62-109060-3310

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OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA GEN. REG. NO. 27

UNITED STATES GOVERNMENT

Memorandum

TO : Mr. Conrad

FROM : W. D. Griffith

1 - Mr. Conrad
1 - Mr. Jevons
1 - Mr. Griffith

DATE: 6/8/64.

1 - Mr. Shaneyfelt
1 - Mr. Frazier
1 - Office, Rm. 7133

Tolson
Belmont
Mohr
Casper
Callahan
Conrad
DeLoach
Evans
Gale
Rosen
Sullivan
Tavel
Trotter
Tele. Room
Holmes
Gandy

SUBJECT: ASSASSINATION OF PRESIDENT JOHN F. KENNEDY
DALLAS, TEXAS, 11/22/63

On June 4, 1964, Inspector Leo Gauthier, SA Lyndal L. Shaneyfelt and SA Robert A. Frazier testified before the President's Commission concerning an on-site survey of the scene of the assassination which survey was requested by the Commission. Commission members present during all or part of the testimony were Chief Justice Earl Warren, Senator John Sherman Cooper, Congressman Charles R. Ford (Republican), Michigan, Mr. John J. McCloy, Chairman, Advisory Committee, Arms Control and Disarmament Agency, and Mr. Allen W. Dulles, former head of the Central Intelligence Agency. Inspector Thomas Kelley, U. S. Secret Service, testified concerning the physical specifications of the President's car as compared with the car used to reconstruct the assassination scene. Inspector Gauthier is preparing a separate memorandum concerning his testimony.

SA Shaneyfelt testified regarding the amateur motion picture films made by Abraham Zapruder, Orville Nix and Marie Muchmore, which have been extensively examined in the Laboratory. He testified regarding the examinations he had made of the cameras used to make these films, the determination of the film speeds of these cameras and the comparison of the film speeds of the cameras to the elapsed times between various frames of the films depicting the assassination. He also explained the manner in which frame numbers were assigned to each frame of each of the assassination films for convenience in the study of the films. In addition he testified regarding the numerous reviews of the motion picture films that have taken place at the Commission, individuals present at these reviews and, in general, the purpose of the film reviews, which was to try to establish the specific points in the films where shots occurred.

SA Shaneyfelt then testified in detail regarding the on-site survey and re-enactment that took place in Dallas on May 24, 1964. He

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ENCLO. BEHIND FILE

1 - Mr. Belmont
1 - Mr. Rosen
1 - Mr. Sullivan
1 - Mr. Callahan
1 - Mr. Malley
1 - Mr. Rogge
1 - Mr. Lenihan

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2 JUN 17 1964

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stated the members of the Commission, FBI and Secret Service that were present at the re-enactment and the manner in which the car and its occupants were established at locations on the assassination route based on specific frames of the Zapruder, Nix and Muchmore films and observations of SA Frazier from the sixth floor window of the Texas School Book Depository (TSBD) building. The specific frames of the Zapruder film used for the re-enactment were, A, 161, 166, 185, 186, 207, 210, 222, 225, 231, 235, 240, 249, 255 and 313. He testified regarding photographs that were made of the re-enactment at each of the specified points along the assassination route as well as motion pictures made of the re-enactment car moving along the assassination route. Exhibits had been prepared for each of the frame numbers re-enacted and each exhibit contained a copy of a Zapruder photograph, a corresponding copy of a re-enactment photograph, a photograph taken through the scope of the rifle and a listing of the measurements related to that location including distance and angle to the window of the TSBD building and distance and angle to a nearby triple overpass. He further testified regarding the motion picture film that was taken through the telescopic sight of the rifle, of the car both in the fixed location previously determined and during the time the car drove the assassination route at approximately eleven miles per hour. SA Shaneyfelt also testified regarding his examination of the Zapruder film including reaction or lack of reaction in either President Kennedy or Governor Connally at various points in the film. He also testified that he had established as a result of the survey and a further study of the Zapruder film that the assassination car was traveling at an average speed of 11.2 miles per hour during the pertinent portion of this film. All of the exhibits presented by SA Shaneyfelt regarding the re-enactment were admitted in evidence.

