we worried that the atmosphere would become oxygen reduced by carbon dioxide, however this

turned out to be nothing more than the effects of the unusual heat combined with physical ertion. On the landing below, a third drop along the wall drops approx. 8 Feet to a small ulder strewn floor. Cutting back under the landing above, is the opening to a fourth drop approx. 12 Feet in which one must rapell down a constriction jammed with logs and direct- beneath converging waterfalls. This felt like taking a hot shower! At the bottom of the urth drop you land on a gravel floored pool about ankle deep with three river catfish randed in it. This is a standup size room approx. 20 Feet in diameter. Along one wall,a rely surviving and very lathargic Coachwhip snake is curled atop a boulder. From this int, the cave extends ahead horizontally in the direction of downstream " SECO " Creek ove. We are 42 Feet beneath the Entrance. The passage ahead extends over floor areas of mented gravel rocks & boulders making a twist to the right, and then to the left, and ening onto a solid walled scoured clean conduit passage containing pools with river catfish. e conduit extends ahead approx. 4.0 Foot high and round for approx. 60 Feet. At this point e pools end and the passage ahead varys in size as a hands and knees size to belly crawl er numerous dry gravel and sand bars for approx. the next 100 Feet. At this point the ssage widens to approx. 25' Feet descending down a steep sandy slope to the base of a ll approx. 11 Feet high. At the bottom of this slope a dig ensued through sandy gravel d a few logs opening a corkscrew constricted passage. This large room above was called e " Sand Funnel ". The cork screw led into another solid walled scoured conduit with pools, rayfish, and river catfish over a foot long. This extends approx. 60 Feet to a sudden op at a sloped wall of gravel rising to within 2 inches of the roof. Time to dig again! s avalances of gravel rolled down, the roof of the passage ahead rose at a steep angle. his would be an intresting climb to say the least. The first man up made it, but loose alling gravel blocked the bottom again. So each man through had to dig his own way in! nd the same would be true on the way out, only more difficult. Thus, this delightful spot as called the " Gravel Mountain ". At the top extended another long stretch of hands & nee to belly crawling passage over dry sand & gravel bars. We estimated to be approx.600 eet away from the entrance pit at this point. And it was at about this time that we began o experience a new to seldom felt discomfort to caving called " Sand Chafing " in some f the more sensitive areas of the body. But, we accepted it as just another character buildingquality to endure and pressed ever forward. After another stretch of the fun stuff, I could look ahead for a good ways down a straight passage, which seemed to enlarge. A short distance later and it became walking size passage. The passage maintained walking size for approx. 100 Feet, and then it got BIG! It became a large Canyon passage up to 25 Feet wide with 40 Foot high ceilings. Then the floor declined sharply downward into a crevice. Just ahead loomed a large drop. We cautiously picked a route down a steep shakey breakdown slope to a ledge 8 Feet above a floored landing. The ledge was severely under- cut. We finally just jumped down to the soft sandy floor below, after we figured out how we would be able to reclimb it. From this landing, the roof of the cave is approx. 60 Feet overhead. Ahead, the main trend slopes up a wall too steep to climb without specific equipment, but down at floor level, a horizontal passage continues. Upon first entering this, we noted that we were now in a joint with water flowing toward us. The passage ended about 100' Feet further (became too narrow & low with increasing fill). We then returned back to the landing. Below the undercut ledge, a short drop through breakdown led to a narrow slot beneath a large boulder.

At this point, the caving was becomming more comfortable temperature wise. We were slowly getting deep enough for the water & air to cool down more. We managed to squeeze down past the slot to the lip of another vertical pit. This one proved to be free climbable also, but was very tricky for finding foot holds on the way down. It droped approx. 35 Feet to a gravel and flowstone floor. Beyond this, the walls ahead have a ribbed constriction forming a false flooring with various size boulders wedged between the ribbed walls. Look- ing through various size holes, one can see the passageway continuing below. I found a likely spot and began digging at the floor just in front of a large boulder. Suddenly the water soaked floor gave way and opened a body sized hole into the passage ahead. I slid down into a shallow pool coming out on another gravel floor across the pool. About 15 feet ahead I could see to the egde of another pit! This pit dropped approx. 12 Feet and is scoured clean and solid walled, and free climbable. At the bottom the joint trend narrows severely, and after 20' Feet of sideways crawl becomes too narrow to continue. At the top of the 12' Pit, a steep climb leads up and over in a joint intersection and down to another

ree climbable 20 Foot pit. The bottom of this pit ends in a constriction of the joint s well.

