

World Heritage Scanned Nomination

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UNESCO Region: ASIA AND THE PACIFIC

SITE NAME: **Minaret and Archaeological Remains of Jam**

DATE OF INSCRIPTION: 29th June 2002

STATE PARTY: AFGHANISTAN

CRITERIA: C (ii)(iii)(iv)

DECISION OF THE WORLD HERITAGE COMMITTEE:

Excerpt from the Report of the 26th Session of the World Heritage Committee

Criterion (ii): The innovative architecture and decoration of the Minaret of Jam played a significant role in the development of the arts and architecture of the Indian sub-continent and beyond.

Criterion (iii): The Minaret of Jam and its associated archaeological remains constitute exceptional testimony to the power and quality of the Ghurid civilization that dominated its region in the 12th and 13th centuries.

Criterion (iv): The Minaret of Jam is an outstanding example of Islamic architecture and ornamentation in this region and played a significant role in their further dissemination.

BRIEF DESCRIPTIONS

The 65m-tall Minaret of Jam is a graceful, soaring structure, dating back to the 12th century. Covered in elaborate brickwork with a blue tile inscription at the top, it is noteworthy for the quality of its architecture and decoration, which represent the culmination of an architectural and artistic tradition in this region. Its impact is heightened by its dramatic setting, a deep river valley between towering mountains in the heart of the Ghur province.

1.b State, Province or Region: Shahrak District, Ghur Province

1.d Exact location: N34 23 47.6 E64 30 57.8

INTERIM ADMINISTRATION
OF AFGHANISTAN (IAA)

Ministry of Information & Culture
Planning and foreign relation
Department
Foreign relation G. Dept.
Directorate ()



WHC received
Date 6/5/02
N°

JT
cc Pst. اداره موقت افغانستان

وزارت اطلاعات و فرهنگ
ریاست پلان و ارتباط خارجه
مدیریت عمومی ارتباط خارجه
مدیریت

No.
Date

نمبره
تاریخ

May 2002

Dear Mr Bandarin,

I have the pleasure in submitting the reformulated nomination dossier of the "Minaret and Archaeological Remains of Jam", a cultural heritage property nominated by the Government of Afghanistan in 1982 and deferred by the World Heritage Committee at its 7th session in December 1983. The Government of Afghanistan requests that the World Heritage Committee examine this reformulated dossier at its 26th session in Budapest, Hungary (24-29 June 2002) for possible inscription on the World Heritage List and List of World Heritage in Danger under cultural criteria (iii) and (iv).

The inscription of the "Minaret and Archaeological Remains of Jam" on the World Heritage List and List of World Heritage in Danger would signify a strong sign of commitment by UNESCO and the international community in assisting our country in protecting the cultural heritage of humankind and in implementing the World Heritage Convention.

Please be assured, Sir, of my highest consideration.

Dr. S. Makhdoom Raheen
Minister of Information & Culture

Mr Francesco Bandarin
Director, UNESCO World Heritage Centre
7, place de Fontenoy, 07-SP Paris 75352 France

NOMINATION OF PROPERTIES FOR INCLUSION ON THE WORLD HERITAGE LIST

1. Identification of the Property

- a. Country (and State Party if different):** Afghan State
- b. State, Province or Region:** Shahrak District, Ghur Province
- c. Name of Property** The Minaret and Archaeological Remains of Jam
- d. Exact location on map and indication of geographical coordinates to the nearest second**

Latitude 34° 23' North, Longitude 64°31' East. The Minaret and Archaeological Remains of Jam are located within the mountainous region of western Afghanistan between Kaminj and Ahangaran. The Minaret of Jam itself is located at the intersection of the Jam and Hari Rivers.

e. Maps and/or plans showing boundary of area proposed for inscription and of any buffer zone

Annex 1 indicates the four core zones (thick red lines) and greater buffer zone (thick green line) of the area proposed for inscription on the World Heritage List and the List of World Heritage in Danger. The buffer zone has been marked on the map following the contours of the topographical character of the area.

f. Area of property proposed for inscription (ha.) and proposed buffer zone (ha.) if any.

The four core zones consist of approximately 70 hectares. The buffer zone consists of approximately 600 hectares.

2. Justification for Inscription

2.a. Statement of significance

2.a.1. The Minaret of Jam has a 10-meter circular diameter base and gradually narrows up following a truncated cone section up to a 40 meters height. Beyond this level, the circular cross-section decreases to become 8 meters in diameter.¹

2.a.2. The Minaret of Jam is believed to have been built to commemorate a major victory of the sultans of the Ghurid Dynasty from western Afghanistan, which overthrew the Ghaznavid Empire extensively conquering parts of northern India. Under the patronage of the Ghurid Dynasty, the eastern Islamic world's arts experienced a final flowering before being extinguished by the Mongol invasion. During the Ghurid Dynasty, the elaborate brick decoration was especially encouraged. This highly sophisticated craftsmanship was utilized on the surface of the Minaret of Jam and even today, most of the exquisite lace-like brick-work which originally covered the Minaret of Jam in its entirety can be seen. This exceptional example of the Islamic architectural decoration represents a peak of its form.

¹ Andrea Bruno, "Minareto di Jam. Un progetto UNESCO per l'Afghanistan." L'Industria delle costruzioni, March 1979.

2.a.3. The Minaret of Jam is one of the very few well preserved monument representing the exceptional artistic creativity and mastery of structural engineering of the Ghurid Period (1000-1220). The Minaret of Jam illustrates the outstanding artistic endeavour of a civilization which has disappeared.

2.a.4. At 1,900 meters above sea level and far away from any town, the spectacular Minaret of Jam rises in the solitude within a rugged valley in the heart of Ghur Province. The monument and archaeological remains of Jam are surrounded by mountain ranges that reach 2,400 meters in height, which originally provided natural fortification for the ancient settlement areas of Jam. Today, this extraordinary natural environment provides a spectacular natural setting for the Minaret and Archaeological Remains of Jam.

2.b. Possible comparative analysis (including state of conservation of similar properties)

2.b.1. The Minaret's Height: At 65 meters, the Minaret of Jam is the second highest standing minaret in the world, after the Qutb Minar World Heritage property in New Delhi (India), which was directly inspired by the Minaret of Jam.

2.b.2. The Minaret's Form: One of the earliest minarets still standing as of 1974 of the tapering cylindrical form was at Sangbast (Iran) dated between 997 and 1028. Other minarets include the Tarik-Hana Minaret at Damgan (Iran) dated 1026 and the Cihil Duhtaran Minaret in Isfahan (Iran) which is also a tapering cylinder set on an octagonal base and dated to 1108. In Afghanistan, in addition to the Tower of Bahram Shah at Ghazni, previously mentioned, there is the Tower of Masud (1114-1115) which are towering minarets. However, these latter two examples are star-shaped today, although they once had a cylindrical storey above the star-shaped base.²

2.b.3. The Ornamentation: The brickwork on Minaret of Jam³ is the culmination of a long tradition which started in the early 10th century with the tomb of Ismail in Bukhara (Uzbekistan). Contemporary with the Minaret of Jam are the Ghurid Period monuments at Cist and Herat (Afghanistan) which all use similar decorative brickwork technique.⁴ Some of these monuments share the same motifs, such as the band of pearls which have been in use since the Sasanides. They are found on the tomb of Ismail and on the Tower of Bahram Shah (1117-1153) at Ghazni (Afghanistan).⁵ The palmettes and pointed flowers between the two inscriptions on the second tier are found in the tenth century Iranian Mosque of Nayin.⁶

2.c. Authenticity/Integrity

2.c.1. Authenticity: The Minaret and the Archaeological Remains of Jam have a high level of authenticity. Since their construction, no major reconstructions have taken place. The Minaret of Jam has benefitted from emergency consolidation measures placed near the base of the minaret, which has succeeded in preventing the seasonal overflow of the Hari and Jam Rivers from undermining the foundation and base of the minaret to date. The various and numerous Archaeological Remains in the Jam area have been partially documented or recorded by archaeologists since the early 20th century. There have been no restoration or reconstruction work undertaken in the past which have decreased the authentic character of these archaeological remains, although some of the remains have suffered from natural decay, years of neglect, and occasional illegal plundering. A full inventory of all Archaeological Remains is still required based upon further examination and documentation of the individual remains.

² Moline, 1973-74: 144. These two latter examples were decorated by unglazed ornamental brickwork.

³ Detailed drawings of the brickwork of the surface of the Minaret of Jam was first published by Professor Andrea Bruno in 1962. These drawings illustrate the intricate and highly sophisticated craftsmanship utilized to decorate the Minaret of Jam. Further drawings of the brickwork have never been published since Professor Bruno's study in 1962.

⁴ Moline, 1973-74: 142-43.

⁵ Ibid.: 143.

⁶ Ibid.

2.c.2. Integrity: The Minaret and the Archaeological Remains of Jam retain a high degree of integrity. The extraordinary natural setting composed of rugged mountains and the two rivers (Hari and Jam Rivers) has experienced very few modern alterations in the past centuries.

2.d. *Criteria under which inscription is proposed (and justification for inscription under these criteria)*

Cultural criterion (iii): The Minaret and Archaeological Remains of Jam bear unique testimony to the Ghurid civilization which has disappeared.

Cultural criterion (iv) The Minaret of Jam is exceptional example of Islamic architecture and decorative features of the 11th century.

3. *Description*

3.a. *Description of Property*

3.a.1. The Minaret of Jam:

3.a.1.1. Date: The Minaret of Jam was constructed on the south bank of the Harirud River at the intersection of two canyon-like river valleys. The minaret, often referred to as the "victory tower", is believed to have marked the centre of the 12th century capital "Firuzkuh" of the Ghurid Period. Sultan Ghiyath al'din Muhammed Ibn Sam was responsible for the construction of the Minaret of Jam between 1163 and 1202.

3.a.1.2. Height and Form: The Minaret of Jam towers up to a height of 65 meters with a 9-meter diameter base. It is made up of four tapering cylindrical shafts which rest on an octagonal base.

3.a.1.3. Interior: Inside the base and the first cylindrical tier of the Minaret of Jam is a steep double spiral staircase leading to the summit. The base of the Minaret of Jam is now below the current ground level, so it is not possible to describe the interior of the very base. Along this staircase are windows placed regularly. The center core and double staircase start below the present ground level and extend up through the elaborately decorated first section to the base level of the second doorway of the next tier. In the next tier, above the spiral staircases and between the two balconies spanning the interior are six squares, vaulted brick platforms spaced a distance of six steps apart. The steps leading from platform to platform are steep and narrow and they project from the curving wall of the minaret rather than resting completely on the platforms. One must cross each platform diagonally to get to the next set of steps. Two sides of the squares platforms are open while sides opposite to each other handle the stairs. These platforms are anchored at each corner into the ribs which run the length of the minaret starting above the top stairs of the circular staircases. The first platform has a small circular hole in the center. Above this, four platforms have square holes. Above these, there are protruding bricks which indicate that a sixth platform once existed. The third tier and the arcaded fourth tier contain no stairs. In these sections the brick ribs have been reinforced by the addition of new bricks and tie beams. The tie beams hold together the outer shell. Six arches that once supported a small cupola remain at the top, although the cupola has now disappeared.

3.a.1.4 Material: The Minaret of Jam was constructed of fired brick bonded with mortar. The first balcony is approximately 36,58 meters above the present ground level and was made of brick and reinforced by projecting wooden beams. The fragile brickwork of the balconies continue to fall away with age and natural weathering, and therefore, the exact original form is difficult to determine today. At the level of the first balcony on the south side is a door leading out to what might have been

the roof of the first corbelled balcony or at least a second level of this balcony.⁷ There is another door at the level of the second balcony.

3.a.1.5 Decoration and inscriptions: The exterior of the shaft of the minaret is completely covered with a geometric decor in relief laid over the plain structural bricks, except for one band of blue tile inscription near the top. A short inscription around the top of the first level states precisely the dates of the erection of the monument in 1194 under the rule of the Ghurid sovereign Ghiyas-ud-Din. It consists of plain raised band and raised, glazed circles or pearls. This Kufic script (the oldest Arabic calligraphic style) is covered with turquoise-colored glaze set against a background of plain buff bricks. Below runs a band containing sixteen rosettes centered with a geometric design.

First cylinder: The most intricately decorated tier is the first cylinder which is divided into eight vertical segments or "panel architecture", matching those of the base section. The three dimensional ornamental brickwork within the panels creates a pattern of light and shade.⁸ Each vertical zone has a narrow band of inscription which runs in an unbroken line around each panel. The text is the entire Sura of Maryam, the 19th chapter of the Koran. All 976 words are in Kufic traditional script and are made of small carved terra-cotta bricks⁹.

The inscriptions reads:¹⁰ -"The magnificent Sultan, Great Emperor (or, King of Kings), Giyat ad-Dunya wad-Din (Provider of the World and of Religion), the Glorifier of Islam and Muslims, Abu I-Fath (The Father of Conquest) Muhammed, son of Sam."

-"Co-partner of the Amir of Believers (Muslims), may god keep His kingdom forever."

-"The magnificent Sultan, Giyat ad-Dunya wad-Din, Abu I-Fath Muhammed, son of Sam. "

-"Work of Ali, son of Amir Muhammed the ..."

-"Abu I-Fath"

There are two bands of Koranic inscription besides the Sura Maryam: "Witness of Islam", "I witness, there is no God but God; and I witness that Muhammad is His Mesenger", "help from God and a night victory. Give thou good tidings to the believers. O believers."

The use of the 19th Sura is decorative. This Sura tells the story of the prophets and their encounters with their situations: Yahya (John the Baptist) with his father Zakariya, Jesus with his mother Mary, Abraham with his unbelieving father, Moses with his brother Aaron, Ismail with his family, Idris in his high station. In all these situations, man is condemned for impatience or lack of faith, for degrading God or faith, and is warned of eternity¹¹.

The areas between the Koranic inscription are covered with geometric openwork patterns in high relief. Just below the corbels of the first balcony are three floral bands with the fourth row down decorated with stylized tulip motifs or a trefoil. These decorative bands are all unglazed brick.

Between the first and second balconies are two bands with Kufic inscriptions. The lower of the two inscriptions rests above a band composed of a network of geometric design. The upper inscription rests

⁷ Moline, 1973-74: 137.

⁸ Ibid: 142.

⁹ Ibid.: 134-135.

¹⁰ The English translation is taken from Moline, 1973-1974: 138-140. She based her translation on Maricq and Wiet, 1959: 26-27.

¹¹ Moline, 1973-74: 141.

on a band which is composed of palmettes and pointed tulips. Setting off each band of inscription are raised pearls.

Above the second balcony there is another band of Kufic inscription and it is this time set on a geometrically patterned background. The band is set off by pearls.

As of 1974, most of the carved brickwork from the octagonal base has eroded away. However, the panels on the south side (away from the river) still show the quality of the decoration¹².

3.a.2. Archaeological Remains in Jam: The following section deals with the archaeological remains which are scattered in the vicinity of the Minaret of Jam:

3.a.2.1 Archaeological remains of Jewish cemetery with Hebrew inscriptions (Annex 1, point B): In September 1962, Prof. Andrea Bruno accidentally discovered a group of stones with Hebrew inscriptions on the hill of Kushkak between Jam village and the minaret. They are believed to date from the 11-12th century and probably came from a nearby Jewish cemetery. The presence of such stones in an area adjacent to the minaret confirms the presence of a Jewish settlement in the area. Werner Herbert reported that plundering occurred in the early 1970s at this site. It is reported that after a period of long drought over several years followed by heavy rainfalls, 8 new inscriptions were uncovered on the north and south side of the hill of Kushkak. Persian and Hebrew inscriptions amounted to 84 in Afghanistan by 1975. The oldest inscription dates from 1012 and the most recent one, to 1220, that is 2 years before the destruction of Firuzkuh by the Mongol Ogodai.

3.a.2.2 Ghurid castles, fortification walls and towers, bazaar: On the opposite side of the Hari river, north of the minaret and high on the cliff, are remains of castles and towers of the Ghurid settlement. Remains of fortifications are also visible to the east of the minaret. The ruins above the Hari river near the Minaret of Jam have an obvious character of fortification, and therefore the general aspect of the area gives one the impression that the Minaret of Jam was not surrounded by a city proper, but by a fortified military camp. A small Jewish settlement could have been settled nearby and is believed to have carried out various trade activities with the military installations¹³. The remains of the fort (Annex 1, point K) are found on the north side of the Hari River. The thick walls are made of clay bricks while the foundation of the fort is constituted of natural stones. A water reservoir (Annex 1, point I) lies about 400 meters above the Hari river. It has a rectangular shape and is made of fired bricks, measuring 7,87 meters by 4,95 meters. Two pipes made of clay protrude from the reservoir and it is assumed that these were underground pipes that were directed towards the castle in order to supply water in times of war. The inhabitants of the area have taken building material from these ruins and, as of 1976, this reservoir has been used as an observatory post for hunters (Cf. Werner Herbert, 1976). To the south of the Hari River are three mud-brick watchtowers forming a fortification line (Annex 1, point D). There are also ruins of a bazaar (Annex 1, point J) which are scattered in an area of about 10 meters by 100 meters. These ruins were first reported by André Maricq in 1957. Fragments of fired brick are scattered around and again, some have been taken by the local inhabitants (as of 1976). It has been reported that there were entrances to underground rooms that were long and narrow which have now collapsed. The bazaar was destroyed by the Governor of Chakhcharan in 1964 in order to build a hotel. Very thin fragments of painted and varnished pottery, as well as fragments of mother-of-pearl dating from the Ghurid period have been retrieved from the site.

3.b. *History and development*

¹² Moline, 1973-74: 134.

¹³ Andrea Bruno, "Notes on the discovery of Hebrew inscriptions in the vicinity of the Minaret of Jam." *East and West*, 14 (1963), n. 3-4: 208.

3.b.1. The Minaret of Jam probably marks the site of the ancient city of Firuzkuh, the capital of the Ghurid empire that ruled Afghanistan and parts of India in the 12th and 13th centuries. Due to the extreme remoteness of the area, the minaret remained completely unknown until reports in the late 19th and early 20th centuries culminated in its rediscovery in 1956 by French archaeologists.

3.b.2. An inscription on the minaret gives the date of construction as 1194, and another inscription gives the name of the current Ghurid emperor, Sultan Ghiyas Ud-Din. The minaret or tower therefore most likely commemorates Ghiyas Ud-Din's victory at Delhi in 1192. According to Maricq, the minaret represented the centre of Ghiyas Ud-Din's immense empire to where all sermons, the *khotbas*, made in his name were directed¹⁴.

3.b.3. The meaning of the existence of the Minaret of Jam in this particular area is yet unclear. In view of the impressive size of the minaret and the limited surrounding area space, it could not have been part of a large mosque complex of the size of the one which existed at Firuzkuh. Only a small mosque could have been built in this area. However, this again would be disproportionate in comparison with the size of the minaret and would have not matched the basic principles of Islamic architecture which respect certain proportions in size and height of building.

3.b.4. The site of Jam is believed to have been used as the royal summer camp when the climate in Herat was hot and dusty. It was once occupied by a settlement and houses were built on both sides of the Hari River (cf. Dr. A. Wasay Najimi's mission report, 30 July- 8 August 1995, p. 2).

3.e. Form and date of most recent records of property¹⁵

Missions to the Minaret and Archaeological Remains of Jam and resulting reports	
1944	First official mention of the minaret by Ahmed Ali Kozad, President of the Society for Afghan History, in the journal <i>Anis</i>
18 August 1957	Rediscovery of the minaret by Andre Maricq, researcher at CNRS. Cf. DAFA survey, vol. 16, 1959 (Maricq & Le Berre).
1959	J. Fischer <i>et al.</i> Cambridge University topographical survey.
Sept.1961-1962	ISMEO architectural survey: Measured drawings and proposal for the restoration of the minaret, discovery of Hebrew inscriptions (Prof. Andrea Bruno).

¹⁴ Maricq, 1959: 5.

¹⁵ Acronyms of organizations:

HAFO (Helping Afghan Farmers Organization): A NGO established in August 2000 in Peshawar, Pakistan. Managing Director: Engr. Jawed who is also the supervisor of the SPACH projects in Herat and Jam (As of August 2000).

TJMC (The Jam Minaret Committee): An NGO set up by Gul Agha Karimi in 1999, consisting of the elders of the Village of Jam and the local commanders. It is unclear if this NGO still exists.

PGRO (Payam-e-Ghore Rehabilitation Organization): A NGO directed by Mr. Gul Agha Karimi, a native of Ghur Province.

SPACH (Society for the Preservation of Afghanistan's Cultural Heritage): Established in 1994 in Islamabad, Pakistan, SPACH has been active in the promotion of the conservation, documentation, capacity building and urgent consolidation benefitting the cultural heritage of Afghanistan.

UNESCO (United Nations Organization for Education, Science and Culture): An intergovernmental organization of the United Nations devoted to educational, scientific and cultural activities. Paris, France.

1963-1964	ISMEO mission: Reinforcement of the base of the minaret (Prof. Andrea Bruno). A temporary dam made of stone and timber was built (August 1963), sample analyzes of the bricks (June 1964).
1971	Scarcia, Venice University-survey.
1973	Herberg, Berlin University-architectural survey.
14-20 August 1974	UNESCO mission to further study the restoration project (placement of metal cages in 1978) (Prof. Andrea Bruno).
August 1975	Preliminary survey of the minaret to measure its inclination (Profs. Andrea Bruno and Guido Fino)
August 1977	Mission to Jam ?
1979	Metal gabion was provided by UNESCO; consolidation and restoration work started in 1978 with a UNESCO financial contribution (cf. CC/CH/DIR, Plan of action for the international campaign for Herat, 19 June 1979, p.6).
30 July- 8 August 1995	Assessment mission (Dr. A. Wasay Najimi). Pile of stones still remaining un-used from previous consolidation and restoration work project.
February 1999	First protective wall along Jam river (SPACH team: Engr. Akbari, Mr. Gul Agha Karimi from the NGO Paigham I Ghor).
2 August 1999	UNESCO/SPACH mission to the minaret (Mr. De Maio, Italian Ambassador in Islamabad and SPACH chairman; Mr. Loundras, Greek Ambassador in Islamabad and SPACH member, Mr. Noguchi from Cultural Heritage Division, UNESCO, Paris; Ms. Nora de Laet, a UNV expert in culture and development from UNESCO Islamabad; Prof. Andea Bruno and Engr. Akbari).
August 2000	International experts visit to the Minaret (Mr. Robert Kluyver, SPACH representative; Eng. Jawed, HAFO Managing Director; Mr. Gul Agha Karimi, PGRO Director; Architect Abdul Ahad, Haji Mohandes, Herat Department of Historical Monuments; and the Jam Minaret Committee.
15 Oct. 2000-22 Jan. 2001	Project work at the minaret supervised by HAFO and PGRO engineers, representatives of the Ministry of Culture and Information, and the local elite.
March 2002	Professor Andrea Bruno UNESCO Mision Report on the State of Conservation of Jam (Annex 2)

3.f *State of conservation*

3.f.1 1960's: According to local sources, it is said that during the Ghurid period the Jam river was controlled by brick masonry walls flanking the stream 1 km upstream from the minaret. The stream was covered at its ends and constructions were built over it. There are traces of brick masonry foundations at the opposite site of the Minaret on the northern bank of the Harirud river, which according to Dr. A. Wasay Najimi, must be a foundation of a bridge leading access from the port of the walled settlement, at the northern side of the Harirud river, to the site of the minaret and the grand mosque/madrassa, now the platform grounds east and south of the minaret. Excavation are needed for further information (cf. Dr. A. Wasay Najimi's mission report, 30 July- 8 August 1995, p. 3). In August 1963 a temporary dam of stone and timber was built to forestall the danger coming from the building's structural instability: the minaret was markedly leaning towards the main stream below the Harirud river. This work was carried out with the help of nearby Jam village's inhabitants. In June 1964, a work program was evaluated which consisted of the following: sample analyses of the bricks and their mortar; subsoil and foundation trial-tests; consolidating with "root-piles" their load-bearing capacity; restoring the structural and relief masonry brickwork and undertaking diverse archaeological test diggings in the immediate surroundings. The complexity and the variety of problems to be overcome in order to adequately restore the minaret made it impossible to accomplish the program within a brief period.

3.f.2 . 1970's The UNESCO project for the minaret:¹⁶ In August 1975, a survey of the minaret was carried out. The purpose of this survey was to determine the lean of the minaret through measurements taken from two octagonal stations (see plan of the minaret in the Annexe 2.) The graphic rendering has pointed out that the lean was moderate and in any case, it would not compromise the stability of the monument itself. It was recommended that after 25 years it would be very desirable to make a new survey to check the situation, using 6 or 8 stations for the survey. The information on the condition of the minaret was preliminary and, pointed to the necessity for a full survey before undertaking any conservation project. As a first step to stabilize the minaret, however, basic precautionary measures were financed by UNESCO in the summer of 1978. The work consisted of placing large metal cages filled with the abundant ashlar stone locally available, in order to control the river water from undercutting the base of the minaret. This preliminary work was indispensable and necessary to undertake the trial foundation surveys. The following points were highlighted during this exercise:

- The lack of thorough archaeological examination of the area and its ruins both above and below the ground level makes it difficult to fully understand the site and the historical significance of the whole area. Therefore, an accurate stratigraphical survey of the area surrounding the minaret is indispensable.
- The difficulties arising from setting up the site's building plant and transporting the necessary equipment have some repercussions on the restoration program.
- Both the existing climatic and geographic conditions have an impact on the period during which work can be undertaken and can reduce it to a few months only per year.
- In the study for consolidating the building's structures it is important to consider the probability of earthquakes in the area.

At the end of the exercise, the following recommended prioritised actions were proposed:

- Regularly place and maintain the metal cages
- Undertake sample tests at the minaret's base to determine the dimensions of the foundations and structural characteristic of the minaret. During this phase the original entrance to the minaret, now covered by earth, is expected to be revealed
- Within an approximate radius of 40 meters around the minaret, sample stratigraphic surveys should be undertaken. This will facilitate the identification of archaeological ruins and its results will assist in elaborating the conservation plan for the minaret.
- Regular measurements should be taken to examine the amount of water flowing around the minaret in relation to the height of the base of its foundations.
- The minaret's base should be restored through consolidation and repair of the broken parts.
- A reinforced concrete ring beam may be utilized to reinforce the minaret, based upon the results of the foundation surveys.

¹⁶ Cf. Bruno, "Minareto di Jam," March 1979.

- Consolidation and counterbalancing of the structures should be completed by building a balancing basin.

In 1979, Professor Andrea Bruno was to begin the UNESCO-supported restoration project. By then a bridge had been built across the Harirud and a building for the workers was also constructed. The gabion (strong cage) wires had been delivered. Then, civil war broke out and all work was abruptly stopped.¹⁷

3.f.3 1990's: In 1995, Dr. A.W. Najimi visited the minaret of Jam and recommended that a gabion wall be built to protect the monument from flooding and erosion by the Jam and the Harirud rivers. Attempts to send further missions in 1998 failed.¹⁸ In February 1999, Engineer Akbari was commissioned by SPACH (Society for the Preservation of Afghanistan's Cultural Heritage) to build a wall of stones with wood reinforcement along Jam River. The work was carried out by Mr. Gul Agha Karimi, Paigham I Ghor. However, this wall could not solve the problem of erosion of the base of the minaret completely. However, it provided some protection. In August 1999, Prof. Andrea Bruno found that the stones for the planned gabion wall remained although the gabion wire had disappeared and the 1977 bridge had disappeared. He recommended to SPACH that a protective wall to mitigate undercutting of the minaret base be built as soon as possible, before the arrival of the spring floods.¹⁹ Various factors combined to make working conditions difficult. The minaret was located on a frontline. Nevertheless, the protective wall was built, using stones and supporting wooden beams, and completed in early February 2000.²⁰

3.f.4 2000 onwards: In August 2000, a team of experts visited the Minaret of Jam to assess the impact of the 1999 protective wall. The team included Mr. Robert Kluyver, SPACH representative, Eng. Jawed, HAFO Managing Director, Mr. Gul Agha Karimi, PGRO Director, Architect Abdul Ahad, Herat Department of Historical Monuments, and the Jam Minaret Committee (established by Gul Agha Karimi in 1999). During this survey it was found that the distance between the foundation of the minaret and the two river banks (Hari and Jam) ranged from 1 to 1.5 meters. The minaret was still leaning about 2 degrees towards North, i.e. towards the Hari River. The Harirud riverbank had crumbled, with a gradient of about 80 degrees sloping down about 5 meters to the water level. It was feared that the next flood would wash away the soft earth and thus directly penetrate the foundations of the minaret. The flooding of the Jam River resulted with a large number of stones accumulating to form a natural dam in the Hari River. Behind it a lake had formed of approximately 400 meters in length. The stagnating water at the foot of the minaret was deemed to have an adverse effect on the foundations, by infiltrating the ground and following underground channels which bypass the dam causing gradual erosion. The minaret leans precisely in the direction of this stagnating water. It seemed appropriate to remove the dam and deepen the riverbed, thus restoring the flow of the river. This would offset any bottleneck effects created by the construction of a flood protection wall along the Harirud riverbank. It was concluded that a protective wall of gabion (steel wire baskets) and stone should be constructed at a distance of 10 meters from the foundation of Jam Minaret along Harirud river. HAFO's engineers prepared the technical drawings. The work started on 15 October 2000 and was completed on 22 January 2001. It was supervised by HAFO and PGRO engineers, as well as representatives of the Ministry of Culture and Information and the local authorities. A protective wall (45 meters long, 3 meters wide at the base, 1 meter wide at the top and 5 meters high) was constructed at a distance of 10 meters from the minaret upstream, along the bank of the Harirud river. Another protective wall (11 meters long, and with the same measurements as the first wall) was built along the bank of Jam river. Among other activities carried out at Jam at the time were the placement of:

¹⁷ "Jam Minaret." SPACH newsletter, No 6, May 2000: 2-3.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

Dry stone masonry (46 meters long, 60 cm high, 60 cm wide and volume 17 cu meter) at the base of the minaret, to reduce water penetration of the minaret area.

Dry stone masonry (23 meters long, 80 cm high, 60 cm wide and volume 12 cu meters) upstream of Jam river (eastern river bank) to avoid flooding of the minaret area.

Dry stone masonry (volume 70 cu meters) was placed on the east bank of the Jam river about 55 meters towards Jam village to prevent damage of the area by river water.

Blocks of dry stones were placed in the river Jam (some 300 meters upstream from Jam minaret) towards Jam village to create a sort of a dam that will decrease water velocity.

In 2001, HAFO recommended that the first wood/stone wall built in 1999 along the river Jam be extended by about 100 meters, and that the wall along the river Hari be extended by about 12 meters. Moreover, it was recommended that the wooden enforcement on the spiral staircase be replaced. Finally, as some bricks are missing in the foundation of the minaret, repair be undertaken.

3.f.5. March 2002 UNESCO Mission: The findings of the state of conservation and recommendations of the March 2002 UNESCO Mission is attached as Annex 2.

3.g. *Policies and programmes related to the presentation and promotion of the property*

3.g.1. There are no formally adopted policies or specific programmes related to the conservation and presentation of the property. Appropriate measures are expected to be taken with the technical and financial assistance of the UNESCO World Heritage Committee, UNESCO and the international community at large.

4. *Management*

4.a. *Ownership*

4.a.1. In 1982, the Minaret and the Archaeological Remains of Jam were owned by the Afghan Institute of Archaeology, Ministry of Information and Culture, Kabul, Afghanistan. The Interim Afghanistan Administration is currently the legal owner of the Minaret and the Archaeological Remains of Jam.

4.b. *Legal status*

4.b.1. Since 1982, the Minaret and the Archaeological Remains of Jam have been public property. The Interim Afghanistan Administration is currently the legal owner and manager of the Minaret and the Archaeological Remains of Jam.

4.c. *Protective measures and means of implementing them*

4.c.1 The following legislations existed in Afghanistan previously. However, since the Interim Administration of Afghanistan is currently reviewing, amending and re-adopting the protective legislatio, their provisions will be transmitted to UNESCO once adopted.

-1976 Law on Archaeology, based on the 1974 Law

-1981 Law on Archaeology

-Laws concerning culture, cultural heritage, museums, etc. in the Official Gazette, the Democratic Republic of Afghanistan, Ministry of Justice, 21 December 1980 (text in Dari and Pashto.)

1974 Law on Archaeology of the Democratic Republic of Afghanistan	
Chap. 1, articles 1-12	Laws on archaeology
Chap. 2, articles 13-22	Immovable historical and cultural properties
Chap. 3, articles 23-32	Movable historical and cultural properties
Chap. 4 articles 33-53	Archaeological excavations
Chap. 5, articles 54-58	Museums
Chap. 6, articles 59-70	Trade of historical and cultural properties
Chap. 7, articles 71-76	Penalties
Chap. 8, articles 77-87	Diverse clauses

4.c.2 The below information provides background information on the establishment of the new Afghan State.

**AGREEMENT ON PROVISIONAL ARRANGEMENTS IN AFGHANISTAN PENDING
THE RE-ESTABLISHMENT OF PERMANENT GOVERNMENT INSTITUTIONS**

General provisions

- 1) An **Interim Authority** shall be established upon the official transfer of power on **22 December 2001**.
- 2) The Interim Authority shall consist of an **Interim Administration** presided over by a Chairman, a Special Independent Commission for the Convening of the Emergency Loya Jirga, and a Supreme Court of Afghanistan, as well as such other courts as may be established by the Interim Administration. The composition, functions and governing procedures for the Interim Administration and the Special Independent Commission are set forth in this agreement.
- 3) Upon the official transfer of power, the Interim Authority shall be the repository of Afghan sovereignty, with immediate effect. As such, it shall, throughout the interim period, represent Afghanistan in its external relations and shall occupy the seat of Afghanistan at the United Nations and in its specialized agencies, as well as in other international institutions and conferences.
- 4) An **Emergency Loya Jirga** shall be convened within six months of the establishment of the Interim Authority. The Emergency Loya Jirga will be opened by His Majesty Mohammed Zaher, the former King of Afghanistan. The Emergency Loya Jirga shall decide on a **Transitional Authority**, including a broad-based transitional administration, to lead Afghanistan until such time as a fully representative government can be elected through free and fair elections to be held no later than two years from the date of the convening of the Emergency Loya Jirga.
- 5) The Interim Authority shall cease to exist once the Transitional Authority has been established by the Emergency Loya Jirga.
- 6) A **Constitutional Loya Jirga** shall be convened within eighteen months of the establishment of the Transitional Authority, in order to adopt a **new constitution for Afghanistan**. In order to assist the Constitutional Loya Jirga prepare the proposed Constitution, the Transitional Administration shall, within two months of its commencement and with the assistance of the United Nations, establish a Constitutional Commission.

II. Legal framework and judicial system

- 1) The following legal framework shall be applicable on an interim basis until the adoption of the new Constitution referred to above:
 - i) The **Constitution of 1964**, a/ to the extent that its provisions are not inconsistent with those contained in this agreement, and b/ with the exception of those provisions relating to the monarchy and to the executive and legislative bodies provided in the Constitution; and
 - ii) existing laws and regulations, to the extent that they are not inconsistent with this agreement or with international legal obligations to which Afghanistan is a party, or with those applicable provisions contained in the Constitution of 1964, provided that the Interim Authority shall have the power to repeal or amend those laws and regulations.

2) The judicial power of Afghanistan shall be independent and shall be vested in a Supreme Court of Afghanistan, and such other courts as may be established by the Interim Administration. The Interim Administration shall establish, with the assistance of the United Nations, a Judicial Commission to rebuild the domestic justice system in accordance with Islamic principles, international standards, the rule of law and Afghan legal traditions.

4.d. Agency/agencies with management authority (to be updated)

- Ministry of Information and Culture(Mr. Ghulam Rasoul Yusufzai, the Deputy Minister for Culture; Mr. Omar Sultan, Advisor to the MoIC)

4.e. Level at which management is exercised (e.g., on property, regionally) and name and address of responsible person for contact purposes

To be determined.

4f. Agreed plans related to property (e.g., regional, local plan, conservation plan, tourism development plan)

4.f.1. There are no formally agreed plans related to the property.

4g. Sources and levels of finance

4.g.1. The Afghan State is currently recovering from two decades of civil unrest. The international community is supporting the Government of Afghanistan in re-establishing the various governmental institutions and services. It is hoped that the inscription of this property on the World Heritage List and the List of World Heritage in Danger will assist in the mobilization of international assistance for enhancing the conservation, presentation and development of this property.

4h. Sources of expertise and training in conservation and management techniques

4.h.1. There is a significant number of trained Afghan technical experts (archaeologists, architects, conservators, engineers, craftsmen) who are scattered within and outside of Afghanistan. The Afghan authorities together with international bodies such as UNESCO, ICOMOS, ICCROM, other IGOs, NGOs and institutions, as well as specialized institutions around the world, are gradually gathering information on the experts who have or intend to return to Afghanistan. In the future, it is hoped that a programme for capacity building of conservation and management expertise within Afghanistan is elaborated.

4.i. Visitor facilities and statistics

4.i.1. There are no statistics of visitors available. There are no visitor facilities, as the rest house built in the 1970's was destroyed during the civil unrest years.

4.j. Property management plan and statement of objectives

4.j.1. There is no management plan established to date, in light of the civil unrest in the country for the past two decades. It is hoped that the inscription of this property on the World Heritage List and the List of World Heritage in Danger will draw international attention, expertise and funding to elaborate a comprehensive management plan with statements of objectives.

4.k. Staffing levels (professional, technical, maintenance)

4.k.1 See paragraph 4.h.1.

5. *Factors Affecting the Property*

5.a. *Development Pressures (e.g., encroachment, adaptation, agriculture, mining)*

5.a.2. Development pressure:

5.a.2.1. An NGO named "Afghan Aid" is building a road along the Jam river near the Minaret of Jam. The proposed plan (dated February 2001) is described below:

(i) The proposed road is foreseen to be constructed around the minaret in a large "U" beyond 100 meters from the wall of the minaret. A new bridge is foreseen to be constructed across the Hari River to the east, approximately 150 meters upstream from the location of the minaret. Blasting is not foreseen for the construction work, as the road would follow the contours of the rugged hillside to the south-east of the minaret.

(ii) Although Afghan Aid believes that the risk is negligible because of the distance between the planned road and the Minaret, to prevent potential vibrations from traffic affecting the minaret's stability, it has been proposed that a trench be dug along the minaret on the side facing the proposed road before the road leads off to the new bridge. This trench would be located within the 100 meters distance between the minaret and the new road. Afghan Aid believes that the trench will prevent all horizontal vibrations reaching towards the minaret. The trench is foreseen to be covered with concrete slabs for the safety of people and vehicles.

(iii) Afghan Aid has considered alternative routes between Jam and Chegcharan, and has estimated that should the route be altered to avoid the vicinity of the Minaret of Jam, the proposed road would be approximately 100 km longer in distance. Furthermore, the alternative route(s) would be closed during part of the winter season due to snow at higher altitudes. On the basis of a rough survey carried out when the area was being surveyed prior to the commencement of the construction project, it was estimated that the proposed route passing through the Minaret and Archaeological Remains of Jam area would cost approximately US\$ 100,000, while the alternative route detouring the Jam area would cost approximately US\$ 1,000,000.

(iv) The choice of routes has been discussed between Afghan Aid and the Governors of Ghur and Herat Provinces, as well as with residents of the Village of Jam. All have requested that the route be constructed through Jam Village, towards Bedan (20 km east of Jam towards Chegcharan), passing through the Minaret and Archaeological Remains of Jam area.

5.a.2.2. The view of UNESCO international experts as well as NGO's such as HAFO is that the implementation of this road construction through the Minaret and Archaeological Remains of Jam area would significantly impact negatively on the property for the following reasons. The Minaret of Jam is already leaning towards the Jam and Harirud Rivers, demonstrating its fragile structural condition. For the time being, minimum measures are in place to prevent river water from undermining the base of the minaret. However, impact such as vibration and pollution caused by sudden traffic in the immediate vicinity of the minaret could cause irreversible damage to the minaret, dramatically accelerate the decay process of the brick surface and structure of the minaret, and possibly cause collapse of part or the whole minaret. Furthermore, the trench which Afghan Aid is proposing to dig within the 100 meter distance between the minaret and the road may irreversibly destroy heritage assets which have not yet been scientifically examined, analyzed and documented. Easy access between the road and the minaret by both vehicles and people would be assured once the trench is covered which may result in damage to the

minaret's structure as well as decoration. Most of the Archaeological Remains of Jam have never been scientifically excavated, explored, examined, nor recorded. The physically visible Archaeological Remains within the Jam area, which are listed in part 3.a of this nomination dossier, such as the three watch towers, fortification walls, Jewish cemetery, palatial complex, water reservoir, are only part of the rich heritage assets composing the Archaeological Remains of Jam. Both these physically visible heritage as well as the heritage assets which have yet to be identified will be impacted upon negatively with the construction of the road, which will either be (a) on the heritage assets themselves or (b) very close to the heritage assets. It is believed that the construction of the road and the subsequent traffic and secondary effects of the sudden influx of cars, trucks, buses, and people will impact negatively upon the heritage assets which today have no protection.

5.b. *Environmental Pressures (e.g., pollution, climate change)*

5.b.1. Environmental pressure and the structural stability of the Minaret of Jam:

5.b.1.1. The Minaret of Jam has continued to be threatened by water penetration from the Jam and Hari rud Rivers. During the spring, when snow from the mountains in the area surrounding Jam melts and flows into the rivers, the rivers often flood. The strong current and flow of water has regularly impacted negatively upon the stability of the base and foundation of the minaret, as the minaret stands at the corner of the meeting point of the two rivers. The Jam River has little water normally as water is harnessed for irrigation at the upper part of the valley. As the valley is steep, floods in rainy seasons are violent and bring along eroded soil of a destructive nature and that could be the reason for natural damage to the base ground around the minaret- leading to the minaret leaning north towards the Hari rud river (cf. Dr. A. Wasay Najimi's mission report, 30 July- 8 August 1995, p. 3). Over the years, the distance between the foundation of the minaret and the two river banks has gradually decreased lessened, due to erosion caused by this seasonal spring flooding. When surveyed in August 200, the distance ranged from 1 to 1.5 meters. Jam Minaret is slightly leaning (about 2 degrees) toward North, i.e. the Hari rud River.

5.b.1.2. In order to elaborate and implement a consolidation plan for the long-term conservation of the Minaret of Jam, it is important to undertake further surveys of the foundation and base of the minaret. The current ground level is much higher than the original ground level of the minaret and it is most likely necessary to undertake some very basic minimum-impact excavation work to identify the nature of the foundation and the base of the minaret.

5.c. *Natural disasters and preparedness (earthquakes, floods, fires, etc.)*

5.c.1. Afghanistan is prone to experience earthquakes as it is located on a fault line.

5.d. *Visitor/tourism pressures*

5.d.1. There are no statistics available on visitor and tourism activities. As Afghanistan has suffered many years of civil unrest in the past two decades, visitation and tourism development has been scarce in recent years.

5.d.2. For the conservation, management and presentation of the property in the future, tourism development

5.e. *Number of inhabitants within property, buffer zone:* The closest village is Jam village (one to two hours by foot). The proposed buffer zone does not include Jam village.

5.f. *Other*

5.f.1. Illegal excavations:

5.f.1.1. Illegal excavations and theft of cultural assets at the Minaret of Jam and the Archaeological Remains of Jam are the most immediate and irreversible threat facing this property today. The activities range from clandestine excavation and looting of the various Archaeological Remains in the Jam area, theft of the baked brickwork of the surface of the Minaret, to the removal and reuse of stones from the fortification and structural remains of the ancient settlement areas of Jam. As there are no on-site guardians to monitor let alone prevent such destructive activities, the illegal acts continue without control.

5.f.1.2. During a mission by a UNESCO international expert in March 2002, extensive damage was witnessed along the northern bank of the Harirud River where the remains of a long fortification mud-brick wall is located. The UNESCO mission witnessed countless holes dug in a systematic manner around and above the remains of this wall, where the thefts evidently found various movable heritage assets dating up to the Ghurid Period. As there are no scientific records of the archaeological remains within the Jam area, aside from the Minaret of Jam, the damage is irreversible and important heritage assets have been lost forever. (Footnote AB's March 2002 mission report)

5.f.1.3. In 1995, Dr. A. Wasay Najimi reported that some archaeological remains and cultural heritage areas in the vicinity of the Minaret in the Jam area had been clandestine excavations undertaken by inhabitants of nearby villages in search of finds to sell in the black market of Afghan heritage. He further noted the presence of a grinding stone from a mill some 500 meters downstream from the minaret that must have been washed away after being illegally excavated and discarded. Simultaneously, Dr Najimi witnessed the use of thick stone masonry walls for serving as foundations of village houses nearby. The stones of these masonry walls which were presumably taken from the archaeological remains of the former settlement and fortification areas of Jam were also being utilized to build or repair new houses in the nearby villages of Jam area.²¹

5.f.1.4. In February 2000, the Herat Department of Monuments expressed its commitment to placing guards near the site to stop illegal excavations.²² However, due to the continued unrest within Afghanistan and financial constraints, to date, there have been no guardians placed on a permanent basis on-site to assure minimum monitoring of the Minaret and Archaeological Remains of Jam.

5.f.1.5. For the conservation of the Minaret and the Archaeological Remains of Jam, urgent measures must be taken to ensure that the principal monuments and archaeological sites are guarded and further clandestine activities are prevented. The inscription of the property on the World Heritage List and the List of World Heritage in Danger could assist in the mobilization of international financial and technical assistance to train and engage necessary guardians and site-managers as appropriate until the Afghan administration is able to provide such protection on a regular basis.

6. *Monitoring*

6.a. *Key indicators for measuring state of conservation*

6.b. *Administrative arrangements for monitoring property*

²¹ Dr. A. Wasay Najimi's mission report, 30 July- 8 August 1995, p. 2.

²² "Jam Minaret." SPACH newsletter, No 6, May 2000: 2-3.

6.b.1. Due to the extreme constraints of the post-conflict Interim Administration of Afghanistan, it has been difficult to secure minimum conservation, management and presentation of the property to date. Therefore, to date, there are no site-managers nor guards who are based at or near the property proposed for inscription on the World Heritage List and the List of World Heritage in Danger. As a result, there is no system of regular monitoring of the property.

6.b.2. However, with the inscription of the property on the World Heritage List and the List of World Heritage in Danger, it is hoped that international and national financial and technical support will be mobilized in a timely manner to gradually ensure long term conservation and management of the property in its entirety.

6.c. Results of previous reporting exercises

6.c.1. All previous reports on the state of conservation result from missions undertaken by experts representing the previous administrations of Afghanistan, UNESCO, relevant NGO's active in the field of heritage conservation and development in Afghanistan. A list of missions undertaken in previous years is presented in part 3.c of this nomination dossier. The most recent reporting exercise was undertaken by Professor Andrea Bruno, who was commissioned by UNESCO's Director-General to examine the state of conservation of the Minaret of Jam and to elaborate proposals for urgent conservation and management measures to safeguard the property. This mission was undertaken on 21 March 2002, and its report is attached as Annex 2 of this dossier.

