MEMO

CITY OF CHULA VISTA

Department of Public Works

DATE: November 6, 2015

TO: Honorable Mayor and City Council

VIA: Gary Halbert, City Manager
Maria Kachadoorian, Deputy City Manager

FROM: R.A. Hopkins, Director of Public Works
William Valle, Assistant Director of Engineering/City Engineer

SUBJECT: Emergency Storm Drain Repairs of Various Corrugated Metal Pipe (CMP)
CIP No. DR202 and DR204

This is to inform you that after reviewing the most recent Corrugated Metal Pipe (CMP) videos from the City's Closed Circuit Television contractor (delivered October 2015), staff have identified many pipe segments that have degraded to a point of failure. In addition, according to the weather news stations, "we are in the midst of a rapidly strengthening El Niño event which will likely peak later this fall as one of the strongest El Niño events on record". Therefore, staff is preparing contracts to be issued in accordance with emergency provisions in section 1009 of the City Charter (Attachment 1) in order to assure the protection of the public and of public and private property. The highest priority CMP segments requiring immediate action are of various sizes and primarily under public streets throughout the City (Attachment 2). The attached pictures (Attachment 3) show some of the failures encountered:

1. Loss of pipe bottom
2. Loss of backfill and large voids surrounding pipe
3. Loss of structural integrity

As a result of these issues, the CMP segments also have significant blockage and debris within the remaining pipe which is compromising the original design flow capacity. While these CMP segments have not fully collapsed, they are considered to be in a state of failure now due to their inability to perform as designed (flow capacity) as well as the clear loss of structural integrity. Their immanent collapse, if not repaired in time, will lead to additional damage of adjacent property and facilities as well as discharge violations (NPDES permit).

Staff is diligently working to accelerate these repairs and is acquiring informal bids for the high priority locations. The goal is to secure a contractor and begin work in December.

The cost for the currently assessed most precarious and consequential locations is estimated at approximately $3.0 Million. Funding will be from two existing drainage repair projects (DR202 and DR204, $1.9M) and, reallocating the funds from Cross Gutter Rehabilitation (STL408, $347k) and Pavement Minor Rehabilitation Program (STL409, $970k). Replenishing funds for STL408 and STL409 will be reconsidered in the 2016/2017 CIP. All projects are in the current CIP and funded with Gas Tax and Transnet Funds. Due to the nature of drainage repair work

actual costs can vary widely. Staff will return with a Council Agenda item to report final emergency repair costs and to ratify the actions taken under the stated provision of the City charter.

BACKGROUND

The City has evaluated the condition of its storm drain facilities, which includes approximately 67,000 lineal feet of CMP storm drain within the City limits. CMP storm drains have not been allowed for permanent use in the City of Chula Vista for over 20 years due to their more rapid deterioration as compared to other types of pipes, such as plastic and reinforced concrete pipes. Due to the lack of dedicated funding for "Storm Drains and Channels", the progress in completing the CMP repairs needed has been limited. Based on the funds appropriated over the last few fiscal years, the CMP repairs completed per category are as follows:

CMP Storm Drain Replacement

Category (as ranked in 2005)	**Linear Feet**	**Linear Feet Completed**
1. Immediate Attention	2,342	2,342 -- Done
2. Action recommended in One Year	24,293	4,560
3. Action recommended in Three Years	13,207	70
4. Action recommended in Five Years	4,269	0
5. Re-inspect in Five Years	22,984	34

As indicated, all CMP repairs within Category 1 have been completed. Staff has been reviewing the recently completed CCTV video of the pipe segments in Category 2 and 3 to develop a repair priority listing. The review clearly validated that the majority of the CMPs continued to deteriorate and are in a state of failure as described above. The failed CMP poses a high-risk liability to the City. Staff recommends that the emergency provisions are invoked to allow the most expeditious schedule for repairs for the highest priority locations currently identified. As the video and evaluations continue, additional locations will be prioritized for repair. Those additional locations will need to be funded and addressed separately from this request.

In recent years, the City has been reacting to more pipe collapses resulting in sinkholes and emergency projects. On average, this reactive approach is significantly more costly than proactive preventative maintenance. Those emergency CMP repairs have ranged in cost from $400,000 to $2.7 million per incident. The 2005 preliminary estimate of preventative repairs for Categories 2, 3 and 4 was $22.4 million. Adjusting for degradation of the asset and inflation the estimate today would be roughly $50 million. Repairing locations only after they collapse would easily double the costs due to the collateral damage to other facilities.