At the lowest point in the cave, we estimated and all agreed that we had to be at least 150 Feet in depth below the Entrance level of the Cave, and estimated an approx. ,000 Feet of horizontal passage. It seemed that we had exhausted all the leads in the lower part of the cave. Even so, all had the feeling that somewhere further down beneath the filled areas, lay an enormus conduit with alot of water. With as much water as enters this cave, now filled areas could reopen to greater depths in the lower part of the cave.

We made our way back up to the sand floored landing. At that point we noticed an unusual formation attatched to a wall high above our heads. This formation of sculpted rock is shaped just like an extended open hand (Complete with fingers & Thumb). It gave us the feeling of a greeting! (By what, we don't know) but anyway, it prompted us to name this largest part of the cave " Hand Shake " Canyon. As we ascended back up into the heated passage above, our exit was casual. We stopped at a possible side lead, dug it open and explored a bedding plane like area for about 40 Feet before becomming to low. We took turns at reverse digging our way back out of " Gravel Mountain " and even welcomed the hot shower climb back up to the Entrance. The Coachwhip snake was given a ride back to the surface, taken home and nurished back to health, and set free in the Austin hill country.

Running out of time, we did not get the cave surveyed. And to do so, it would be estimated to be a 10 to 12 hour trip. A representational map accompanies this report. Any and All future trips made into this cave must be formatted by monitoring weather reports, and done so during the only possible times for entry. That is during extreme dry conditions. Any water entering through the top gate means that the cave is too hazardous. It can be an extremely dangerous place, and prone to flood on short notice as upstream " SECO " Creek extends NORTHWARD for many many miles.

***

The Project participants were:

1.) Charlie Savvas
2.) Lee Jay Graves
3.) Doug Allen
4.) Mike Walsh (Observer)
5.) Mike Warton (Project Supervisor)
6.) Cindy Warton (Manager of Supervisor!!!)

END.

BANDERA COUNTY
MEDINA COUNTY
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Qal
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Kad
Cem
Hondo
Hondo 929
D'Hanis
Dunlay
Dunlay Oil Field
Wieboldt No 2
970
SOUTHERN PACIFIC
Holloway Farm
Elstone
Underground pipeline
Hondo Creek
Seco Creek
Middle Verde Creek
Live Oak Creek
West Squirrel Creek
East Squirrel Creek
UVALDE COUNTY
MEDINA COUNTY
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Ewi
Em
Ek
Ec
Er
Qt
Hay Oil Field
Yancy Oil Field
Taylor-Ina Oil Field
Jena Louise Oil Field
Adams Oil and Gas Field
Yancey
Woodley Gas Field
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MEDINA COUNTY
FRIO COUNTY
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ZAVALA COUNTY
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Water
Eb
Eqc
Ranch
173

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RE: EDWARDS UNDERGROUND WATER DISTRICT
1615 NORTH ST. MARYS, P.O. BOX 15830
SAN ANTONIO, TEXAS 78212 - 9030

AC (512) 222 - 2204

ATIN: MR. PHILLIP FARRINGTON

SUBJECT: REPORT OF KARST FEATURE DESCRIPTION OF: SITE VISITATION OF MARCH 27, 1993. " SECO " CREEK RECHARGE FEATURE PRESENTLY KNOWN AS " RUGH " SINKHOLE LOCATED NORTHWEST OF D'HANIS, MEDINA COUNTY, TEXAS.

" RUGH " SINKHOLE / CAVE, SITE VISITATION OF MARCH 27, 1993

REPORTED BY: MIKE WARTON

The Karst Terrains Recharge Feature presently known as " RUGH " SINKHOLE / CAVE is Located approx. 1.5 Miles upstream from the " Valdina Farms " Sinkhole / Cave Site along " SECO " Creek in Medina County, Texas. This Feature occurs along the SOUTHWEST Bank of " SECO " Creek, at which point the Creeks active wash channel measures 53' Feet wide. The Cave's entrance measures approx. 2.5' Feet wide X 3.5' Feet in Length, and is somewhat " Diamond " Shaped in configuration. The edges of the entrance consist of a layer of Limestone which is approx. 8" to 10" inches thick, and well undercut below apparently in all directions. The Entrance drop was reported to be an approx. 10' to 12' Foot free drop. At the time I observed this Feature, it was actively insurging approx. 8 to 10 C.F.S., captivating the flow of " SECO " Creek. The Stream channel flowing into this Feature measured approx. from 6" to 12 " inches in depth X 6.0 ' Feet wide at the Cave's Entrance. It was not possible to enter the Cave under these conditions. Measurements were taken for a protective Recharge Gate. The Cave's Entrance, as well as a large collapse sink further up on the bank are developed along a strong Fracture Lineament Trend of N. 60 E. The distance from the Insurgence Entrance to the collapse sink further up the bank is 59' Feet.