7. Documentation

7.a. Photographs, slides and, where available, film/video

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7.a.3. Mr. Francis Macouin, Directeur du centre de documentation, Musée Guimet
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7.a.5. UNESCO World Heritage Centre, Asia Cultural Unit
7, place de Fontenoy, Paris SP 07, France
Tel: 00-33-1-4568-1571, 00-33-1-4568-1000, Fax: 00-33-1-4568-5570
Email: whc-info@unesco.org Website: www.unesco.org/whc/

7.b. Copies of property management plans and extracts of other plans relevant to the property

7.b.1. To date, there is no officially adopted comprehensive management plans or other plans which exist in draft or officially adopted form. One of the urgent needs for adequate protection of the property being nominated is to elaborate a conservation and management plan to ensure long term conservation of the property.

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7.d. Address where inventory, records and archives are held.

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8. Signature on behalf of the State Party

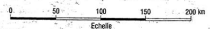
Signature: Signed by Mr Raheen Makhdoom

Title: Ministry of Information and Culture, Interim Administration of Afghanistan

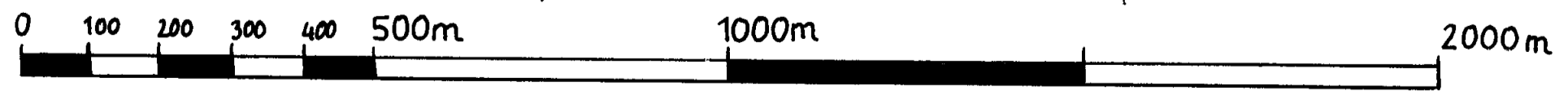
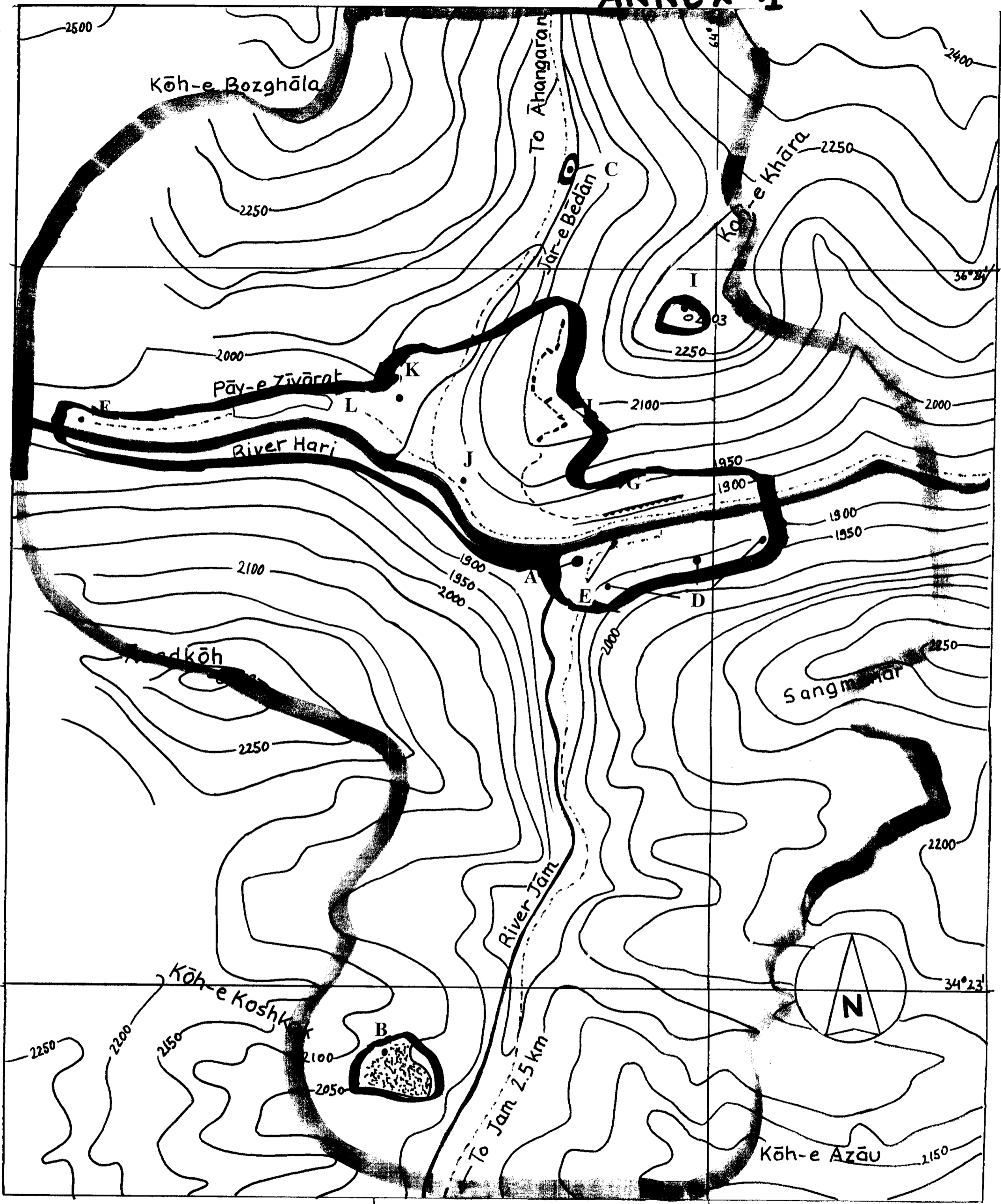
Date: 1 May 2002

Afghanistan

- Kaboul** ● Capitale
Harat ● Ville de 1 000 000 à 5 000 000 habitants
Kandahar ● Ville de 100 000 à 1 000 000 habitants
Delaram ● Ville de 50 000 à 100 000 habitants
 ● Site remarquable
 ✈ Aéroport international
- Frontière internationale
 Frontière continentale
 Autoroute
 Route principale
 Route secondaire
- 1 436 m d. Altitude en mètres
 □ Dôme de sable
 Lac
 Lac périodique
 Lac salé
 Marquage



ANNEX 1



- core zones
- buffer zones
- river
- road
- archaeological remains

Map of Jam

- A. Minaret of Jam
- B. Jewish cemetery
- C. Arabic (Isl.) inscriptions
- D. Ruins of 3 watchtowers
- E. Ruins of a bridge
- F. Ziyarat (religious building)
- G. Fortress walls (south)
- H. Castle (Arg-E Dokhtar-E Padshah)
- I. Water reservoir
- J. Ruins of a bazar
- K. Fort
- L. Remains of a settlement (Pay-e Ziyarat)



**UNITED NATIONS EDUCATIONAL
SCIENTIFIC AND CULTURAL
ORGANIZATION**

MINARET OF JAM
MISSION MARCH 2002

UNESCO CONSULTANT:
ANDREA BRUNO
MATR. CA0646
N. de CONTRAT: 3500542

RAPPORT PRELIMINAIRE SUR LE MINARET DE JAM

A) Calendrier de la Mission

En ce qui concerne la mission au minaret de Jam, le programme prévoyait d'utiliser un hélicoptère qui aurait dû être mis à notre disposition par les autorités afghanes au terme des accords passés avec le représentant de l'UNESCO à Kabul. Malgré les assurances données par les autorités, il est apparu immédiatement qu'il était fort improbable d'obtenir cet hélicoptère et malgré notre instance, tant de la part de Jim Williams que de la mienne, nous avons réalisé que cela serait impossible.

Une hypothèse de voyage prévoyait une escale à Bamyan pour faire le plein de carburant et la poursuite du voyage jusqu'à Jam tant à l'aller qu'au retour. Cette hypothèse s'est trouvée ensuite démentie par le fait qu'apparemment à Bamyan, il n'y avait pas de carburant pour hélicoptère et que la possibilité d'un vol Ariana (Afghan Airlines) était exclue pour des raisons de sécurité par l'ONU. Diverses autres tentatives d'obtenir un hélicoptère d'organismes internationaux s'avèrent impossibles.

Par conséquent, vu l'impossibilité de me transférer de Kabul à Herat par la route, j'ai décidé de rentrer sur Islamabad avec un avion des Nations Unies, grâce à l'intervention de Jolyan Leslie (Project Manager Harvard Program on Humanitarian Policy and Conflict Research) qui m'a trouvé une place grâce à l'absence d'une autre personne.

Donc, le 19 mars 2002, 6ème jour de mon séjour à Kabul, au cours duquel il m'a été possible de me rendre compte de l'état dans lequel se trouvait le musée de Kabul et de la situation générale de cette ville (cf mon rapport sur le musée de Kabul), je suis rentré à Islamabad, d'où le jour suivant j'ai pu prendre un autre vol des Nations Unies pour Herat où je suis arrivé le même jour.

A mon arrivée à Herat en compagnie de Jolyan Leslie, j'ai pu être hébergé dans la bâtiment du personnel de l'UNICA accueilli par le Directeur Abou Dek qui a réussi à me loger en dépit du manque de place disponible. J'y ai retrouvé mon collègue Marco Menegotto qui se trouvait déjà à Herat dans le cadre de la mission Unesco, commencée avec moi le 11 mars. En fait après notre départ de Paris nous nous étions séparés à Islamabad le 13 mars pour nous livrer à nos tâches respectives.

A Herat, j'ai pris contact avec la HAFO qui collaborait déjà avec M. Menegotto dans le cadre de sa mission, afin d'organiser le voyage jusqu'au minaret de Jam par la route .



Abou Dek et Jolyan Leslie



Abou Dek et Andrea Bruno

Les deux jours du 22 et 23 mars passés à Herat ont été fort utilement employés pour visiter en compagnie de M. Menegotto les travaux accomplis par l'UNESCO de 1975 à 1980 qui constituaient l'objet de sa mission. Ayant moi même suivi ces travaux (lors de ma mission UNDP / AFG / 75 / 022), j'ai pu avec lui constater l'état de dégradation que j'avais déjà signalé au cours de mes missions précédentes en juillet et octobre 1999.

Par ailleurs grâce au Directeur du Service des Antiquités Mohammad Mazahrt, nous avons obtenu un rendez vous avec le Gouverneur de la Région de Herat Ismael Khan, qui nous a reçu (M. Menegotto et moi même) dans son bureau aux confins de la ville, lors de cette rencontre il y avait aussi Sayed Nasir Yasafi, chef du protocole du Ministère des Affaires Etrangères (Head of Protocol MFA).

Au cours d'une conversation cordiale et approfondie sur les problèmes de la ville de Herat et de toute la région suite au drame de la guerre, rencontre qui a été filmée par la télévision locale, Ismael Khan a exprimé son appréciation pour l'intérêt porté par l'UNESCO aux problèmes du patrimoine monumental de Herat qui avait commencé avec la campagne de 1975.

Le Directeur du Service des Antiquités Mohammad Mazahrt rencontrait pour la première fois le Gouverneur et la présence des consultants de l'UNESCO a permis de mettre en relief son rôle en tant que responsable direct des monuments et à faire ressortir tous les problèmes et toutes les difficultés que comportaient ces opérations qui en ce moment historique ne pouvaient être considérées comme prioritaires.

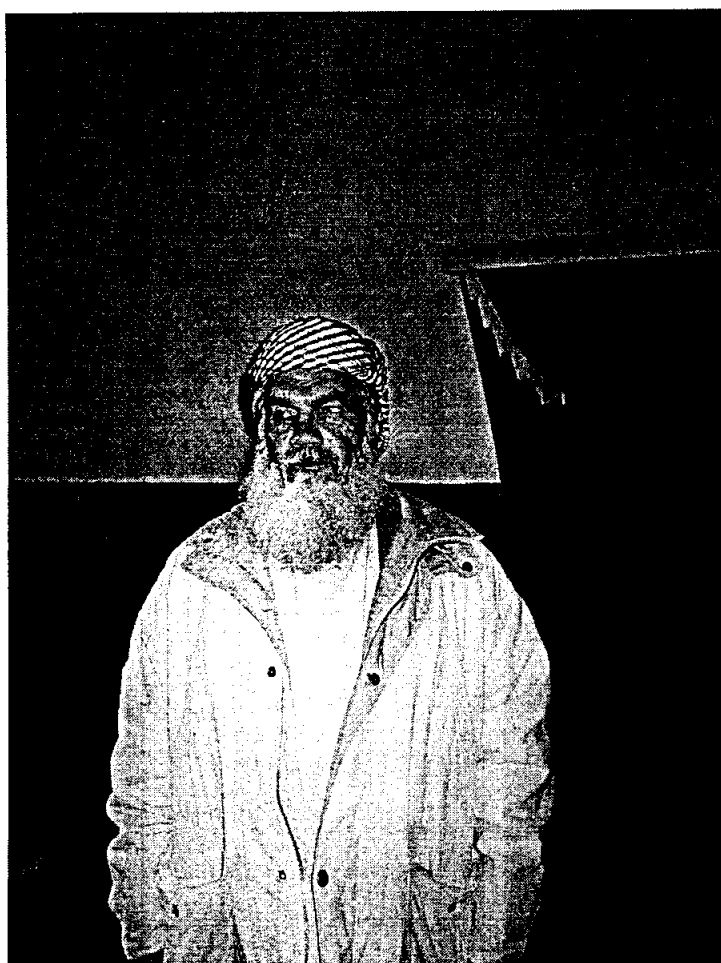
Entre temps, n'ayant pas réussi à obtenir un véhicule des Nations Unies, j'ai du louer par l'intermédiaire de la HAFO, un véhicule tout terrain avec chauffeur afin de pouvoir me rendre avec l'ingénieur Shafi à Jam.

L'état de la route que j'avais déjà parcouru en octobre 1999 à l'occasion de ma précédente mission pour l'UNESCO était d'une telle difficulté qu'il rendait nécessaire l'utilisation de deux voitures, en cas de dépannage.

Le temps dont je disposais étant extrêmement limité et pour ne pas compromettre la mission à Jam que je considérais comme fondamentale pour pouvoir apporter une réponse aux demandes de l'UNESCO, en vue de l'inscription du minaret dans la liste du Patrimoine Mondial en danger, j'ai essayé d'obtenir au moins une voiture des Nations Unies, afin de respecter les limites de sécurité requises mais n'y suis pas arrivé.

Le 21 mars j'ai pu rencontrer à l'UNICA le docteur Erminio Sacco, Directeur du WFP pour la région qui m'a proposé de me prendre sur un des hélicoptères utilisés par son programme WFP dans la région de Ghor et ainsi j'ai pu réussir à rejoindre le but de mon voyage ce qui jusqu'alors avait été apparemment impossible.

Pour me garantir contre toute impossibilité éventuelle de retour avec l'hélicoptère, j'ai envoyé à Jam la voiture que j'avais louée et qui devait m'attendre sur place avec l'ingénieur Shafi et l'architecte Abdul Haad (qui avait travaillé pendant 5 ans comme chef de chantier dans le cadre du projet UNDP / AFG / 75 / 022) et qui connaissaient déjà les travaux car l'ingénieur avait directement participé à la phase finale.



le Gouverneur de la Région de Herat Ismael Khan



Le Directeur des Antiquités Mohammad Mazahrt et l'Ingénieur Marco Menegotto



M. Menegotto, le Gouverneur de la Région de Herat Ismael Khan et A. Bruno

Dans la nuit du 21 au 22 mars, un orage violent a rendu le vol en hélicoptère impossible et le 22 au matin nous n'avons pas pu décoller, le mauvais temps s'est prolongé le jour suivant pour se calmer seulement dans la nuit du samedi 23 . La matinée du 24 les conditions atmosphériques s'étaient définitivement améliorées et les deux hélicoptères mis à disposition par le WFP purent décoller pour leur mission dans le Ghor.

J'ai retenu opportun et particulièrement utile de pouvoir demander à M. Menegotto de m'accompagner dans cette visite à Jam, profitant ainsi de ses compétences spécifiques dans le domaine de la consolidation des structures qui constituaient l'objectif principal de sa mission à Herat.

Le départ d'Herat pour Jam le matin du 24 a du être retardé de deux heures environ pour permettre la réparation d'une avarie mécanique au rotor de l'un des deux hélicoptères.

Après une heure et demie de vol en remontant le cours du fleuve Harirud, (voir les nombreuses photo ci-jointes), nous sommes arrivés à la verticale du minaret où, l'hélicoptère qui nous transportait M. Menegotto et moi est descendu pour un court moment afin de nous y déposer. Il était entendu que d'ici trois heures il viendrait nous reprendre pour nous ramener à Herat.

Le retard pris au départ et la nécessité de rentrer à Herat, ont réduit au minimum mon séjour à Jam. Toutefois, lors de ma précédente mission en 1999 quand j'étais venu par la route grâce à un laissez passer des Talibans et des Moujahidins, mon séjour avait été encore plus court (moins de 45 minutes), du fait de la tension existante entre les deux factions armées qui s'affrontaient sur l'Harirud.

En atterrissant au pied du minaret, j'ai trouvé l'ingénieur Shafi et l'architecte Abdul Haad qui étaient arrivés deux jours avant par la route et qui malgré le retard avaient eu le bon sens d'attendre mon arrivée.

B) Commentaires sur l'état actuel du minaret et propositions d'intervention

Au pied du minaret se trouvait un tout terrain appartenant au directeur des travaux de consolidation des rives de la Jamrud entre la base du minaret et le village de Jam, malheureusement le directeur n'était pas là lorsque je suis arrivé et je n'ai pas pu le rencontrer.

Ces travaux perdurent depuis deux ans et devraient faire l'objet d'un examen approfondi pour vérifier l'opportunité du tracé proposé pour ce projet qui viendrait endommager gravement le site archéologique en interdisant toute mise en valeur par des fouilles conduites de façon scientifique.

1. L'évidence de ce risque grave est amplement et de façon irréfutable illustrée par les centaines de **fouilles illicites** qui ont été pratiquées justement dans cette zone et qui de toute évidence ont amené la découverte d'objets d'une valeur commerciale certaine dont on ne connaît malheureusement pas la nature mais dont tout le monde parle depuis deux ans.

Au cours de ma mission précédente, on m'avait déjà signalé des fouilles illicites mais du fait de la courte durée de mon séjour sur le site je n'avais pu constater leur importance comme j'ai pu le faire aujourd'hui, bien que de façon non exhaustive, grâce aux photographies car je n'ai pas eu le temps d'inspecter moi-même les fouilles.

Il y a lieu de considérer que ce pillage a dû se produire entre mes deux visites et il me semble improbable de penser qu'il se soit interrompu.

Il y avait beaucoup de monde lors de l'atterrissage de l'hélicoptère, sur l'autre berge de l'Harirud. J'ai eu la possibilité de rencontrer des personnes que j'avais déjà connu précédemment à l'occupation soviétique et que j'avais revu lors de ma mission en 1999, période durant laquelle il avait été impossible de rejoindre le minaret de Jam. Grâce à mon farsi approximatif j'ai cherché à avoir des indications plus précises sur les fouilles et sur les éventuelles pièces archéologiques trouvées mais je n'ai obtenu aucune réponse satisfaisante.

2. J'ai donc constaté et documenté les travaux de protection réalisés par le SPACH et par la HAFO à partir du mois de janvier 2000 (voir les photographies ci-joint).

La base du minaret est maintenant bien protégée du fleuve et ces travaux représentent finalement la possibilité de commencer un **examen diagnostique complet des fondations** à travers un forage et des sondages directs qui pourront conduire à un projet de consolidation définitif.

Jusqu'à ce jour, le seul relevé du minaret existant a été effectué par moi même en 1961 (lors de ma première mission avec l'ISMEO, voir document A ci-joint) avec des instruments de mensuration très élémentaires et représente le seul point de donnée qui témoigne les caractéristiques de cette structure

architecturale remarquable. Ce travail pourra être le point de départ pour une connaissance plus approfondie et ceci représente la première grande urgence vis-à-vis du minaret.

Il existe des analyses cognitives sur la composition des matériaux en terre cuite et des mortiers qui ont été effectuées sur la base d'échantillons qui avaient été pris à leur temps et analysés par le laboratoire de chimie du Polytechnique de Turin en 1978.

Aux professeurs de cette même université j'avais aussi demandé, à l'époque, de faire une étude de simulation des poussées du vent sur le minaret et des hypothèses d'intervention de consolidation qui restent telles jusqu'au moment de relevés plus précis et d'analyses directes sur la structure, ainsi qu'une proposition de consolidation à vérifier après avoir effectué des sondages de la fondation.

En espérant que ces oeuvres de mensurations puissent commencer au plus tôt, à l'intérieur d'un cadre de recherche réalisé par des spécialistes et avec des moyens "modernes", on propose donc de continuer le travail réalisé en 1975, où grâce à l'aide d'un géomètre (Guido Fino) et en utilisant un théodolite nous avons relevé les inclinaisons de la structure (document B ci-joint). Ces mesures auraient du faire partie d'un travail plus approfondi, qui aurait du être réalisé au cours des années successives mais qui a été interrompu de l'occupation soviétique jusqu'à nos jours.

C'est dans ce but que j'ai contacté une société spécialisée dans ce secteur, Archidata (voir en annexe documents), de façon à étudier un pré-projet d'intervention qui pourrait représenter le point de départ d'une **opération de sauvegarde et de valorisation de ce monument.**

Il est indispensable qu'à l'avenir ce monument et le site archéologique tout entier fassent l'objet d'une surveillance constante pour que ces fouilles clandestines ne puissent pas continuer. La protection de l'environnement immédiat du site, où l'on trouve des restes importants de la civilisation ghurid et qui représente un patrimoine inestimable certainement comparable comme importance historique et architecturale à la vallée de Bamyan et aux monuments les plus importants du territoire afghan, ne me semble pas moins importante.

S'il était possible d'inscrire le Minaret et le site dans la liste du Patrimoine Mondial en danger tenue par l'UNESCO, cela permettrait de trouver les fonds nécessaires pour les protéger du vandalisme en attendant que l'Etat Afghan puisse prendre cette opération à sa charge.

C'est grâce à la connaissance que j'ai, depuis plus de quarante ans, de la situation dangereuse dans laquelle se trouve ce monument que je suis convaincu de l'urgence d'une intervention.

Par conséquent, il est souhaitable, qu'en même temps :

- a) Une **mission technique** ayant pour objet l'établissement d'un **relevé du site et du monument**, ainsi que de **l'examen hydrologique de la vallée** et du cours de l'Harirud et de son affluent le Jamrud, indispensables pour la définition du tracé proposé de la route et de la construction d'un pont.
- b) Une **mission archéologique** composée d'archéologues afghans et avec la collaboration éventuelle d'une mission étrangère ayant déjà travaillé en Afghanistan, procède à une **inspection immédiate des fouilles illicites** afin de sauver ce qui peut l'être et de poser les bases d'une fouille scientifique ayant pour finalité la relecture du système de défense qui protégeait cette vallée et dont le minaret représentait l'essence même.

Tout ce que l'on peut voir c'est à dire les trois tours de guet, les murs de fortifications, le cimetière juif, les ruines du palais et le grand réservoir ne constituent qu'une infime partie du site archéologique de Jam. La plupart des restes archéologiques se trouvant à Jam n'ont jamais fait l'objet de fouilles, d'examens ou de quelque documentation scientifique que ce soit.

- c) Un **examen du projet de la nouvelle route** qui tienne compte d'éventuelles **modifications** en fonction relevé du site et du monument proposé, car la construction d'une route telle qu'elle est prévue ne pourra avoir qu'un impact désastreux. L'inclinaison du minaret de Jam vers le côté de la rivière témoigne de sa fragilité structurelle et toutes les mesures nécessaires semblent avoir été prises pour éviter que l'eau de la rivière ne vienne miner la base du minaret. On peut toutefois craindre que les vibrations des travaux de la route n'accélèrent la dégradation du monument en brique et n'en occasionne la chute partielle.

Le problème de la construction de la route et du pont met en jeu des intérêts économiques et apparemment les travaux disposent de financements. Il est donc probable que la proposition de modifier ce projet soit un problème pour les responsables de la question. Ces conditions ont créé dans les deux dernières années un échange de lettres et d'opinions en faveur de la réalisation du projet, malgré le dégat évident et irréversible que cela causera au minaret et à ses environs.

Durant les 3 heures de ma présence sur le site, j'ai cherché à recueillir le plus d'informations possibles sur le minaret en lui-même et sur la zone qui l'entoure. J'ai pu pénétrer dans le minaret par la petite fenêtre située à environ 3 mètres du sol actuel et qui devrait se trouver à environ 7 mètres de la base réelle du minaret enterrée sous des éboulements et des débris.

Avec M. Menegotto nous sommes arrivés au point le plus haut possible, où je n'ai trouvé aucune différence spéciale ni nouveaux dégats par rapport à ce que j'avais vu lors de ma précédente visite.

Lorsqu'il sera possible de commencer les travaux de sondage de la base de soutènement et de restauration des parties manquantes il faudra assurer l'accès intérieur par l'escalier hélicoïdal dont les marches sont pratiquement détruites en totalité.

J'ai pu monter à pied une partie du sentier qui conduit au village de Jam de manière à voir les travaux de construction de la route prévue.

De la base du minaret vers le village de Jam, environ 300 mètres de protection ont déjà été réalisés et dans la gorge rocailleuse où le lit du torrent est le plus profond, aucun travail n'a encore été fait. J'ai pu parcourir encore une centaine de mètres jusqu'à la localité où j'avais découvert en 1961 des restes d'une implantation hébraïque, signalée par de nombreuses pierres tombales, qui ont été à l'époque l'objet d'un grand intérêt de la part d'archéologues et d'épigraphistes.

Je n'ai malheureusement pas pu mieux documenter cette zone, à cause du manque de temps (on m'avait à peine communiqué, grâce à un téléphone satellitaire que m'avait prêté le Directeur de l'UNICA Abou Dek, que l'hélicoptère était entrain d'arriver) et j'ai dû retourner à la base du minaret juste à temps pour l'atterrissage de l'hélicoptère. Même si je me trouvais loin, j'ai pu remarquer dans la zone du cimetière hébraïque deux grandes tranches de fouilles, certainement récentes.

Au retour nous avons survolé toute la vallée de l'Harirud et nous sommes rentrés à l'aéroport de Herat en fin d'après midi avant le coucher du soleil du même jour.

Le 25 mars nous avons rencontré à Herat l'ingénieur Shafi et l'architecte Abdul Haad qui étaient entre temps rentrés par la route avec beaucoup de difficultés à cause du mauvais temps qui avait rendu le passage des gués problématique.

Le lendemain matin nous sommes rentrés, M. Menegotto et moi même, avec un vol des Nations Unies à Islamabad, où nous avons rencontré L. Lévi-Strauss qui était lui même en mission et nous lui avons fait un premier compte rendu de notre mission. Le soir même nous avons su du tremblement de terre qui avait touché le nord de l'Afghanistan.

Le 27 mars à l'aube nous sommes repartis pour Paris via Dubai, M. Menegotto est ensuite rentré à Rome et moi j'ai rencontré Christian Manhart à l'UNESCO lors d'un briefing approfondi.

Ma mission s'est donc conclue lors de mon retour à Turin, par le vol Air France de 19h50, vendredi 29 mars.

DOCUMENT A

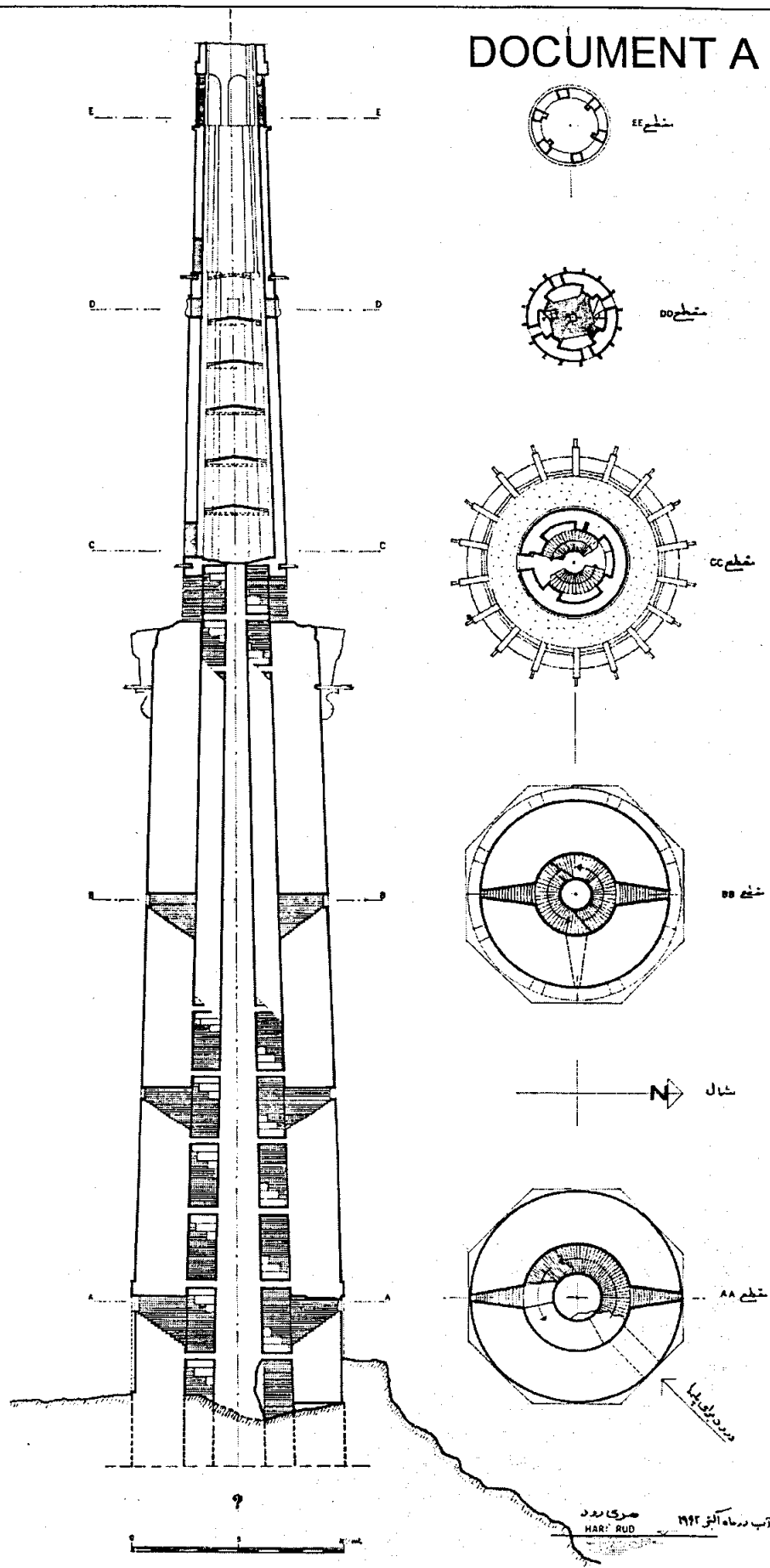
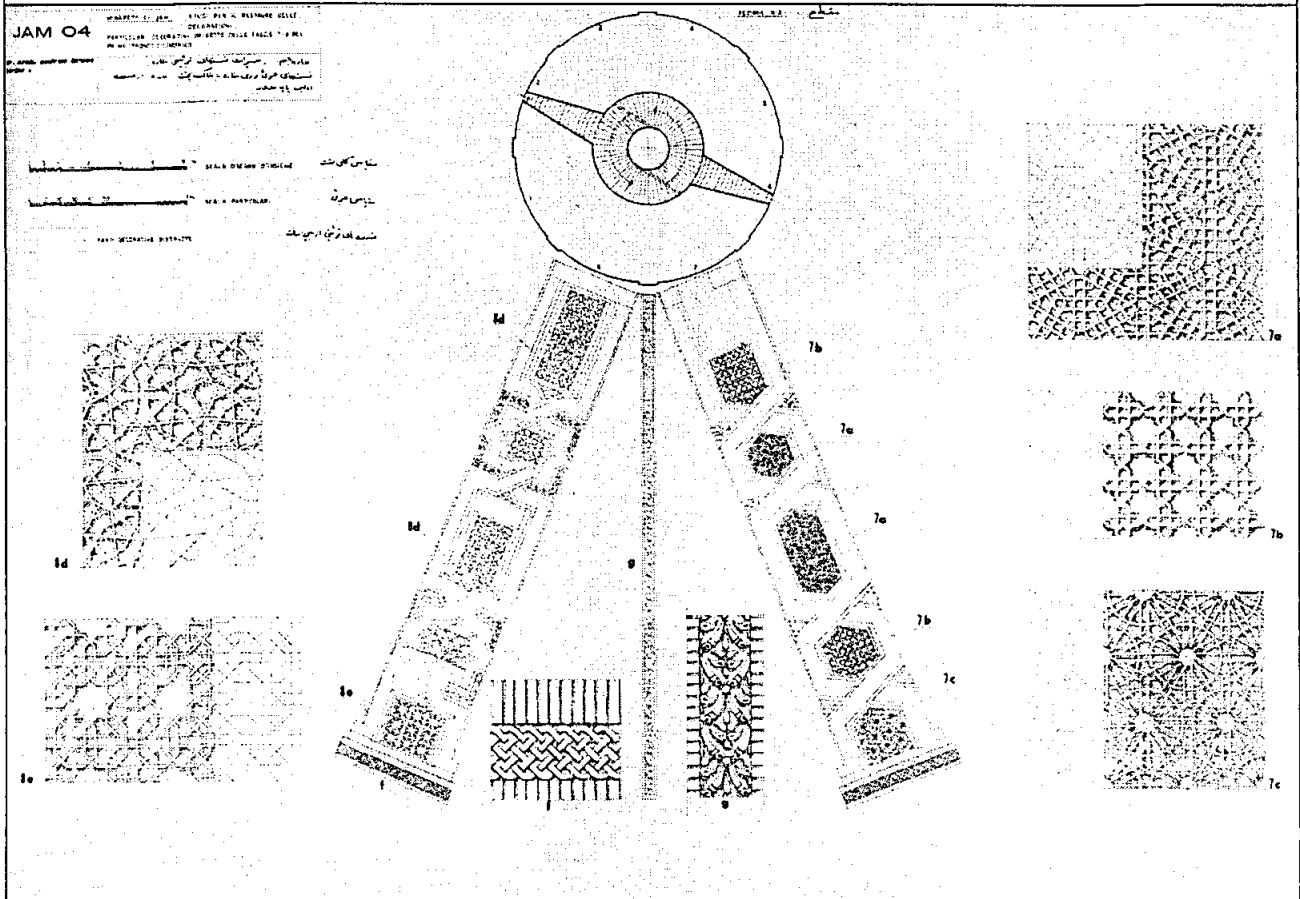


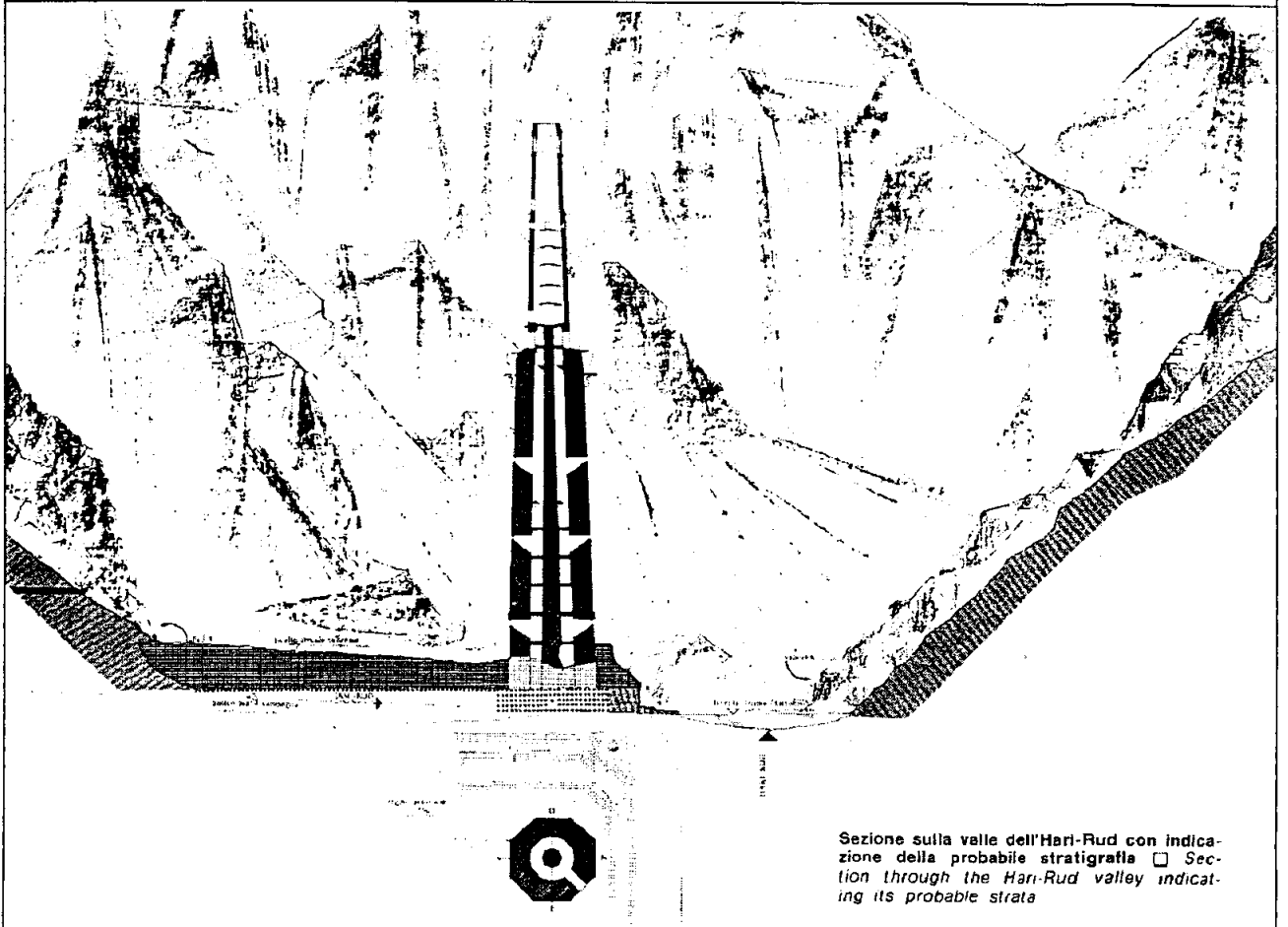
Plate I - Minaret of Jām.
The vertical section of the
Minaret and some horizon-
tal sections.

DOCUMENT A



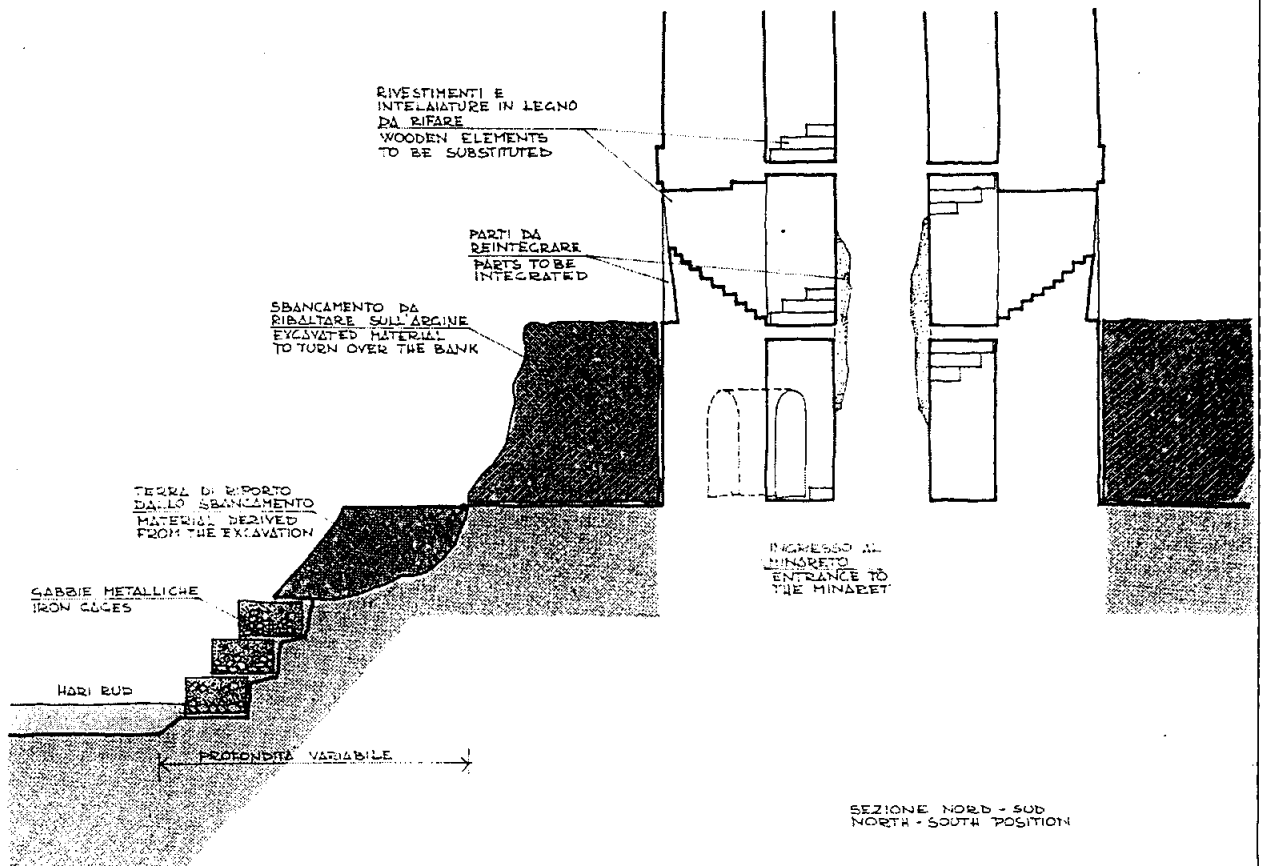
RELEVÉ DE LA DECORATION DU MINARET DE JAM 1961

DOCUMENT A



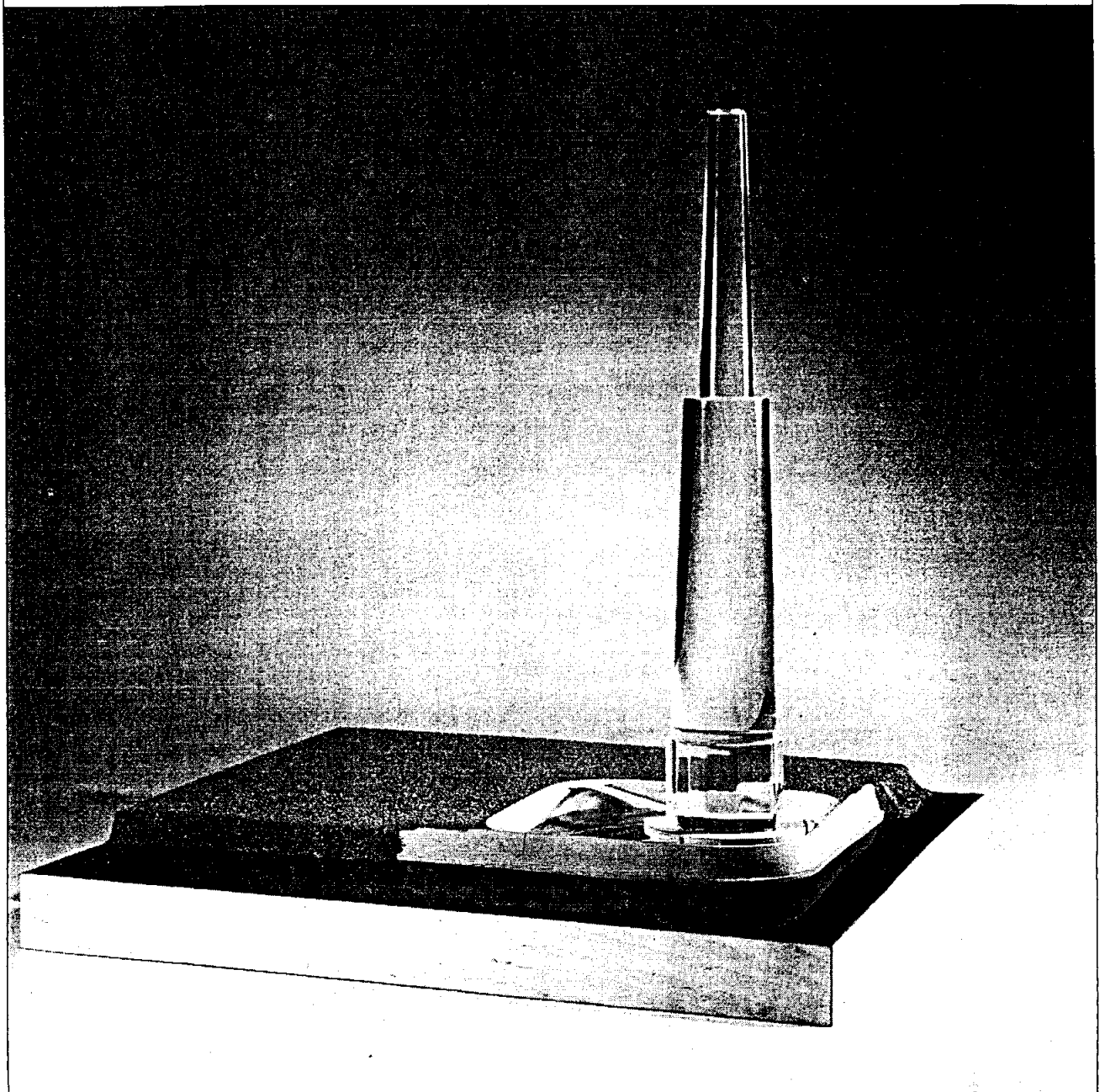
COUPE SUR LA VALLEE DE L'HARIRUD 1961

DOCUMENT A



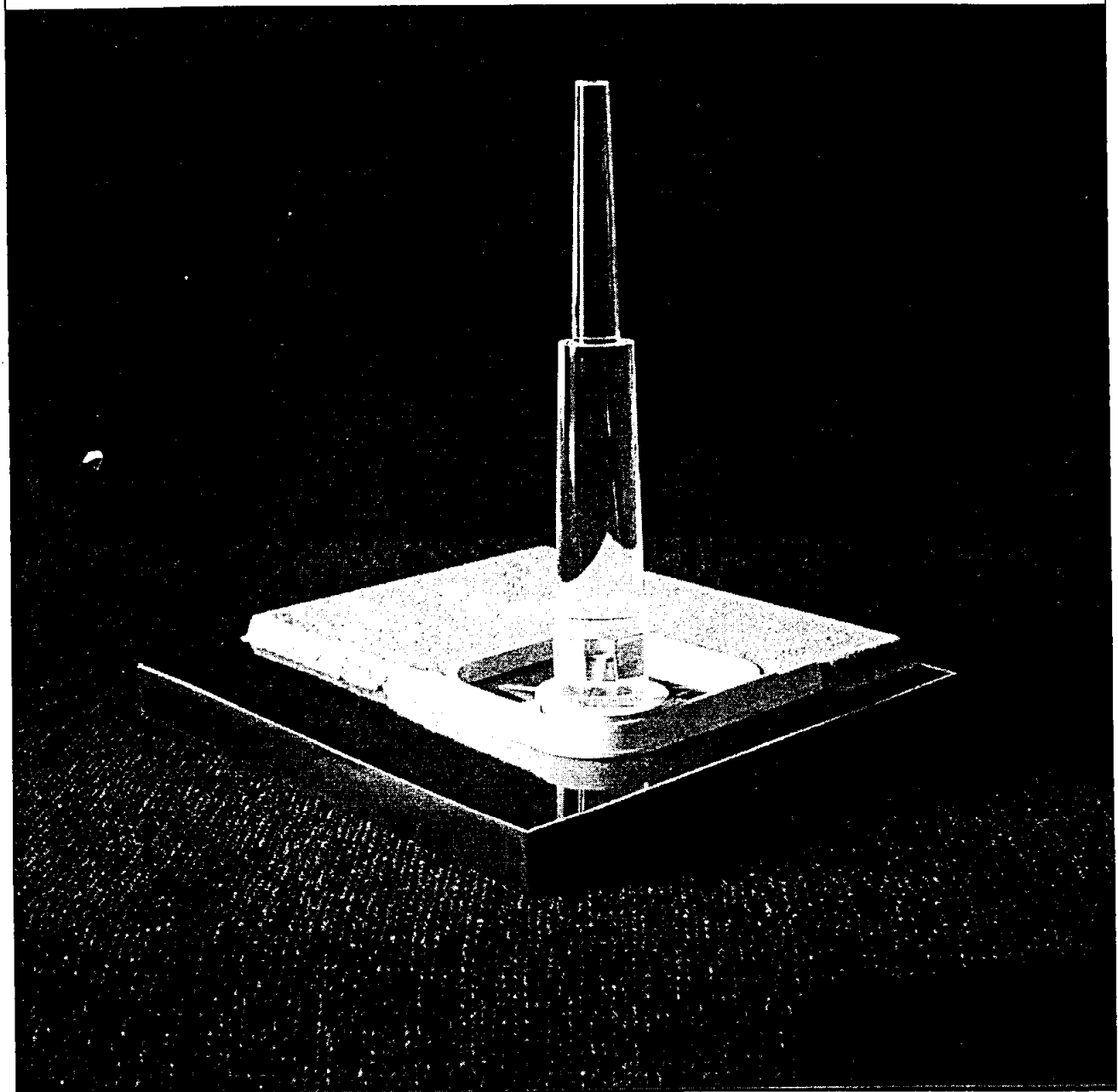
COUPE NORD-SUD DE LA BASE DU MINARET 1961