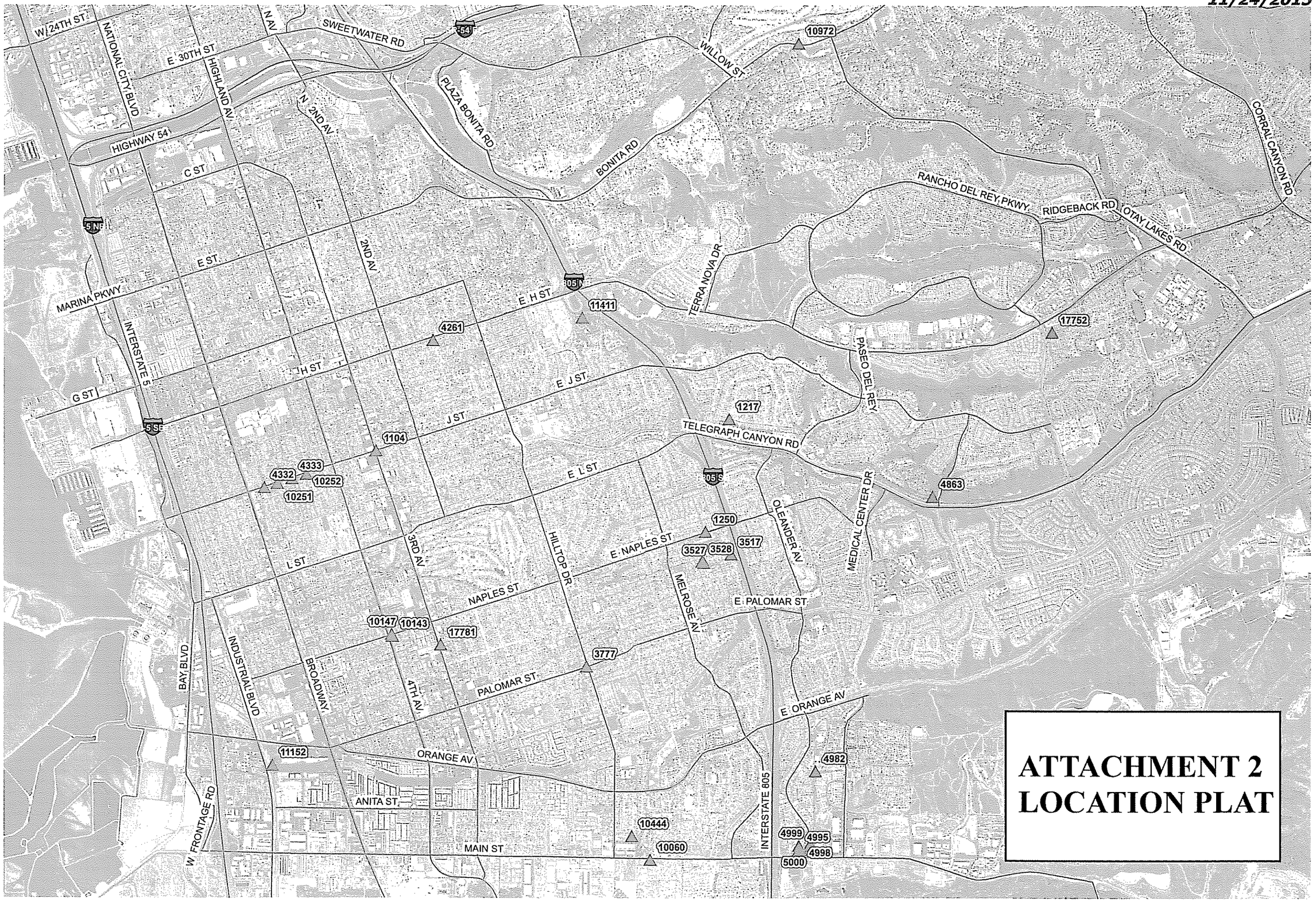
The Asset Management Plan developed for drainage facilities provides a roadmap to implement a more proactive approach in sustaining drainage facilities rather than being reactionary. The preliminary investment recommended for drainage restoration averages $4.5 million per year.

cc Glen Googins, City Attorney
Iracsema Quilantan, Assistant Director of Public Work Operations
Frank Rivera, Principal Civil Engineer

Jose Luis Gomez, Principal Civil Engineer
Silvester Evetovich, Principal Civil Engineer
Roberto Yano, Senior Civil Engineer
Robert Beamon, Administrative Services Manager, Public Works-Engineering

Attachment 1 – Section 1009 of the City Charter
Attachment 2 - Location Plat
Attachment 3 - Pictures of pipe failures

11/24/2015



ATTACHMENT 2
LOCATION PLAT

Prepared By: TWeinman
Projection Information:
Name: NAD 1983 StatePlane California VI FIPS 0406 Feet
Datum: North American 1983
File: J:\Engineer\SEWER\GIS\Maps\Sewer basemap.mxd

Legend

- Priority_Adj
- Roads

CITY OF CHULA VISTA

Loss of Structural Integrity

Loss of backfill and large void surrounding pipe

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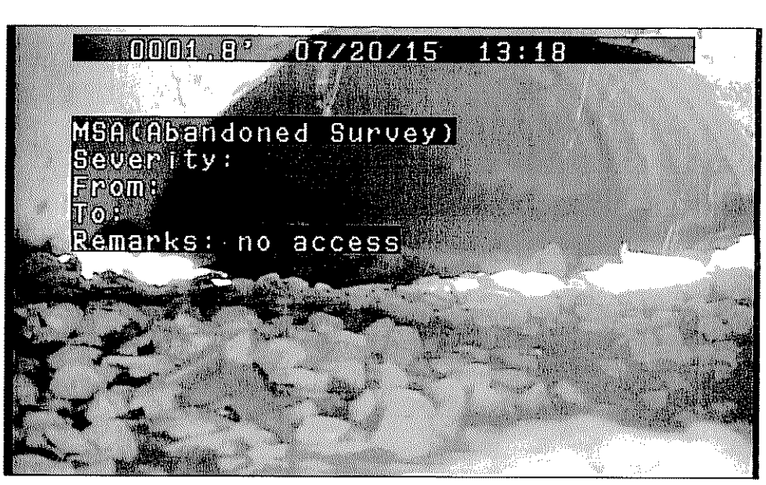

Loss of pipe bottom

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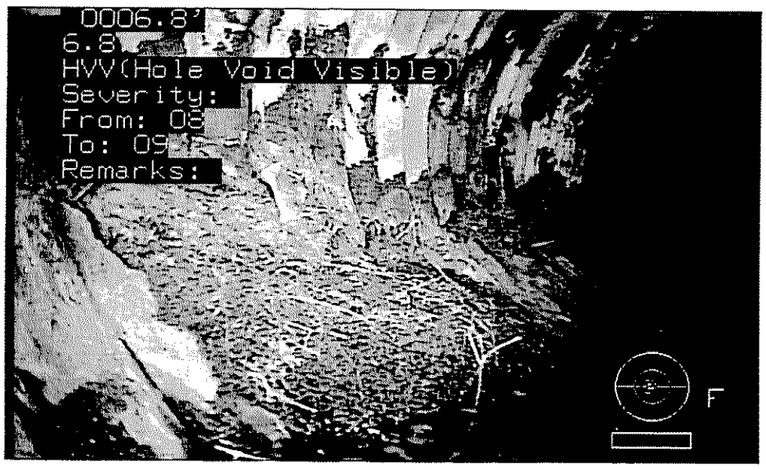
Loss of backfill and large void surrounding pipe