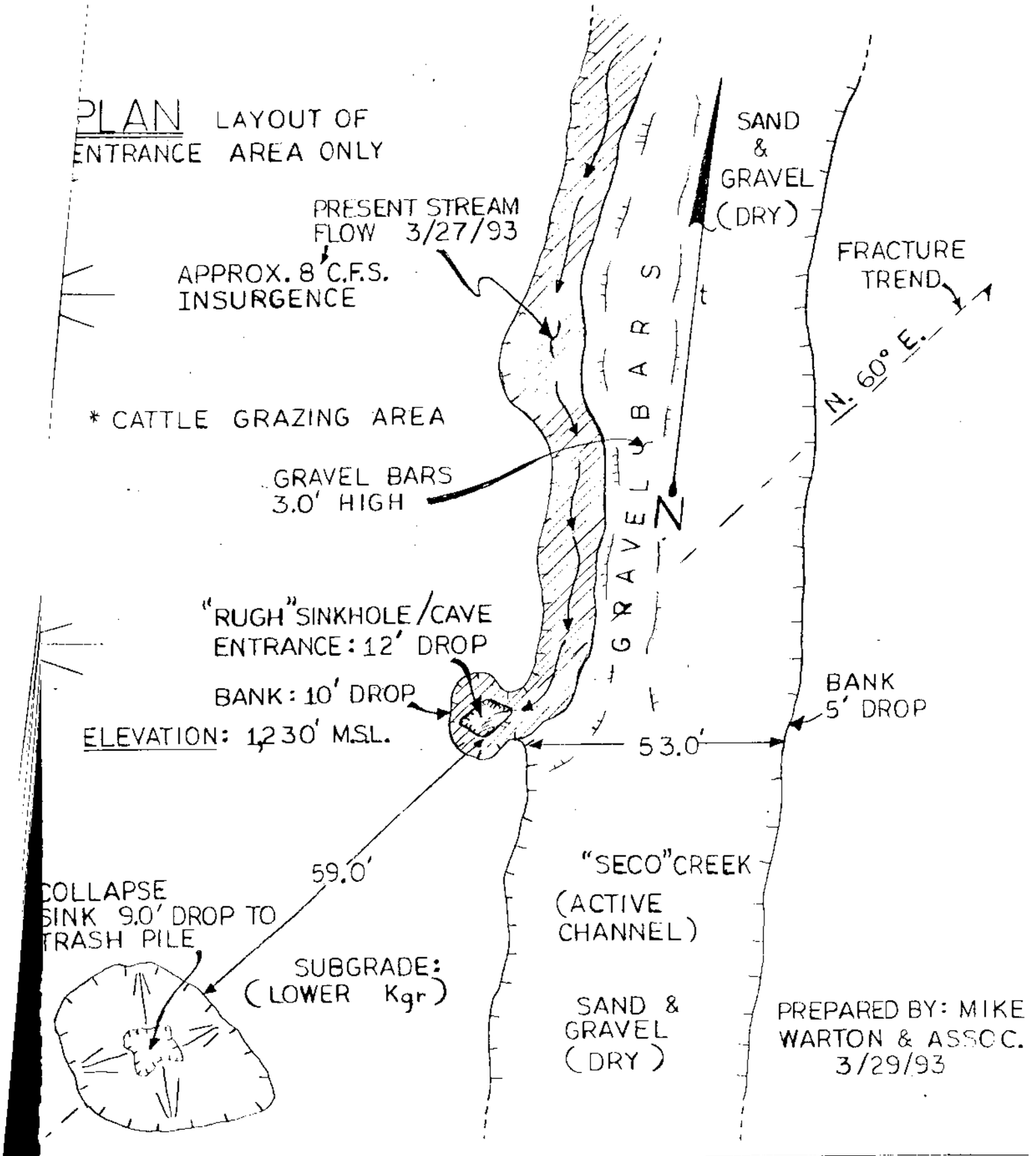
Several observations of this new Recharge Feature were made. This Feature, according to local sources has recently opened up within the last TWO (2) years to a physically accessible size. The Cave's entrance appears to be positioned at approx. 1230' MSL., and developed in the Lower GLEN ROSE LIMESTONE FORMATION (Kgr). It would seem apparent that this subgrade water course is highly likely to connect to the same conduit system represented at the bottom of " Valdina Farms " Sinkhole/ Cave. A dye trace test might be very sucessful in proving this. This Feature will insurge a great amount of water into the subgrade before the creek flow reaches " Valdina Farms " Sinkhole / Cave. If any Insurgence figures have been previously calculated for " Valdina Farms " Sinkhole / Cave, The recharge Loss at this new Site would probably significantly effect calculations at " Valdina Farms " Sinkhole / Cave. It was my impression, that " RUGH " Sinkhole / Cave Mightyeild an extensive network of stream conduit passage under exploration efforts.