DOCUMENT A



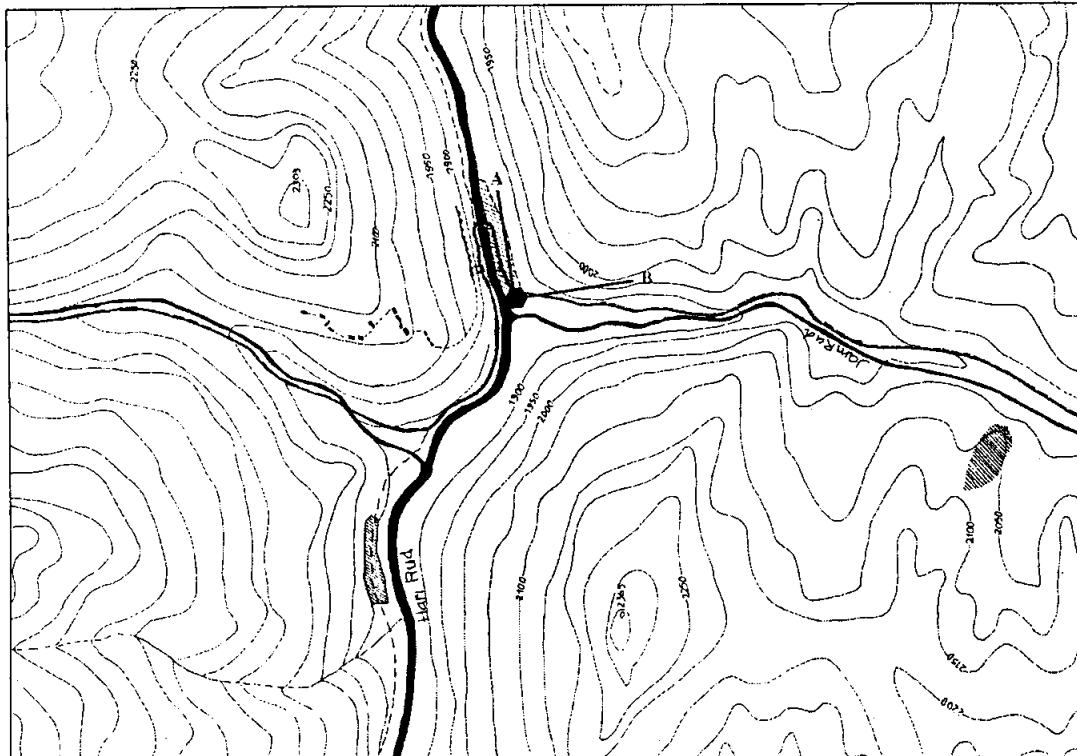
MAQUETTE DU PROJET DE CONSOLIDATION DU MINARET DE JAM 1961

DOCUMENT A



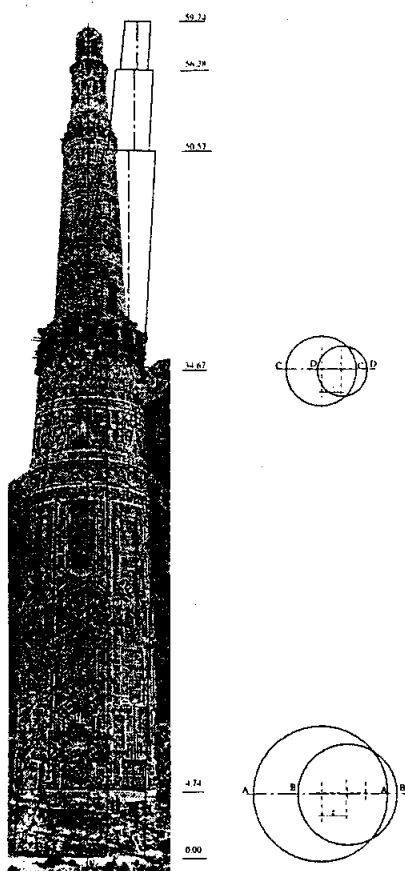
MAQUETTE DU PROJET DE CONSOLIDATION DU MINARET DE JAM 1961

Minaret of JAM

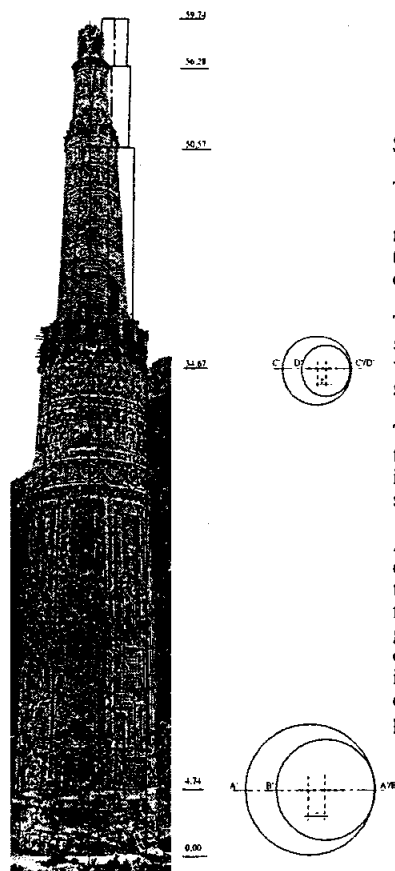


Survey August 1975

survey by Guido Fino



section A



section B

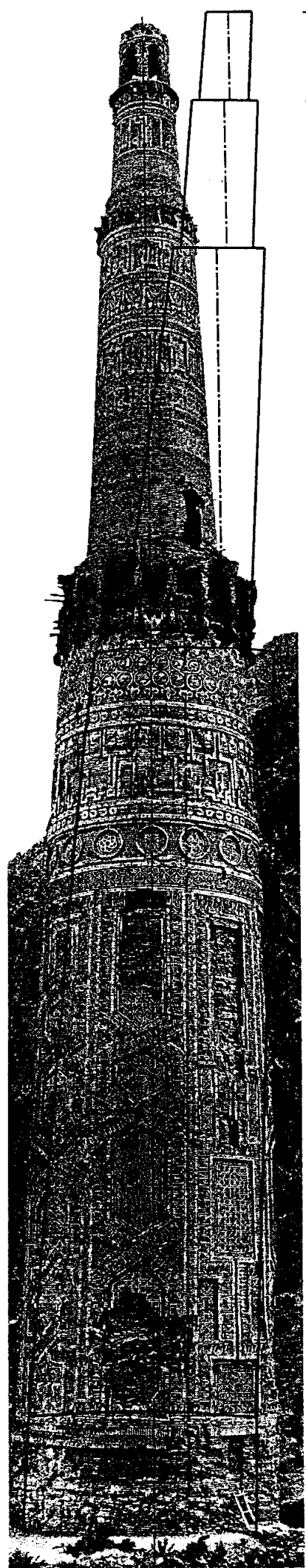
SURVEY of JAM MINARET

The purpose of the survey carried on in 1975 was to locate the lean of the minaret through measurements taken from two orthogonal stations (A and B; see plan of the spot).

The search for the positioning of the two stations was made through a theodolite which allowed to identify the most leaning sides of the minaret.

The graphic restitution has pointed out that the lean was moderate and in any case it was not such as to compromise the stability of the monument itself.

After 25 years, however, it would be very desirable to make a new survey to check the present situation, using 6 or 8 stations for the survey. This work should allow to get more detailed information on the current condition of the minaret: these information are in fact preliminary and essential to any further conservation project.



59.74

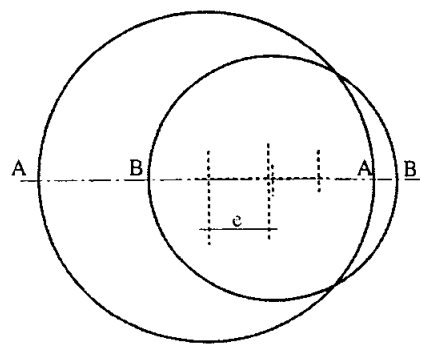
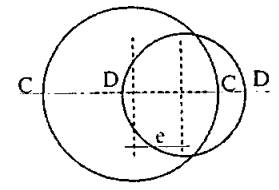
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34.67

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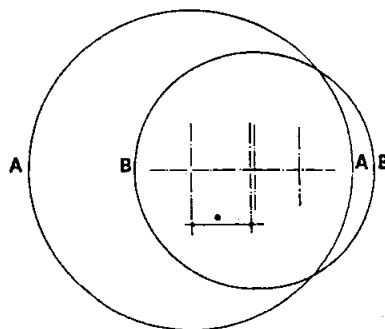
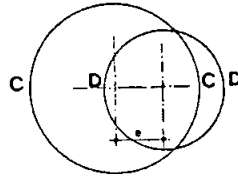
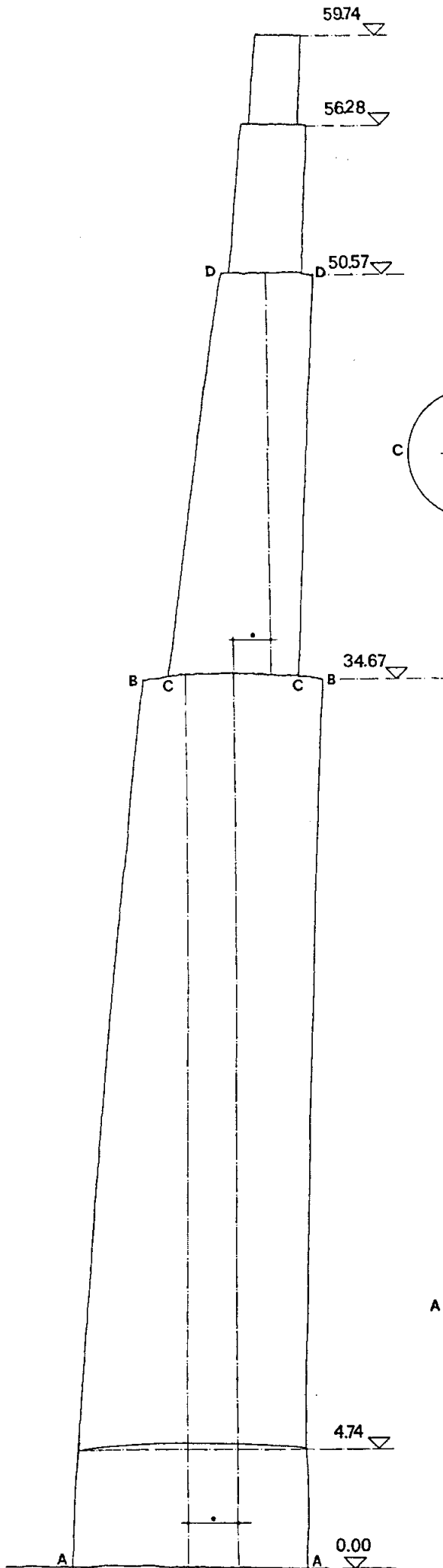
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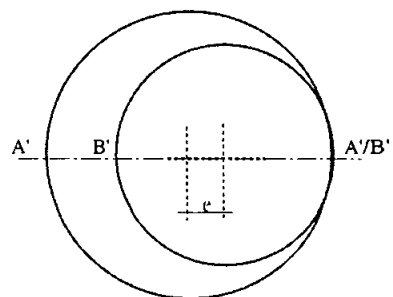
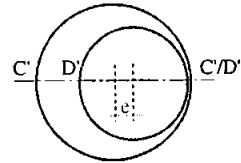
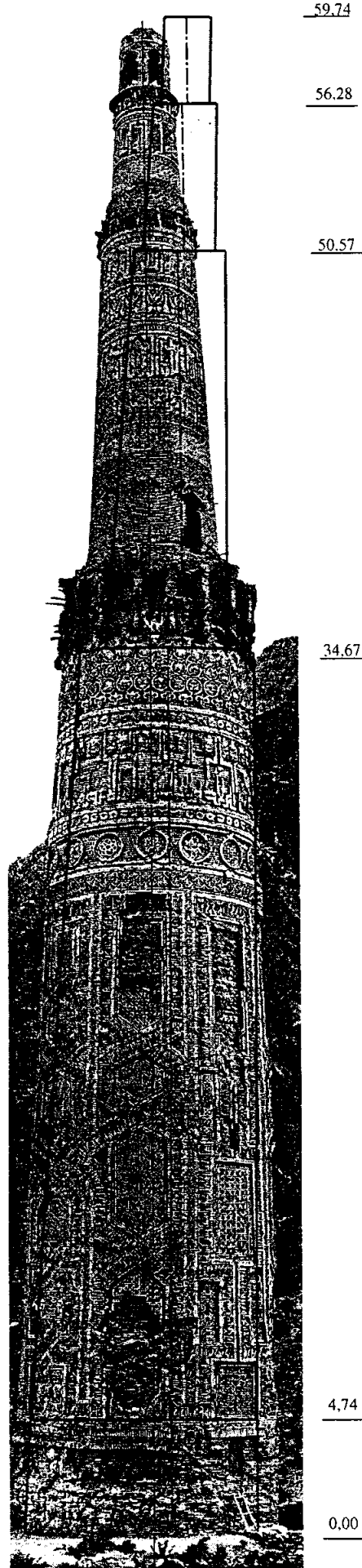
survey by Guido Fino

DOCUMENT B



Arch. ANDREA BRUNO
UNESCO Consultant
1975

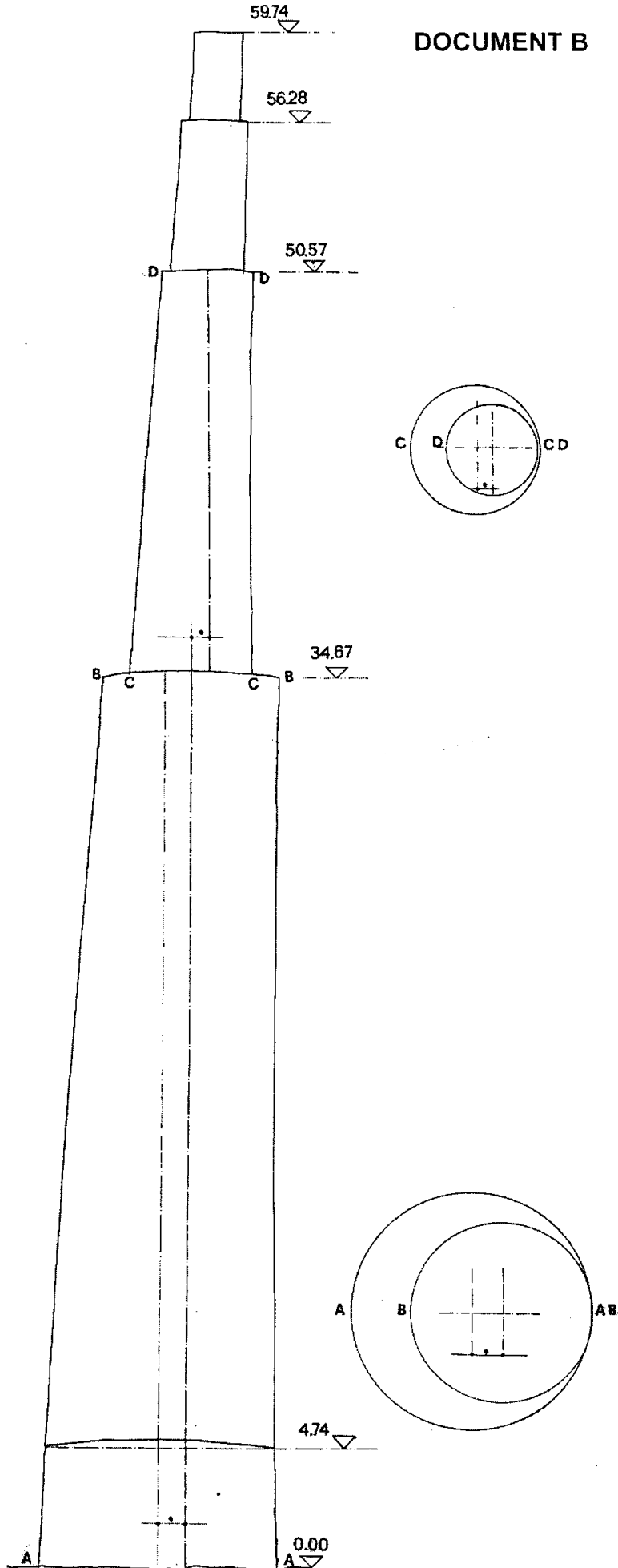
DOCUMENT B



section B

survey by Guido Fino

DOCUMENT B



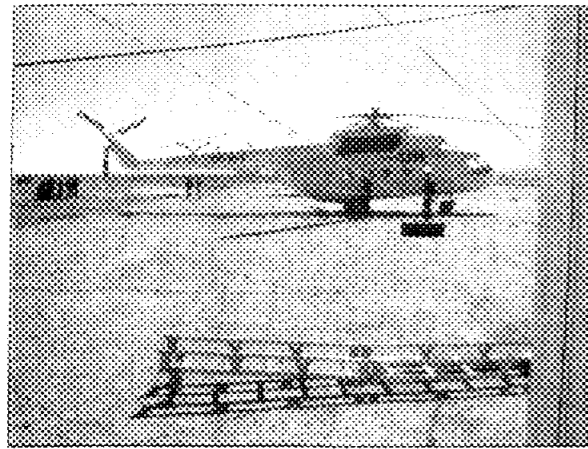


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AFGHANISTAN

MINARET OF JAM
MISSION MARCH 2002

UNESCO CONSULTANT:
ANDREA BRUNO
MATR. CA0646
N. de CONTRACT: 3500542



Preparing for the flight with the SKYLINK aviation UN WFP



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UNESCO

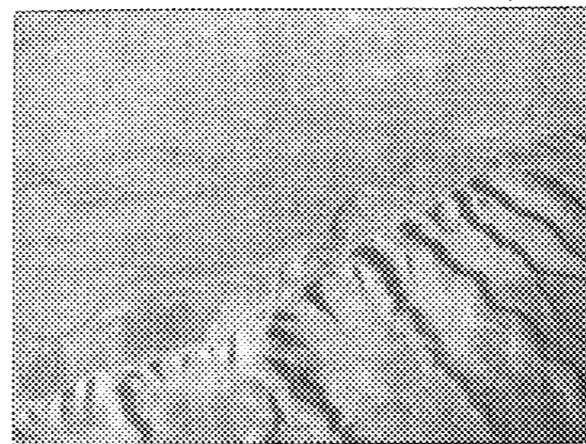
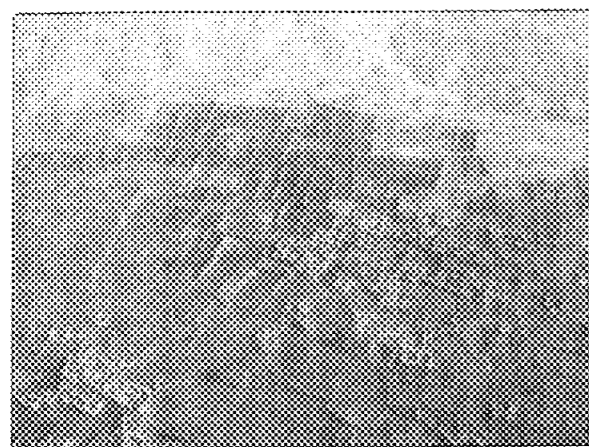
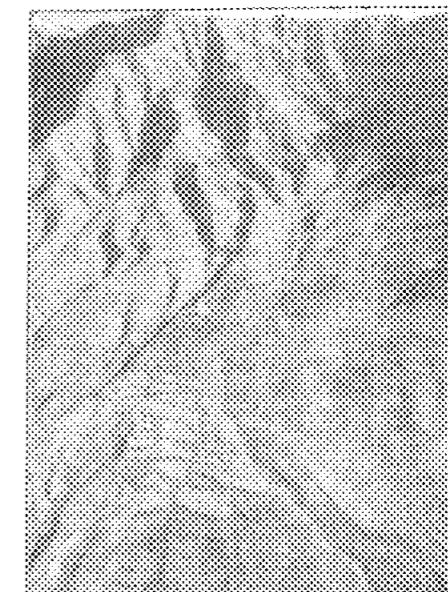
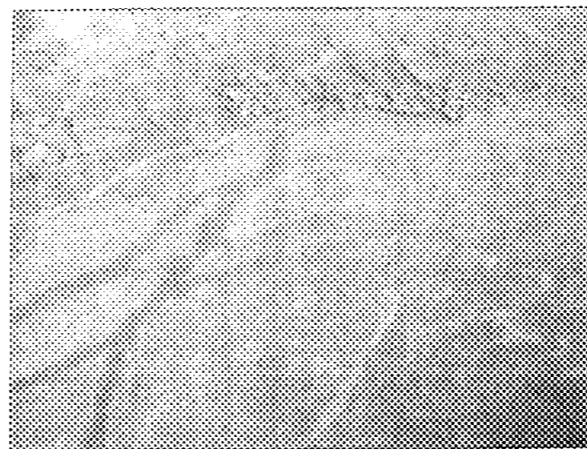
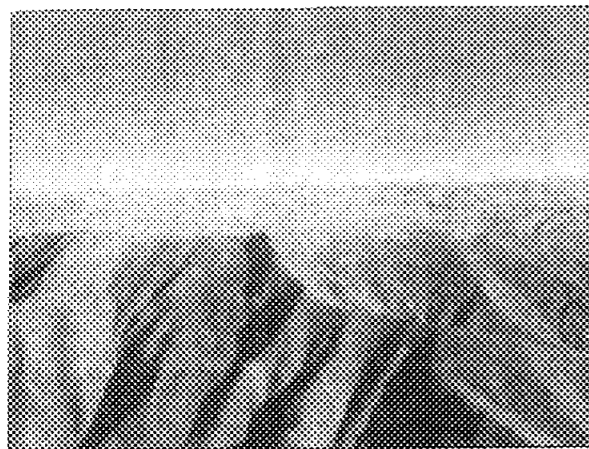
AFGHANISTAN

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Sightseeing on the route between Herat and Jam



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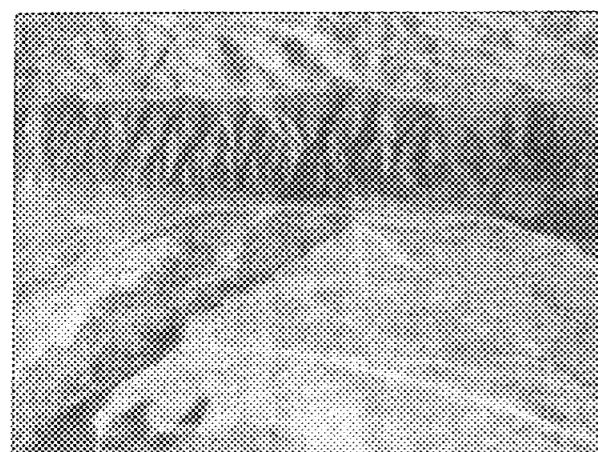
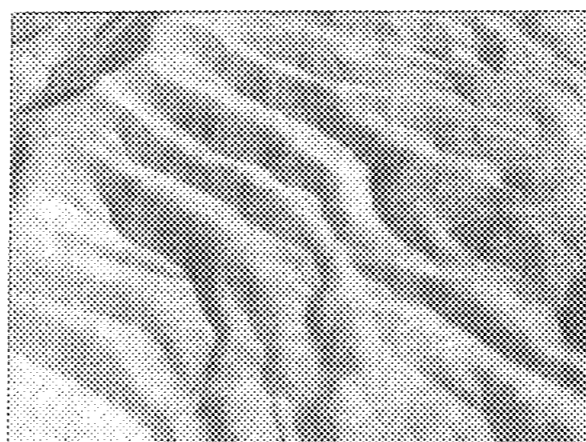
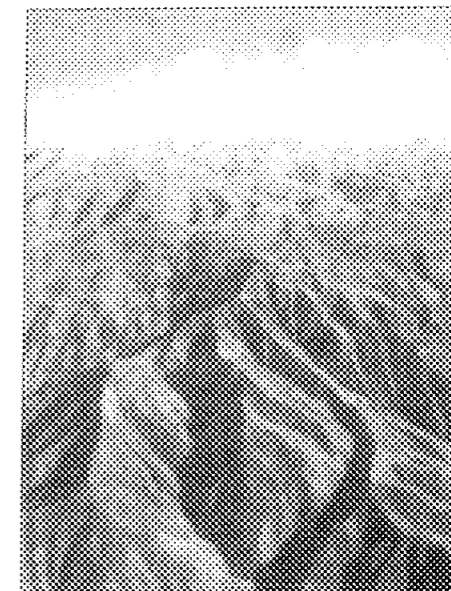
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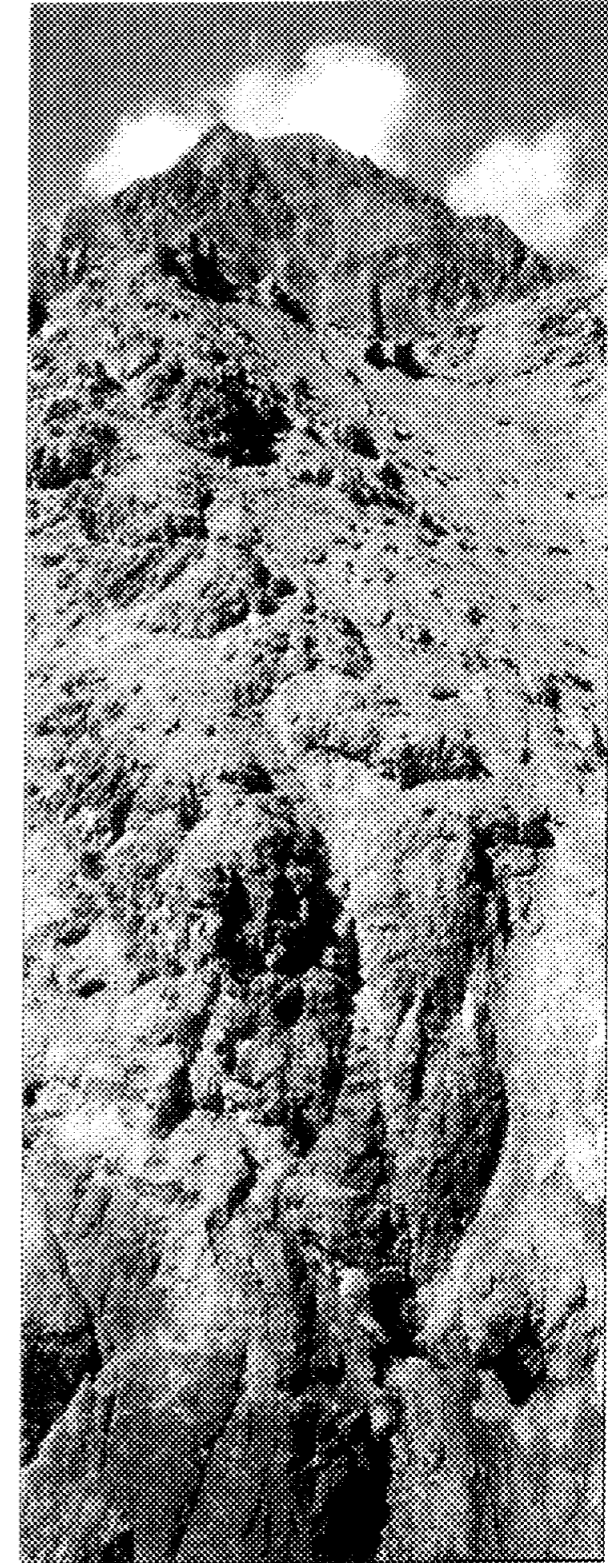
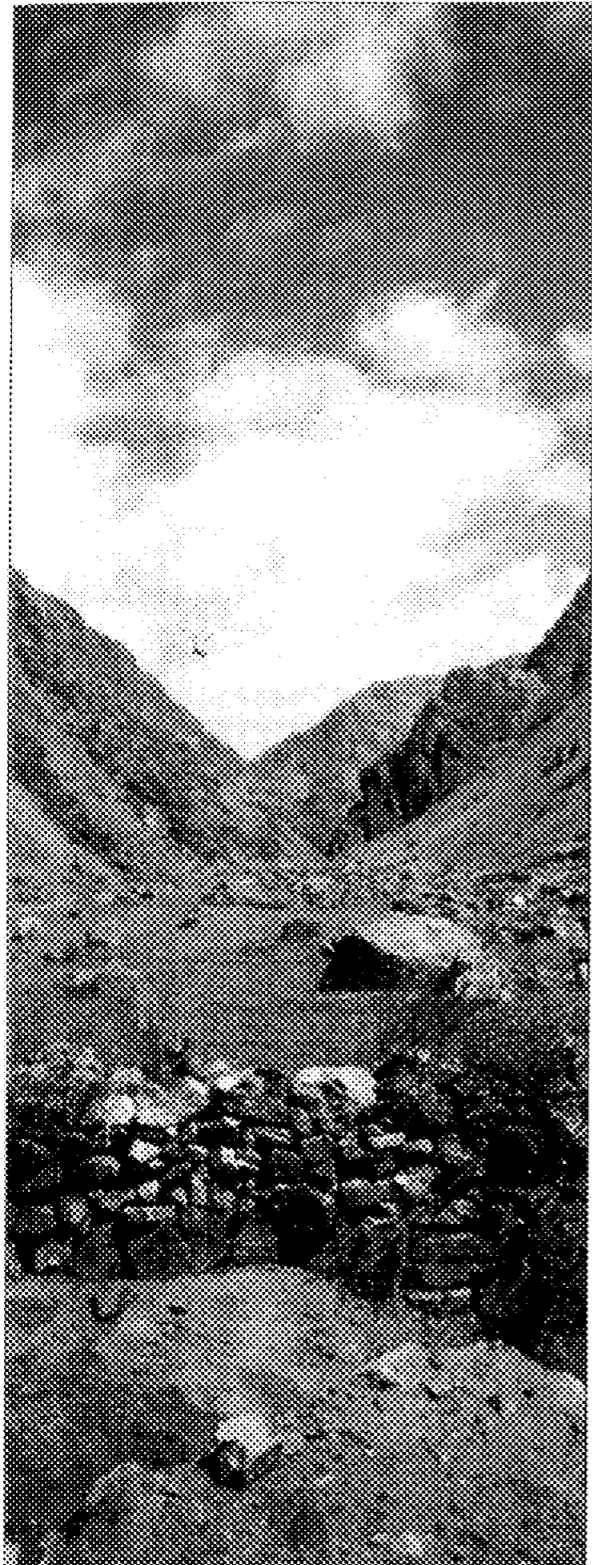
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Landing of the helicopter in the plain in front of the minaret



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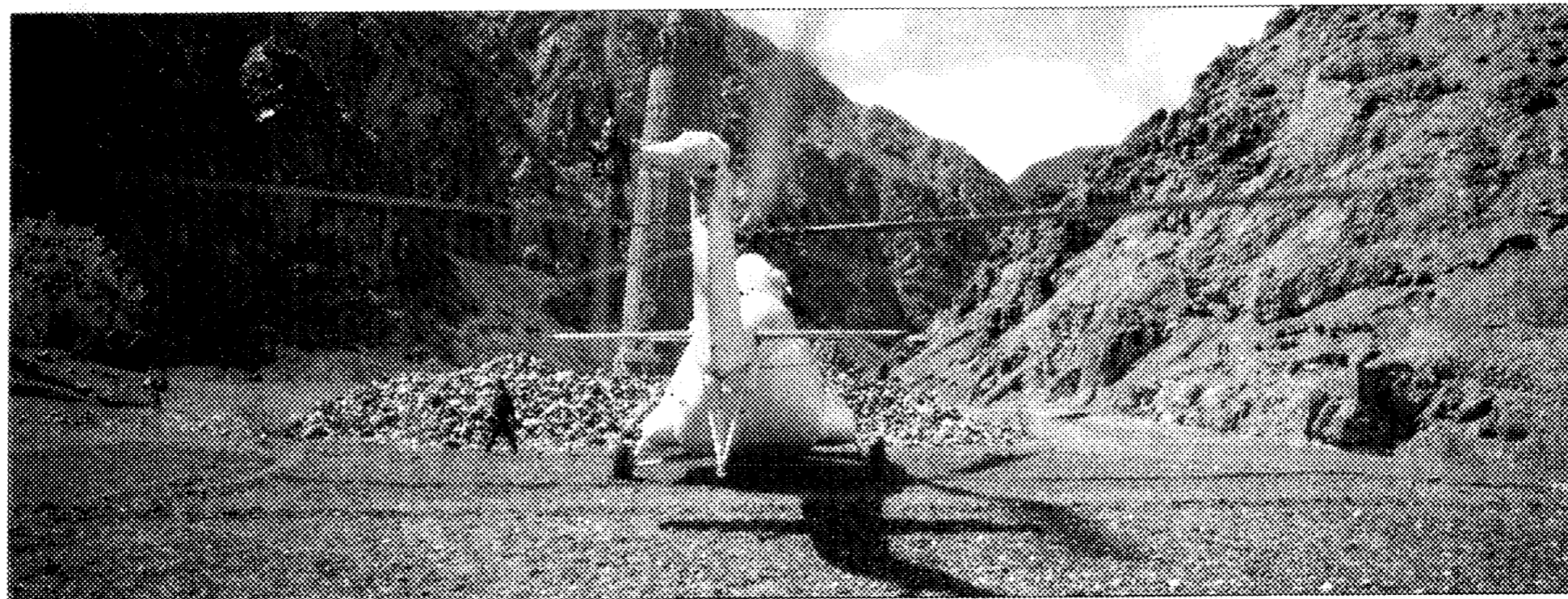
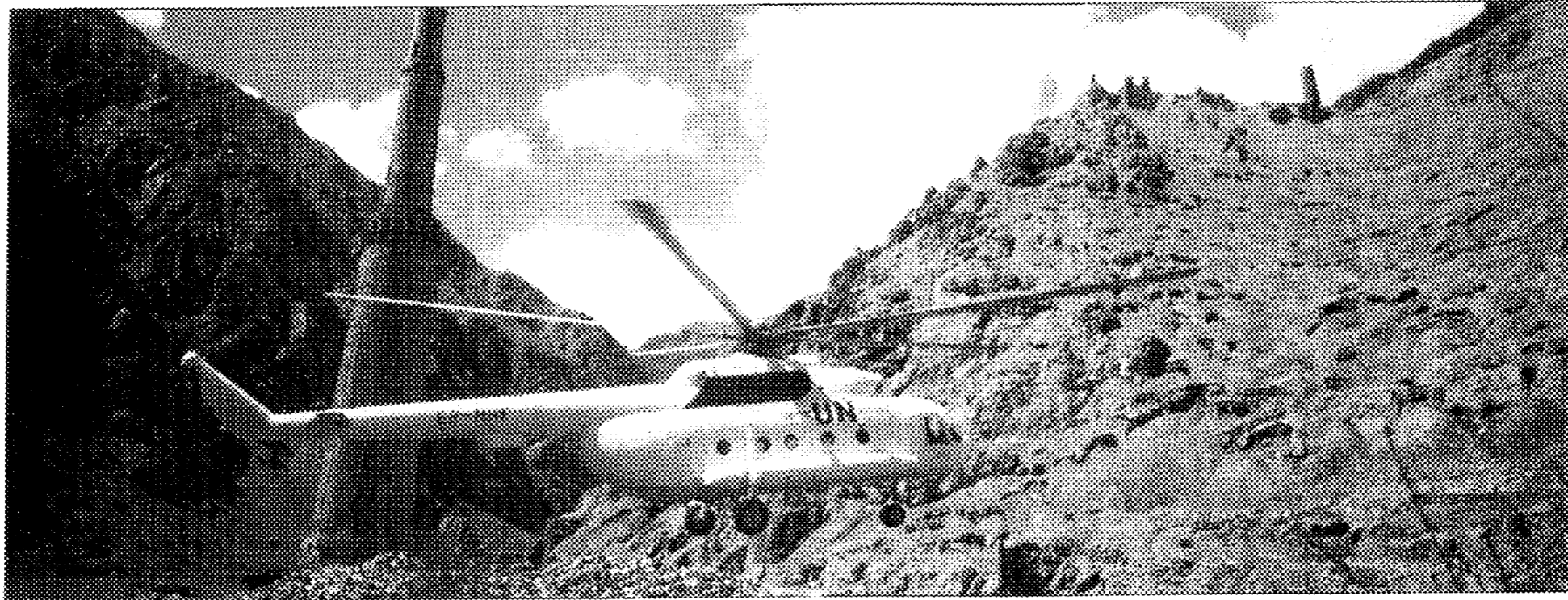
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The helicopter taking off between the narrow faces of the Hari Rud Valley



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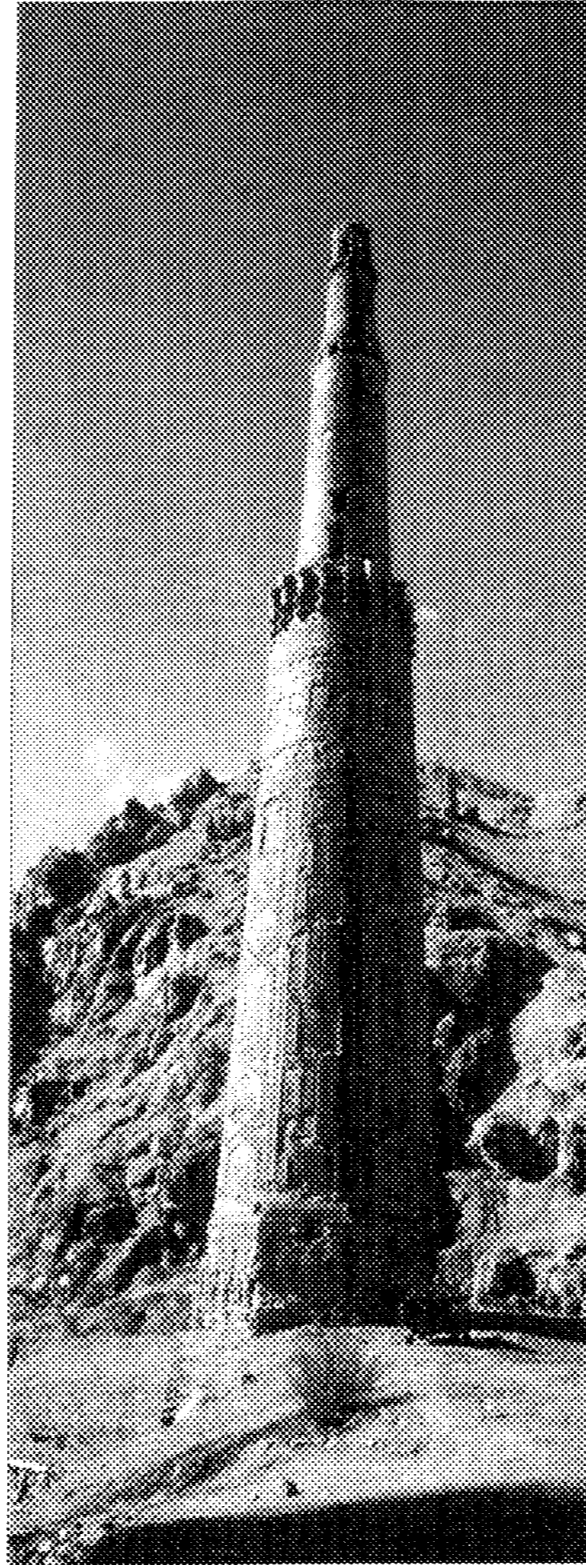
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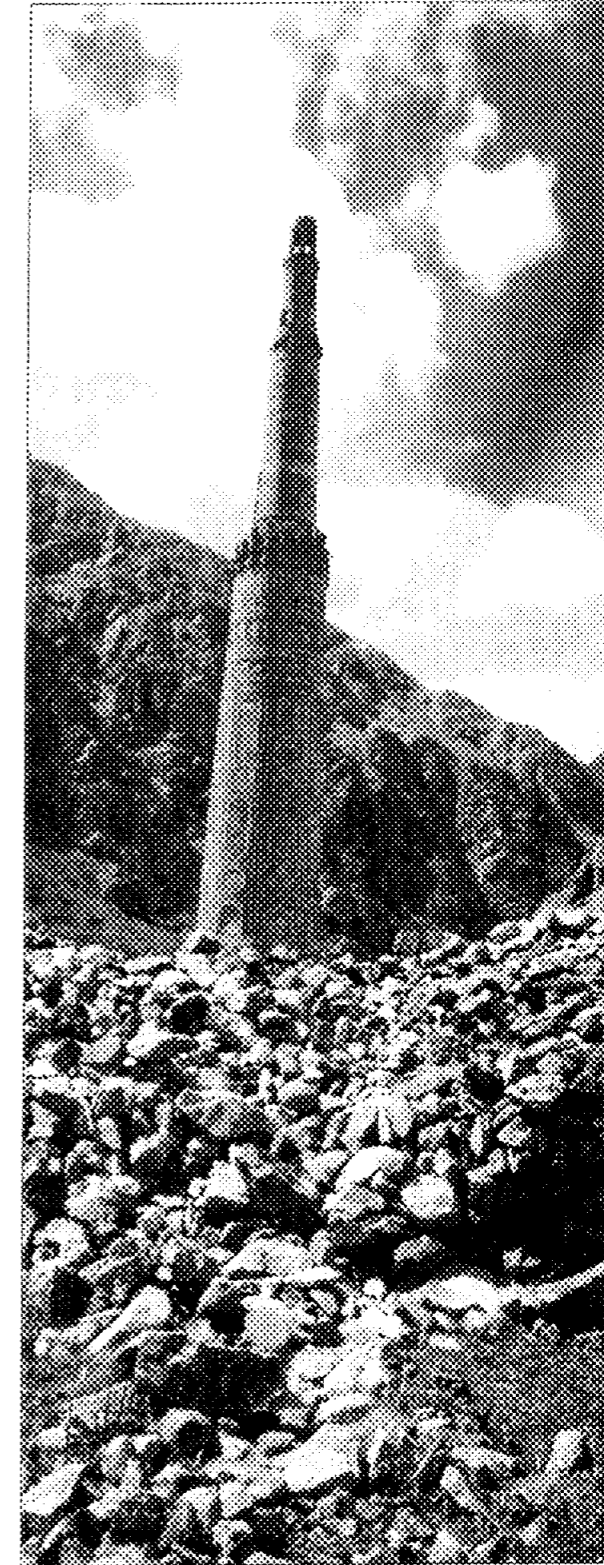
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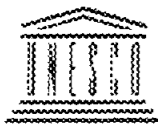
South side