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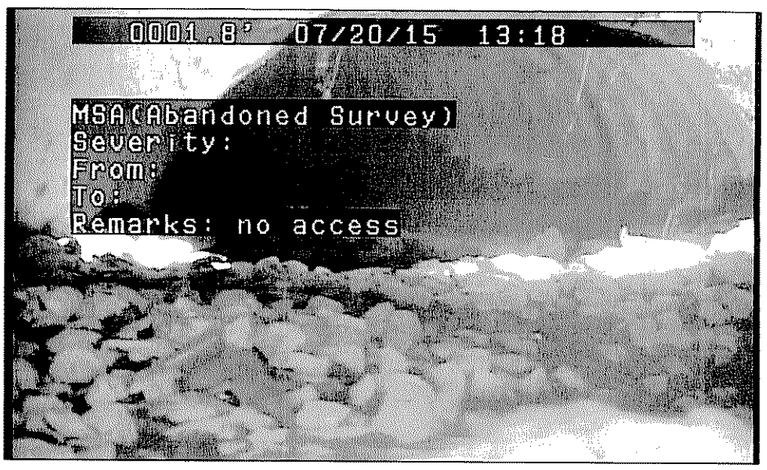

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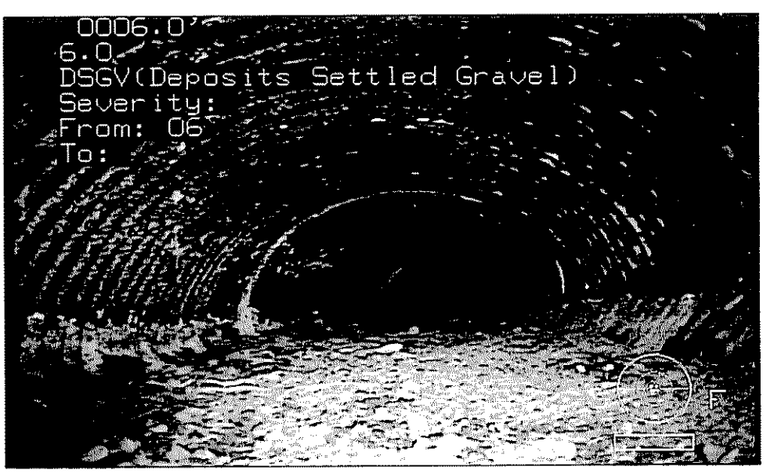

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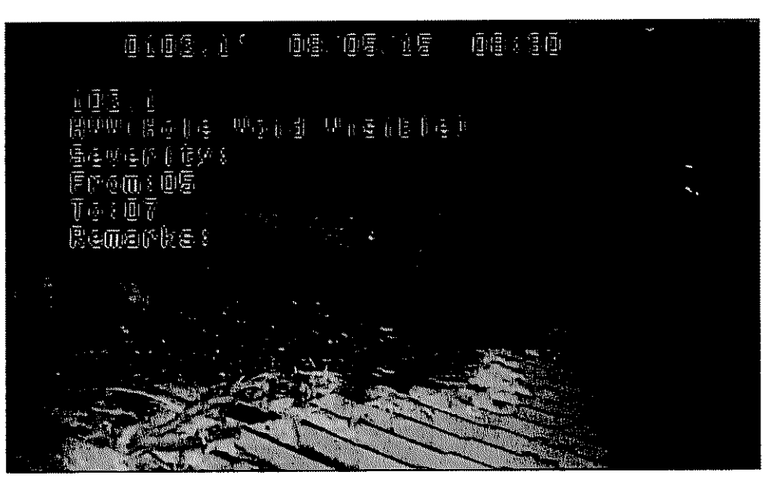

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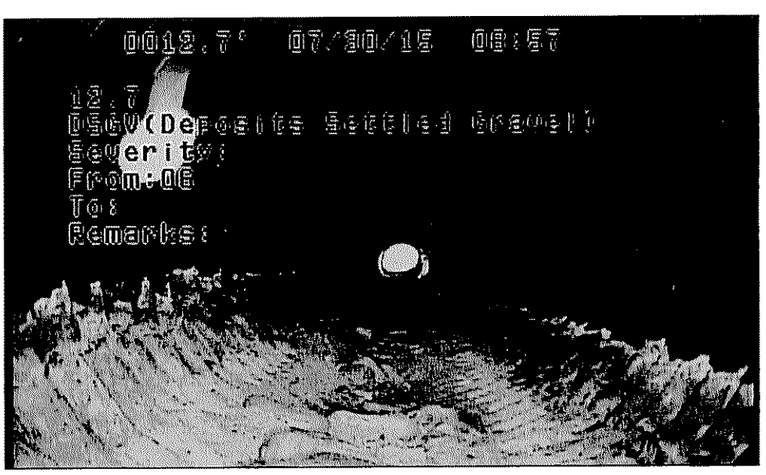

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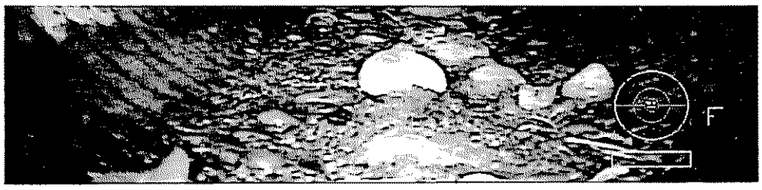

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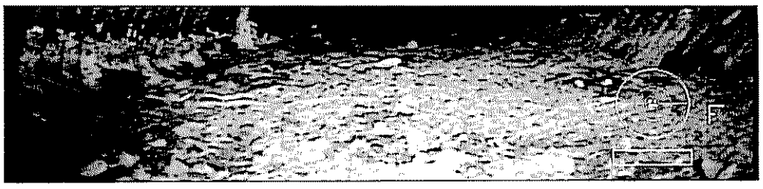