Some concerns have been expressed for a protective recharge Cave Gate. If & when this would be performed, conditions would have to be dry at the Cave's Entrance, which is also an ideal time for exploration efforts and interior documentations. Due to the nature of " RUGH " Sinkhole / Cave, this Feature represents a very dangerous situation during times of active Insurgence. Gating this Feature most definitely is viewed as a warranted and wise decision.

End of Report.

MIKE WARTON
KARST TERRAINS SPECIALIST
NATIONAL CAVE GATE CONSULTANT

"RUGH" SINKHOLE/CAVE
"SECO" CREEK · MEDINA COUNTY, TEXAS



"RUGH" CAVERN

MEDINA COUNTY, TEXAS SCALE: 1/2" = 10'

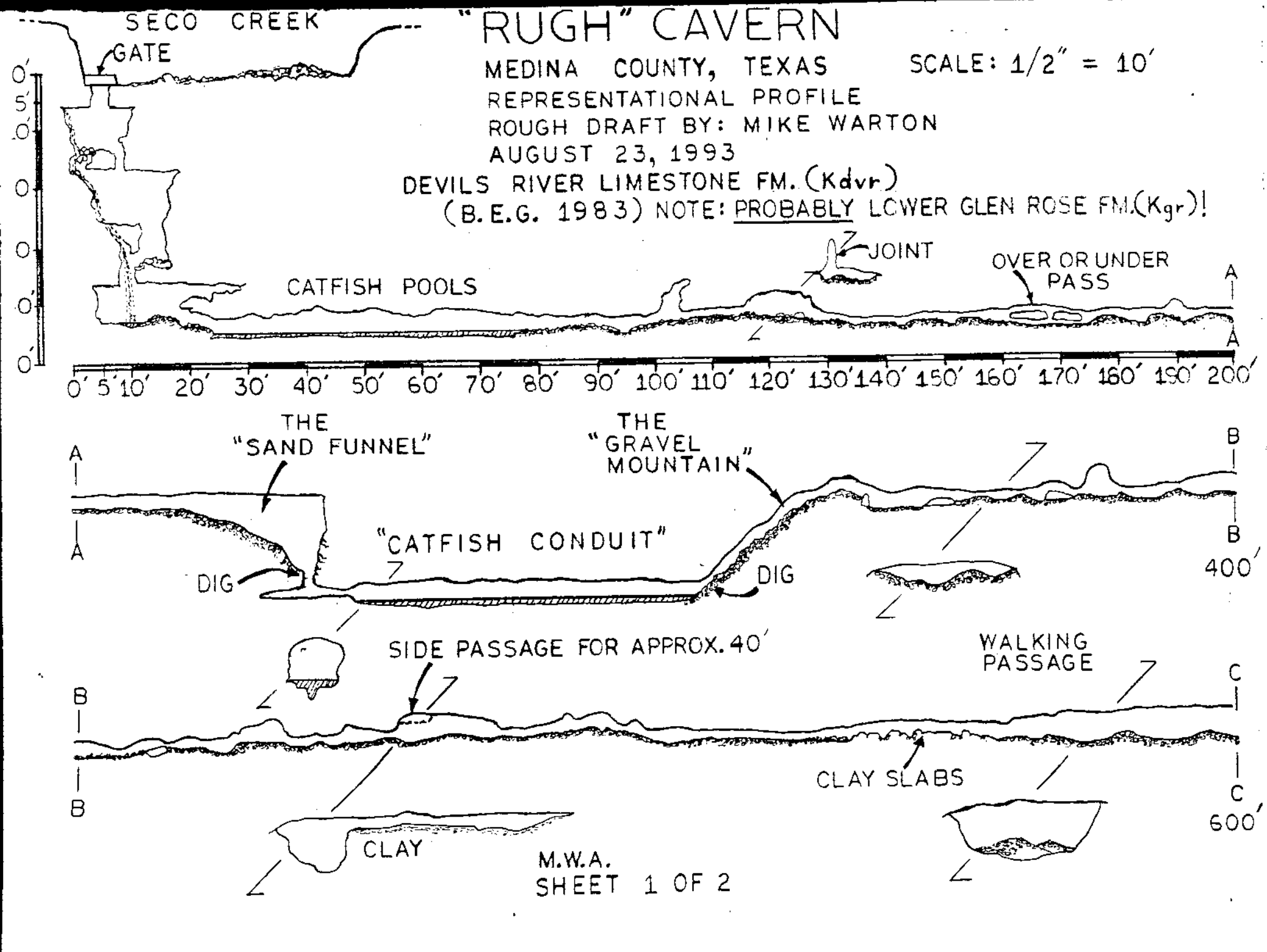
REPRESENTATIONAL PROFILE

ROUGH DRAFT BY: MIKE WARTON

AUGUST 23, 1993

DEVILS RIVER LIMESTONE FM. (Kdvr)