West side



East side



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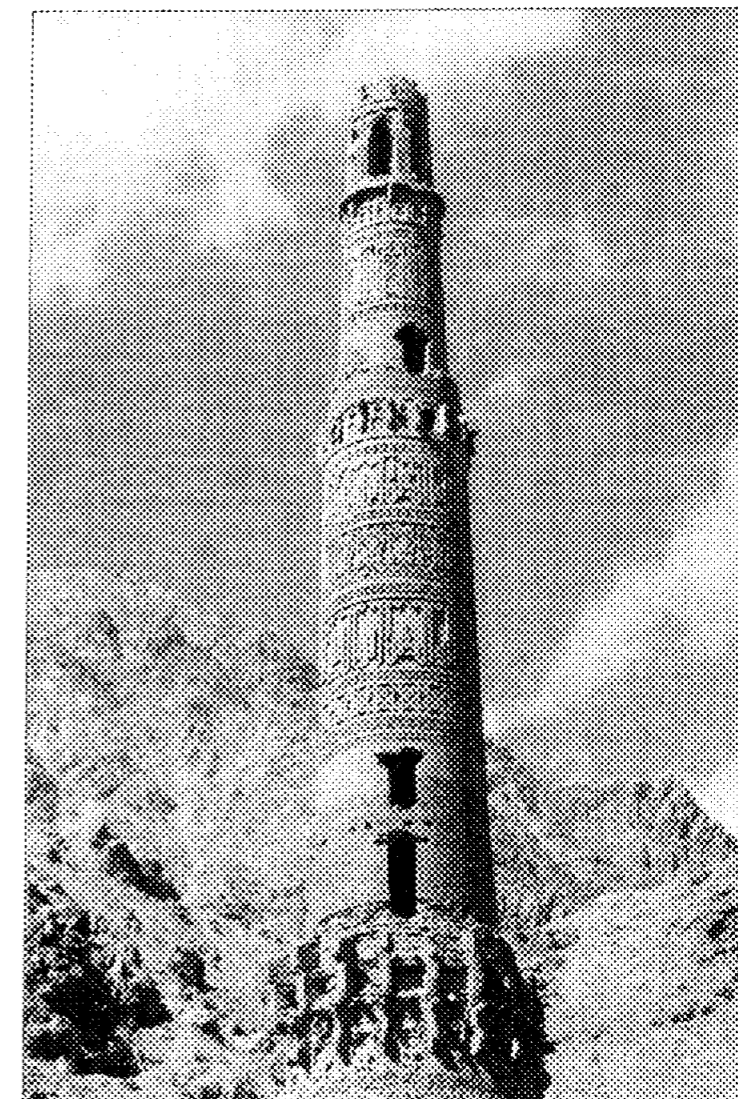
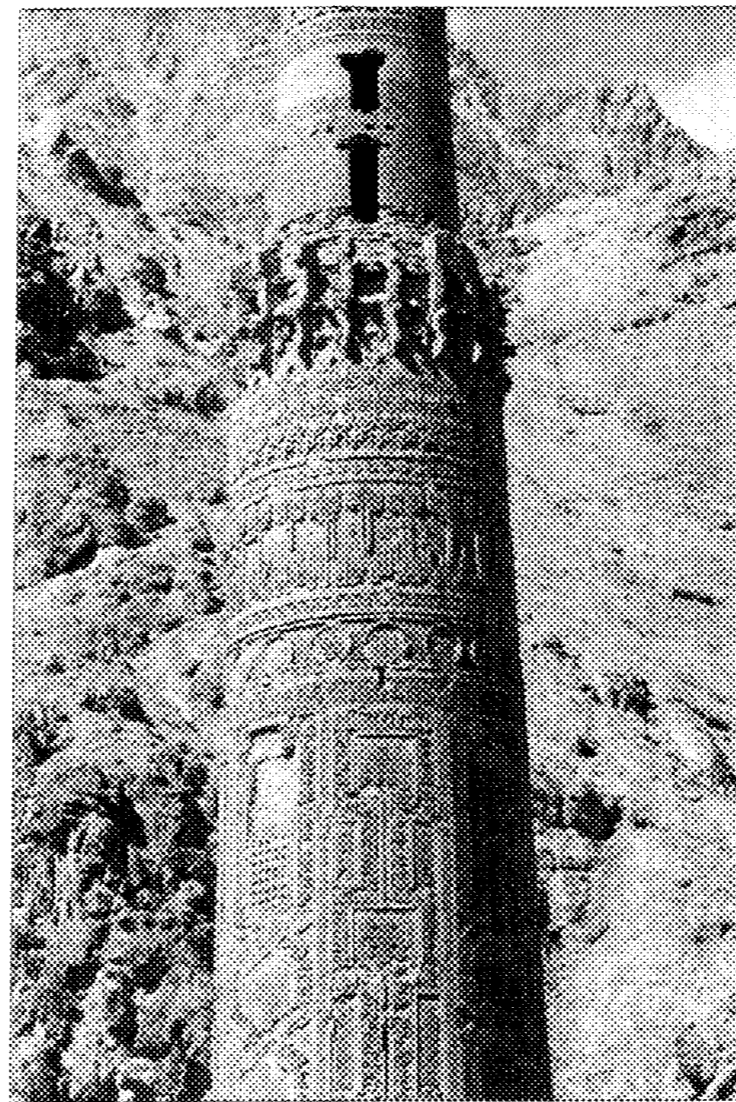
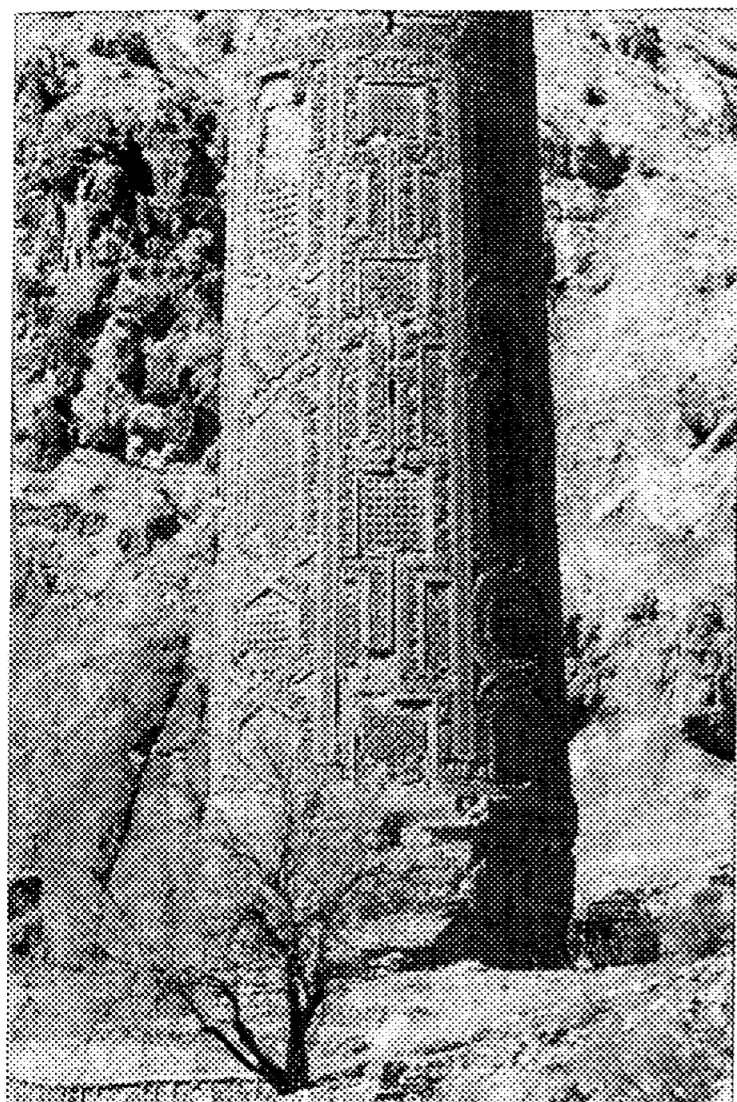
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The minaret from the south



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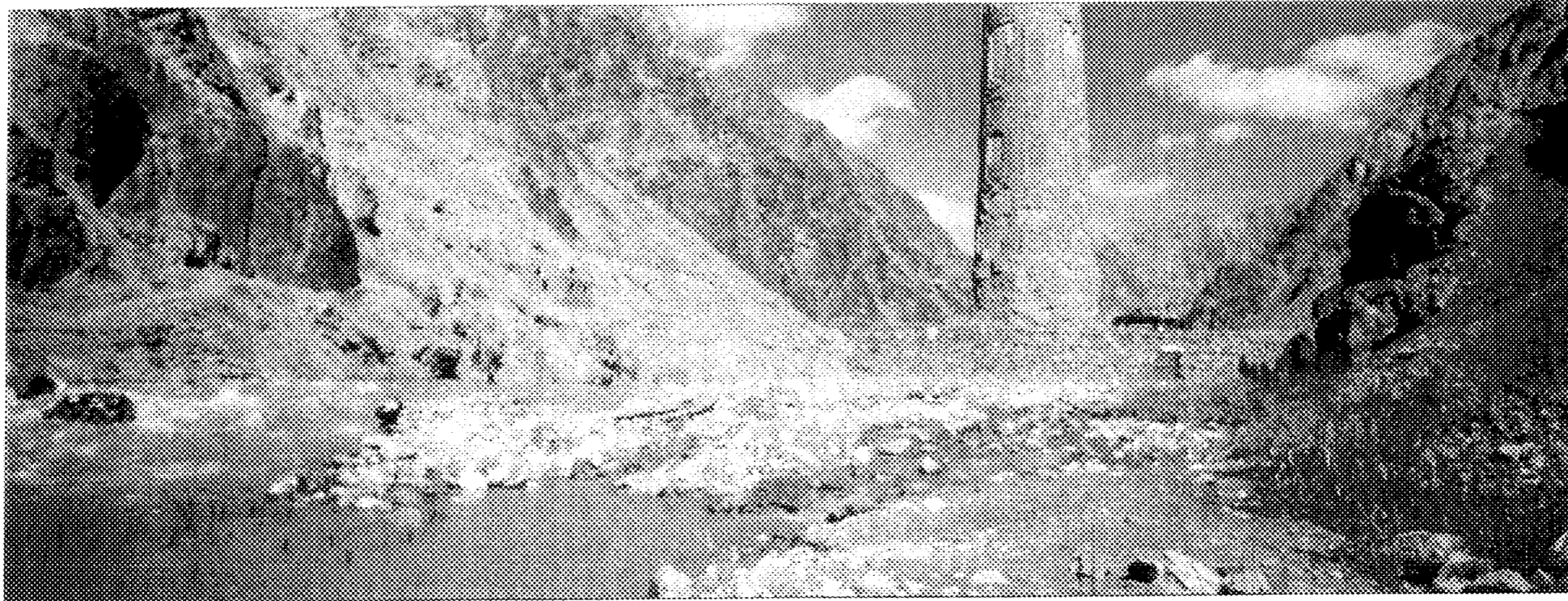
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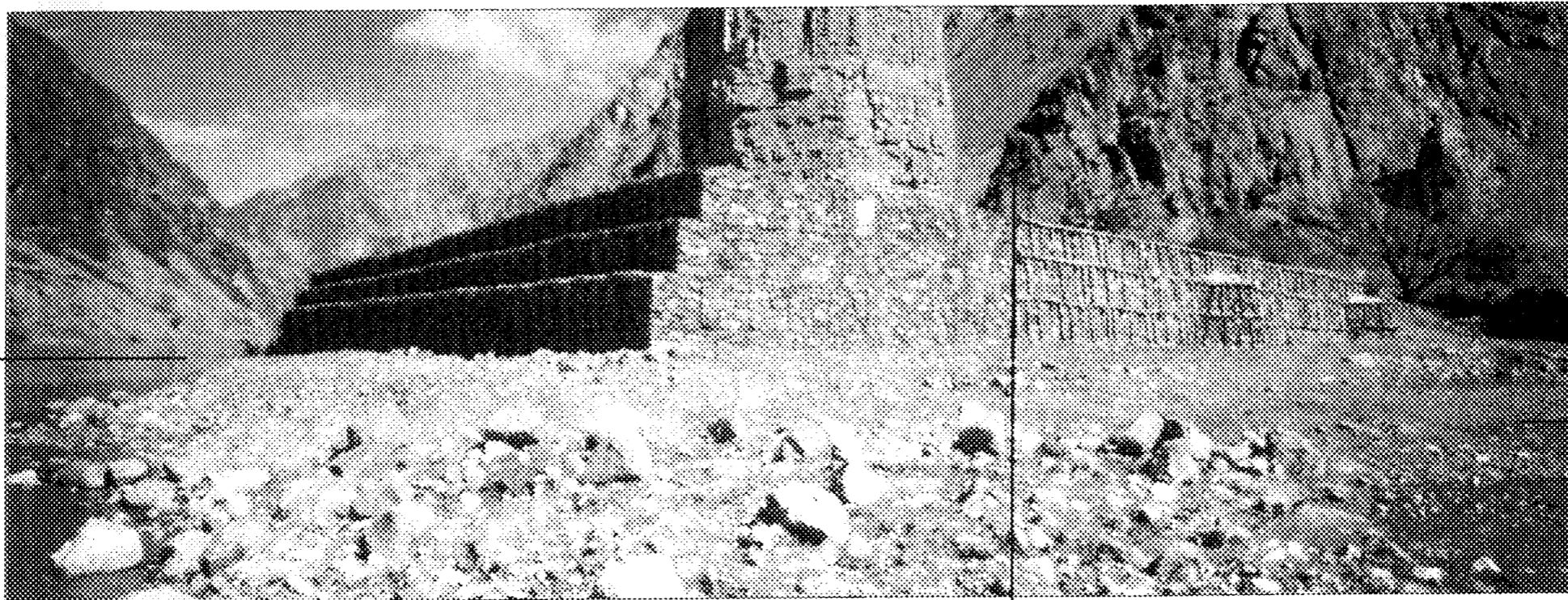
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View of the minaret taken from down the plain of the Hari Rud water-course

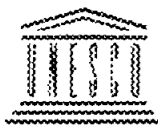


Hari Rud

Jam Rud

2nd phase HAFO: metal cages

1st phase SPACH: wooden grid



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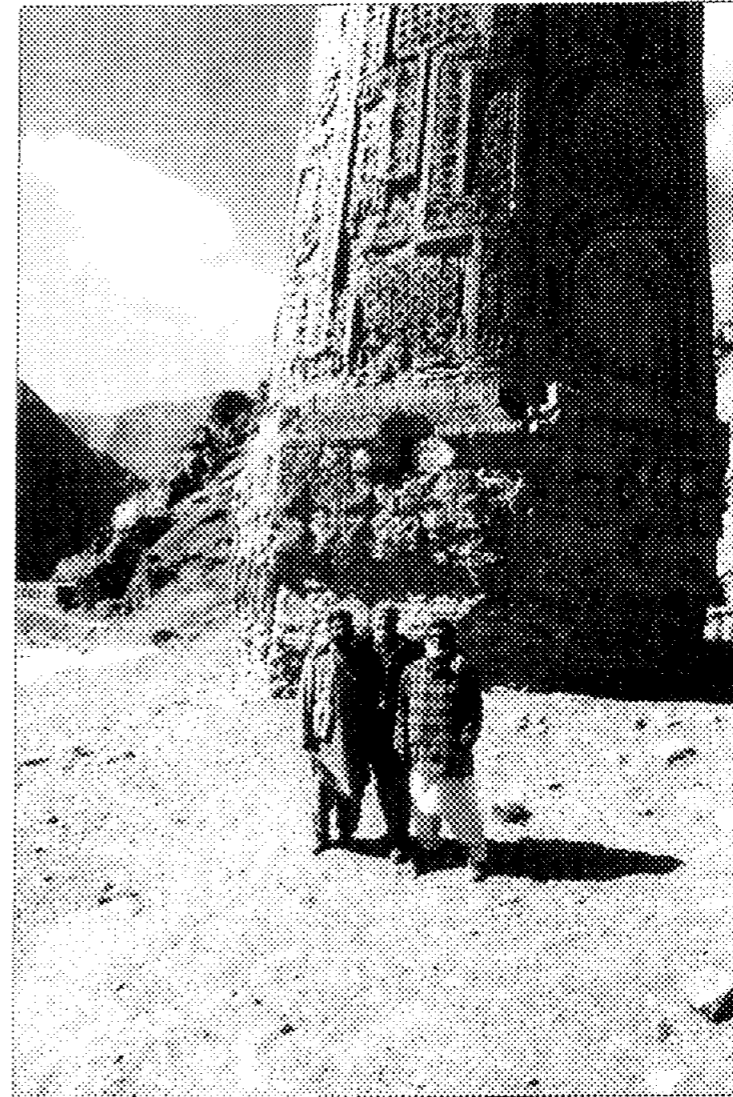
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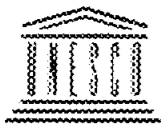
People found at the arrival of the helicopter



The pilots of the helicopter



With engineer Shafi and architect Abdul Ahad



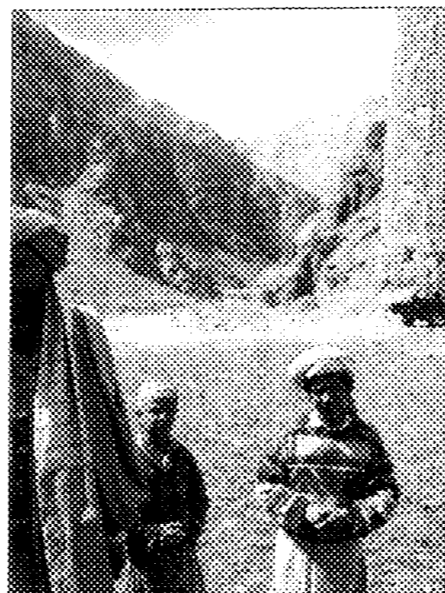
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The shadow of the minaret on the Hari Rud



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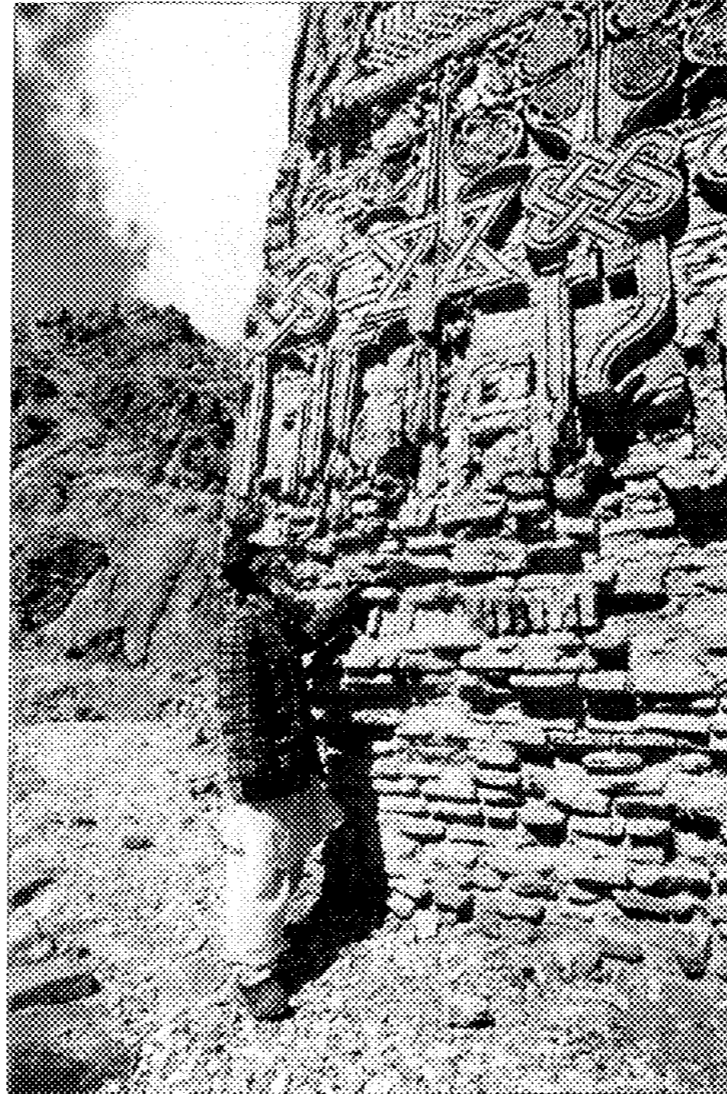
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Checking the conditions of the basement of the minaret



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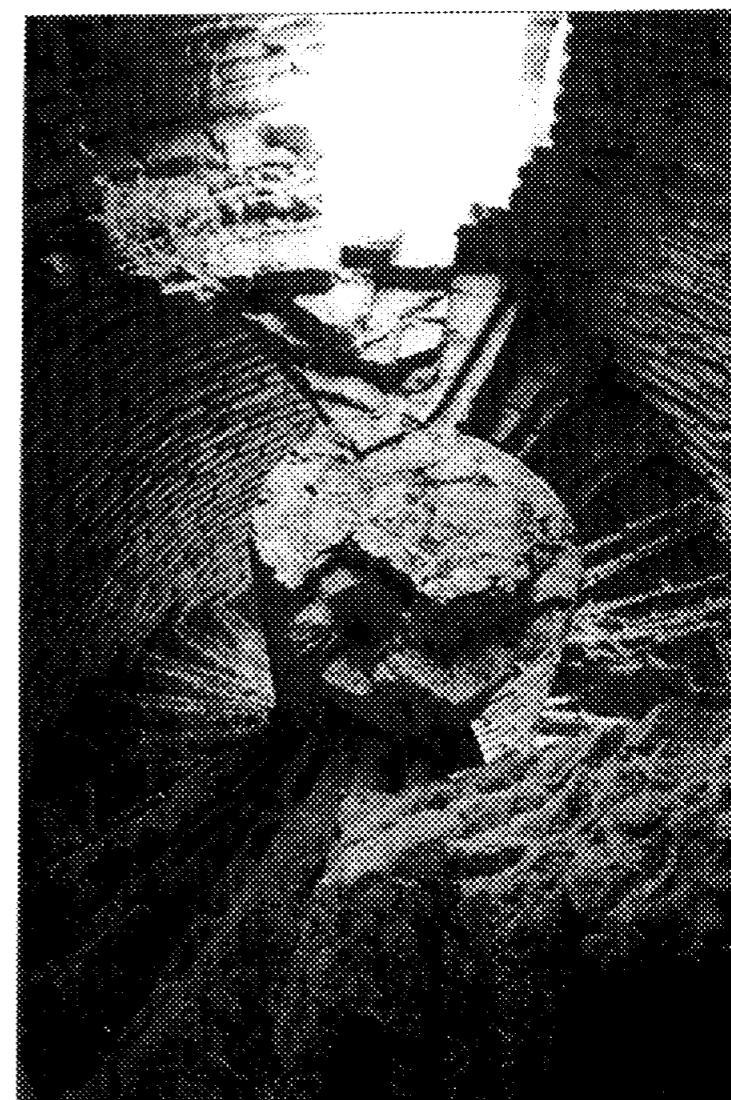
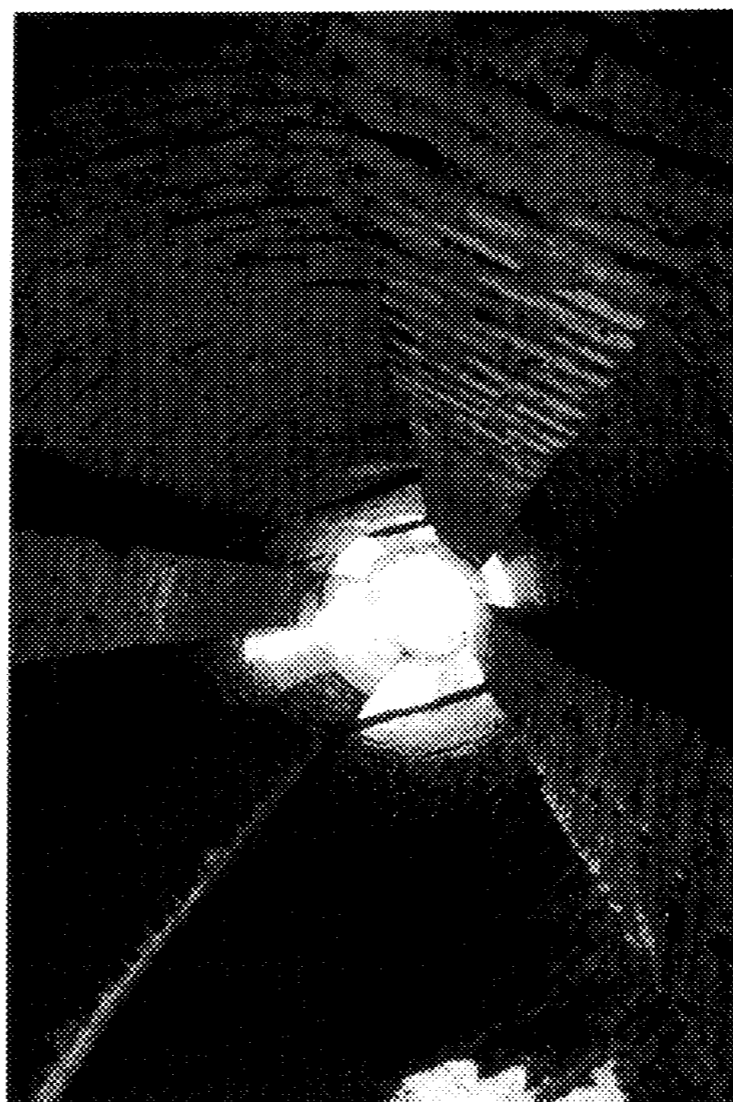
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Inside the minaret



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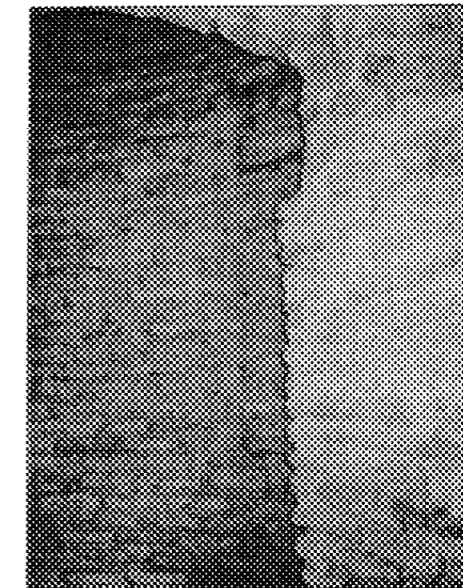
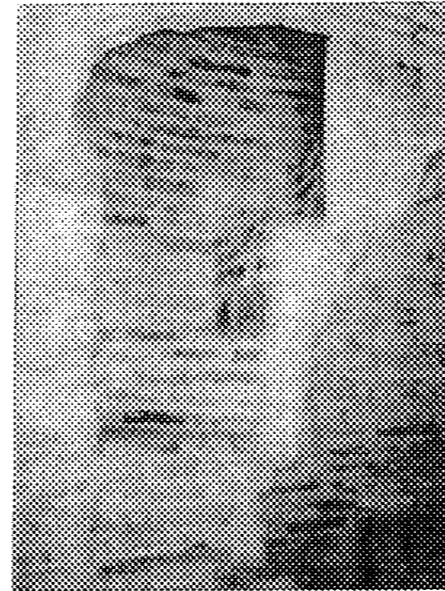
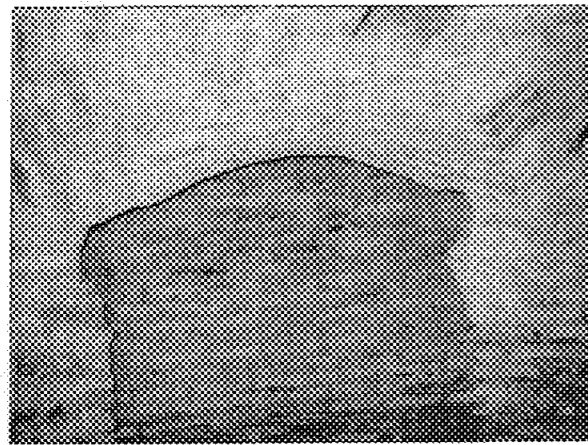
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Inside the minaret



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The Hari Rud river from the top of the minaret



The Hari Rud river from the top of the minaret



The Jam Rud from the top of the minaret



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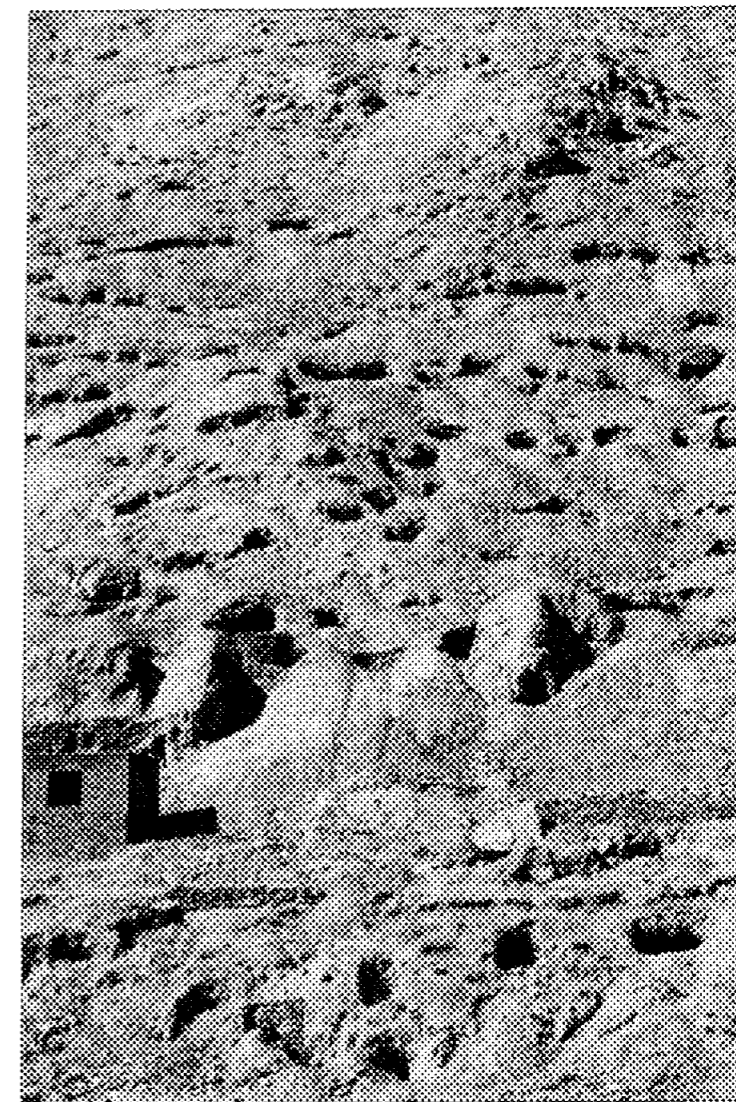
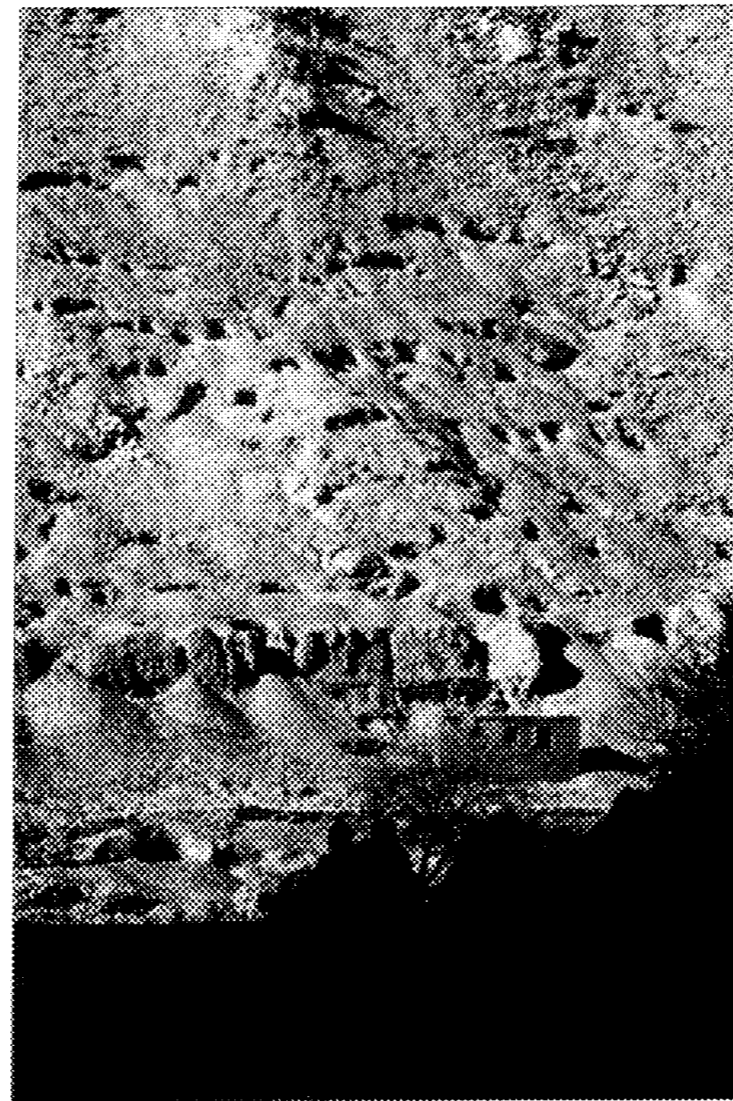
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The illegal excavations cover the entire surface of the cliff



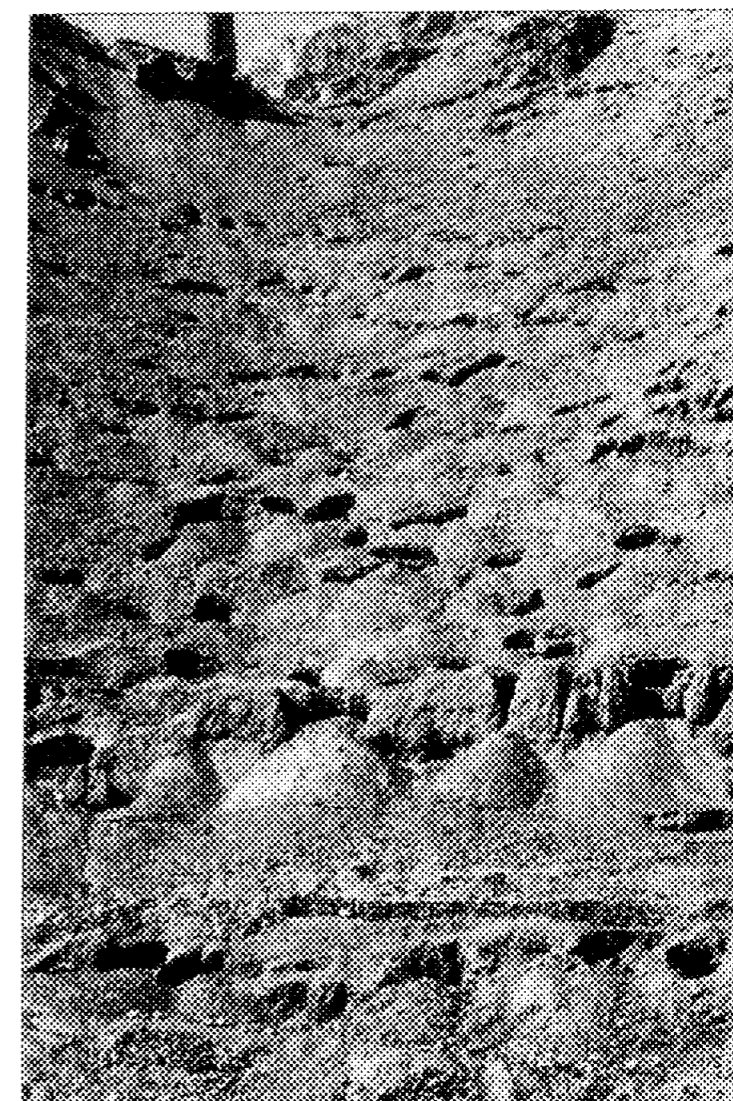
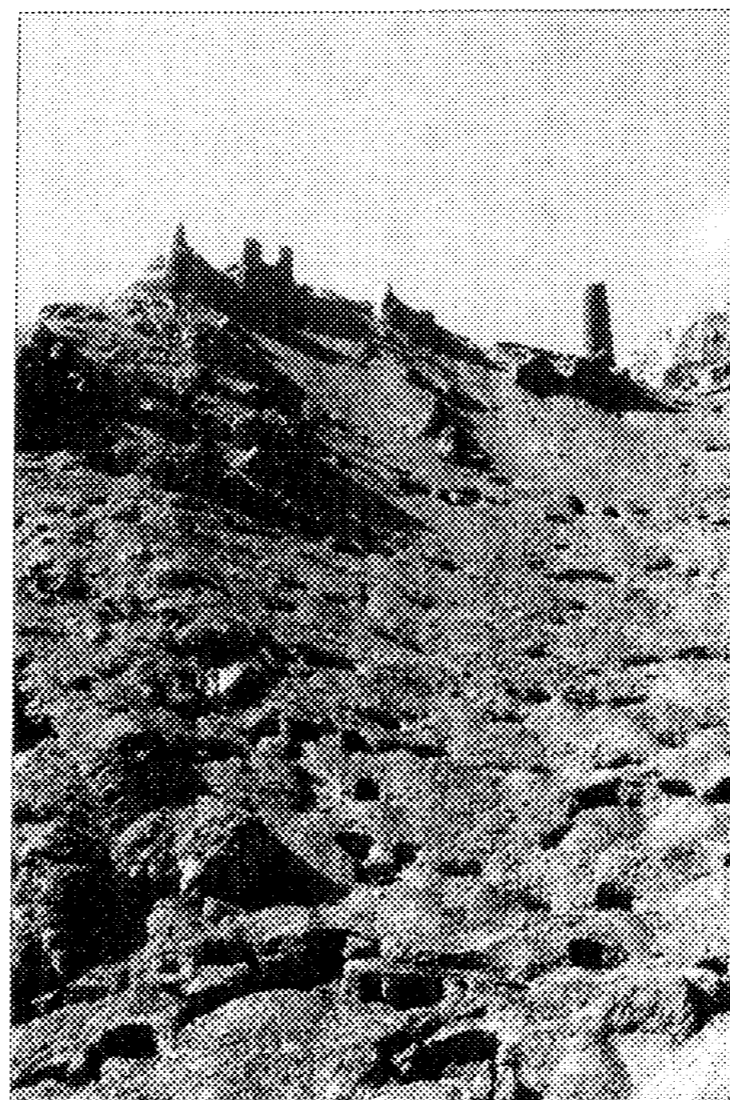
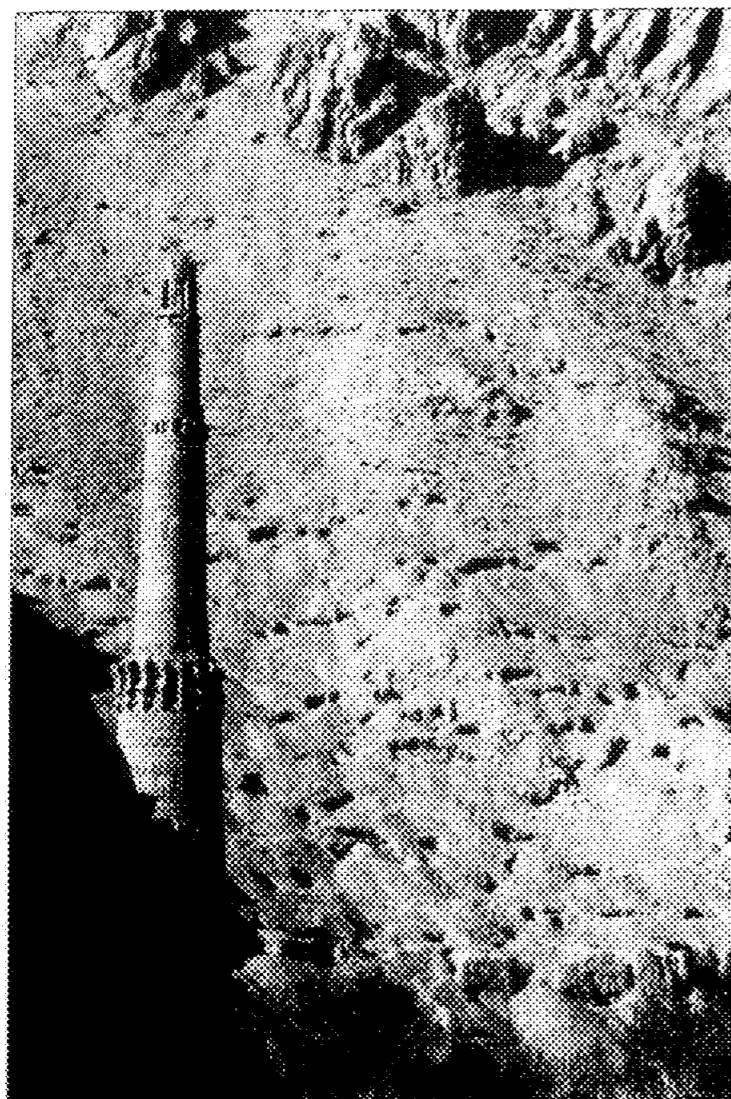
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Views of the side of the mountain on the opposite side of the minaret. Evident the traces of the illegal excavations across the side as far as the top of the fortification



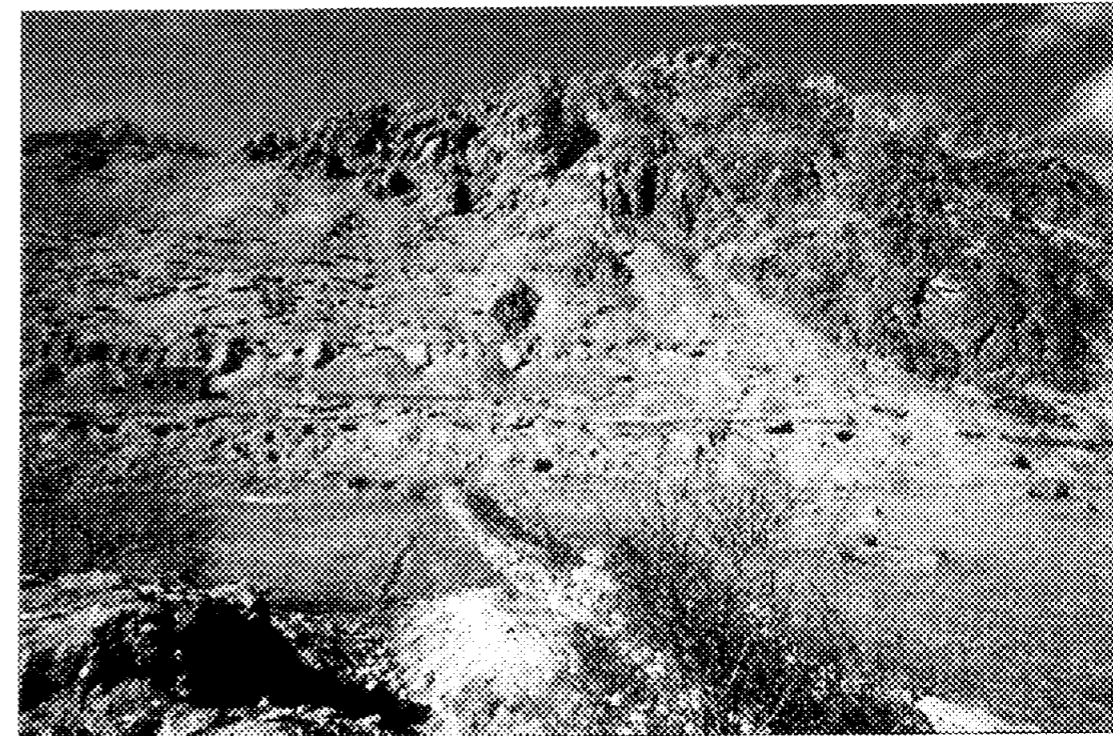
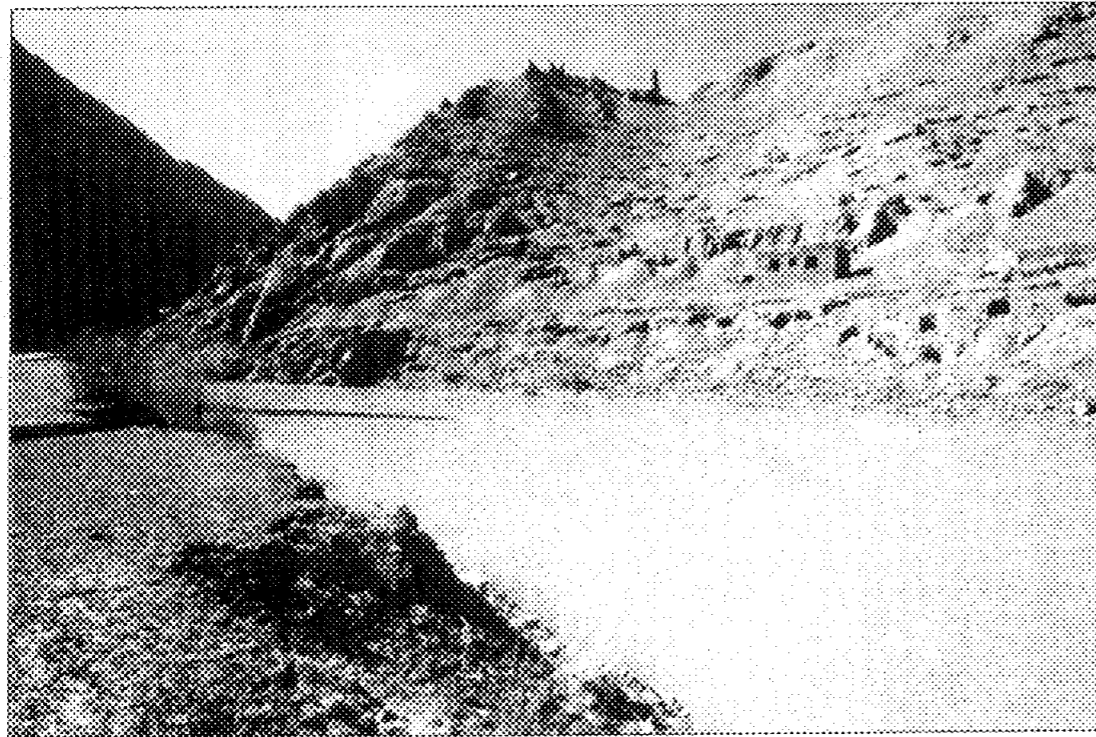
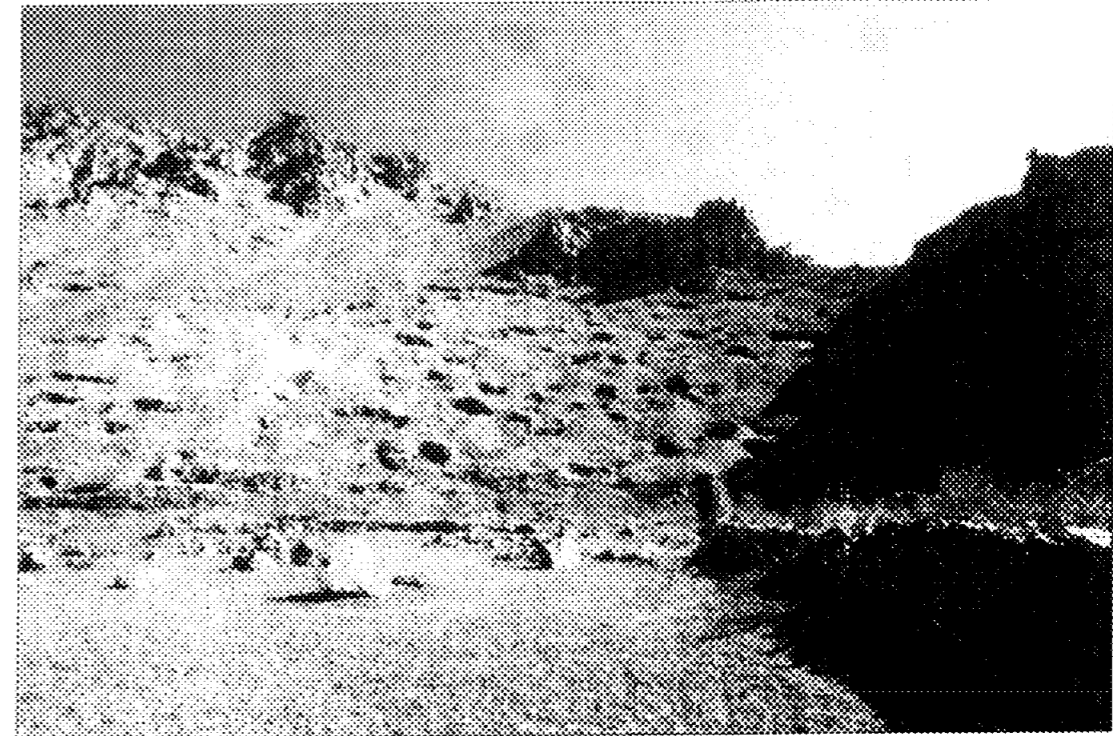
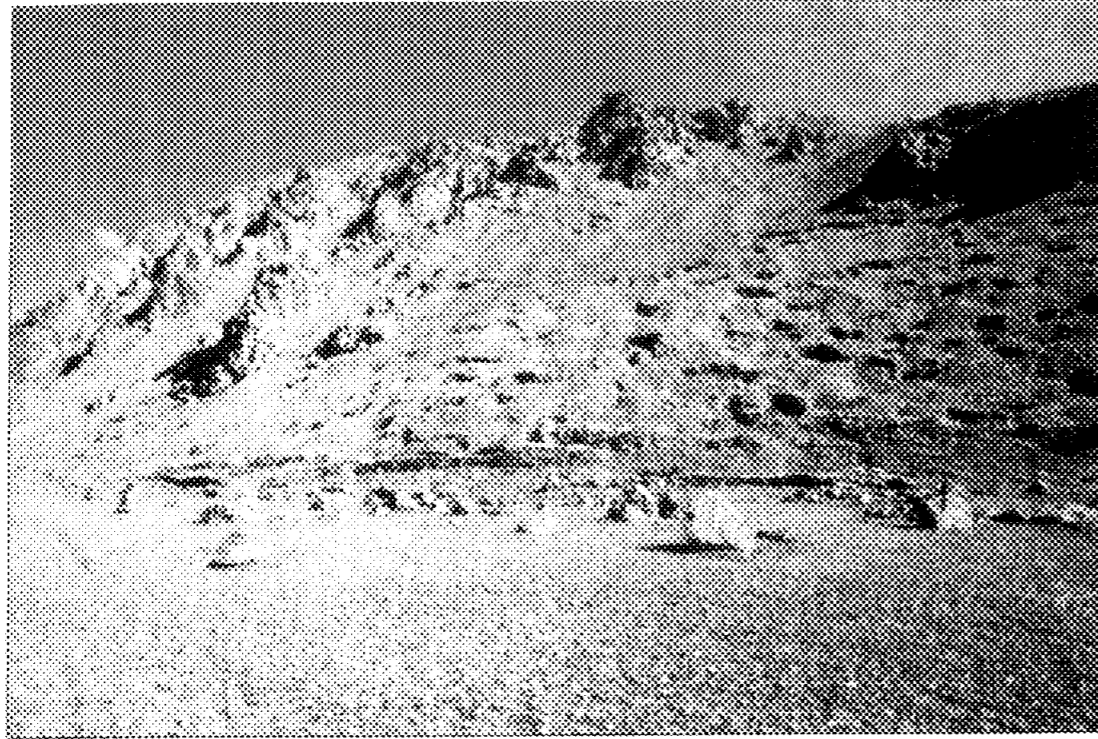
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The illegal excavations on both the river sides