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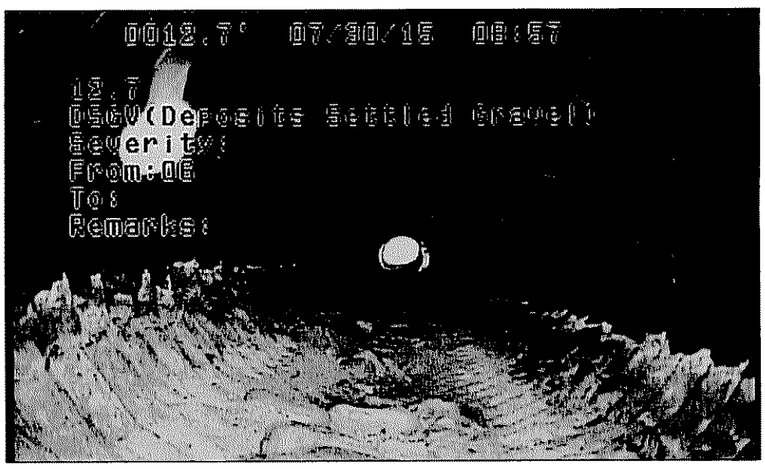

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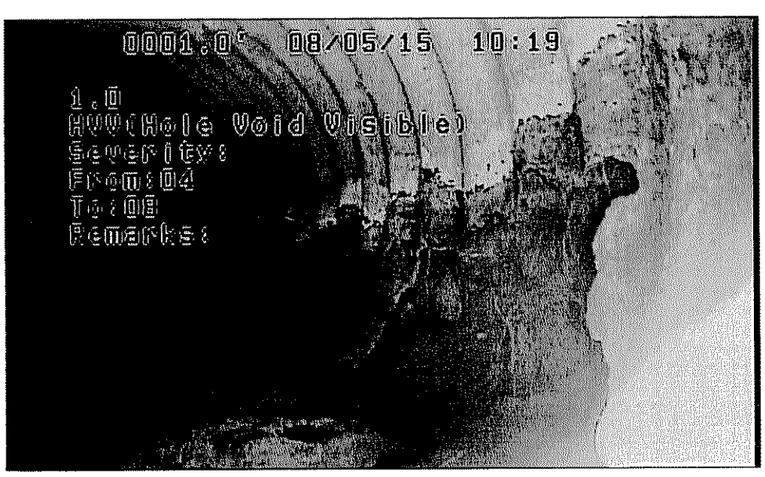
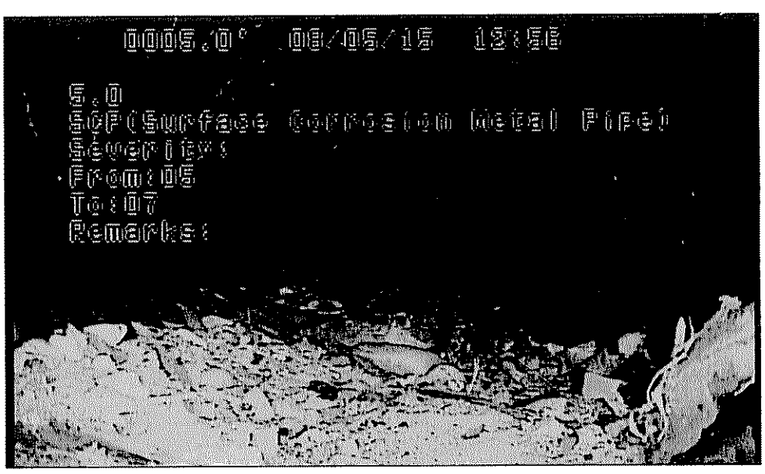


Loss of backfill and large void surrounding pipe



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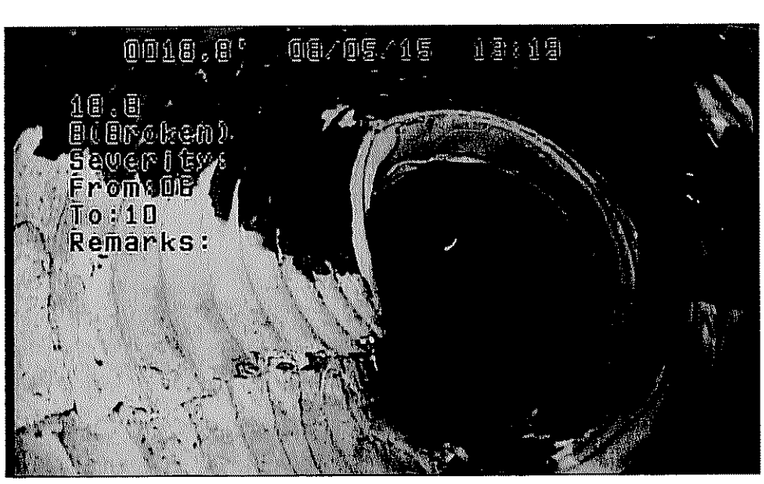

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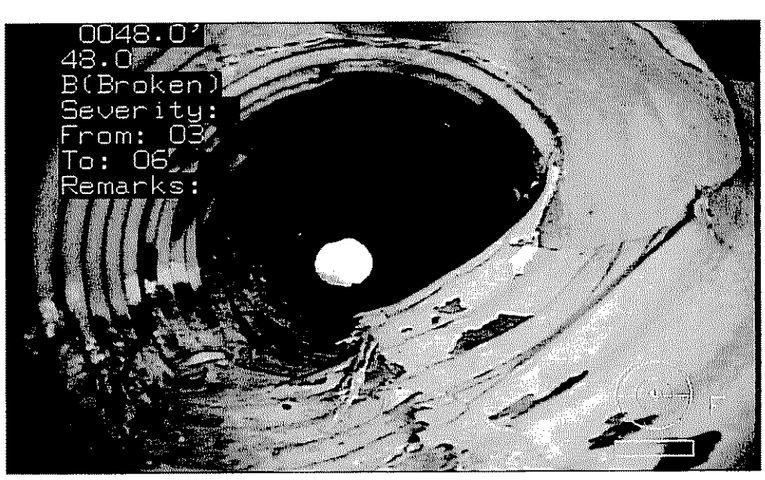