(B.E.G. 1983) NOTE: PROBABLY LOWER GLEN ROSE FM.(Kgr)!



M.W.A.

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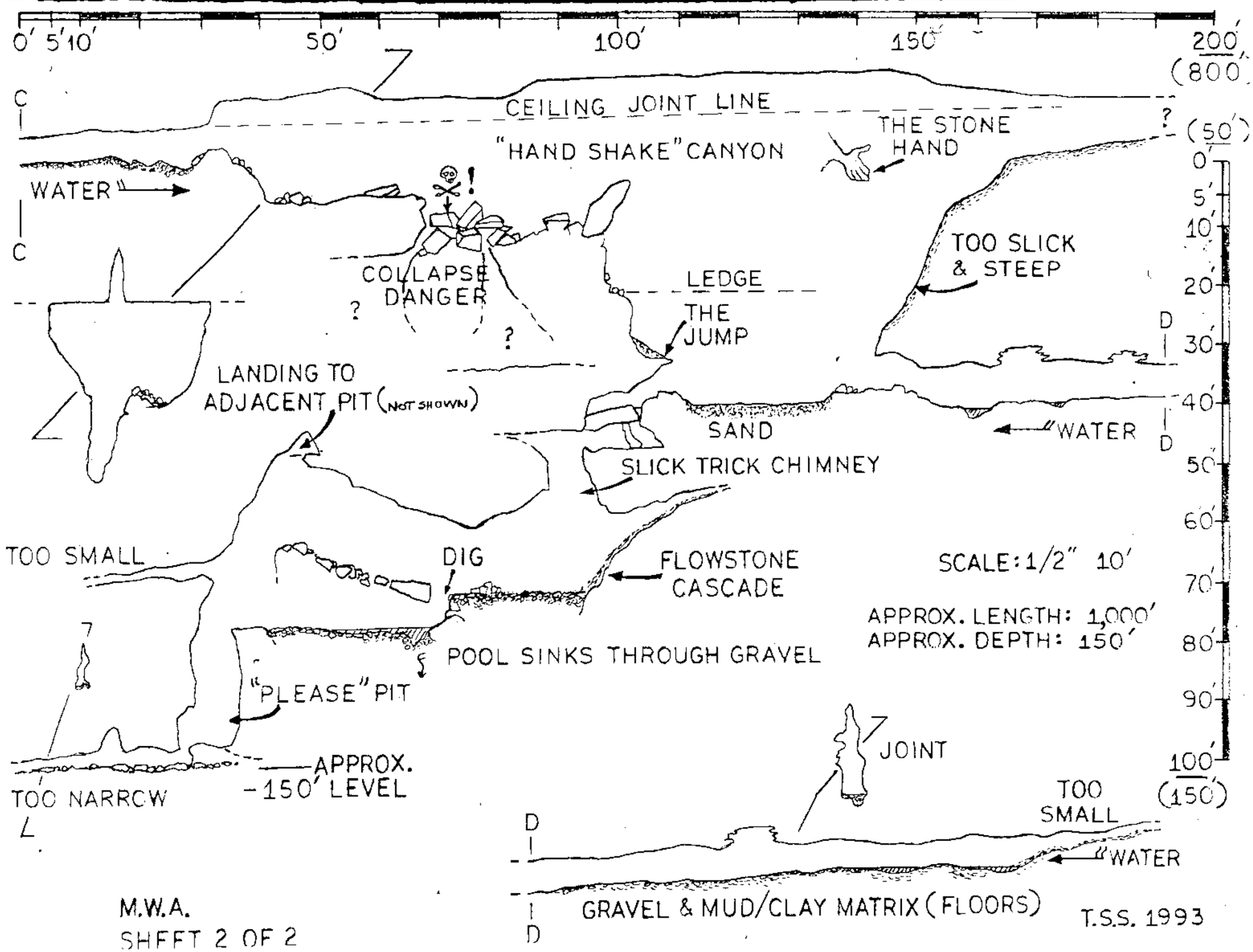

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T.S.S. 1993