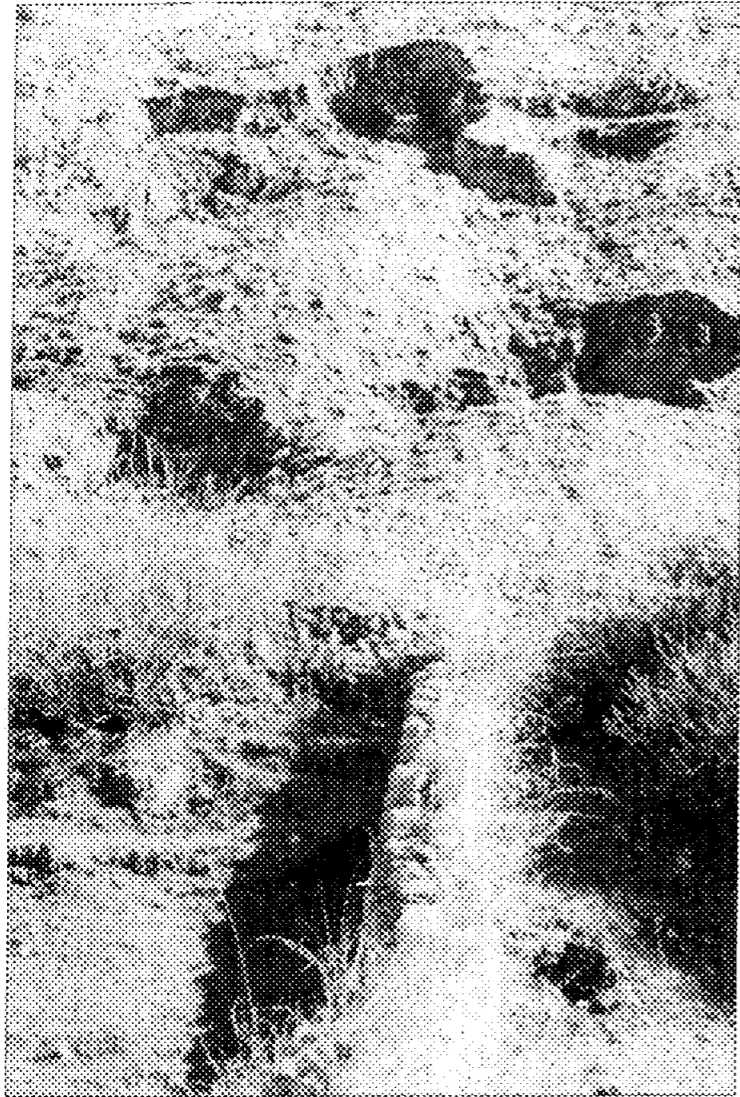
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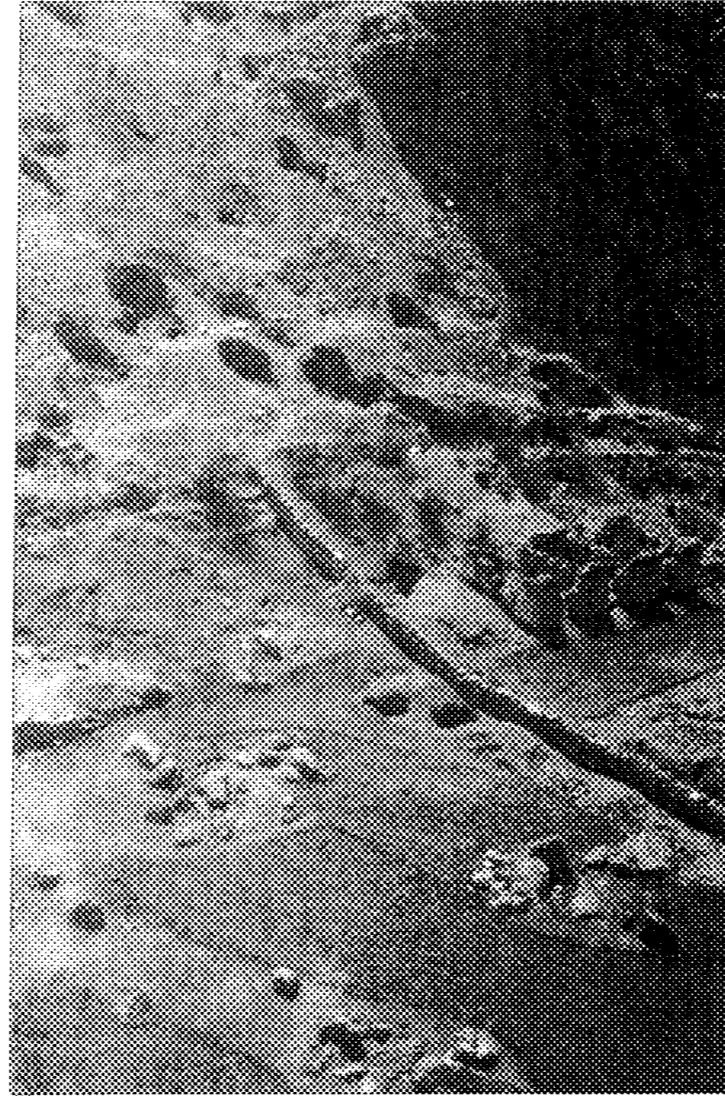
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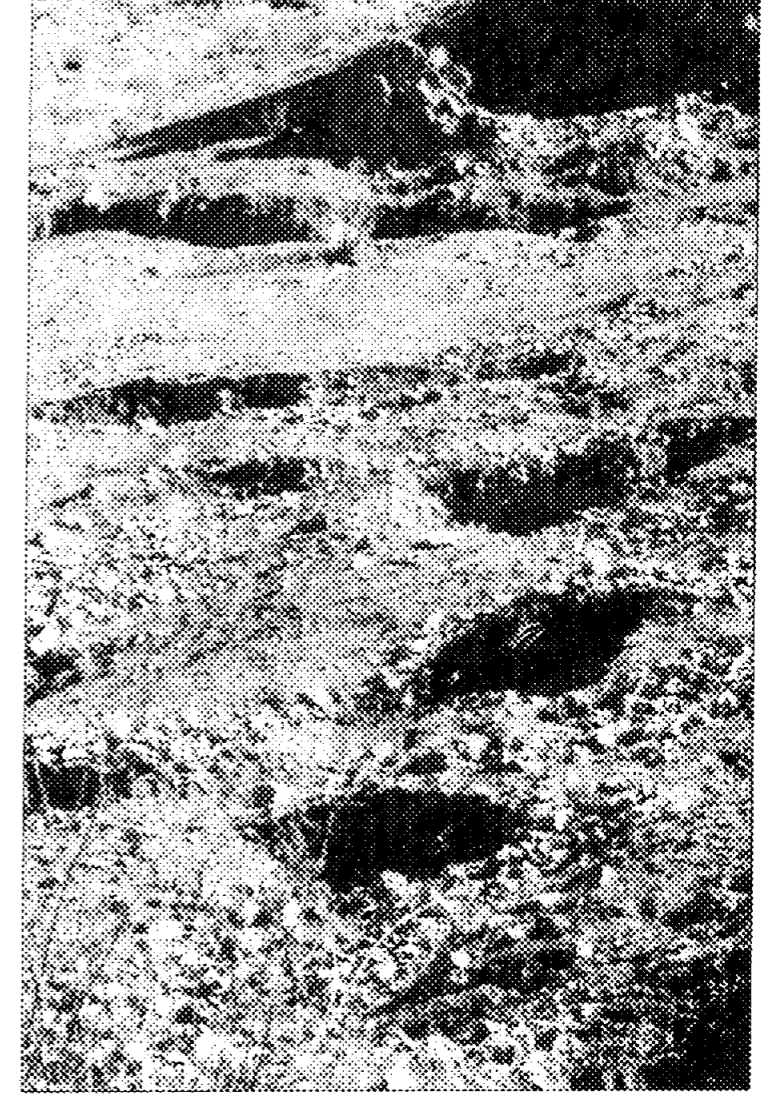
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A stone wall covered by thorny bushes cuts off the plain all the way to the Hari Rud edge



The landing space seen from the helicopter. Evident the traces of the excavations and demolitions



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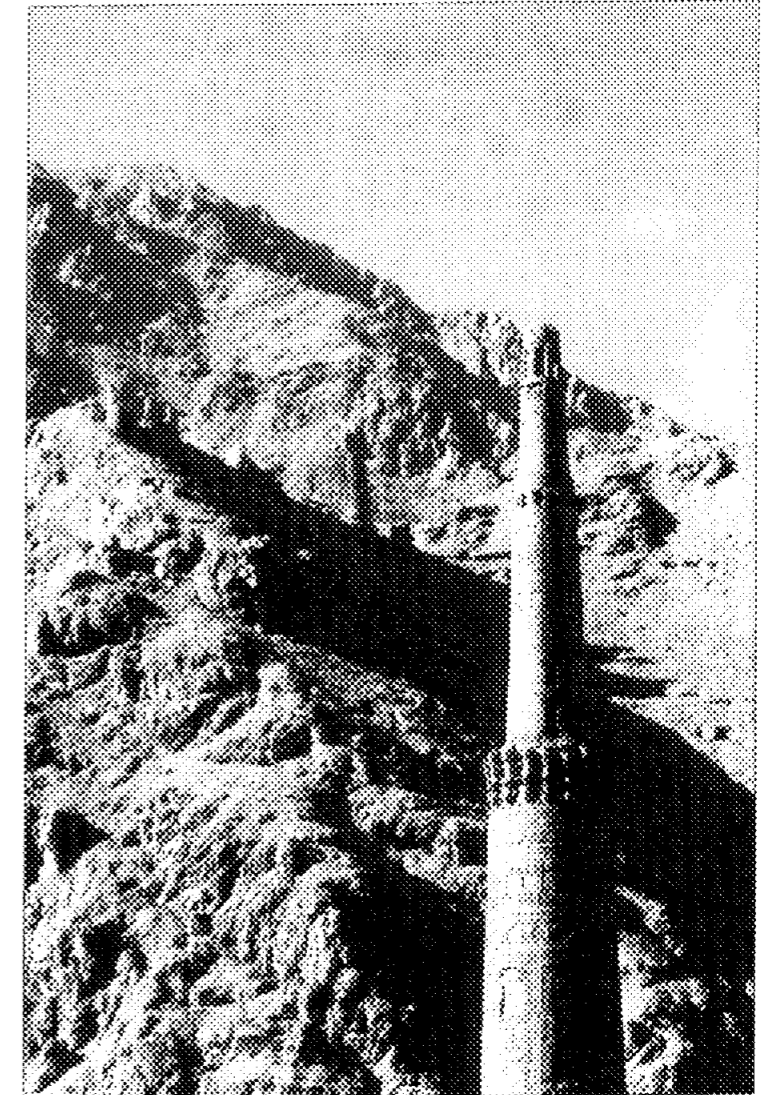
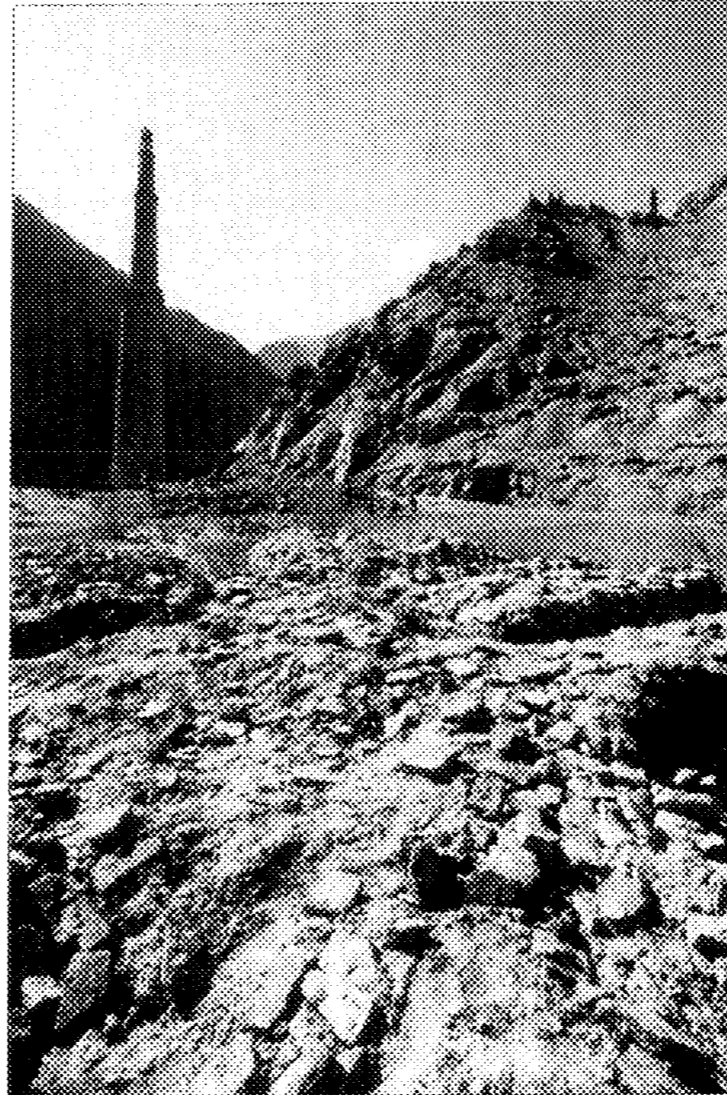
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The remains of the buildings built in the 60's to prepare the strengthening works and the restoration of the minaret



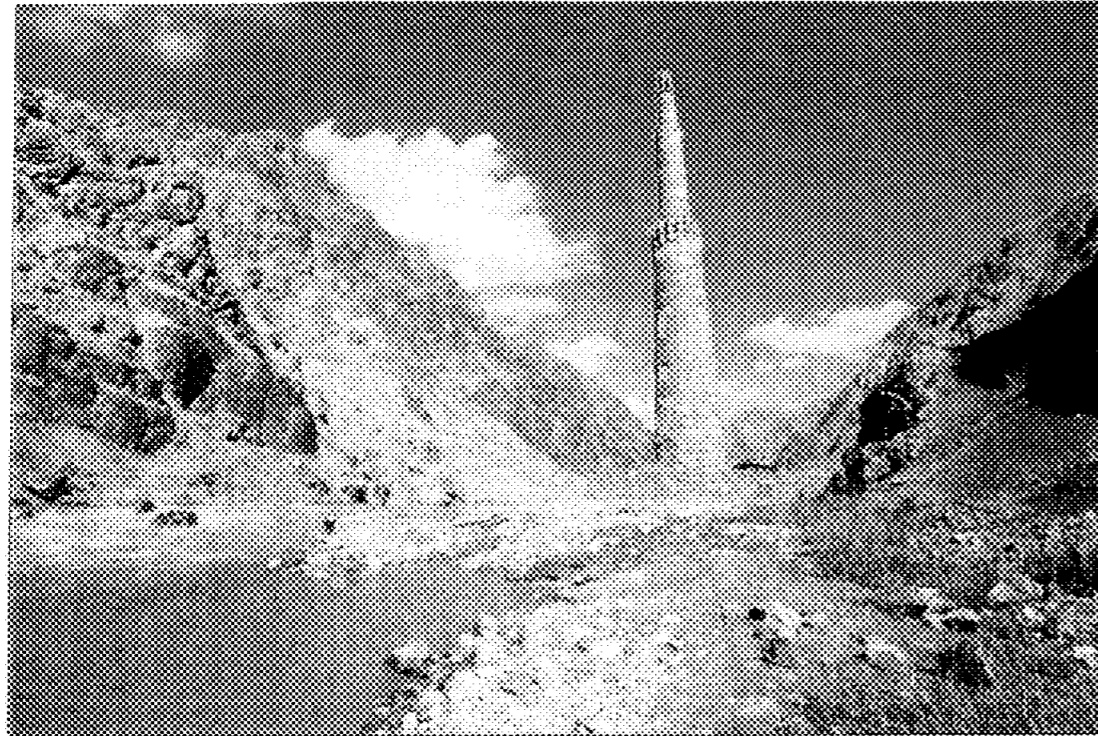
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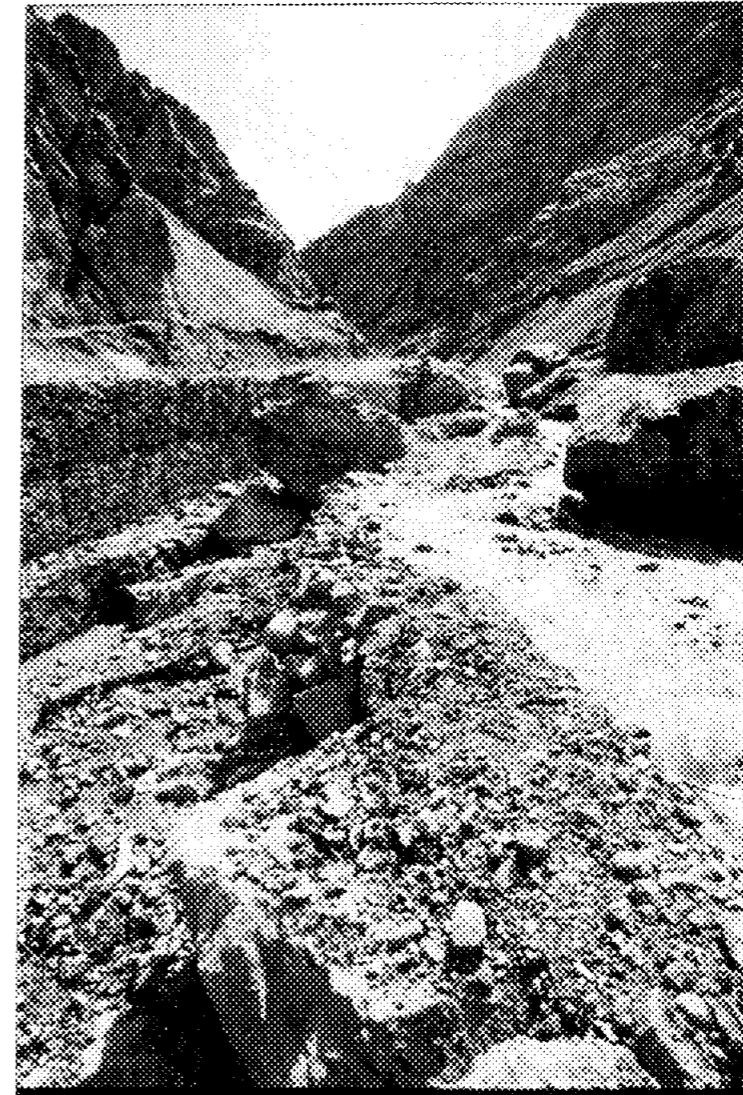
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Western view of the minaret



Mouth of the Jam Rud coming down to the plain



Protective cages realized on the Jam Rud



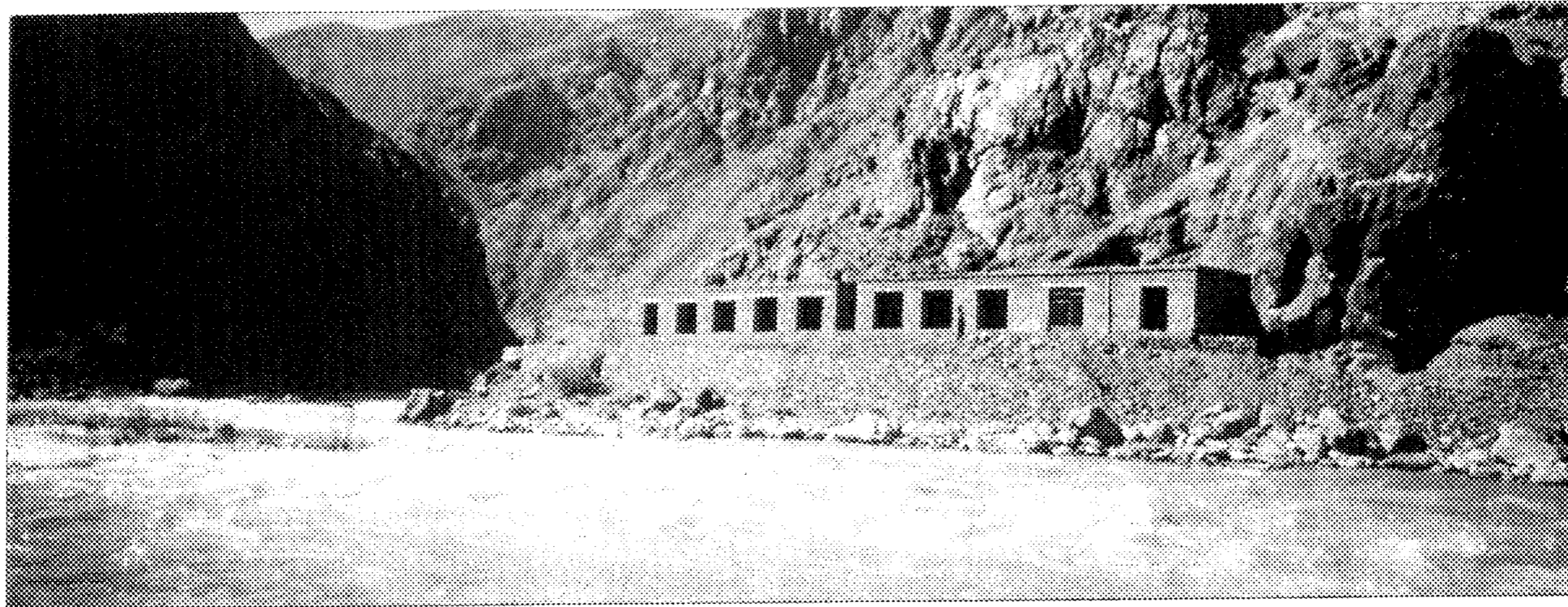
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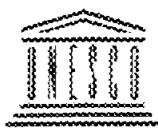
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The Hari Rud down to the plain of the minaret. A new building for the workers employed in the construction of the planned street



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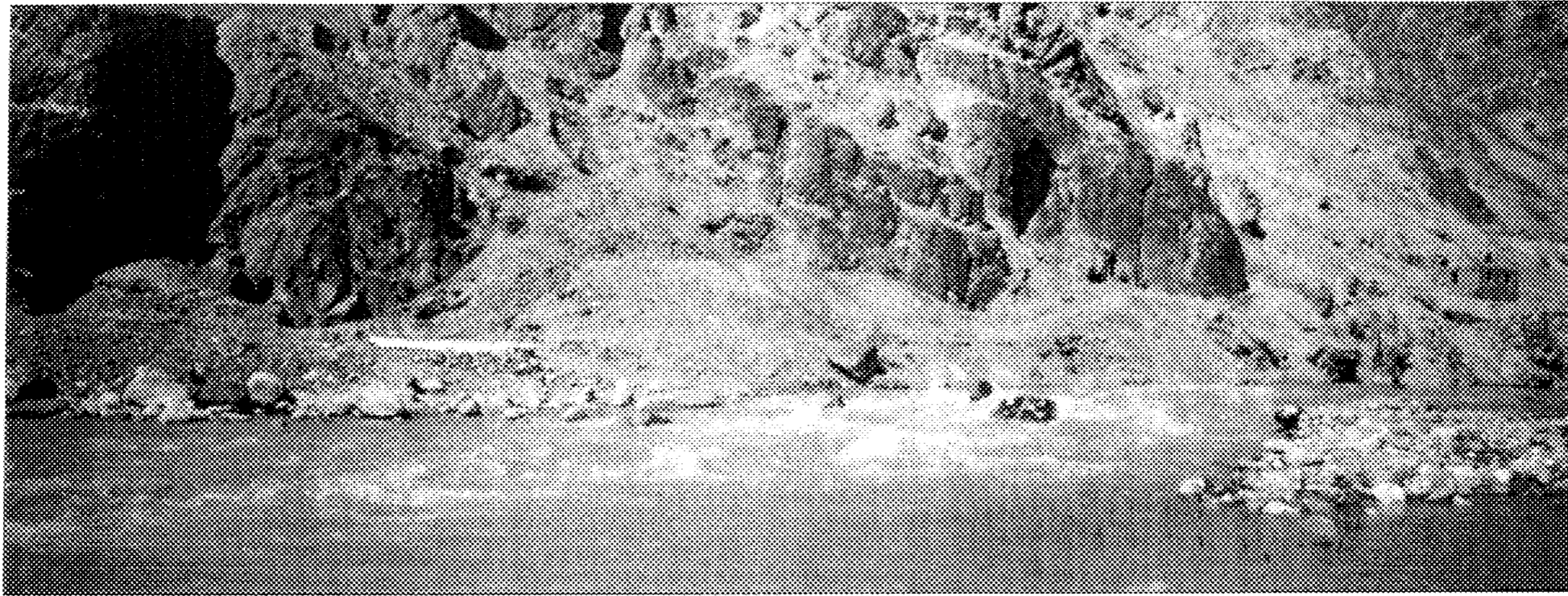
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The water-course of the Hari Rud down to the plain



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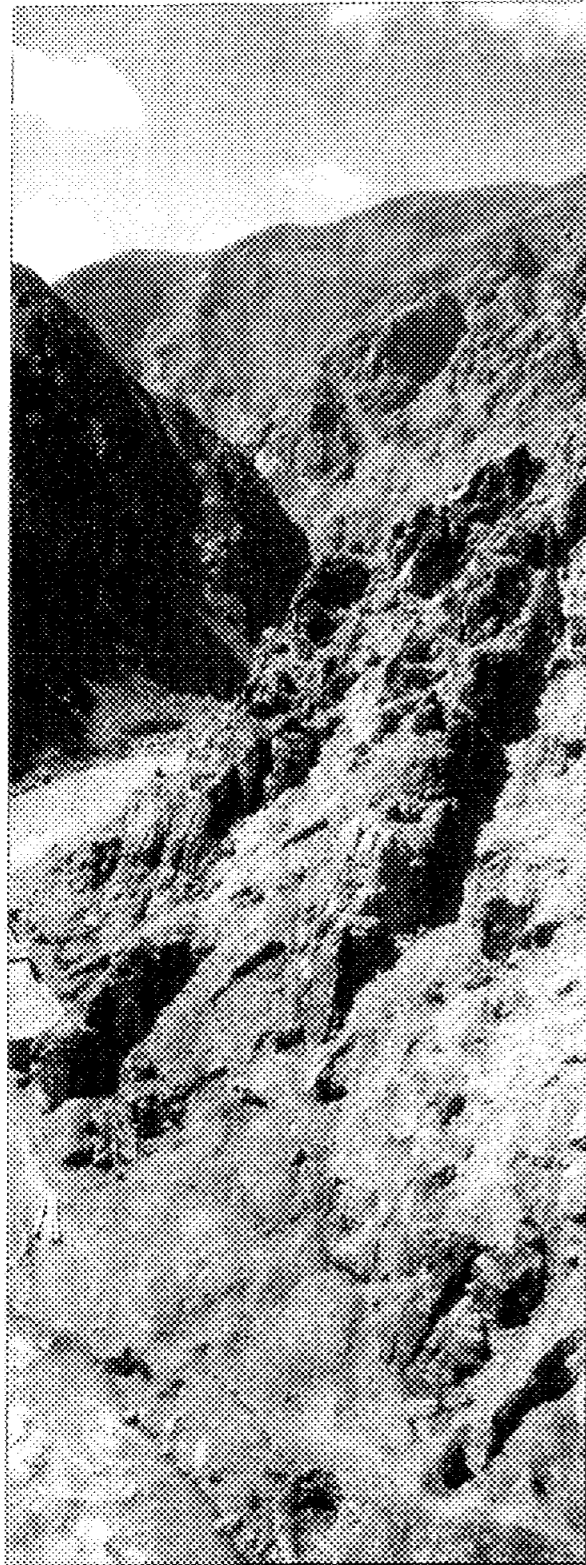
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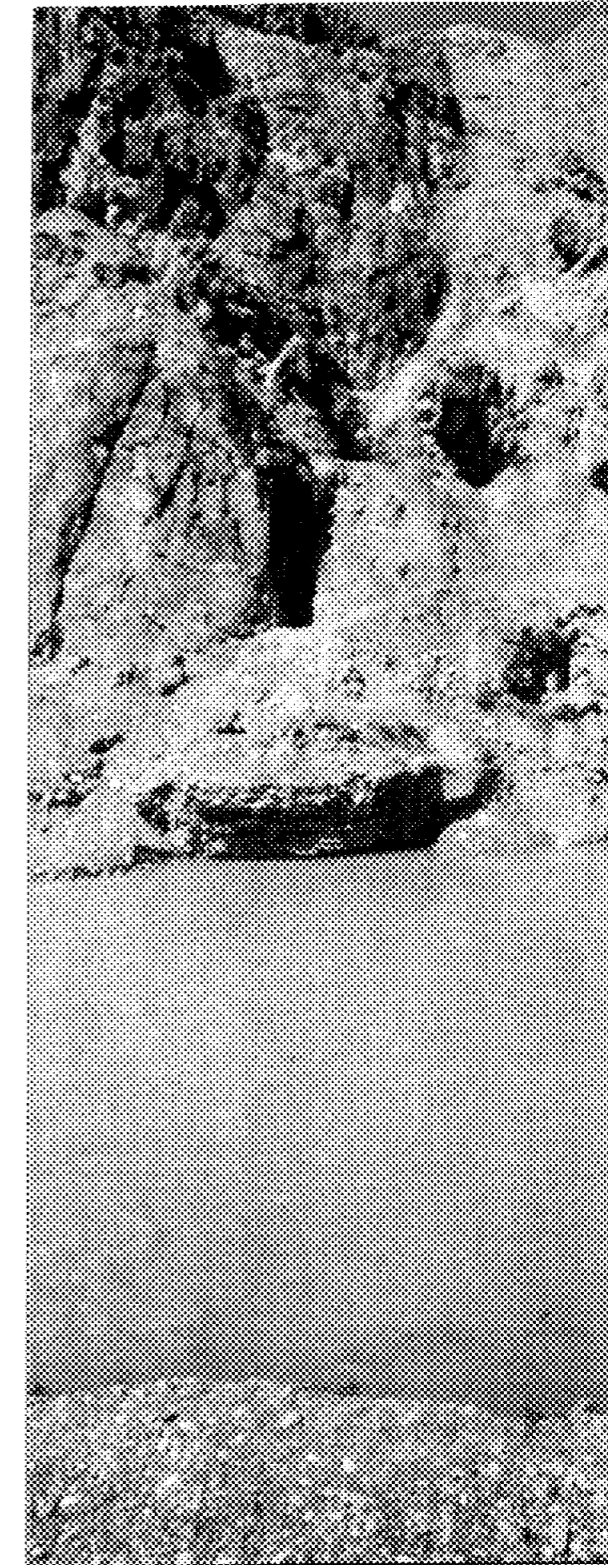
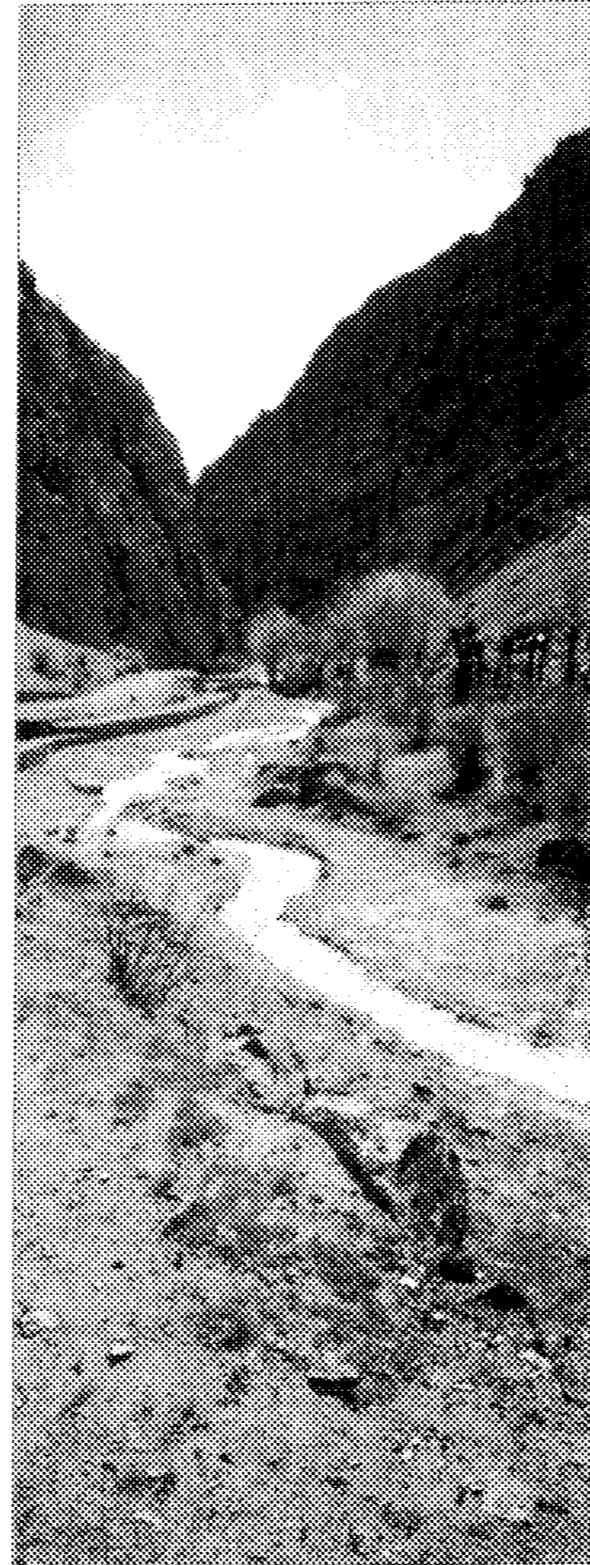
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The water-course at the foot of the Jam Rud



Traces of the base of the bridge
on the opposite side of the minaret



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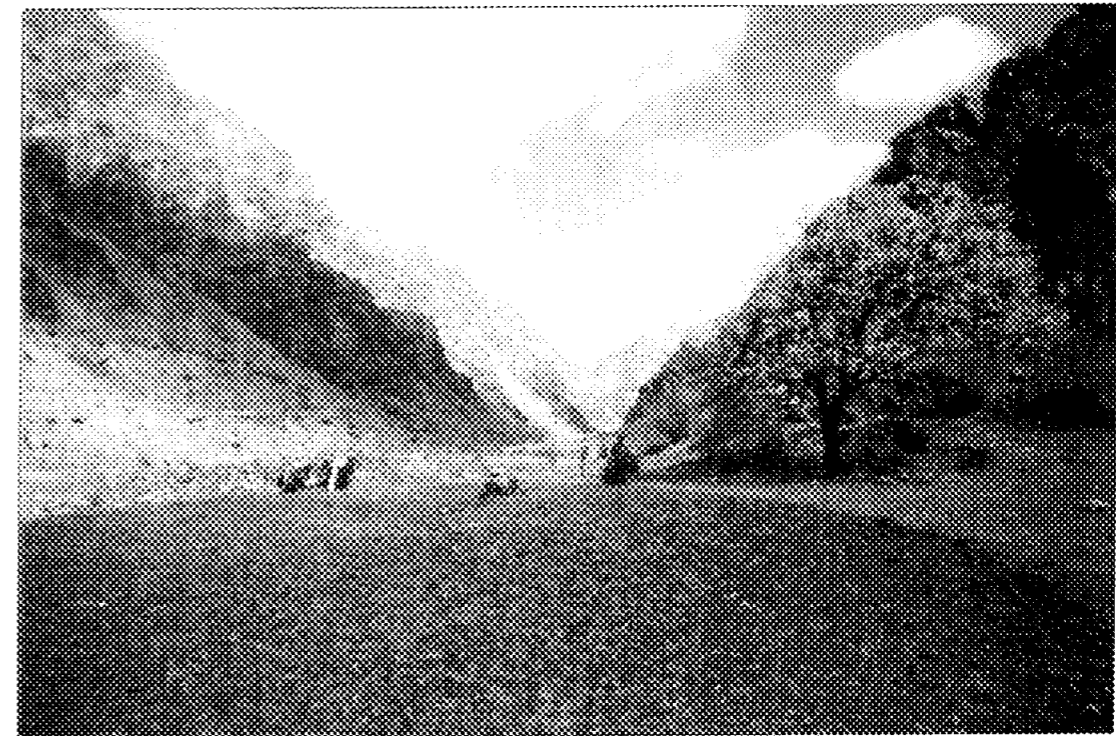
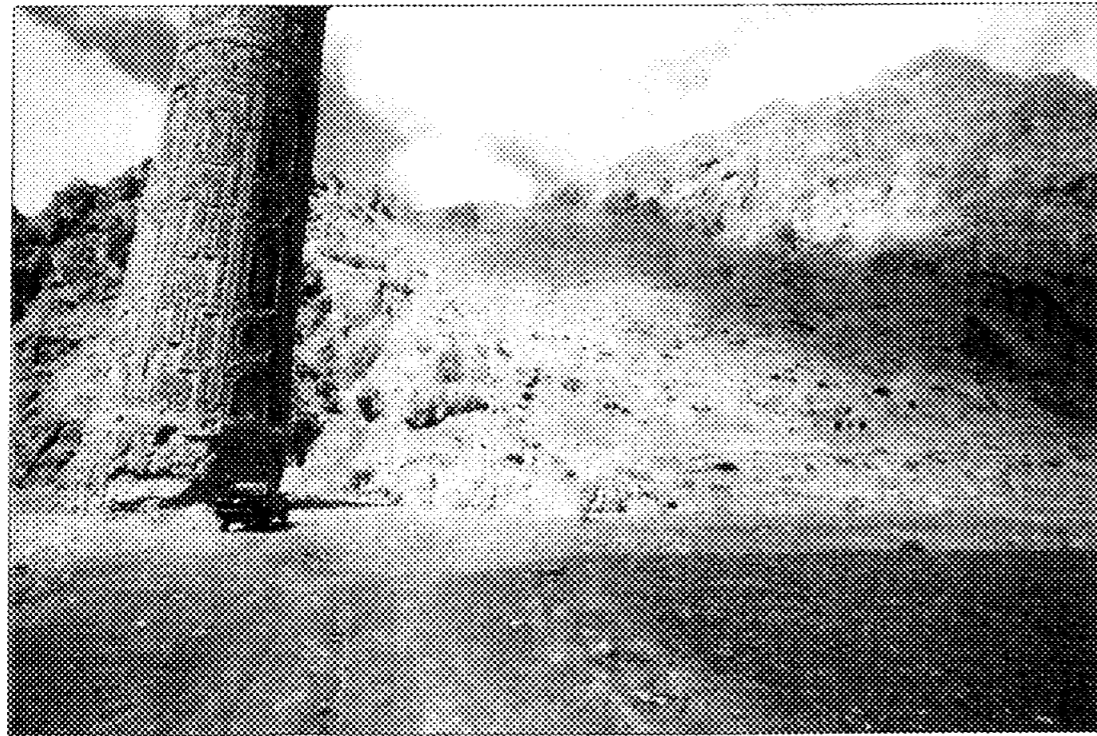
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Views of the sight around the minaret



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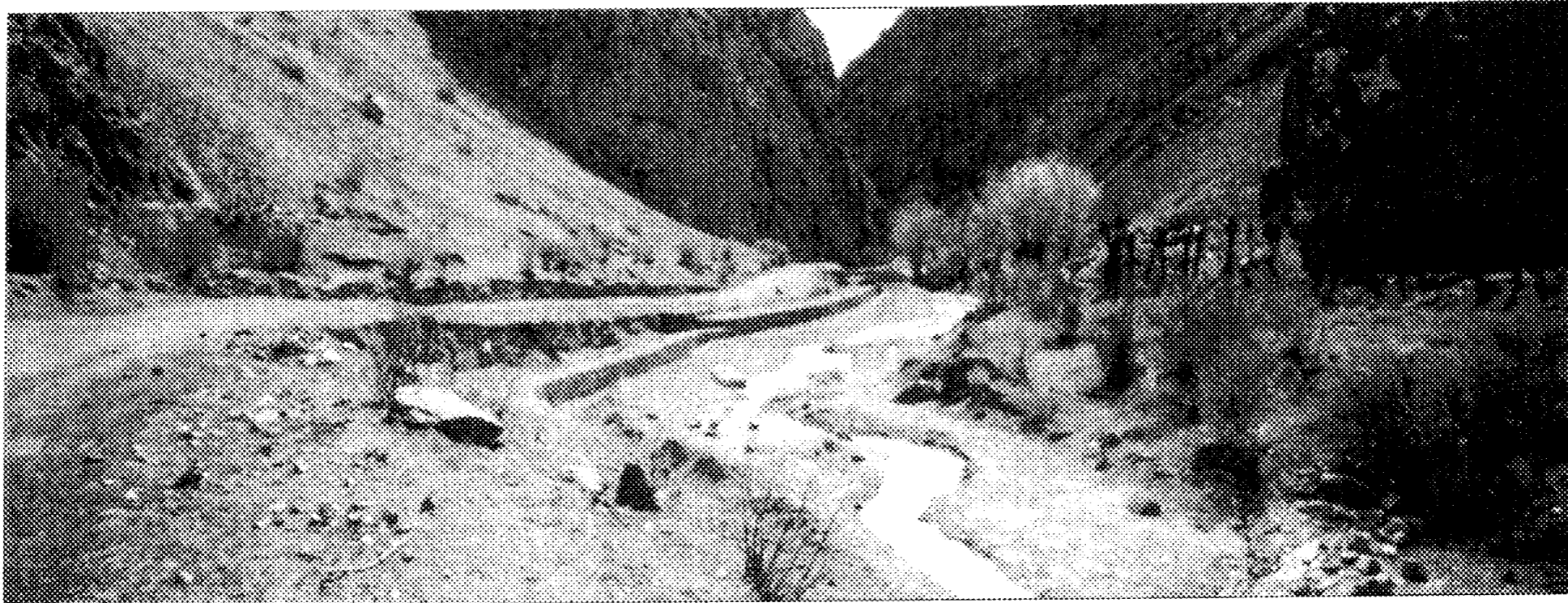
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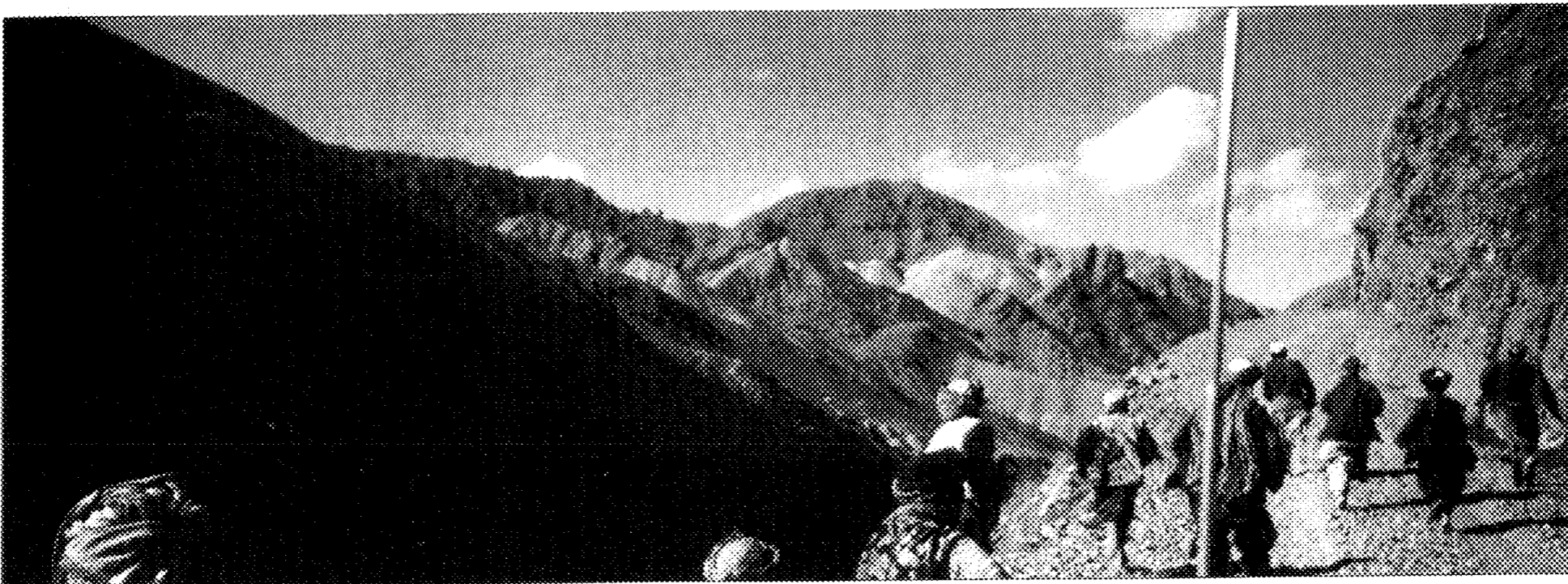
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The ending part of the Jam Rud close to the basement of the minaret



Inhabitants of the Jam village going to the minaret to wait for the arrival of the helicopter