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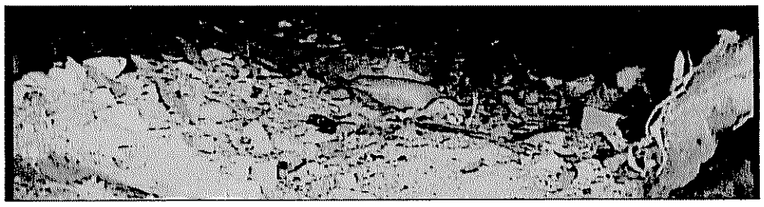

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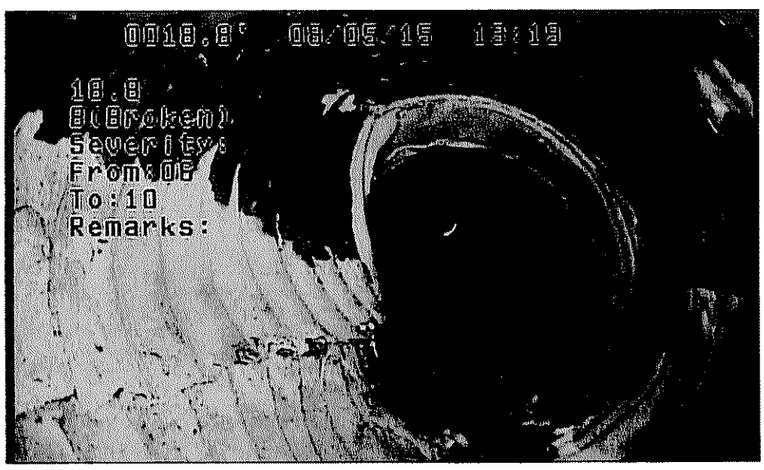

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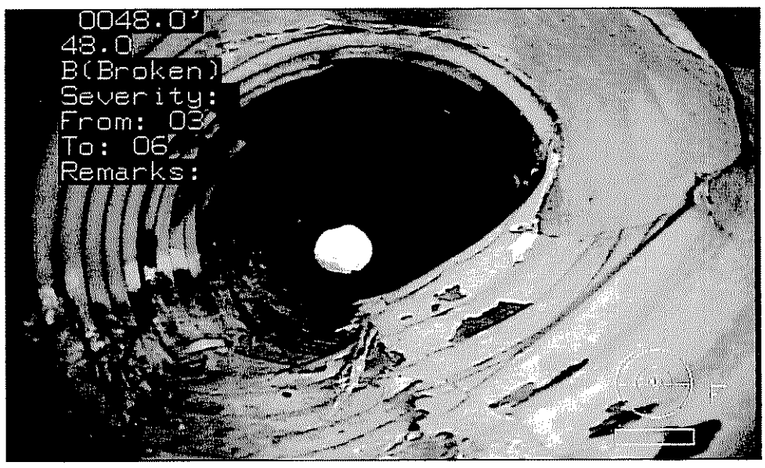

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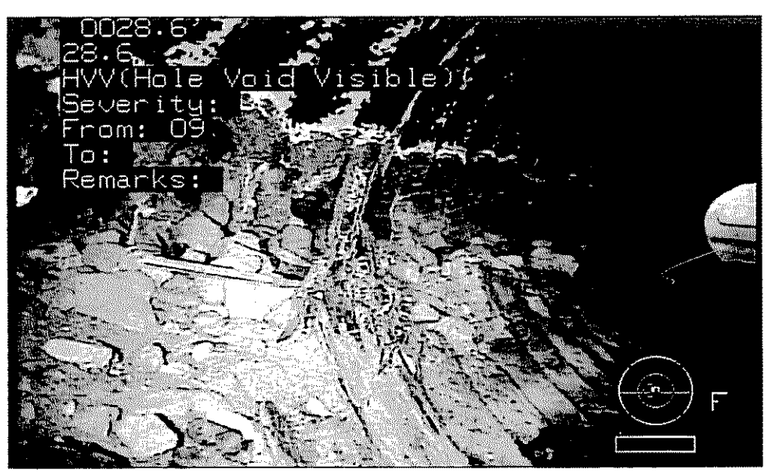

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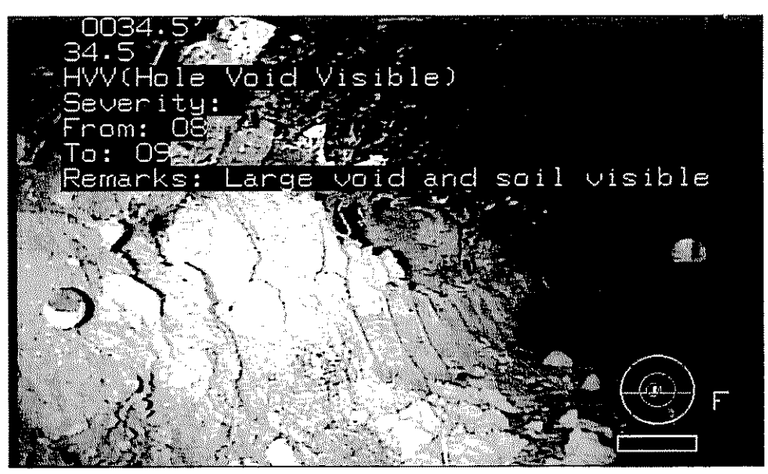