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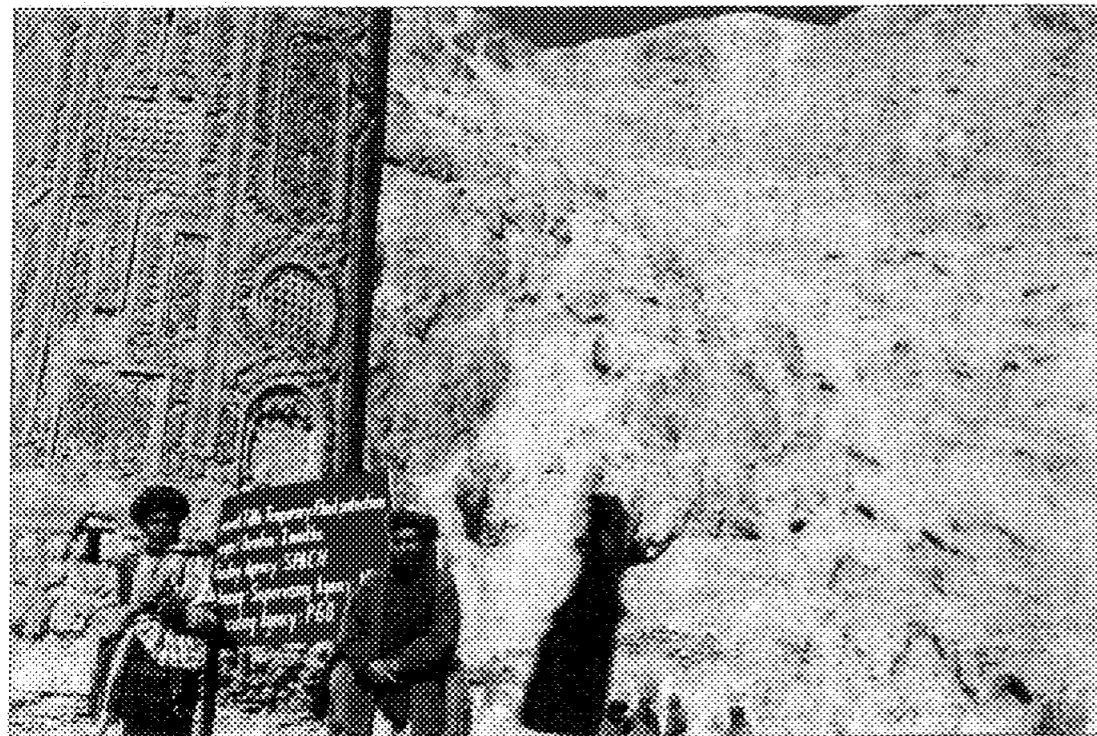
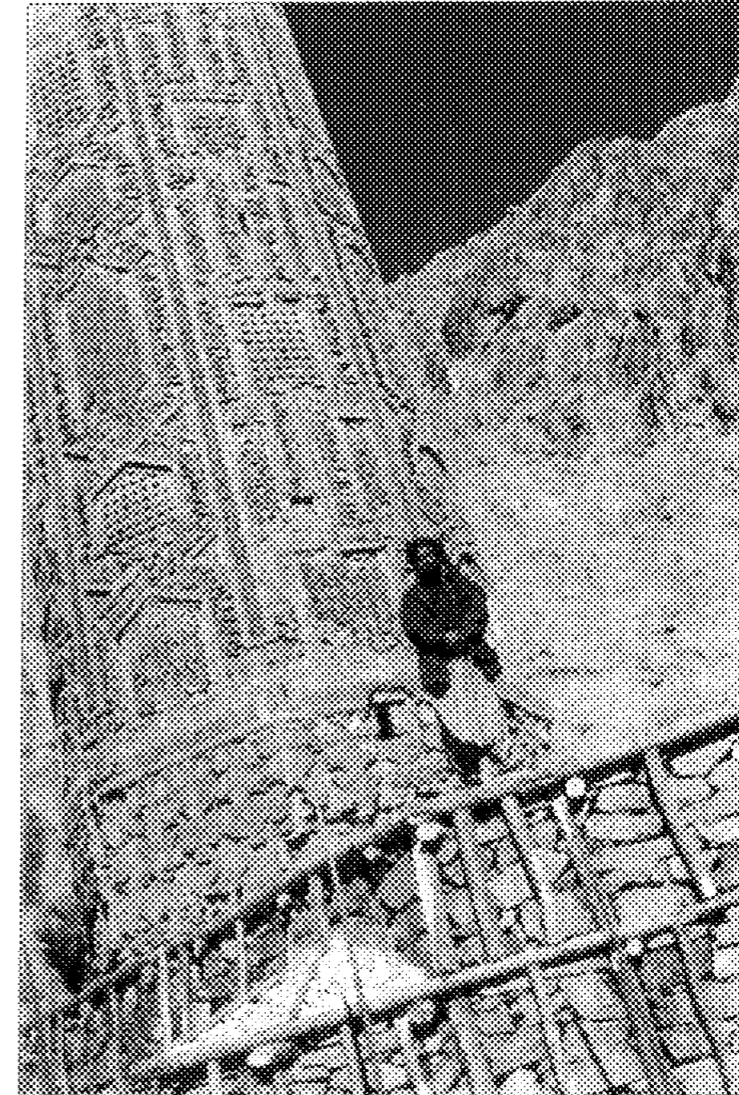
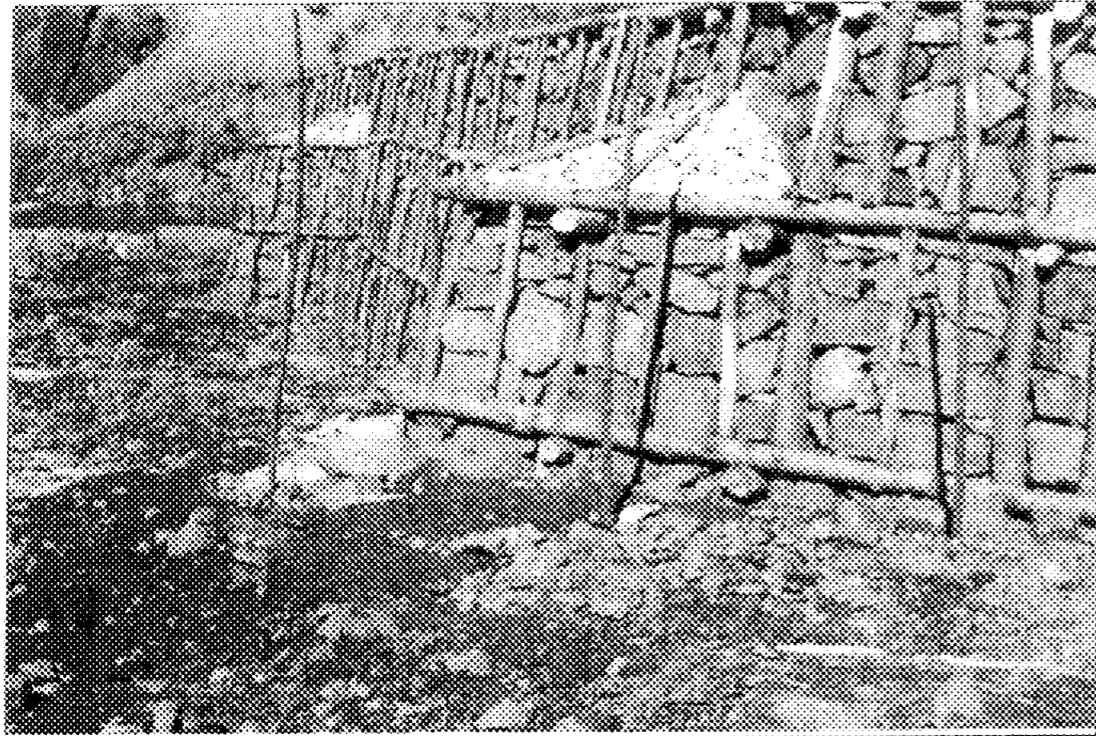
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JAM MINARET
HISTORICAL PHOTOGRAPHS
(1970-2000)



First works realized by SPACH to protect the basement of the minaret (photos by M. E. Akbari)



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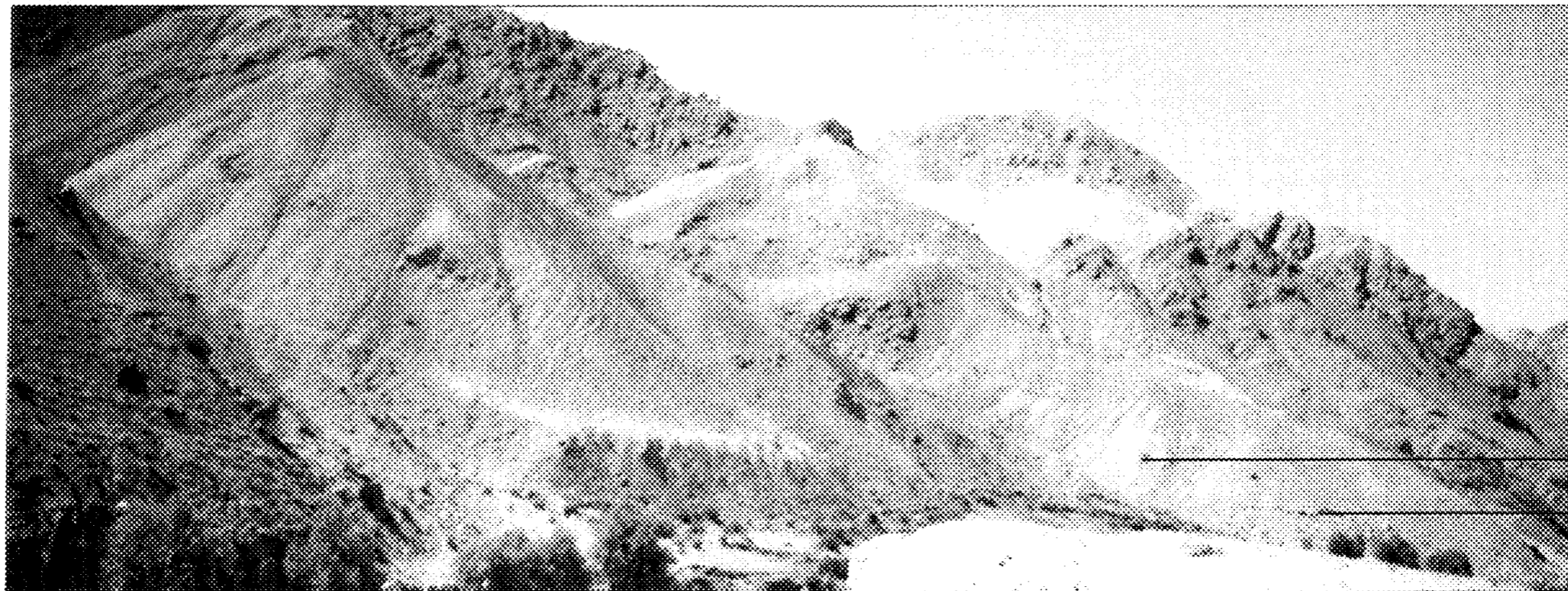
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MINARET OF JAM - 2000



The route from the village of Jam to the minaret



traces of recent excavations

In this area in 1961 funeral stones with persian-judaic inscriptions were found



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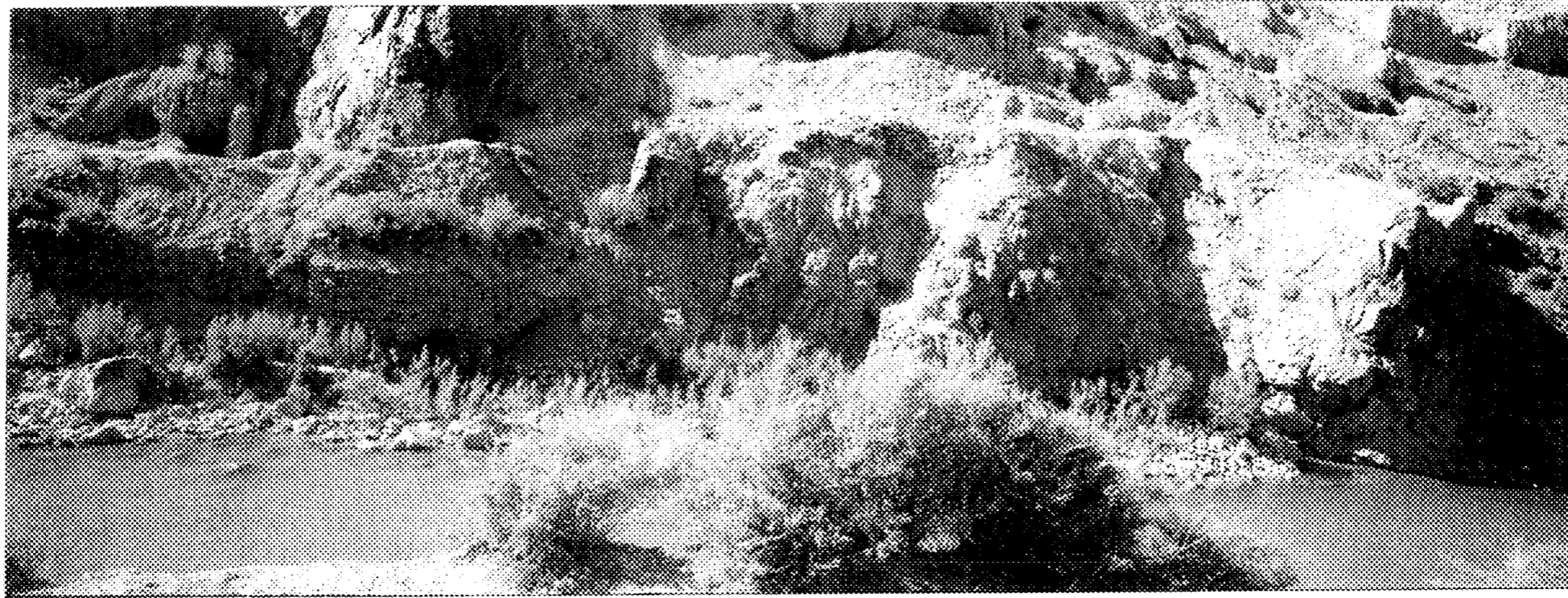
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Existing situation in 1999



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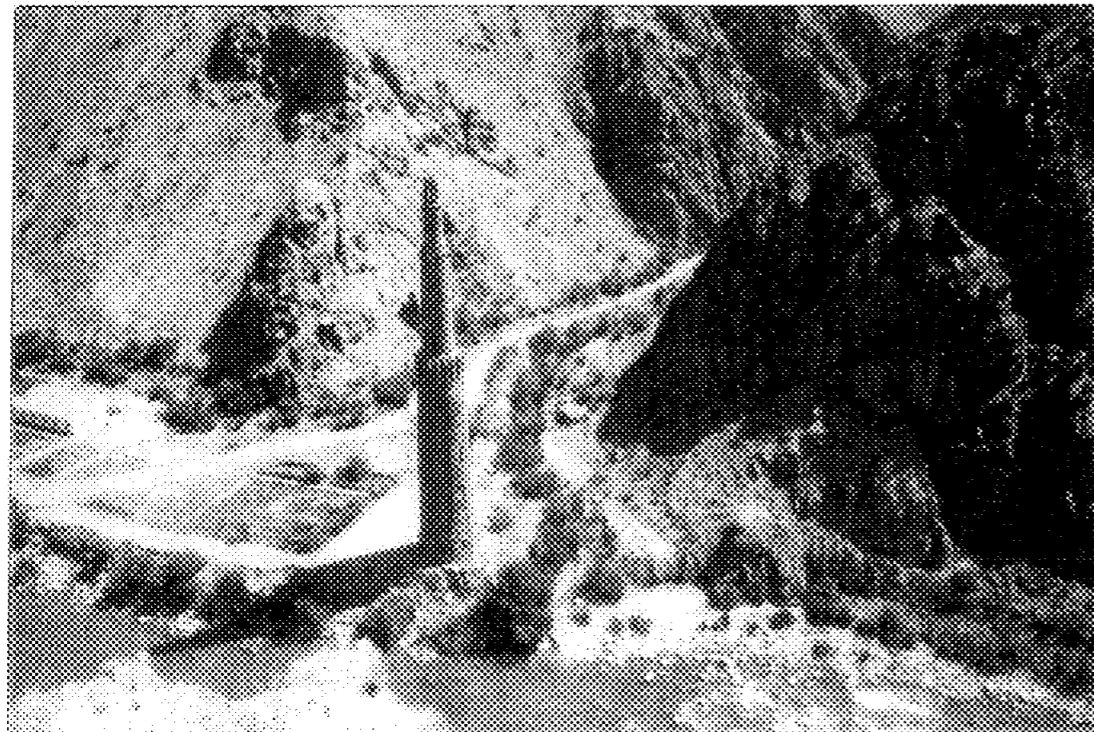
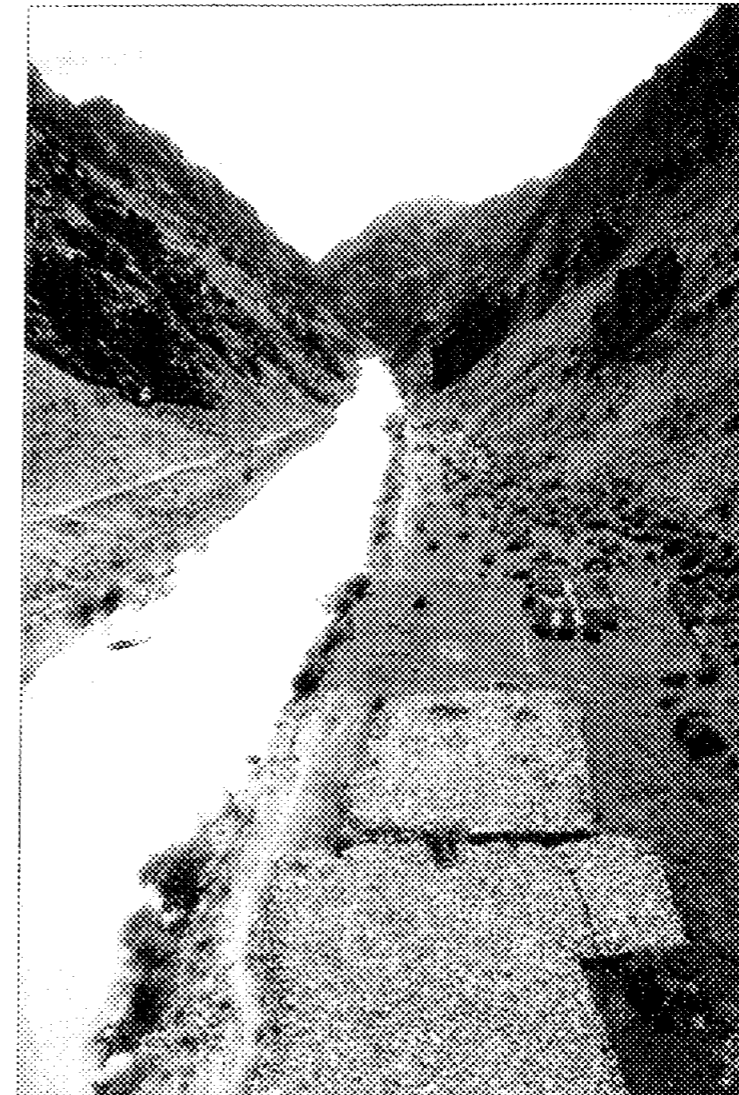
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MINARET OF JAM - 1999



Existing situation in 1995 (photos by Y. O'Connor)



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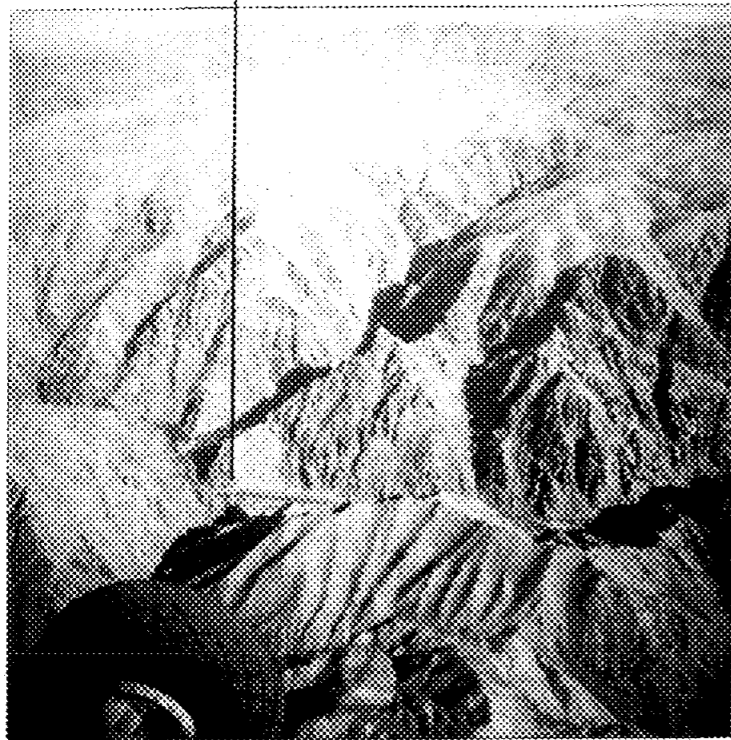
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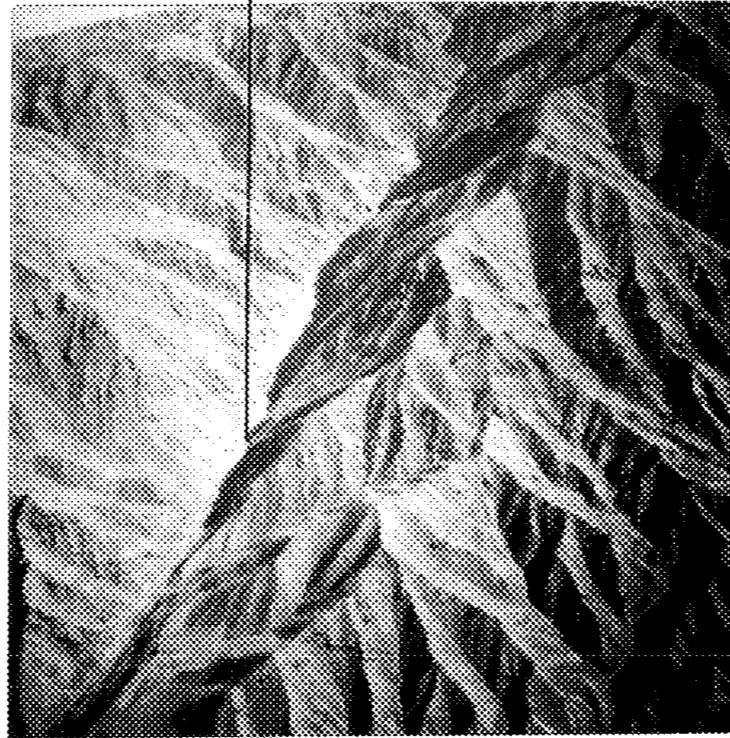
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MINARET OF JAM - 1995

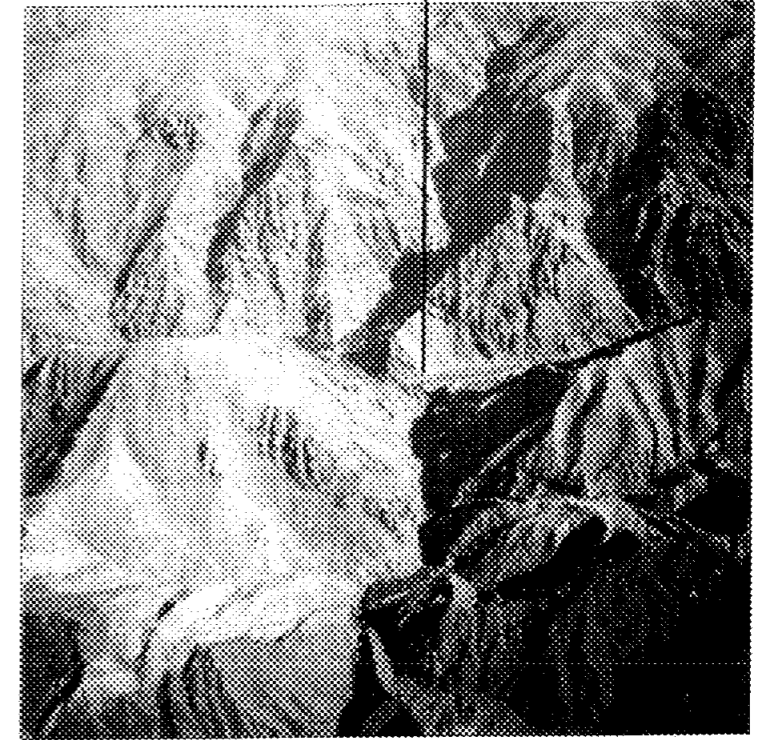
the minaret



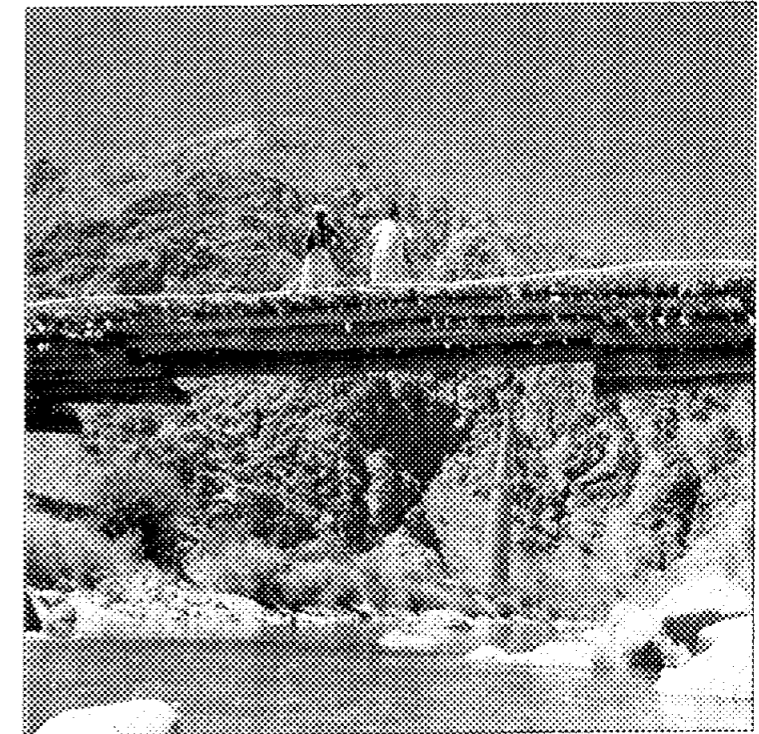
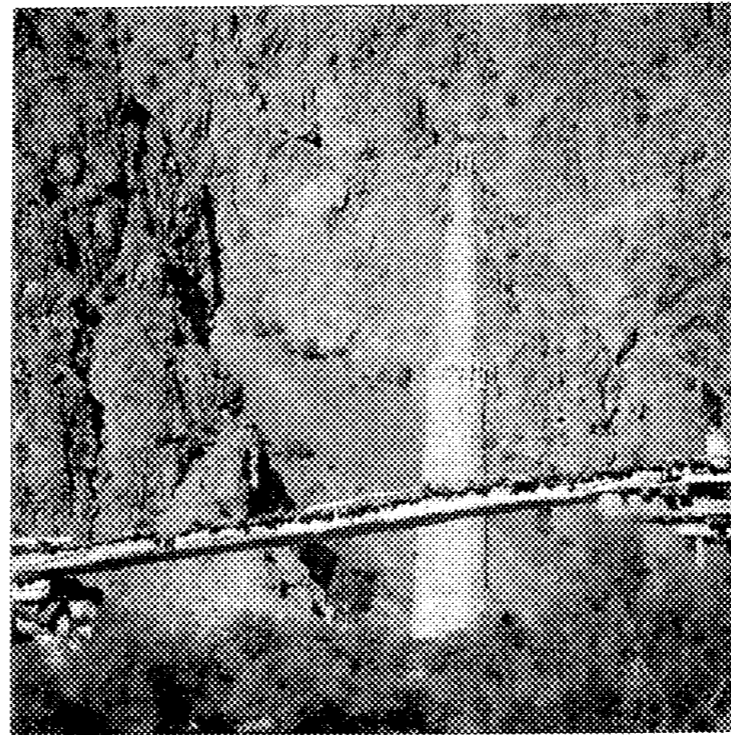
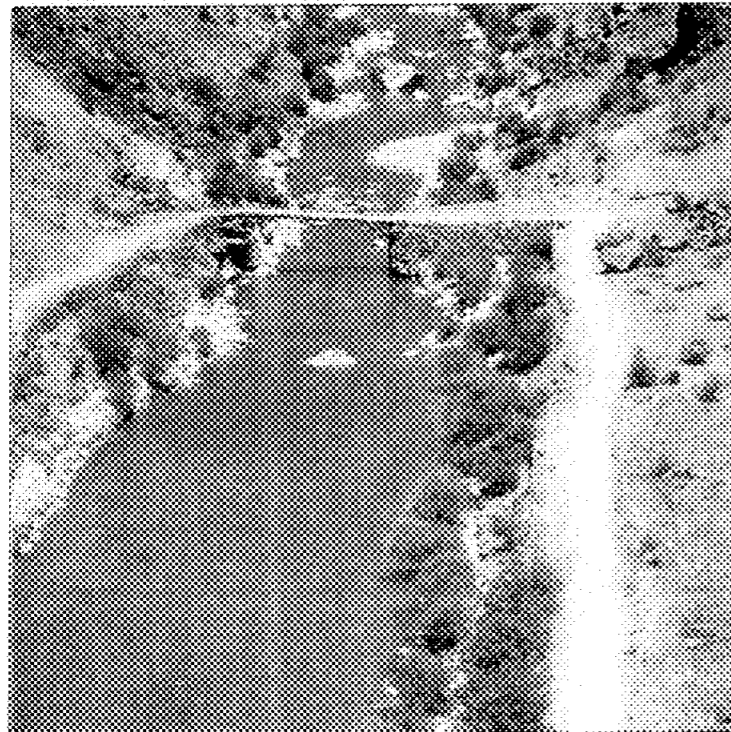
the Hari Rud Valley



the minaret



Aerial views 1976



The wooden bridge built in 1972-73 and now destroyed



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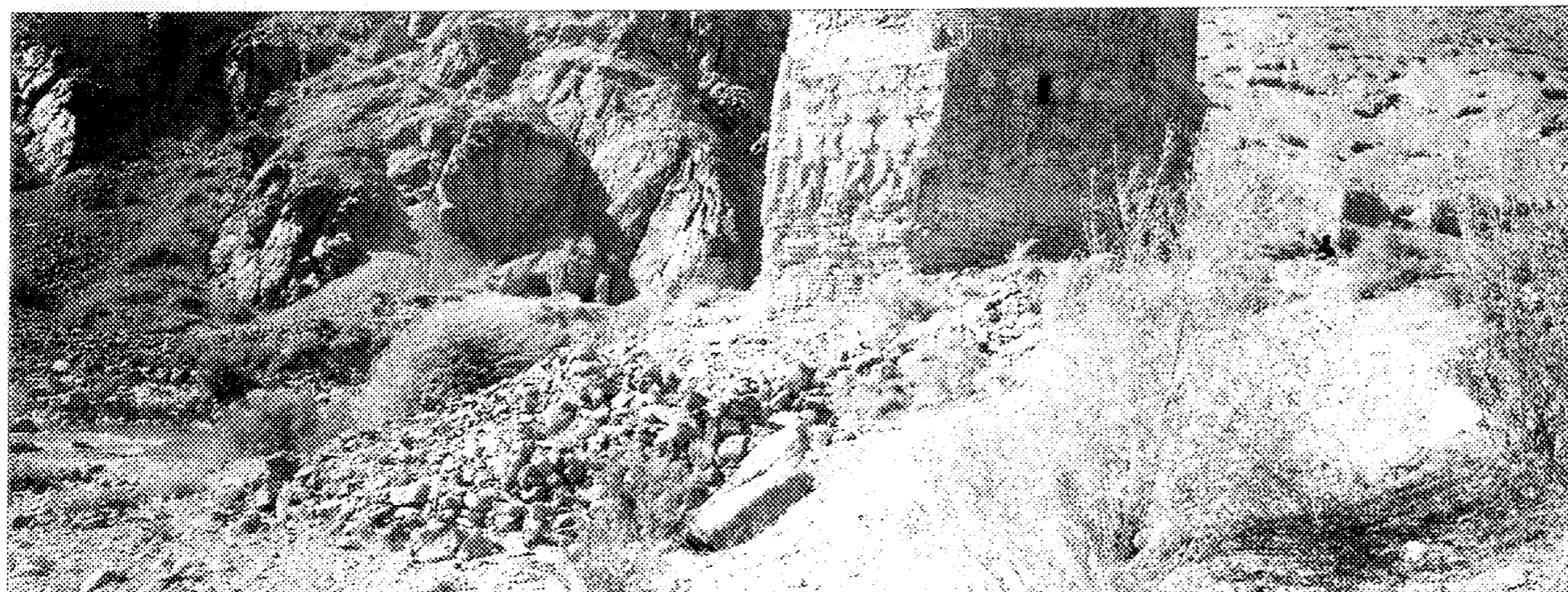
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MINARET OF JAM



1999: every mark of protection has disappeared

Base of the minaret 1999



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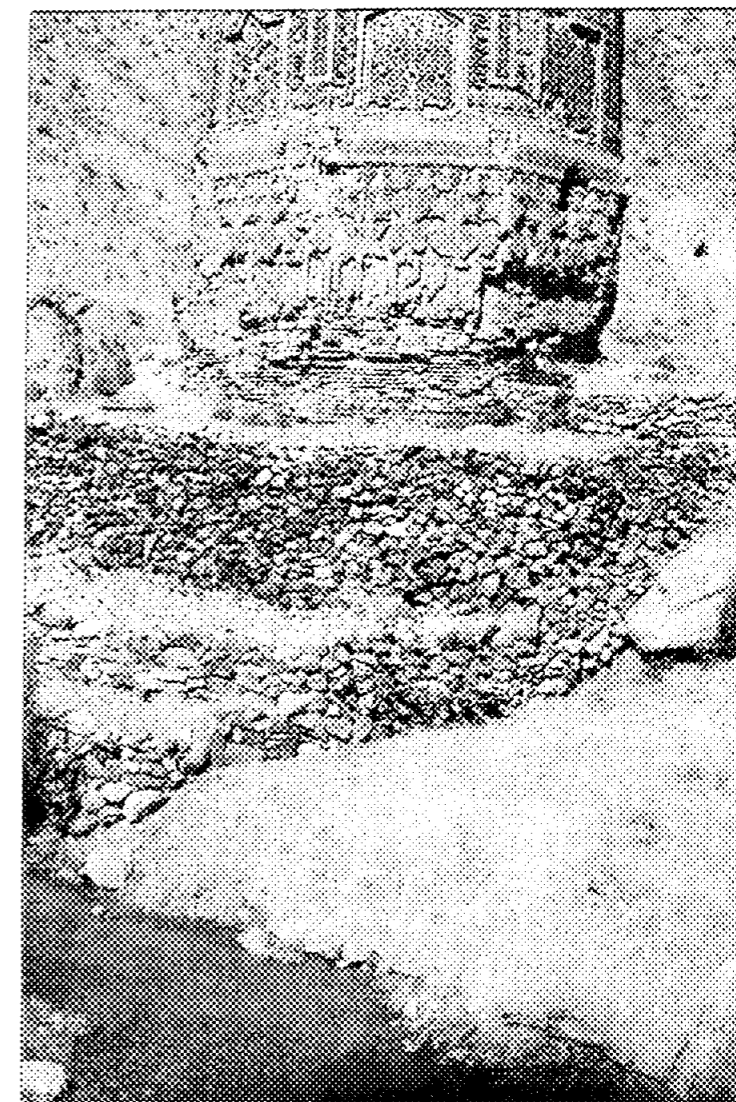
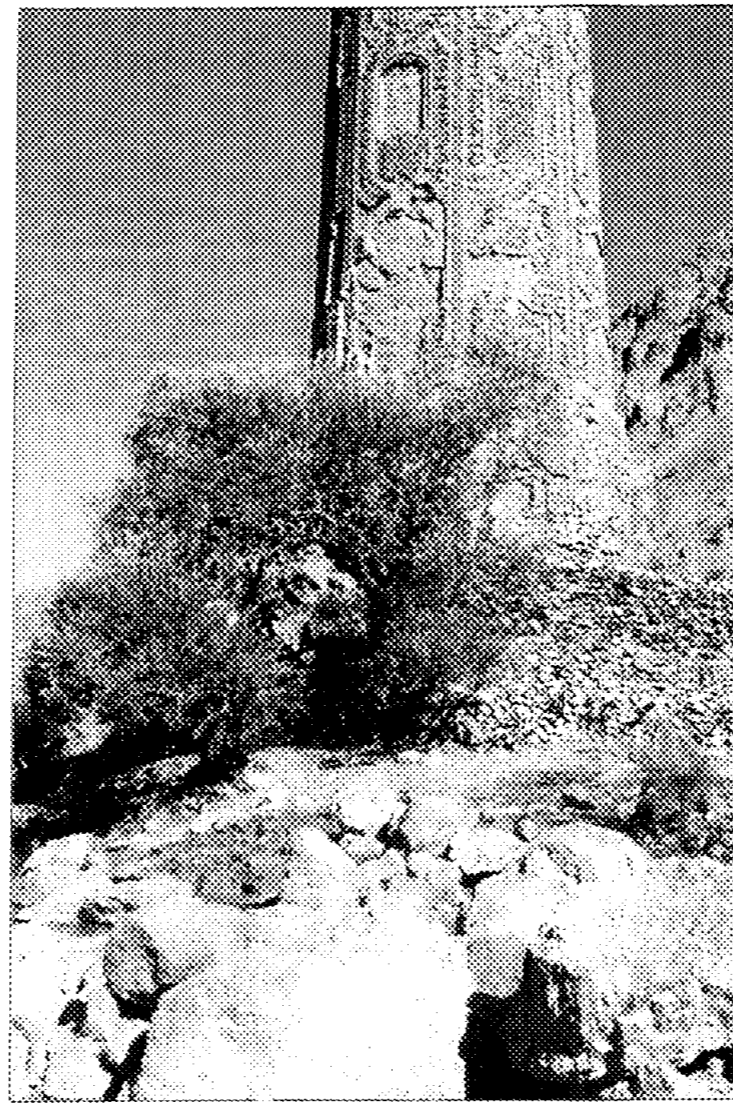
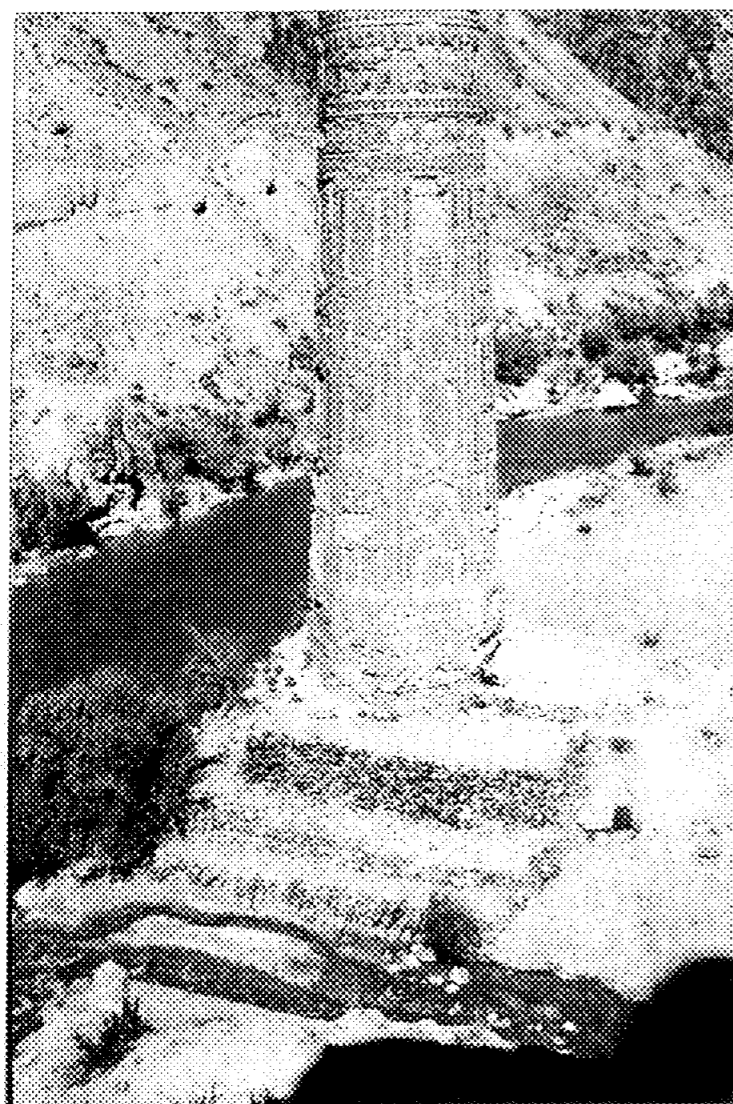
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First works of protection realized in 1963 thanks to the labour of the people of the village of Jam



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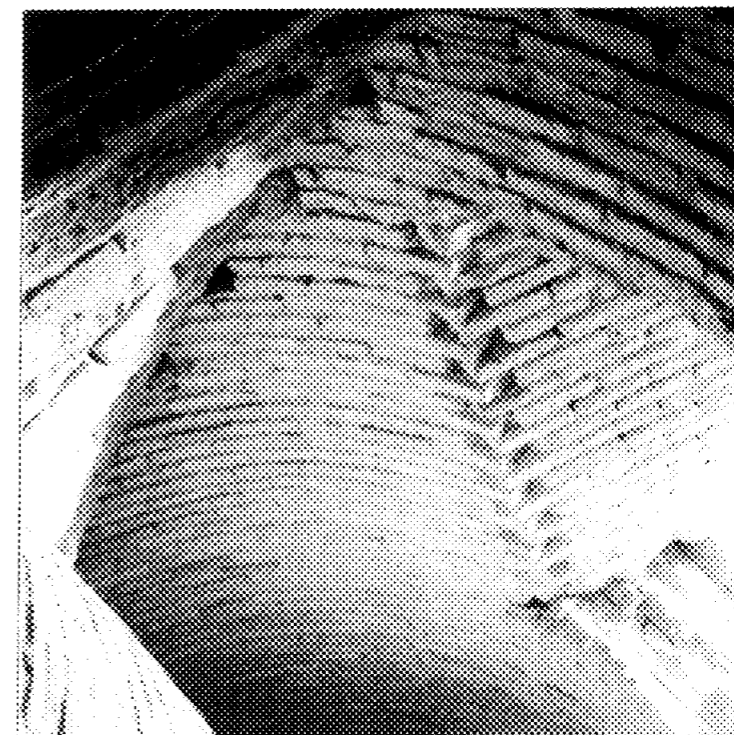
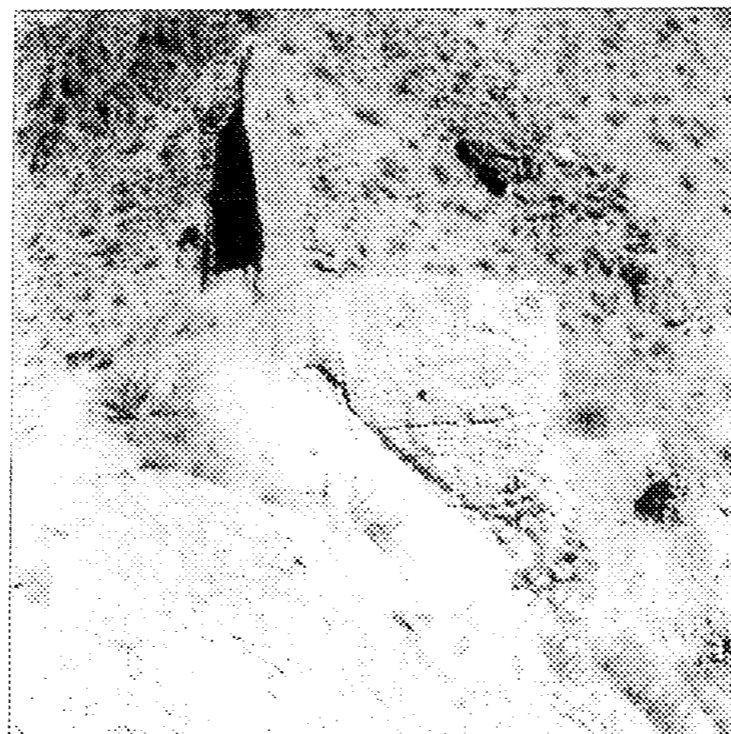
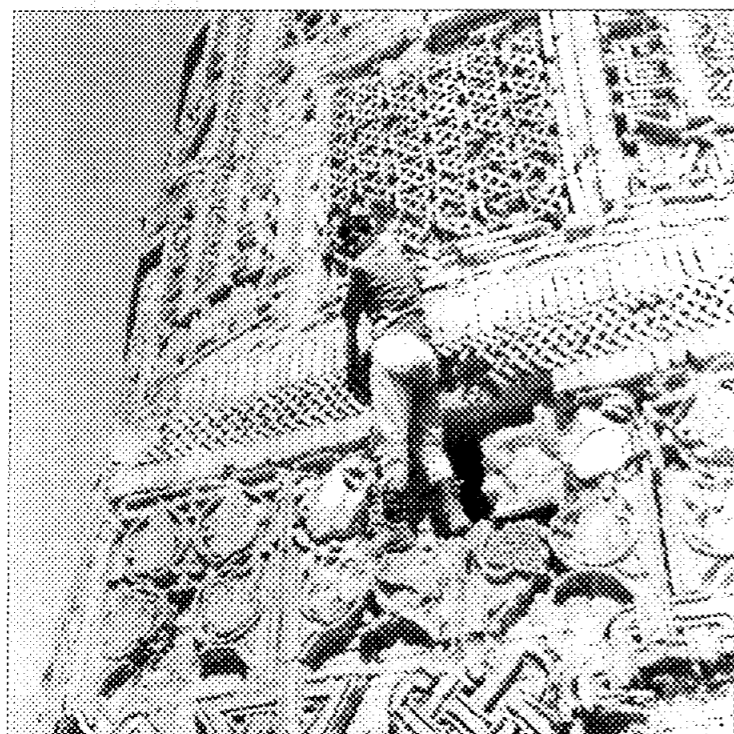
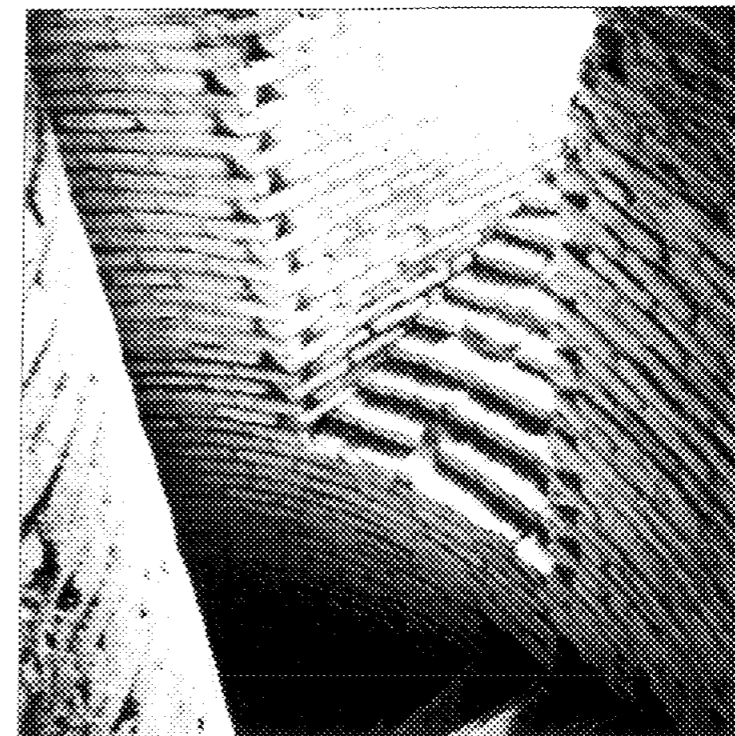
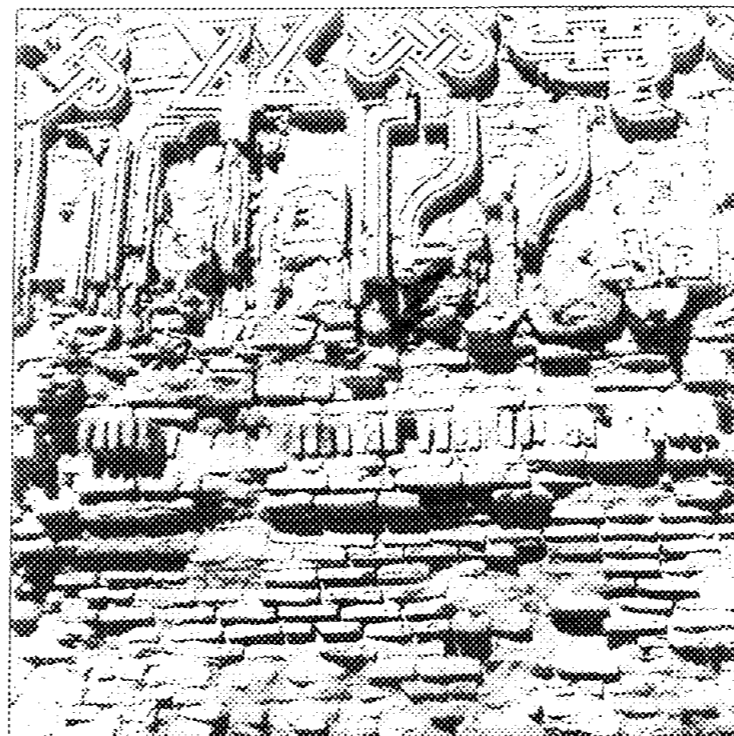
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MINARET OF JAM - 1963