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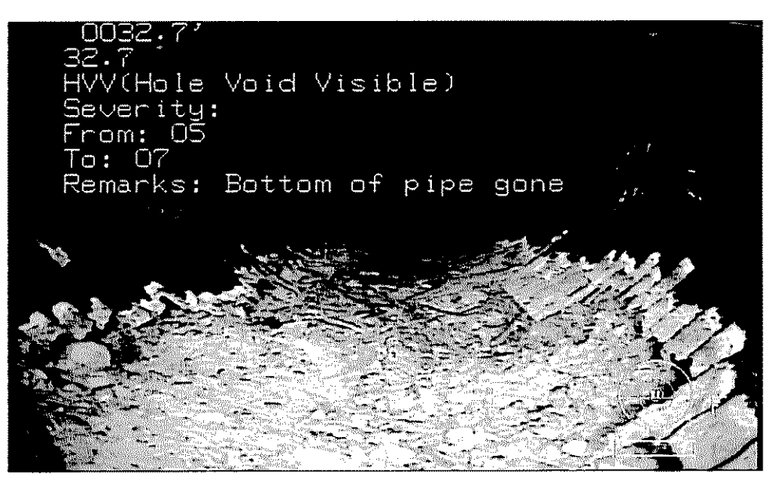

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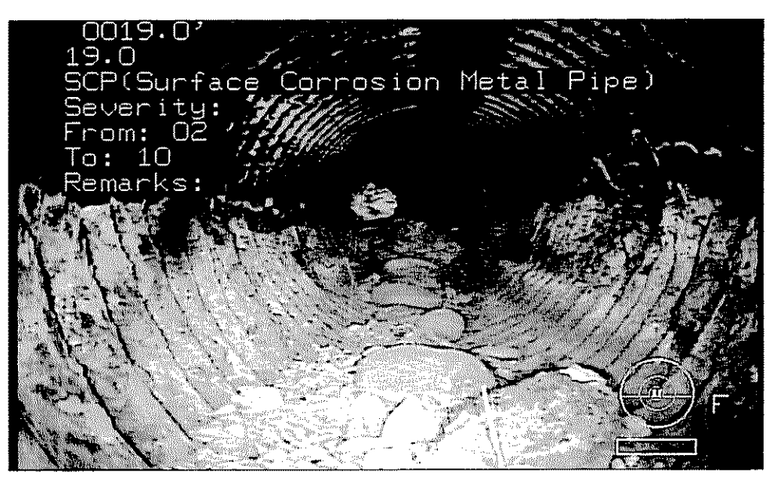

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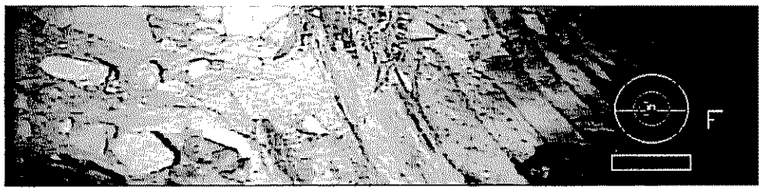

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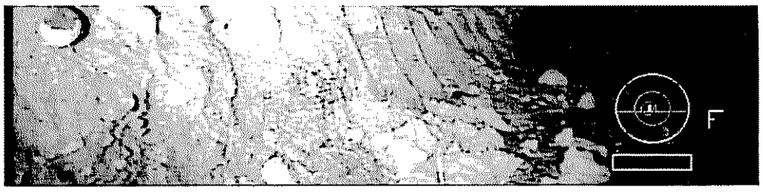

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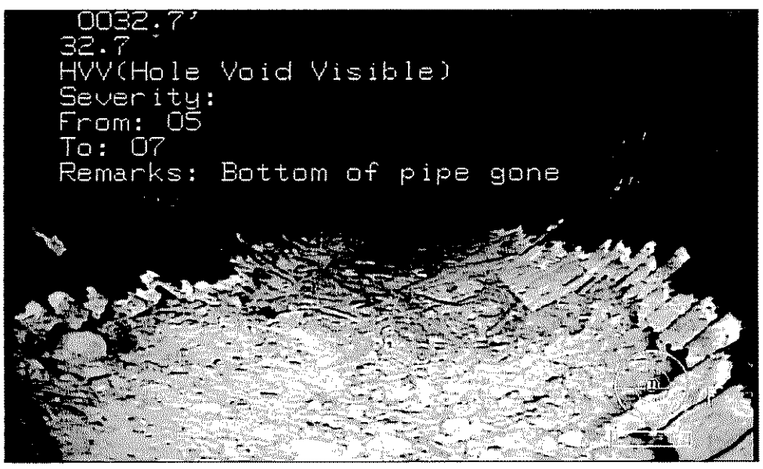

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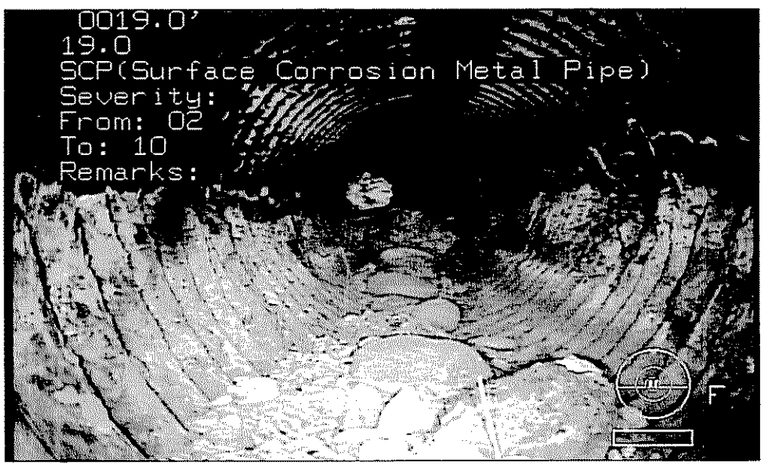

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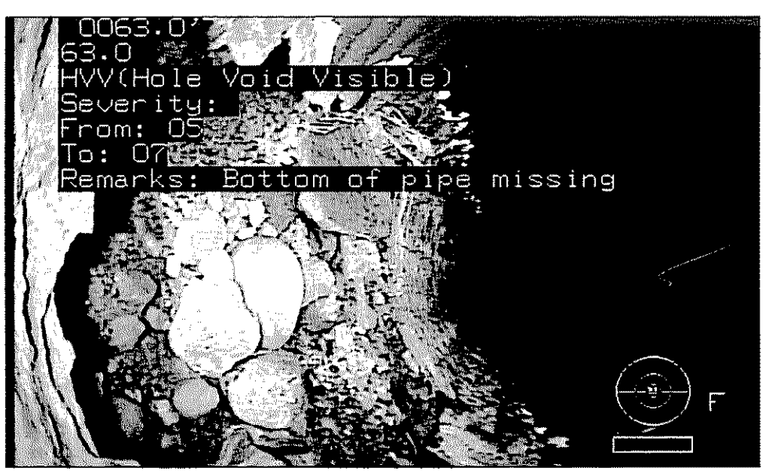