Existing situation in 1963



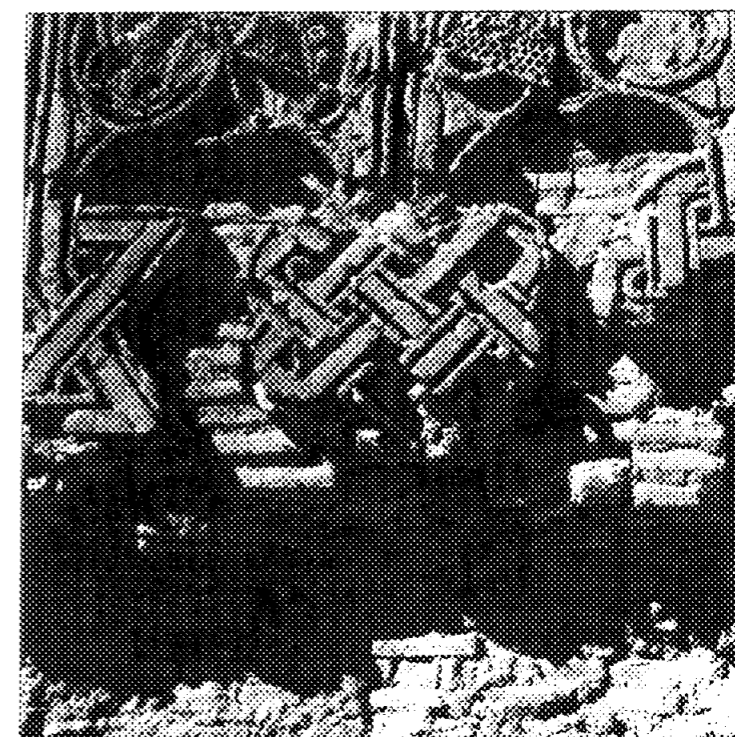
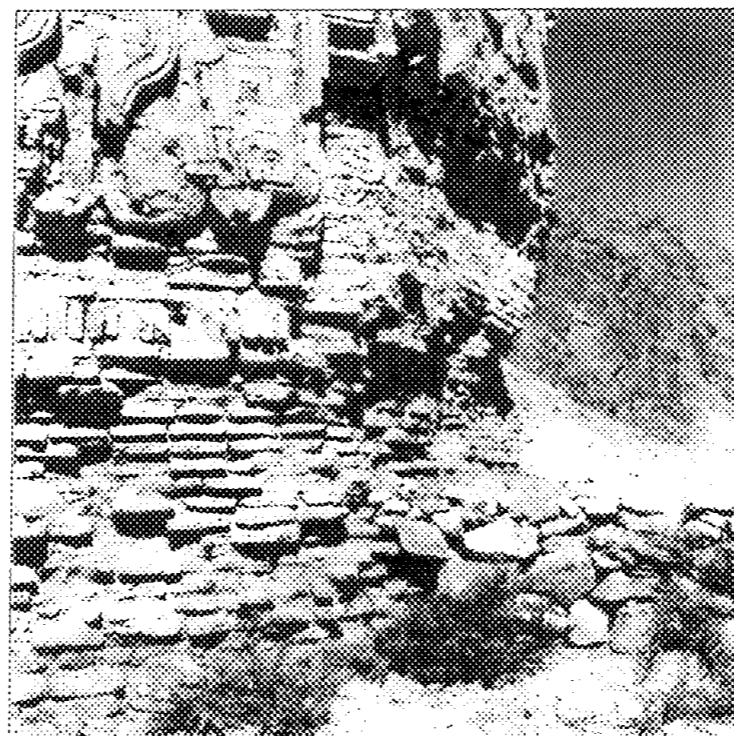
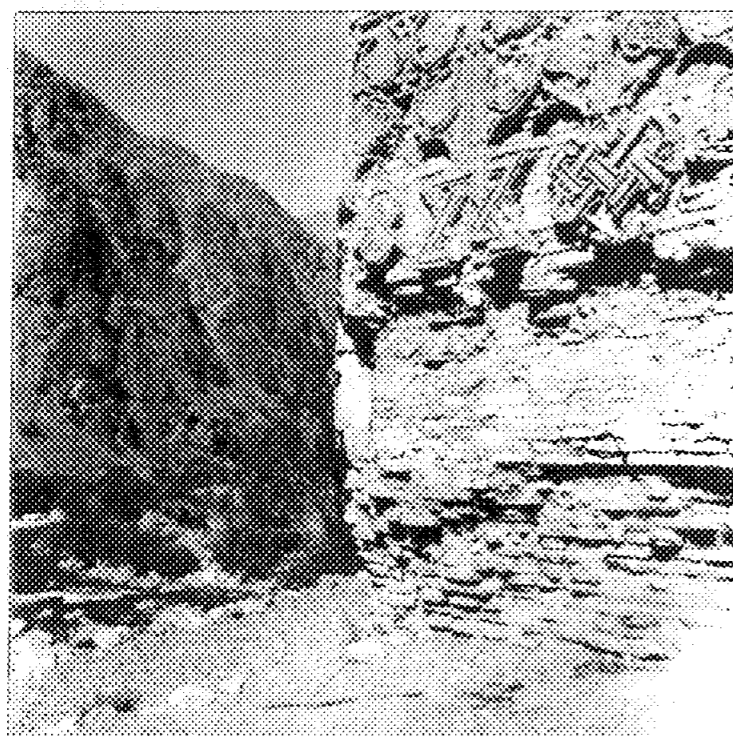
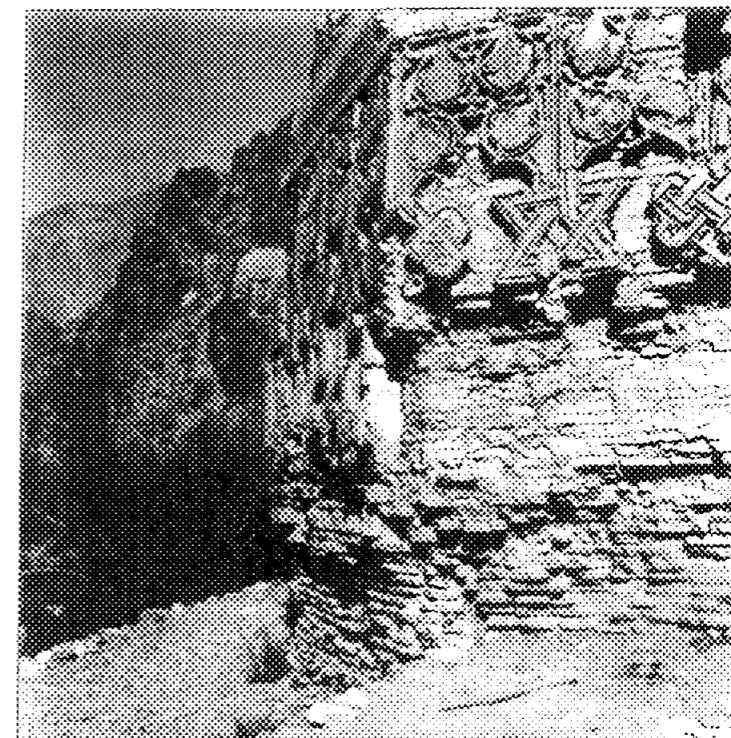
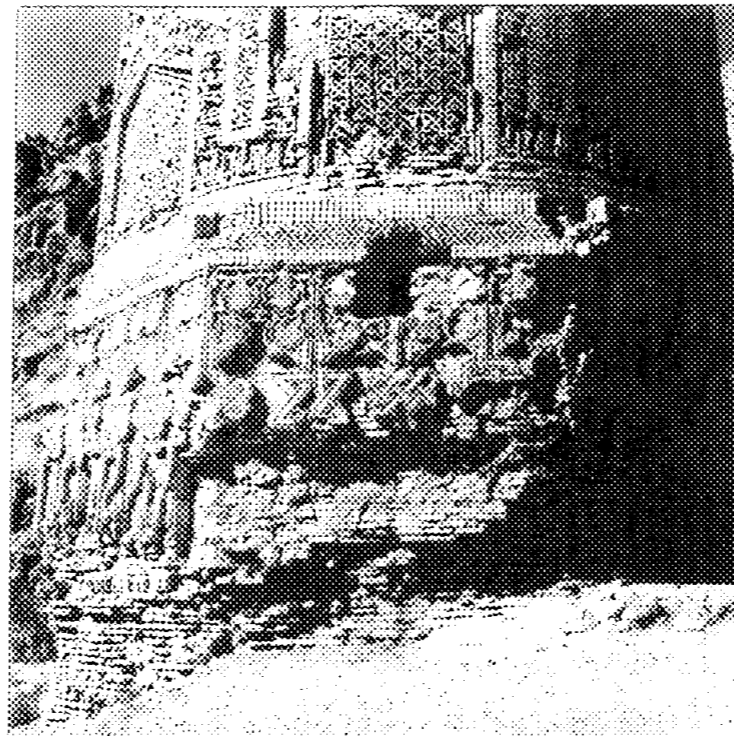
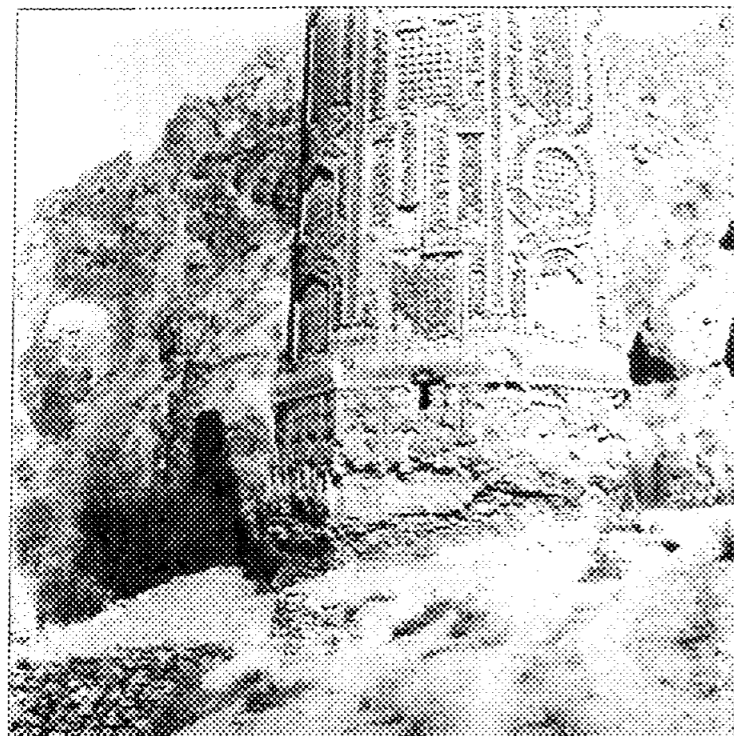
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MINARET OF JAM - 1963



Base of the minaret in 1963



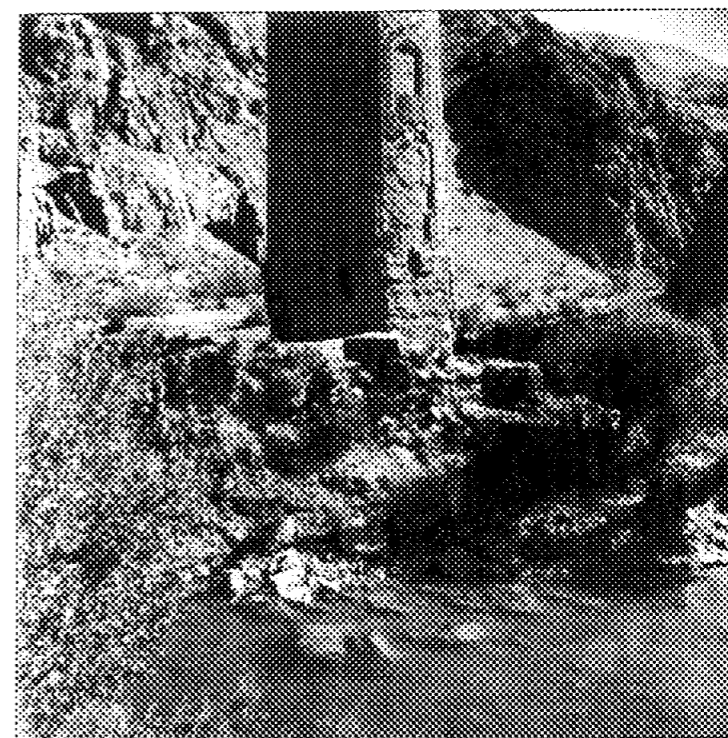
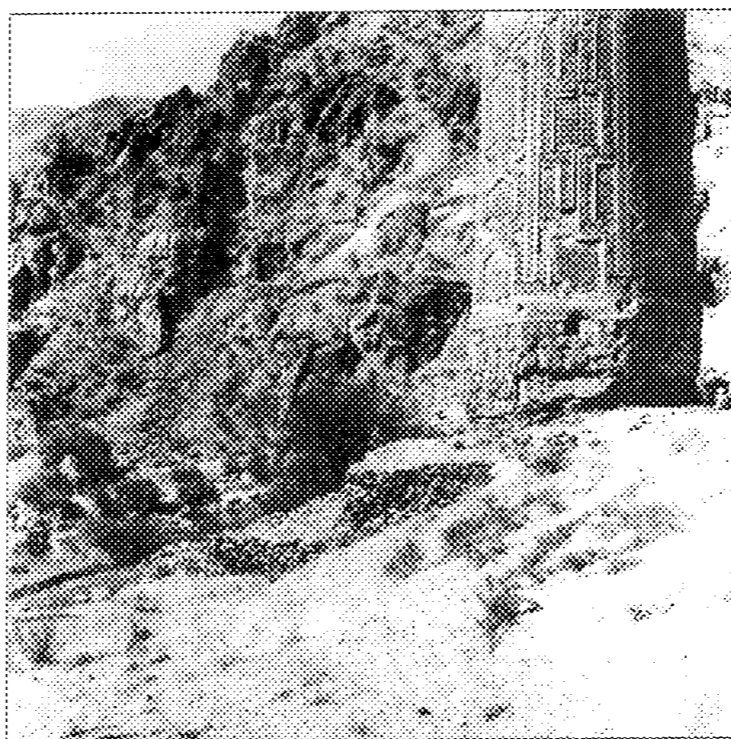
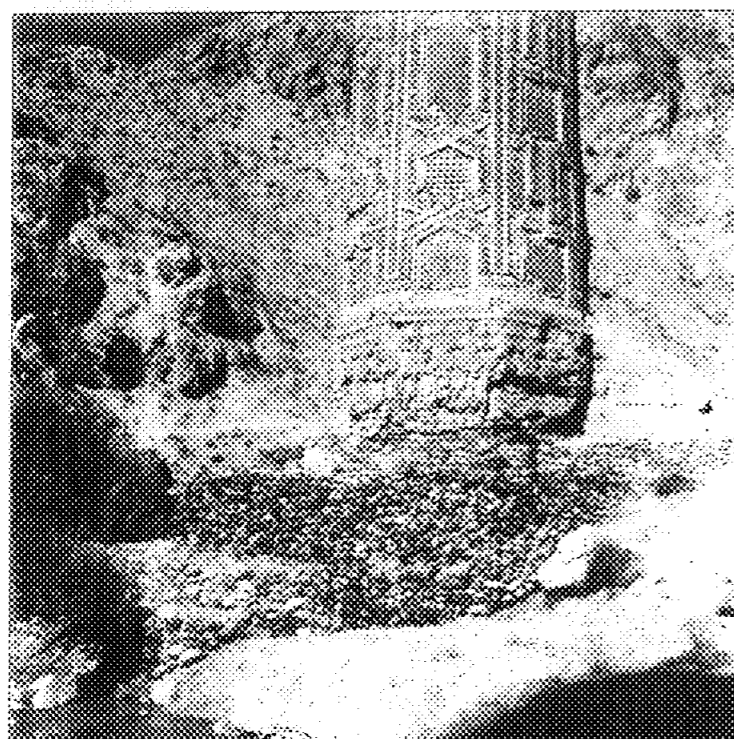
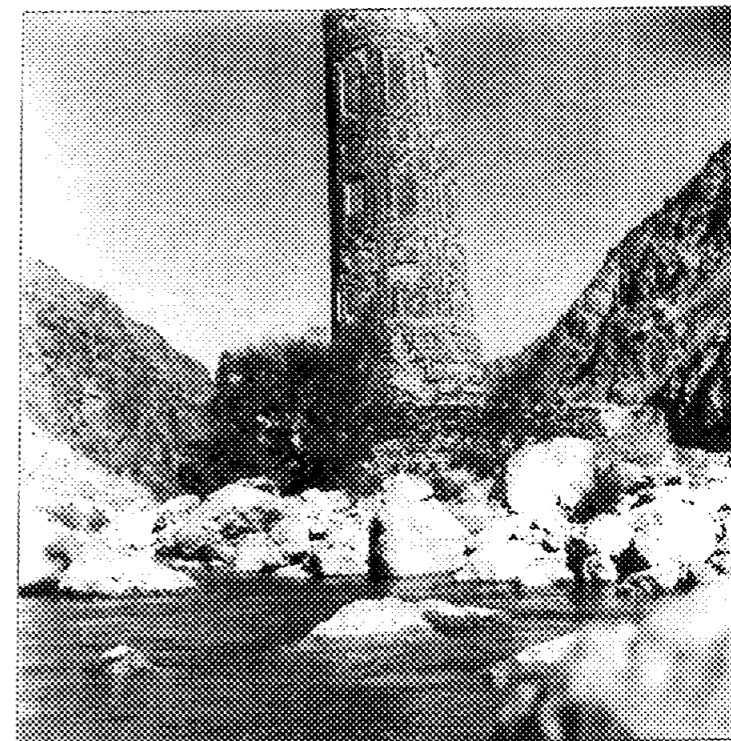
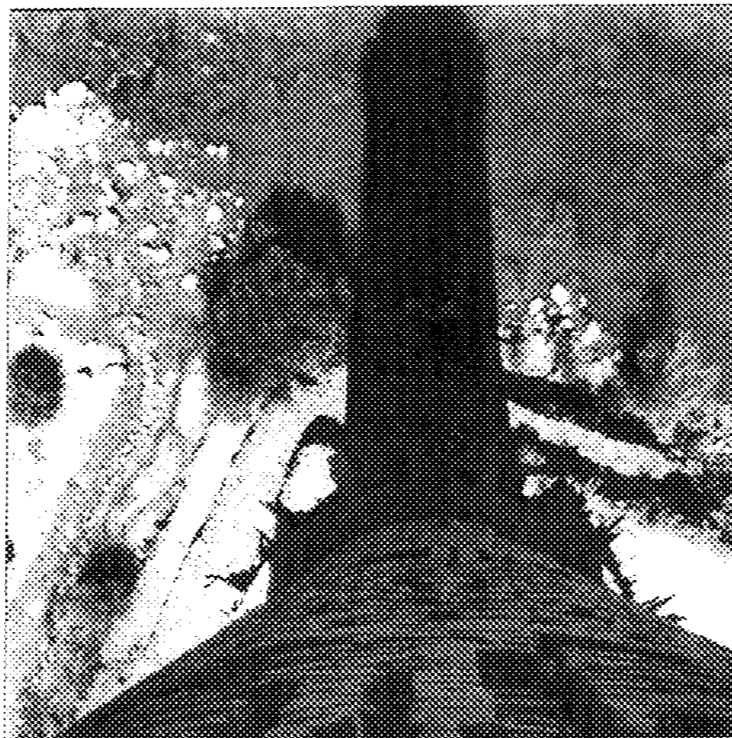
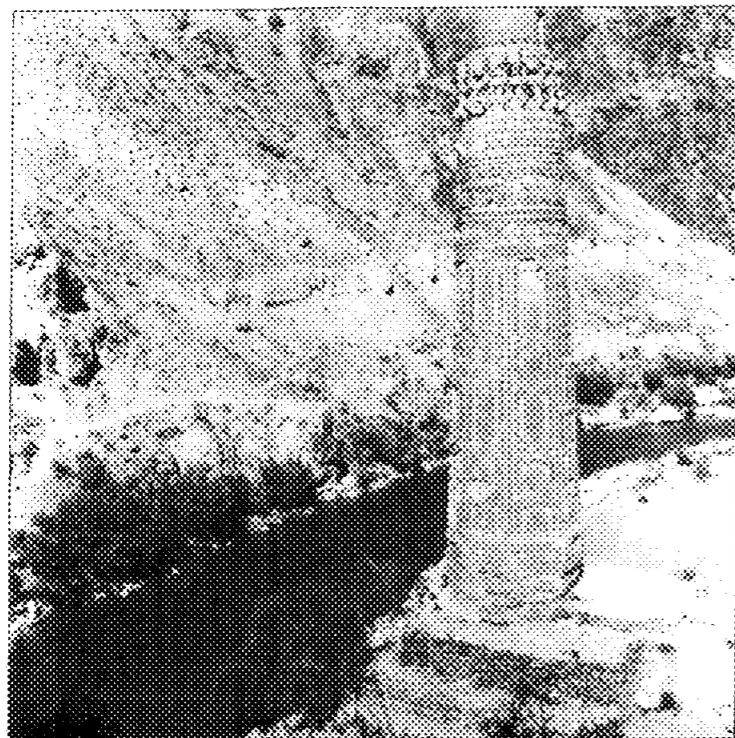
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MINARET OF JAM - 1963



Existing situation in 1963



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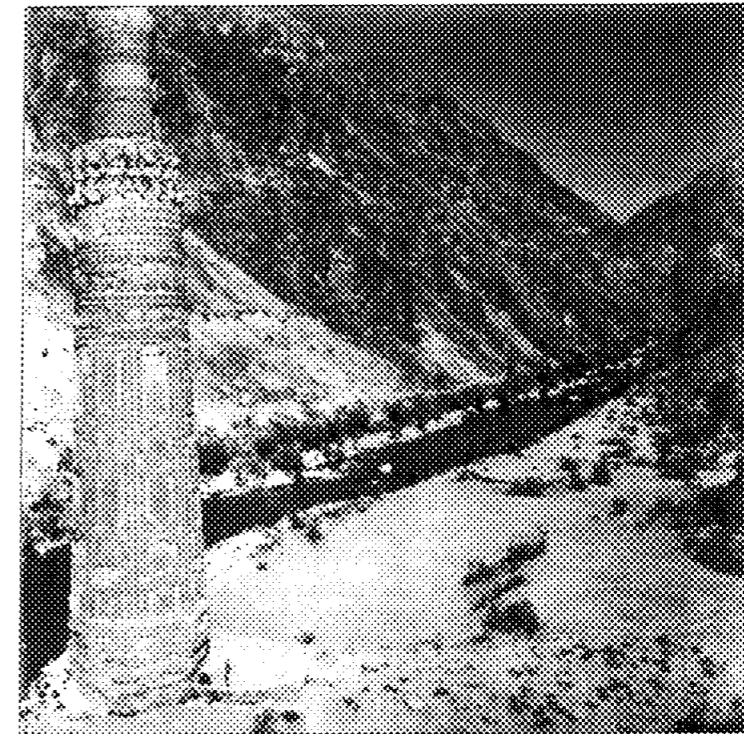
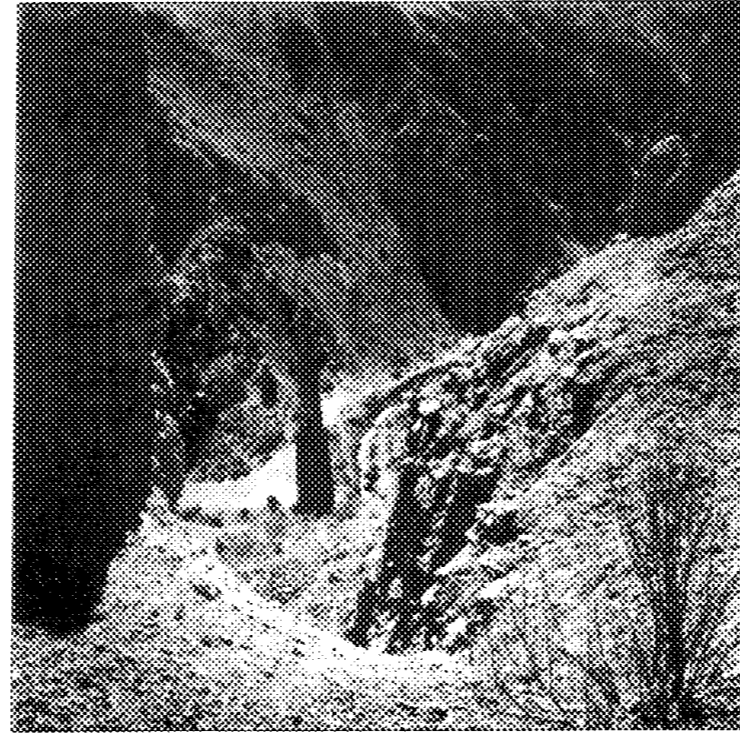
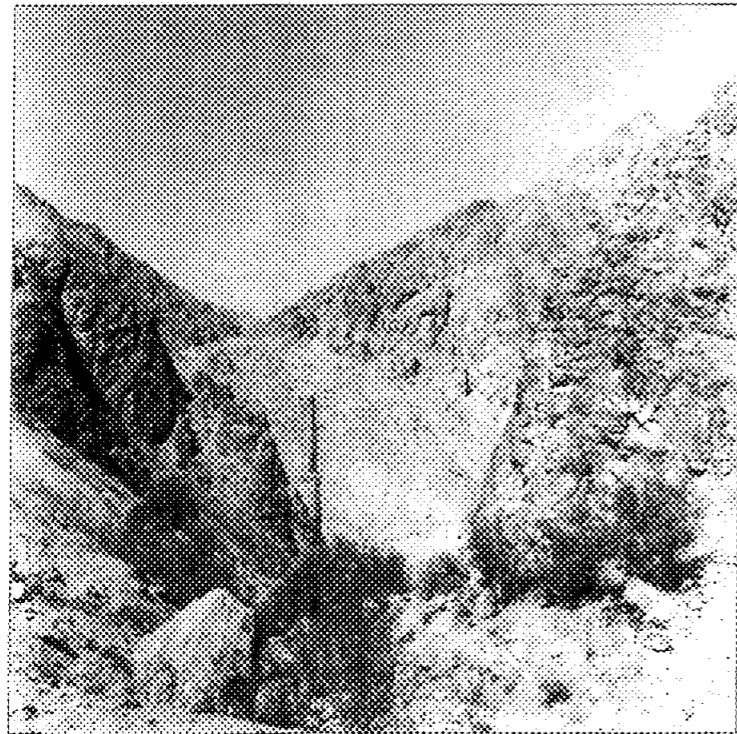
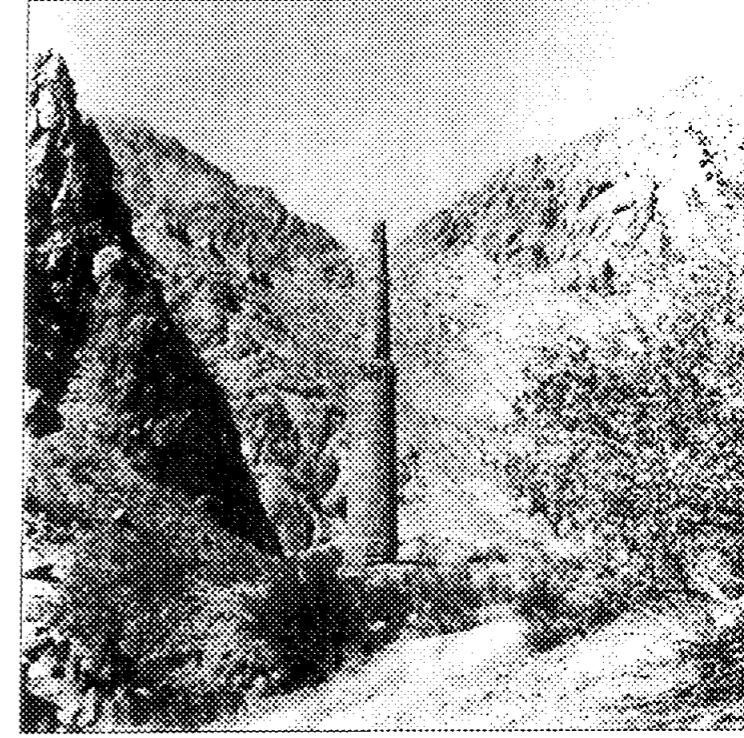
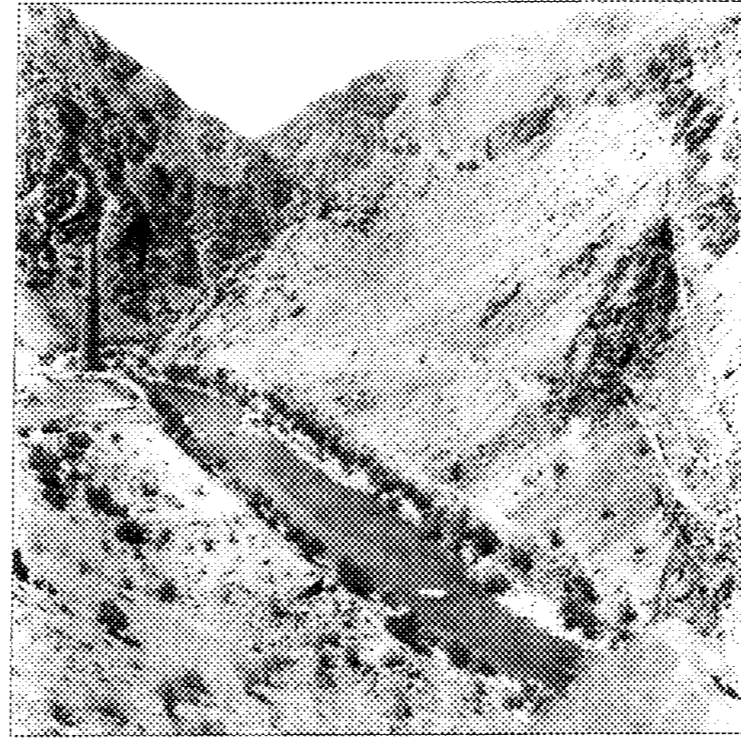
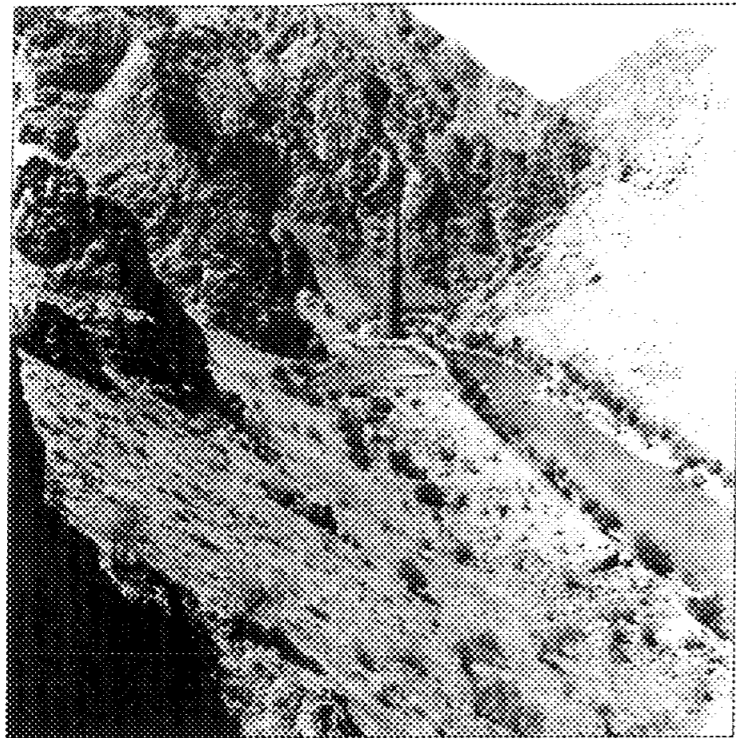
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MINARET OF JAM - 1963



Existing situation in 1961



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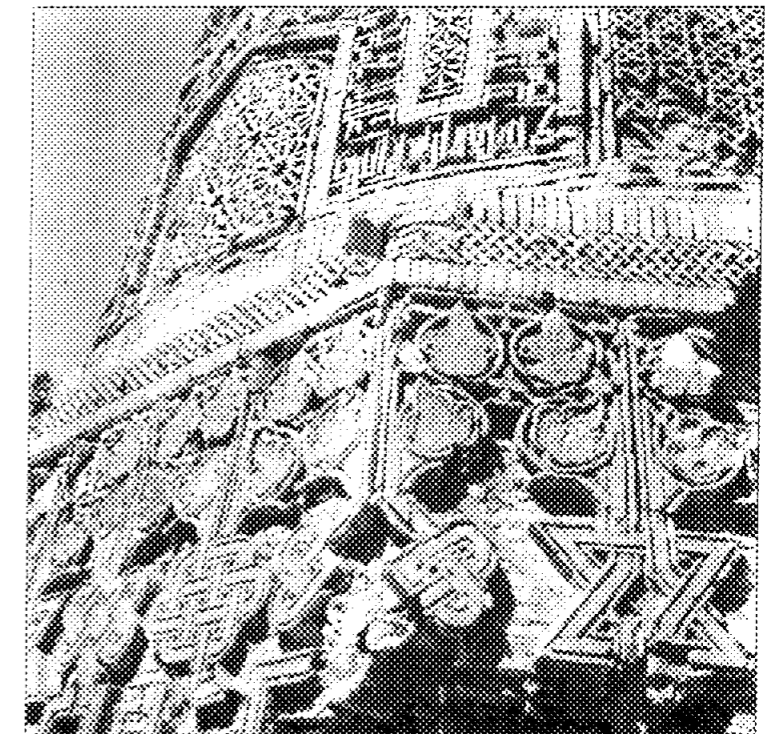
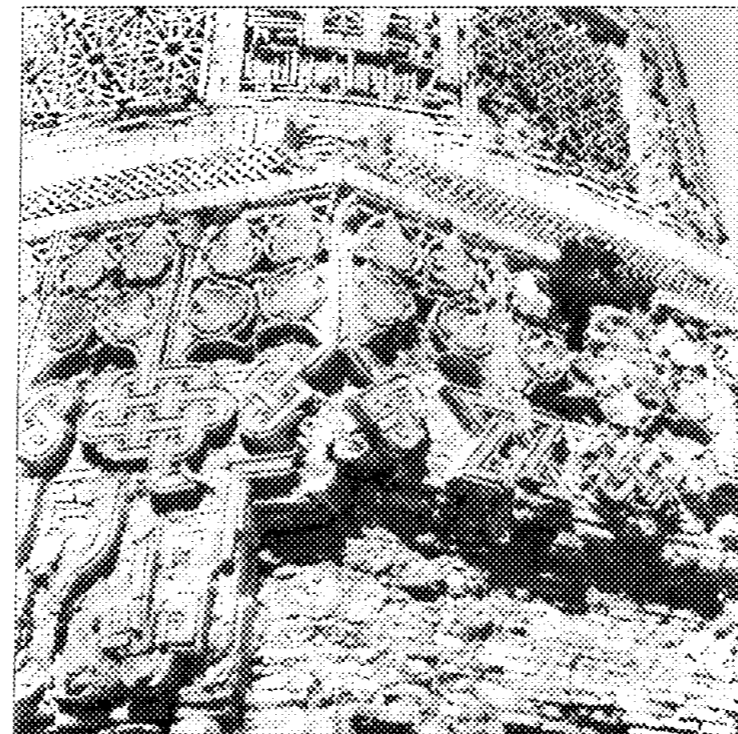
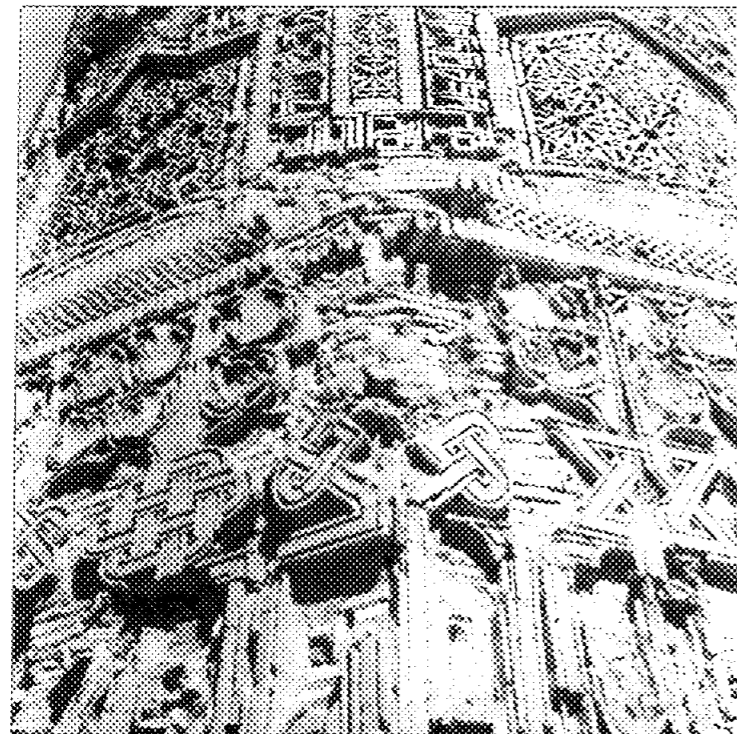
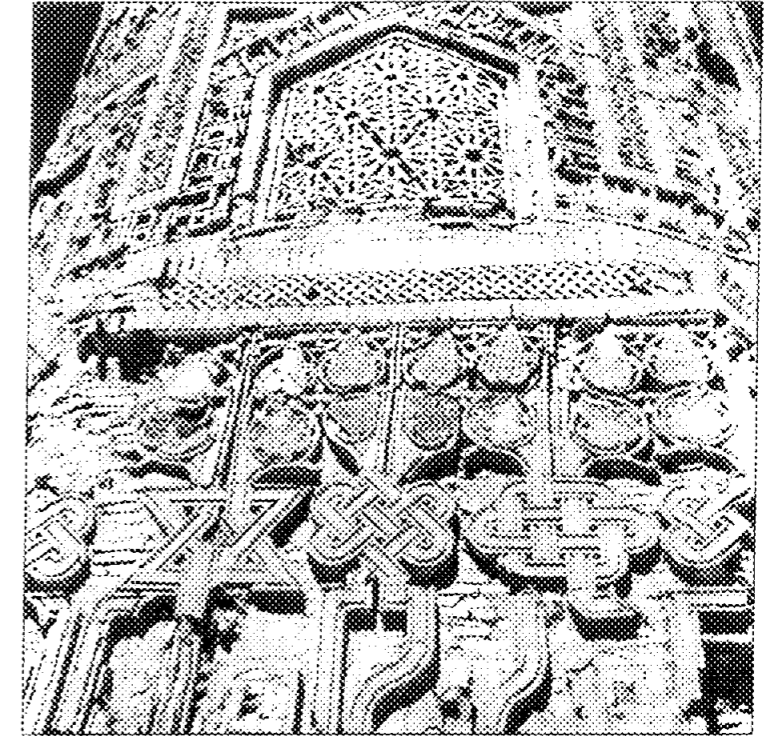
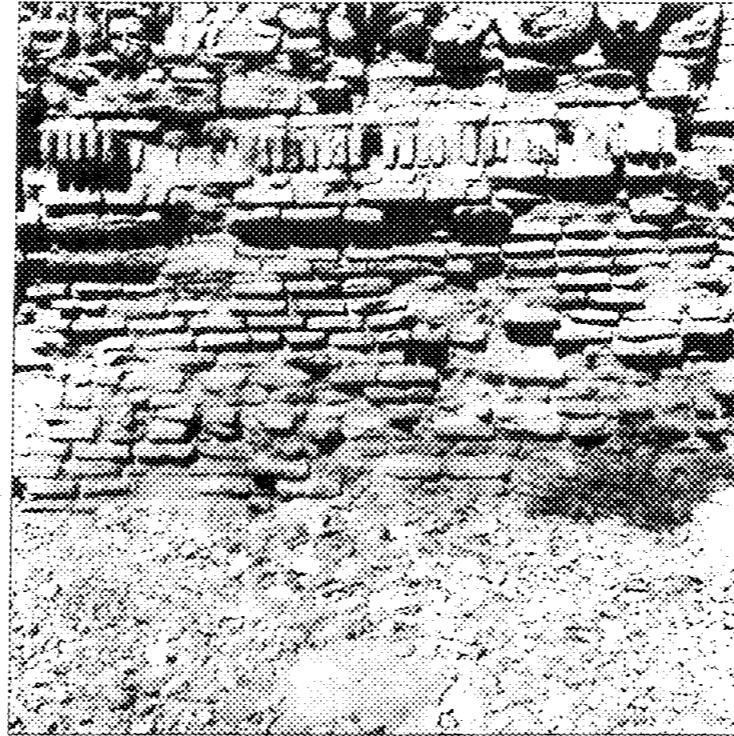
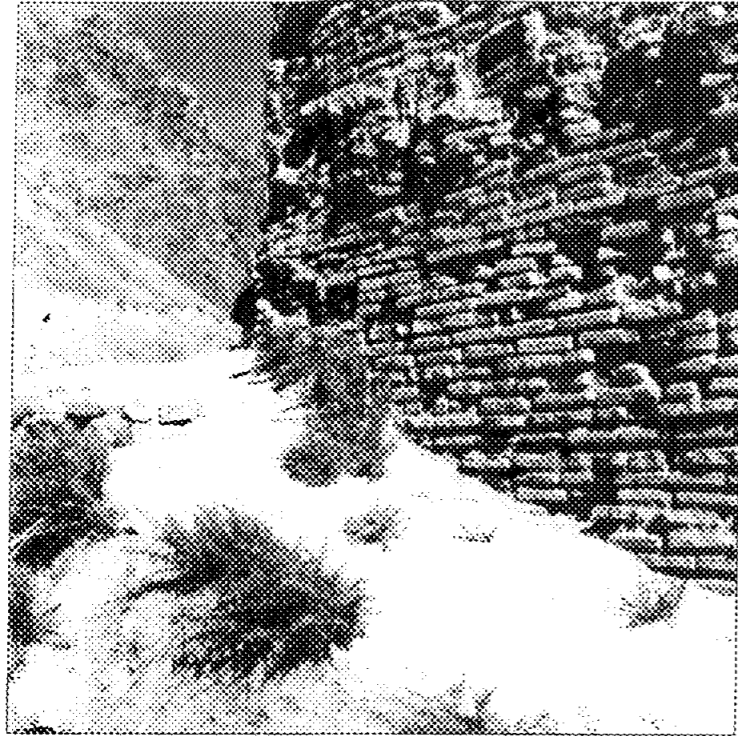
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MINARET OF JAM - 1961