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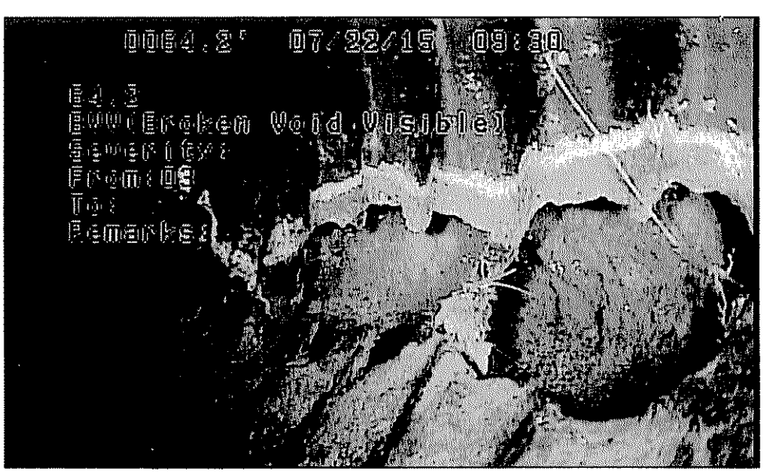

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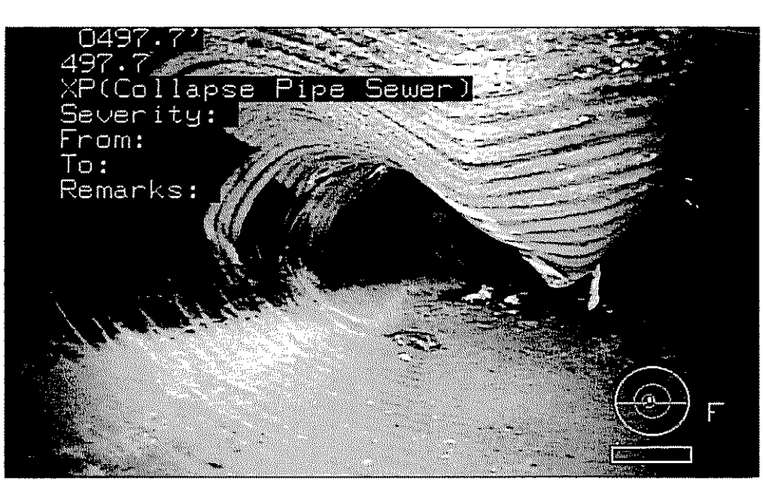

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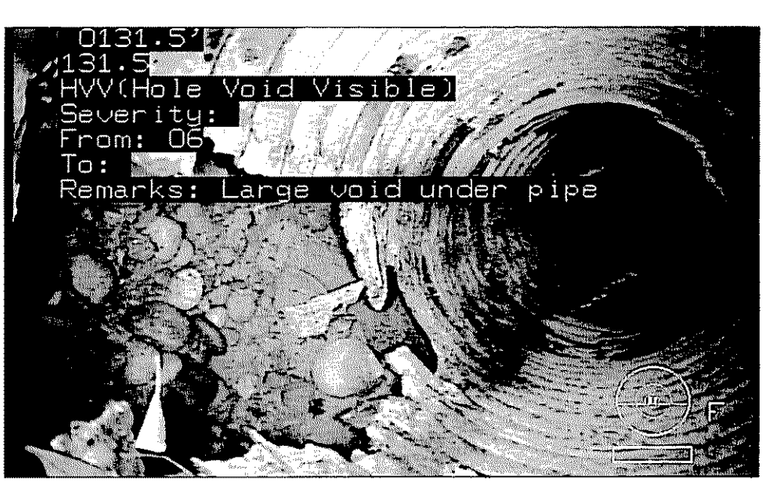

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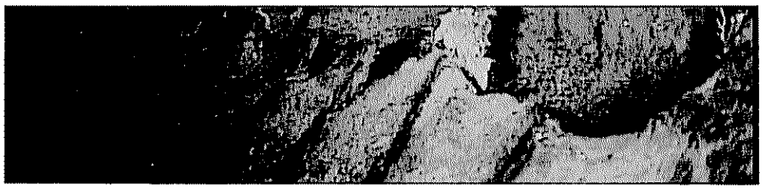

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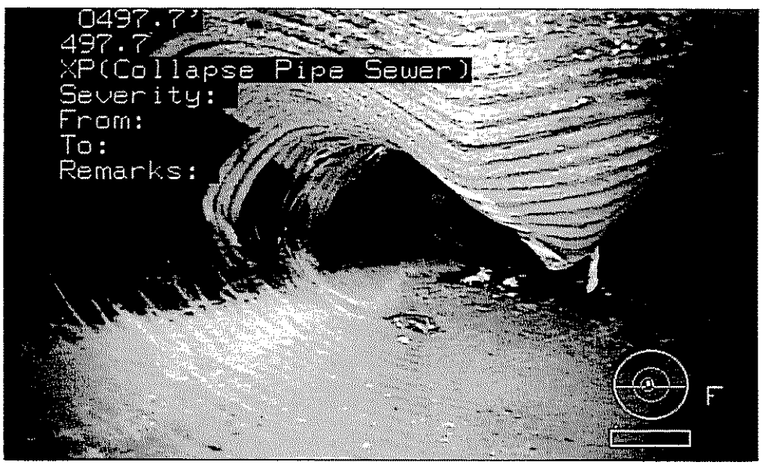