Base of the minaret in 1961



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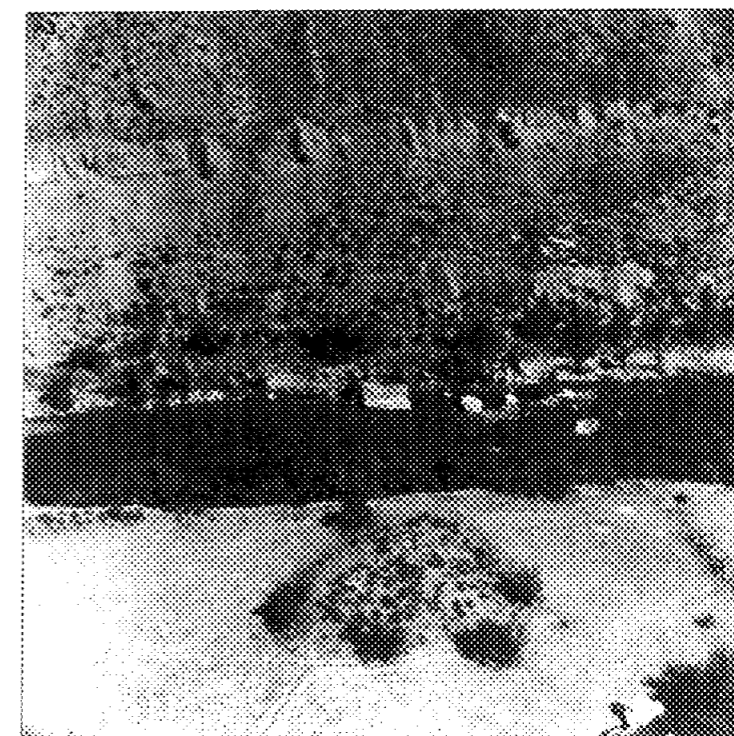
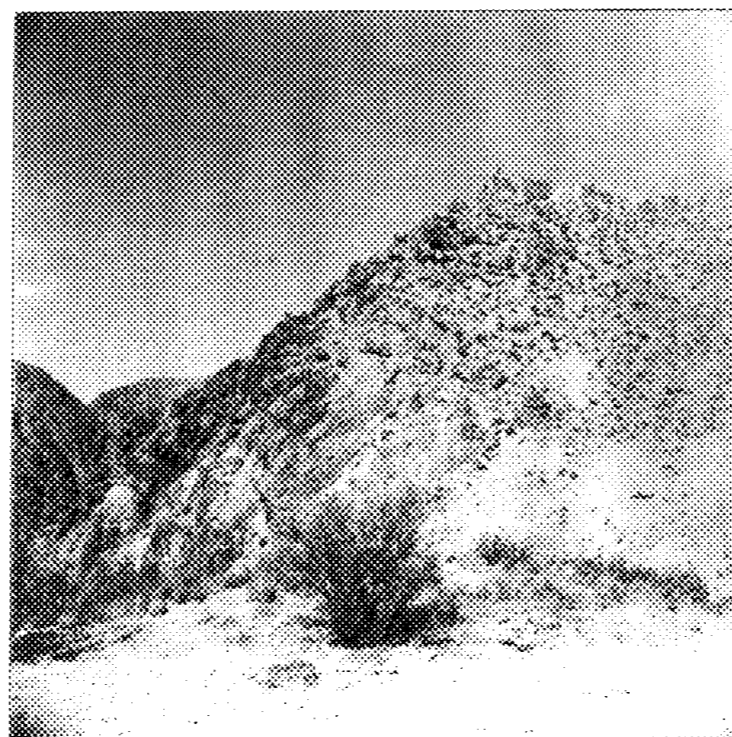
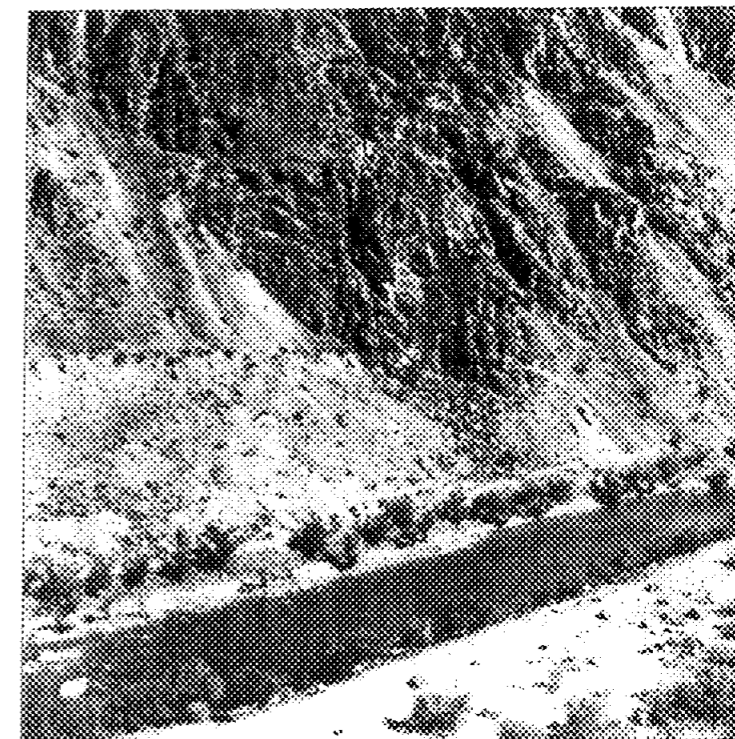
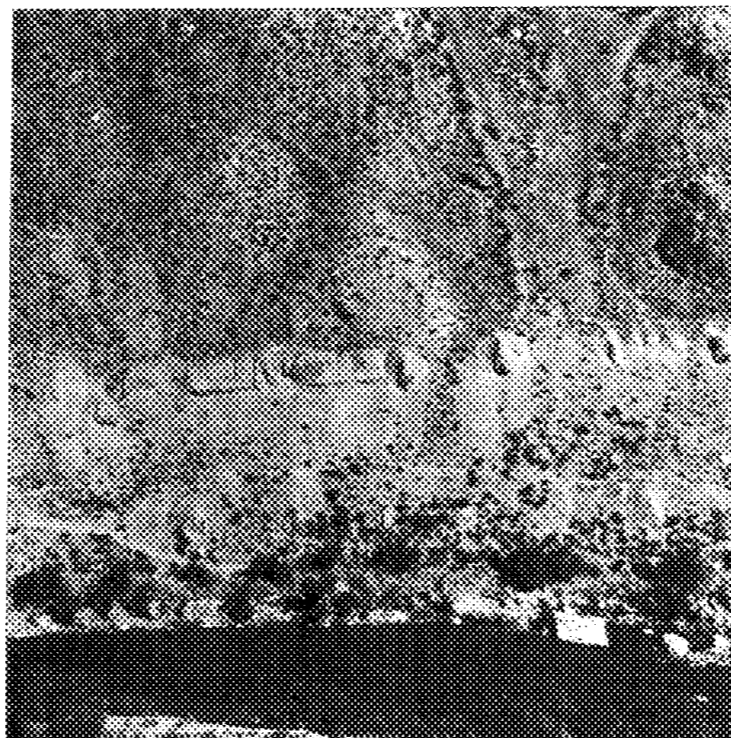
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MINARET OF JAM - 1961



Pictures of the sight taken in september 1961



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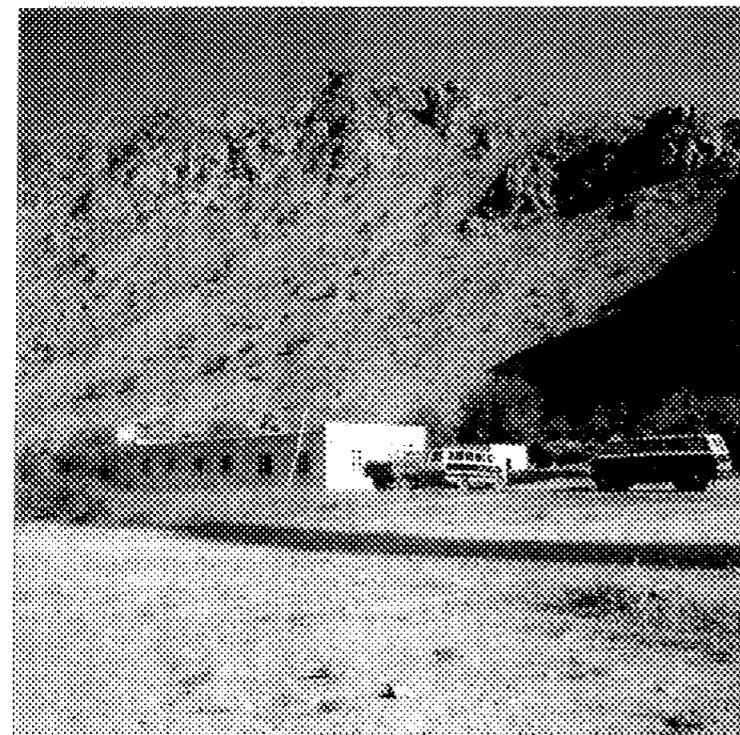
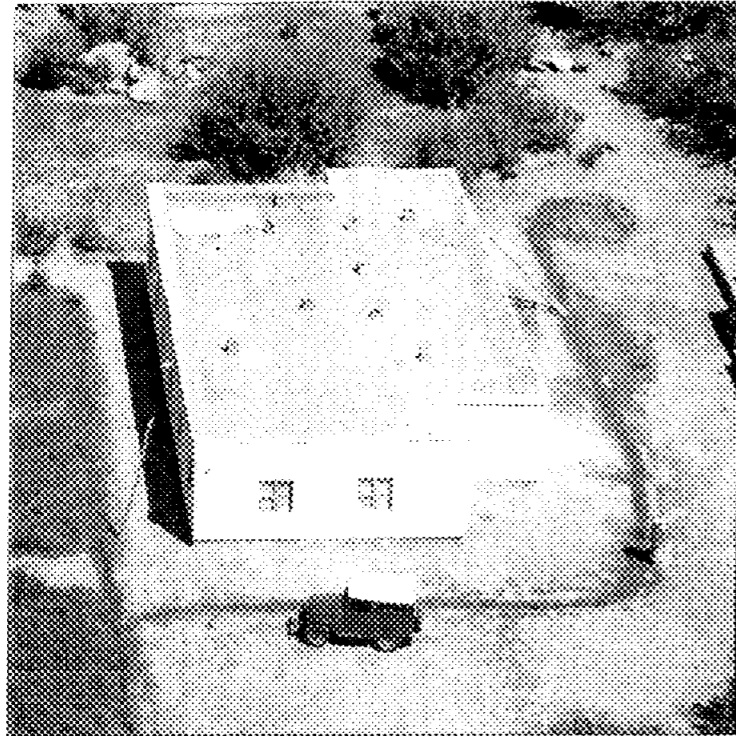
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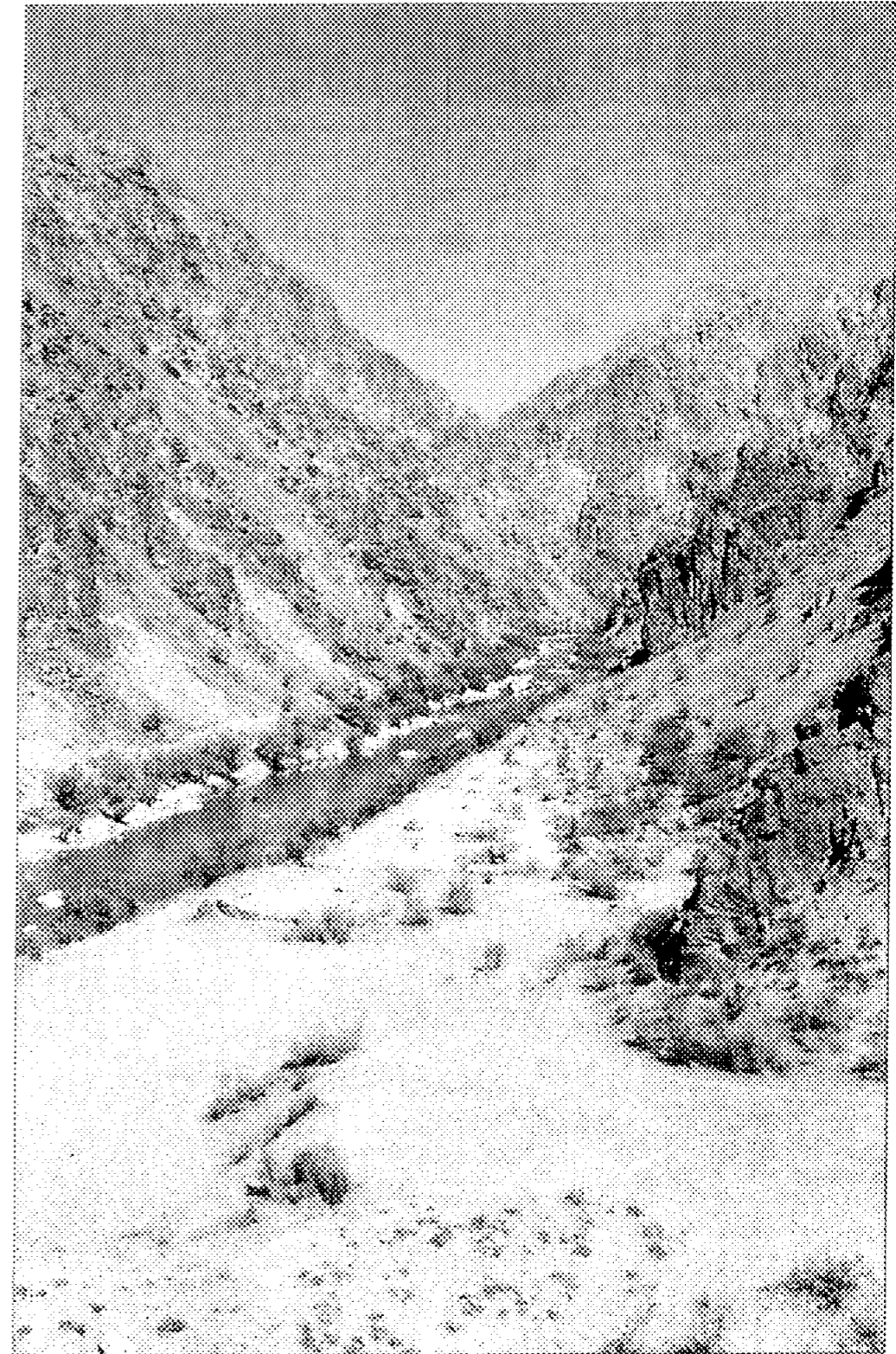
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MINARET OF JAM - 1961



Buildings realized in the 70's and now destroyed



Situation in 1961



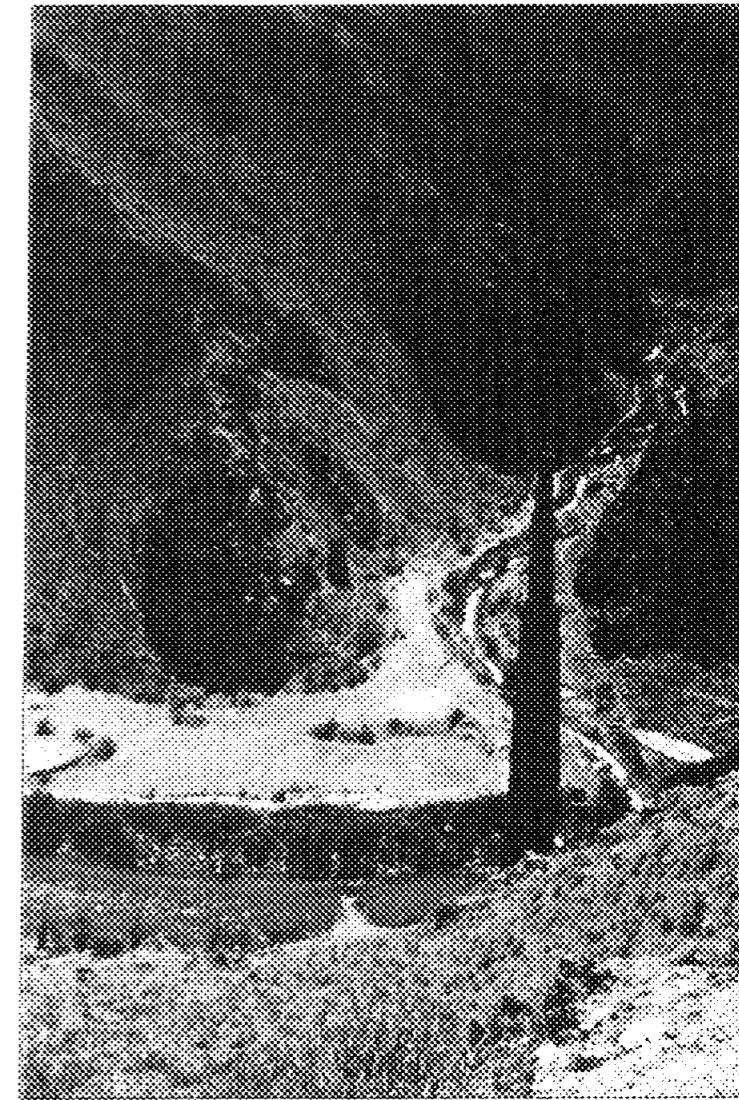
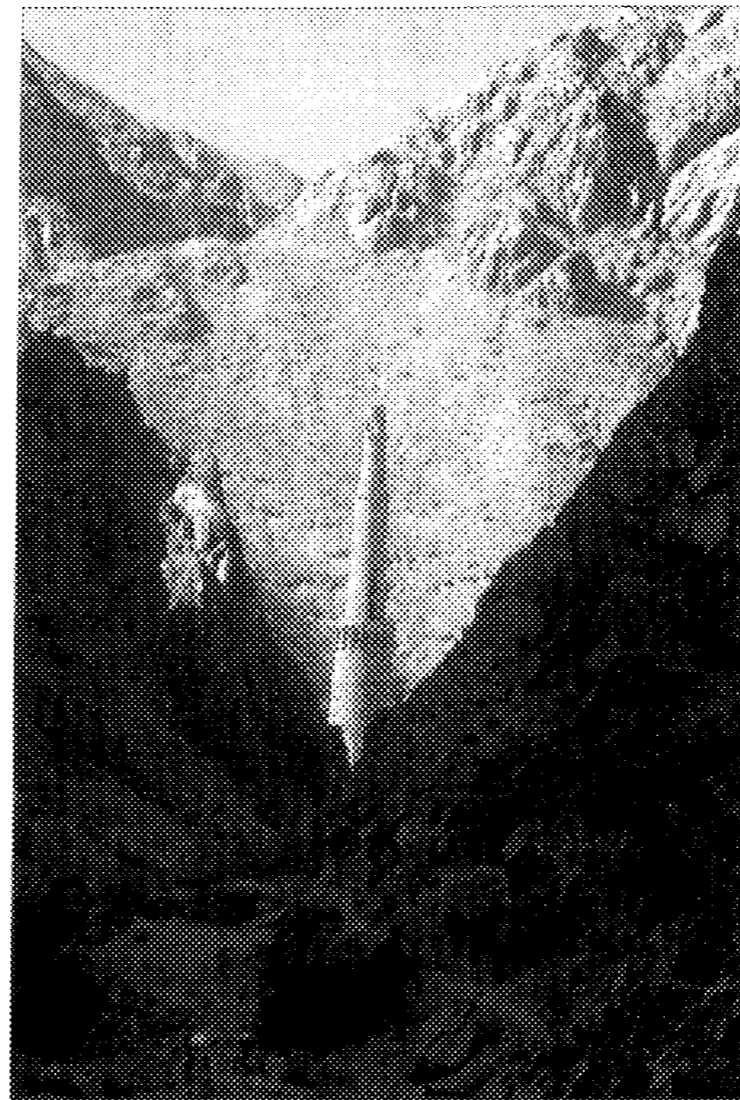
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Pictures of the 60's



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MINARET OF JAM - 1960

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GRUPE archidata

Minaret de Jam Afghanistan

**Relevé et documentation générale
Évaluation technique et financière
Avril 2002**

A la demande de l'architecte Prof Dr Andrea Bruno de Turin, expert de l'Unesco, le groupe Archidata présente ci-dessous une évaluation technique et financière pour le relevé photogrammétrique du minaret de Jam et de ses environs.

Les objectifs de cette contribution à la sauvegarde du minaret de Jam, sont les suivants :

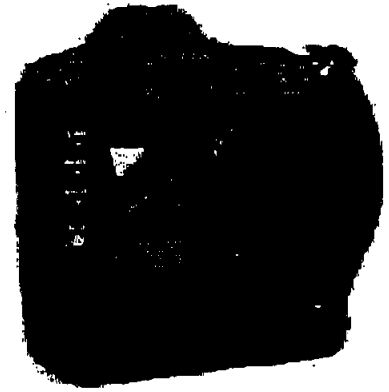
1. mise en place d'un réseau géodésique fixe de référence, servant de base indispensable à toute intervention future sur le site (point d'origine calé par GPS, méthode Trimble Pathfinder)
2. fournir un relevé métrique détaillé du monument et de ses environs (cf plan ci-annexé) dans l'état actuel
3. fournir les bases générales d'un système global de gestion de l'information (SIG) liée au monument et à ses environs
4. fournir les documents graphiques indispensables d'une part, aux diverses recherches archéologiques et physiques (sismiques, hydrologiques et stratiques) et d'autre part, au projet de sauvegarde d'un patrimoine de cette importance en complément aux travaux de l'architecte A. Bruno effectués dans les années 1960 (cf. Werner Herberg in Afghanistan Journal Jg 3, Heft 2, 1976)
5. développer une méthodologie de contrôle du comportement dans le temps de l'édifice adaptée au lieu et aux personnes en charge de la surveillance du site

Le programme envisagé comprend les prestations suivantes :

1. la prise de vue digitale métrique du minaret et de ses environs

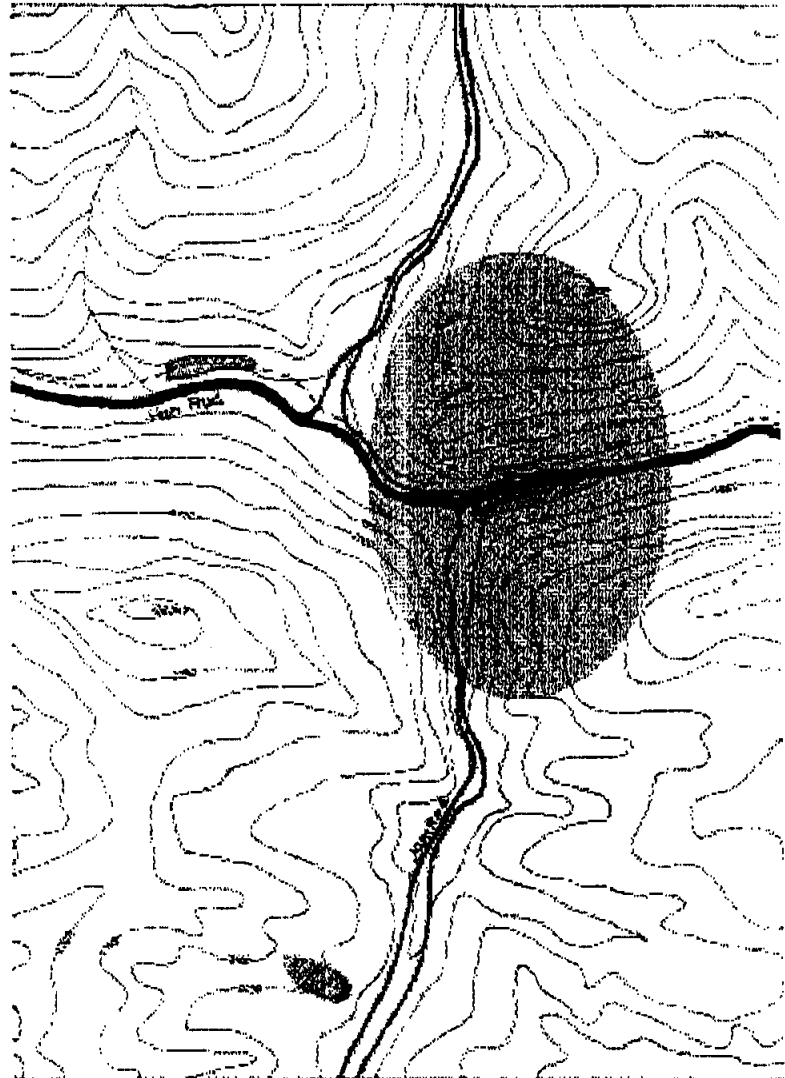


2. le relevé métrique du minaret et de ses fondations visibles dans le but d'établir les quatre élévations principales, deux coupes verticales et cinq plans (selon relevé initial établi par l'architecte Andrea BRUNO) à l'échelle 1:50 avec le dessin des contours du décor mais sans l'appareillage de brique
3. le relevé topographique de la vallée environnante dans le but d'établir une douzaine de profil transversaux
4. le relevé général des zones ayant fait l'objet de fouilles sauvages pour servir de base aux explorations planifiées
5. la mise en place du système de monitoring
6. la formation du personnel technique indigène à l'utilisation des données produites et à l'enrichissement progressif de la base de données au fur et à mesure du développement du projet



Pour des raisons pratiques de terrain, les dernières technologies de mesure laser tridimensionnelle maîtrisées par notre groupe Archidata ne peuvent être retenues ici. Par conséquent, nous privilégions le relevé par photogrammétrie digitale, procédé parfaitement adapté à la morphologie de l'objet. De manière concrète, les trois technologies suivantes sont retenues :

1. Après avoir implanté et matérialisé un réseau polygonal local, la géométrie globale du minaret sera saisie par tachéométrie laser (station totale Leica TCRM 1105). Les points tridimensionnels acquis serviront également à l'orientation et au calage des clichés photogramétriques. Les élévations extérieures du minaret seront couvertes par environ une soixantaine de prises de vue réparties sur cinq niveaux verticaux se recoupant entre elles avec un taux de 60%. Pour la partie supérieure du minaret (correspondant aux trois niveaux supérieurs de prises de vue), le recours à un hélicoptère



est souhaitable. Cependant, en cas d'impossibilité administrative, le recours à une caméra longue focal pourrait convenir même si la précision n'était pas égale. Le relevé intérieur du minaret sera exécuté par télémétrie laser en calant les différents niveaux par rapport à la géométrie extérieure. La restitution des données liées au minaret sera effectuée en trois dimensions dans le but d'obtenir un modèle numérique de qualité photographique. A partir de cette acquisition précise, des orthophotographies à l'échelle 1:20 pourront être produites en tout temps (environnement Intergraph de Microstation). Le logiciel informatique développé dans ce contexte permettra également l'intégration de photographies historiques dans le modèle numérique de base, autorisant des reconstitutions d'états disparus et des comparaisons possibles avec l'état de dégradation actuel. Dans ce même ordre d'idée, le modèle produit pourra servir de base à la simulation des différentes variantes de projet de sauvegarde de l'objet.

2. Les profils en travers seront saisis par une méthode mixte alliant la tachéométrie laser et le système d'orientation global par satellite. Des photographies aériennes prises depuis un hélicoptère serviront également de base à l'établissement d'orthophotographies de la zone élargie.

3. Les trous opérés lors des fouilles sauvages seront positionnés par les mêmes procédés.



De manière générale, tous les documents graphiques produits pourront être utilisés dans des logiciels de dessins habituels (Autocad, Vectorworks,...). Par ailleurs, toutes les données acquises seront structurées dans l'environnement Autocad Map et/ou Arcview. Cette approche entièrement numérique permettra une diffusion élargie des connaissances recueillies.

L'assistance locale pour la réalisation de ce projet nécessite :

1. la mise à disposition d'un véhicule tout terrain avec un chauffeur pour toute la durée du séjour pour le transport du matériel et l'acheminement du personnel technique
2. la mise à disposition d'un hélicoptère durant deux jours pour les prises de vue aériennes
3. l'infrastructure nécessaire à l'hébergement de trois ingénieurs du groupe Archidata
4. l'accompagnement par le personnel local durant tout le séjour

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GRUPE archidata

L'évaluation technique formulée comporte les phases d'exécution suivantes :

1. préparation de la mission :	juin 2002
2. mission in situ :	août 2002
3. création de la base de données :	septembre 2002
4. restitution :	octobre et novembre 2002
5. validation in situ :	mai 2003
6. formation in situ :	mai 2003
7. monitoring :	dès juin 2003

L'évaluation financière pour cette proposition est la suivante :

1. préparation de la mission :	5'000 US\$
2. mission in situ :	35'000 US\$
3. création de la base de données :	3'000 US\$
4. restitution :	25'000 US\$
5. validation in situ :	5'000 US\$
6. formation in situ :	10'000 US\$
7. monitoring :	5'000 US\$
8. frais hors déplacements :	5'000 US\$
9. divers et imprévus :	10'000 US\$

Le total de cette offre se monte à 103'000 US\$ (HT)

Les conditions de paiement sont les suivantes :

1. 20 % à la commande
2. 30% au retour de la mission
3. 30% à la livraison
4. 20% à 60 jours dès la réception

Cette offre est valable durant 90 jours.

Epalinges le 22 avril 2002

Archidata-sa
Michel CLIVAZ, Président

Olivier FEIHL, Administrateur

Helping

Final Narrative
Report
Jam Minaret

Afghan

Farmers

Organization

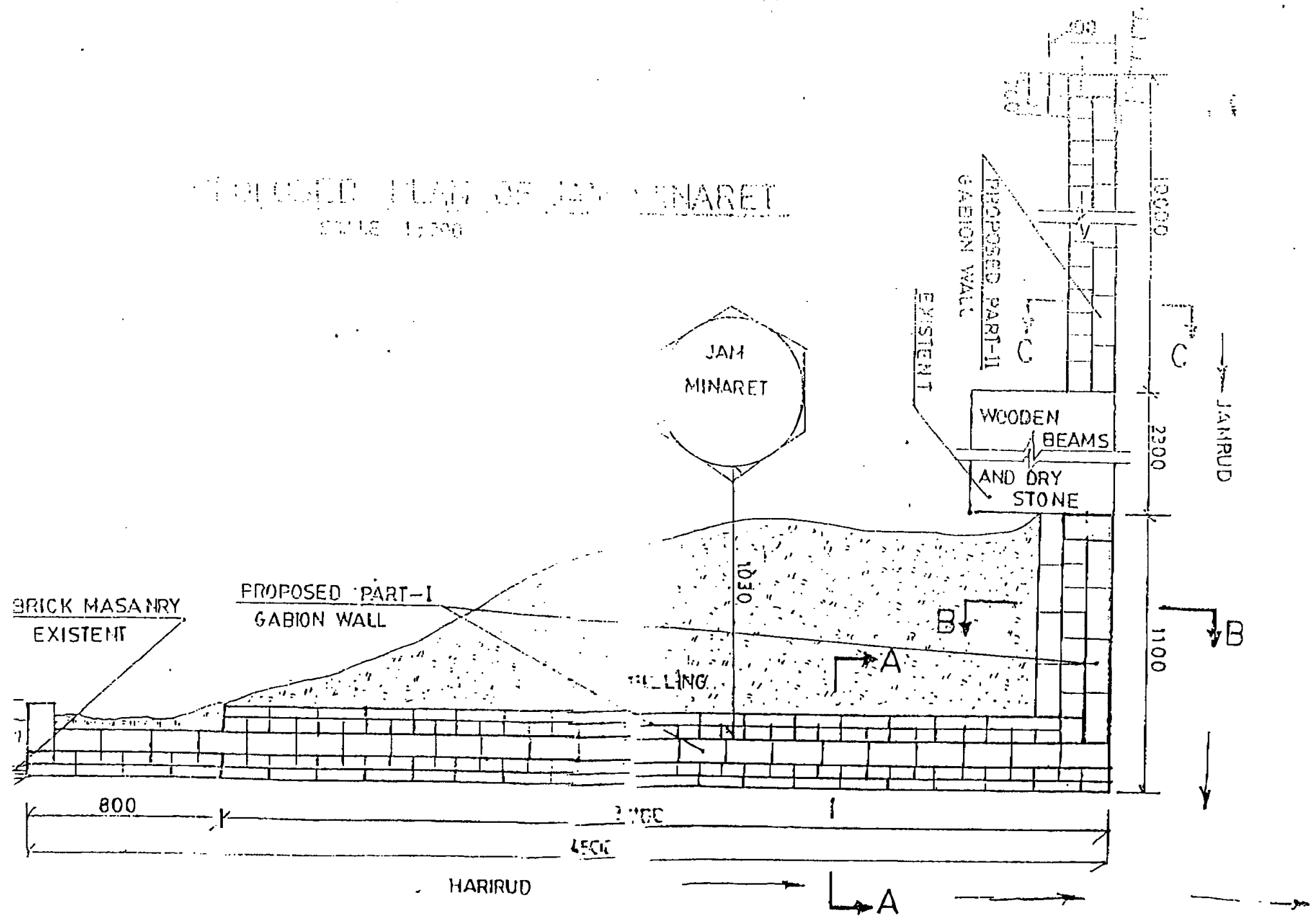


Photo By: Eng. Sayed Jawed

Photo By: Eng. Sayed Jawed

PROPOSED PLAN OF JAH MINARET

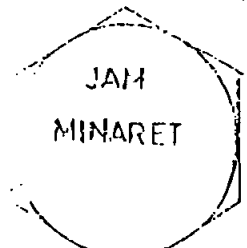
SCALE 1:300



BRICK MASONRY
EXISTENT

PROPOSED PART-I
GABION WALL

FILLING



EXISTENT

PROPOSED PART-II
GABION WALL

WOODEN
BEAMS
AND DRY
STONE

JANRUD

1000

2300

1100

800

2700

4500

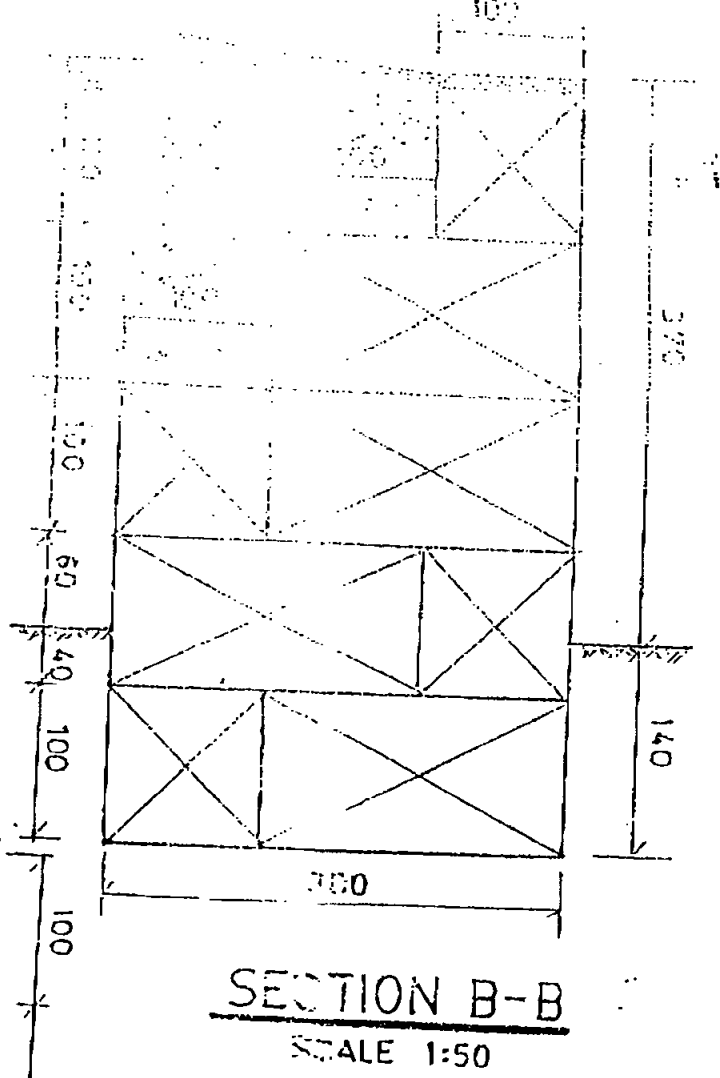
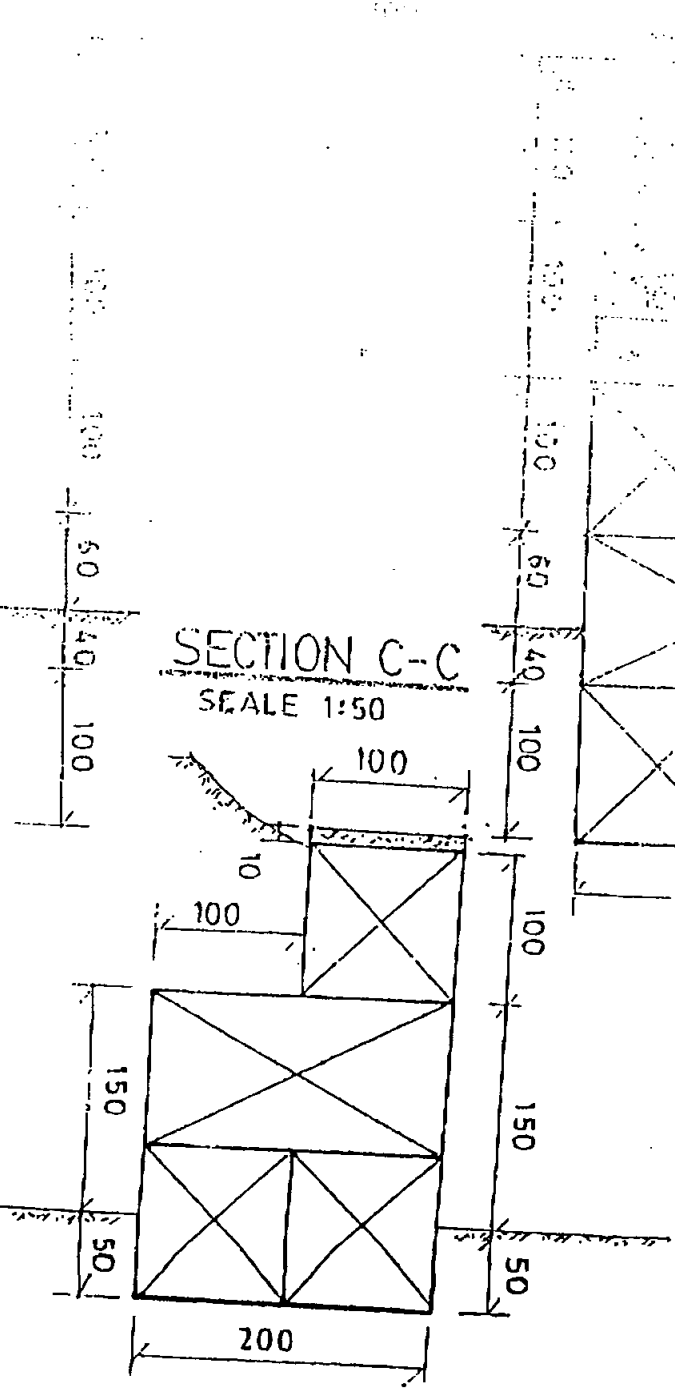
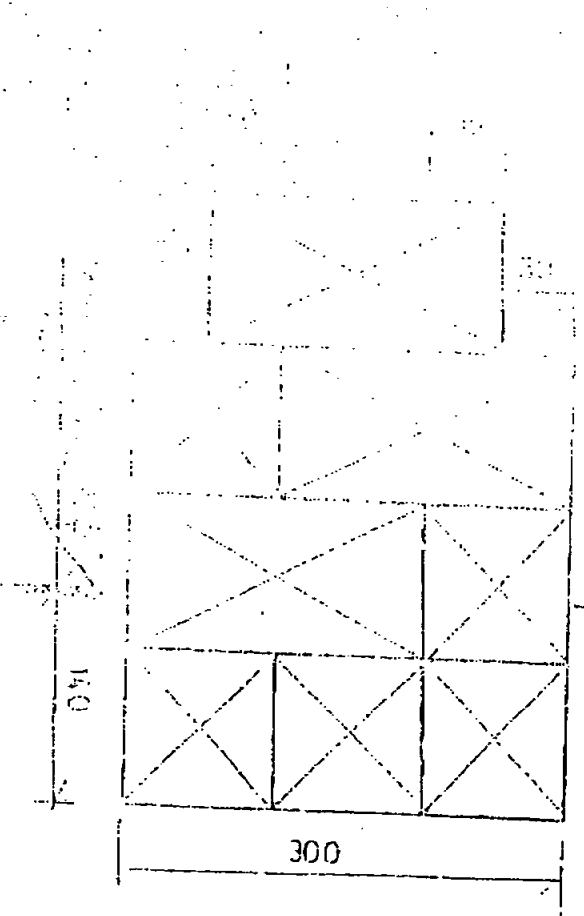
HARIRUD

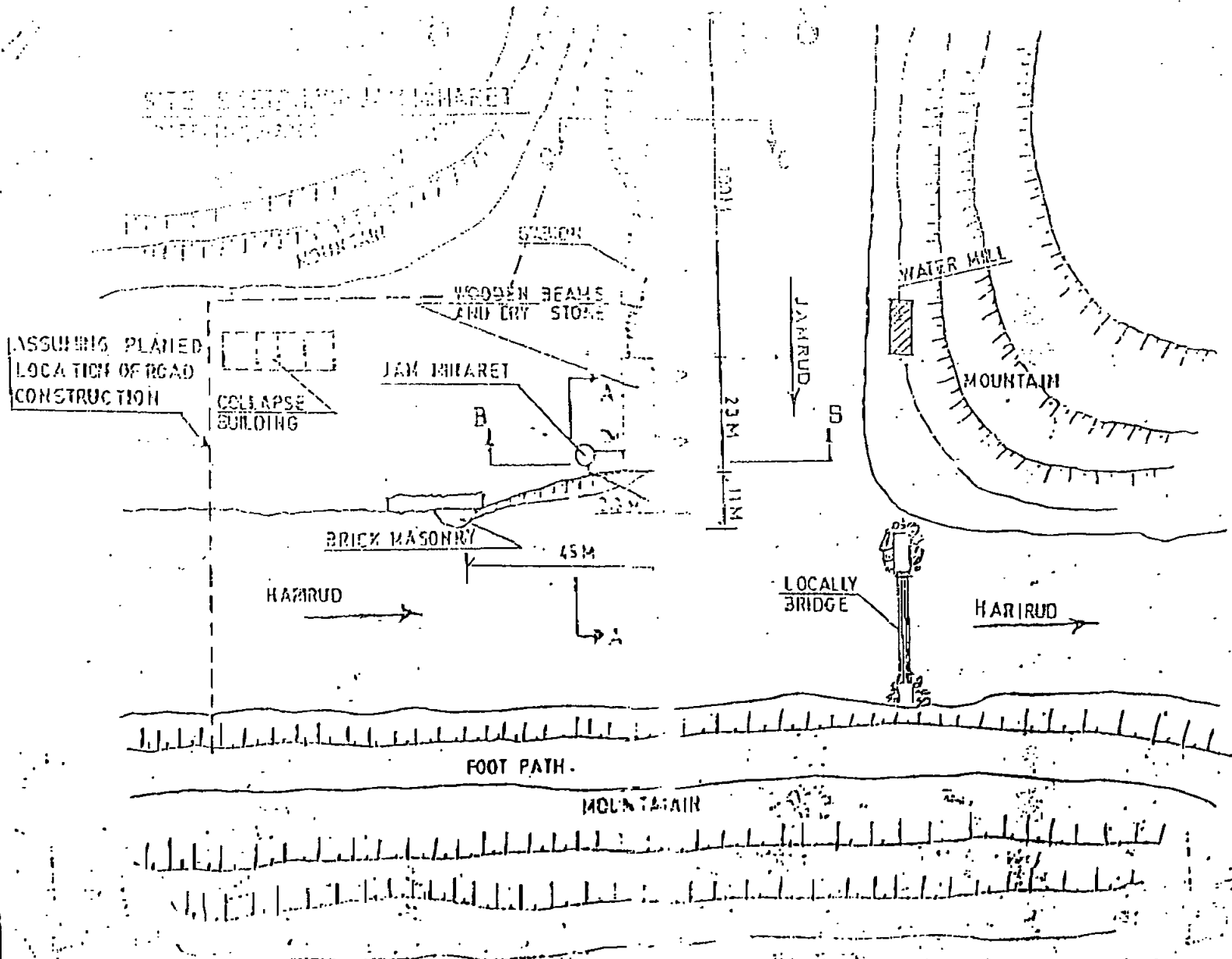
A

B

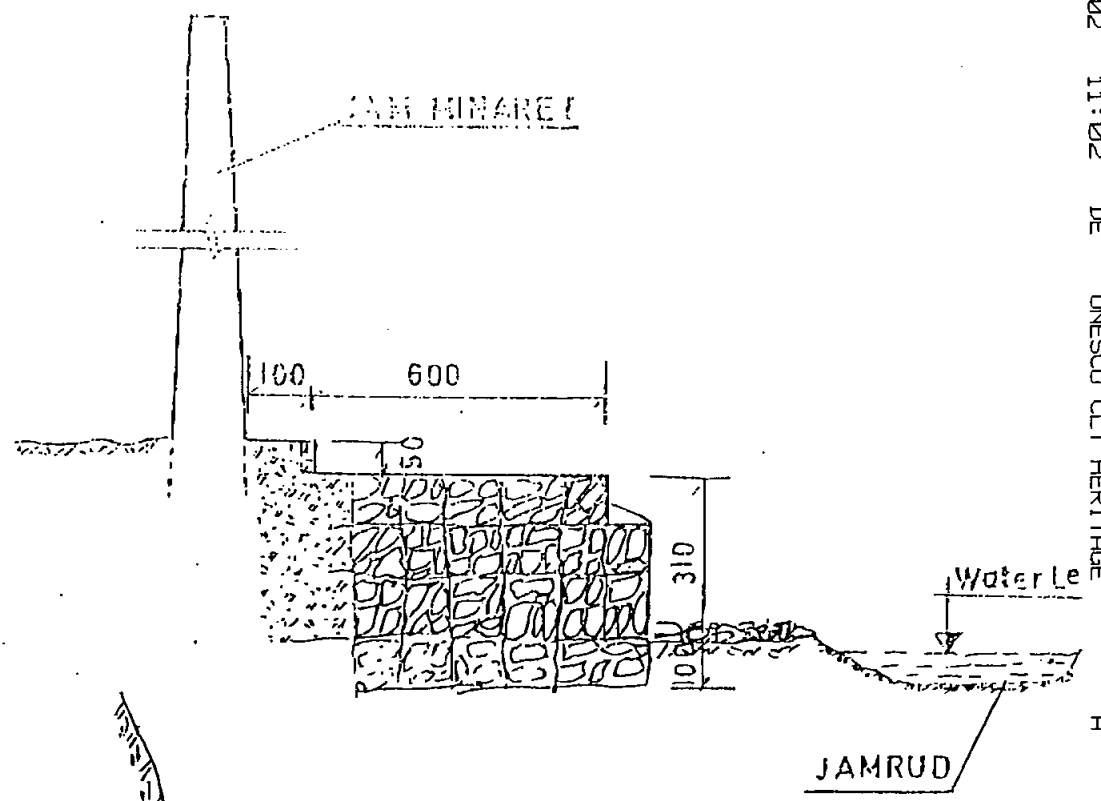
B

A

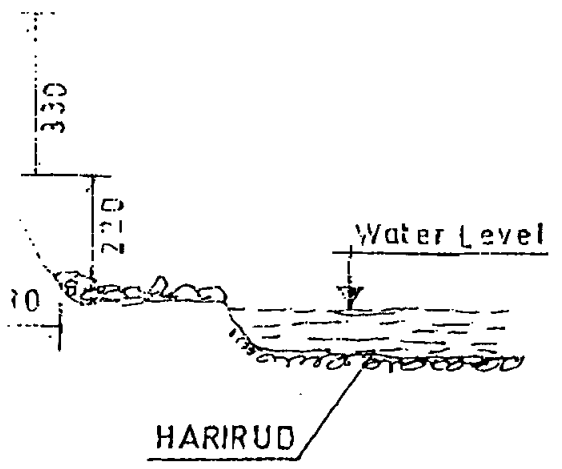
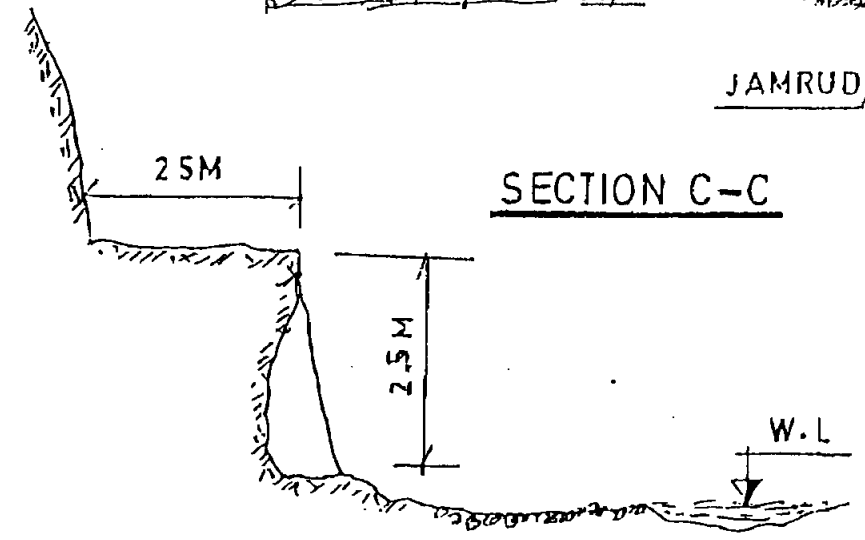




SECTION B-B



SECTION C-C



DATE 13-10-2000