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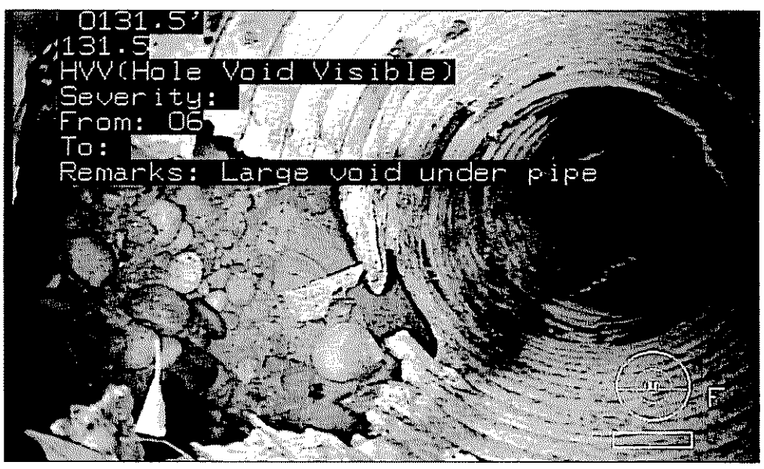

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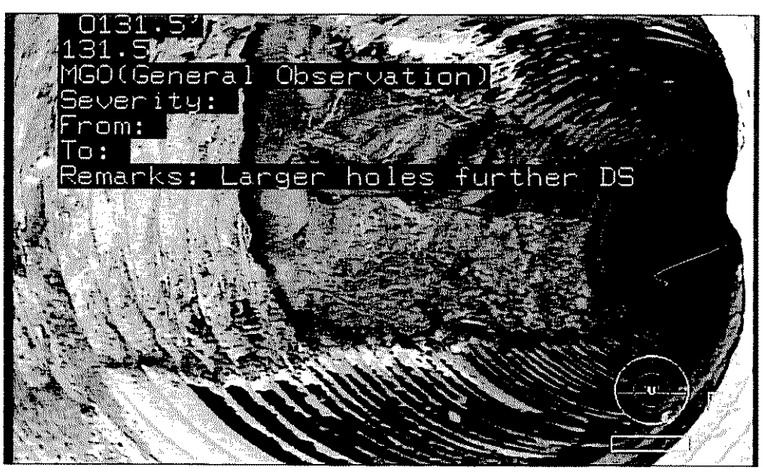

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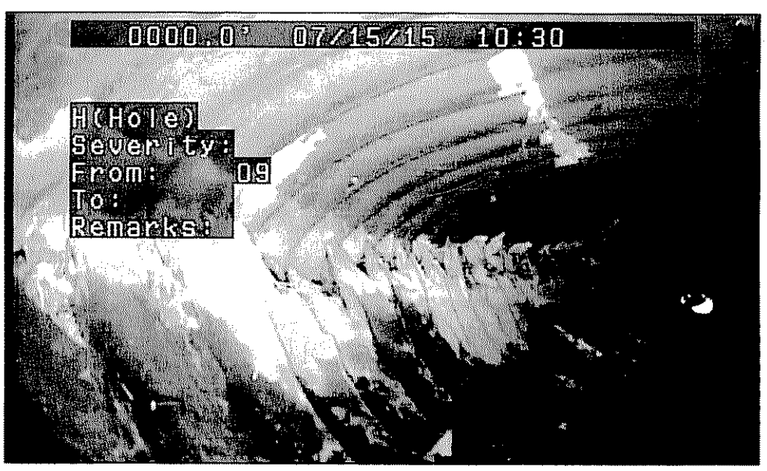

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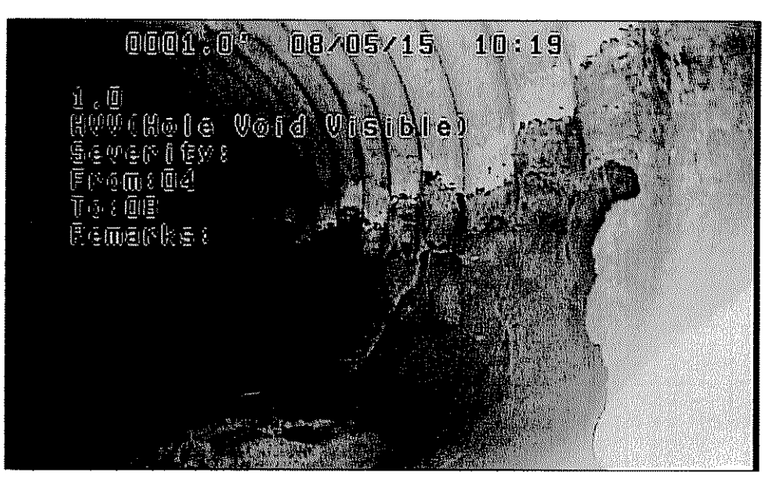

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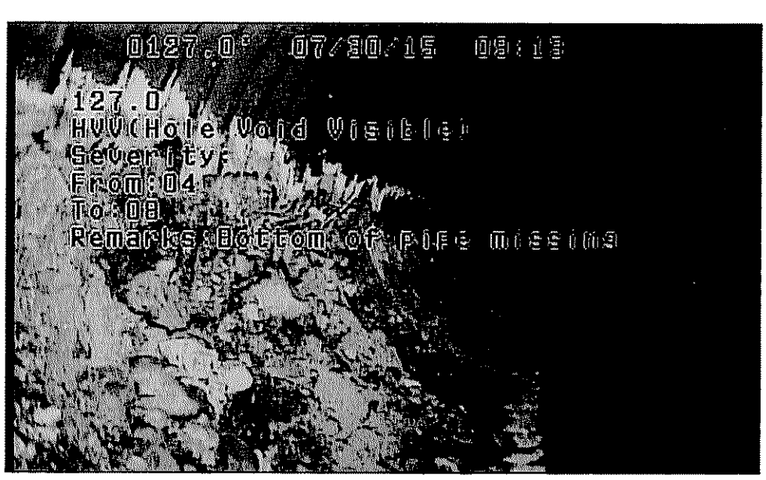

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