SA Frazier testified that he participated in the on-site re-enactment, making observations from the sixth floor window of the TSBD BUILDING. In this connection, the Commission desired to place the car used in the re-enactment at the point where the assassin would have his last clear shot before the car passed under a tree which overhangs Elm Street in front of the TSBD. The Commission wished to determine

also if the assassin would have a clear shot at the President through any break in the foliage of this tree and to position the car where the first clear shot could be made after the car emerged from under the tree. SA Frazier, using the telescopic sight on the assassination rifle, fixed these positions as frame number 166 (last clear shot), frame number 186 (shot through opening in tree) and frame number 210 (first clear shot beyond tree) of the Zapruder film and so testified.

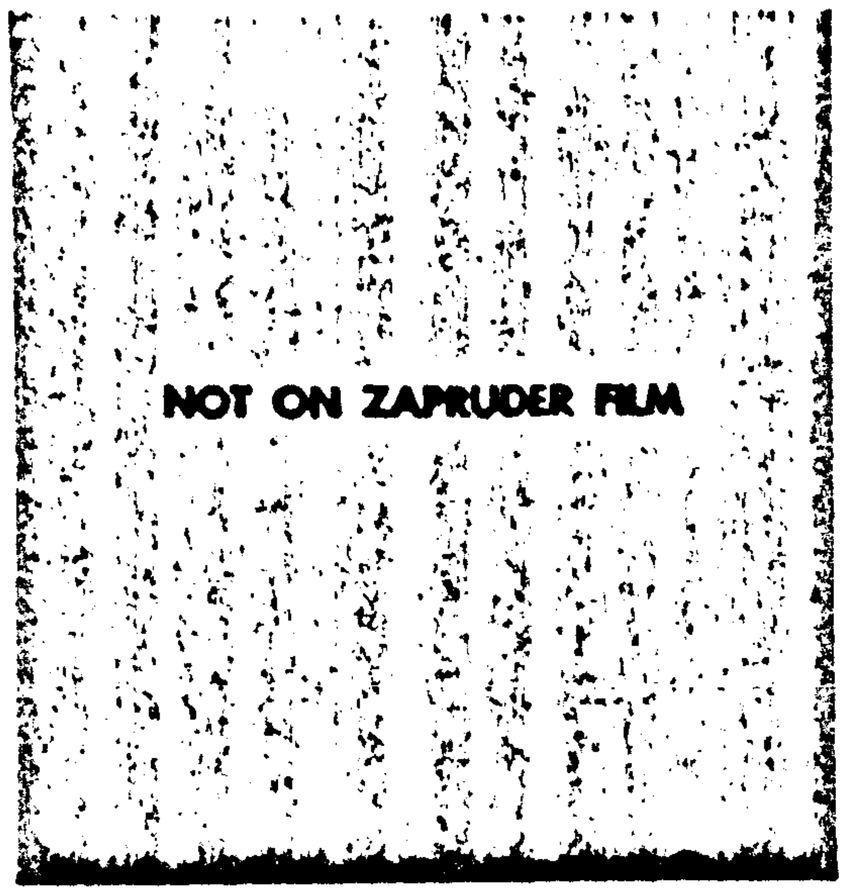
SA Frazier also testified that under certain hypothetical conditions set out by the Commission (in particular that there was no deflection of the bullet while passing through the President's body), and under the conditions shown in the photographs taken during the on-site re-enactment, a bullet which struck President Kennedy in the back of the neck (first wound) would necessarily have struck the car or its occupants after exiting from the front of the President's neck. This condition exists due to the downward angle of the path of the bullet and to the position of the Presidential limousine which was moving virtually directly away from the assassin's position.

Under the hypothetical conditions set out by the Commission (in particular that there was no deflection of the bullet while passing through the President and that Governor Connally was sitting in front of the President approximately as the scene was reconstructed on 5/24/64), SA Frazier testified that it was possible the bullet which wounded the President also could have struck Governor Connally in the back and passed through his body.

However, in connection with all of SA Frazier's testimony concerning hypothetical questions and assumed conditions, SA Frazier was careful to inform the Commission that there was insufficient technical evidence known personally to him to support or otherwise resolve the hypotheses and assumed conditions advanced by the Commission representatives.

Following the testimony of Messrs. Kelley, Gauthier, Frazier and Shaneyfelt, movie films made by SA Shaneyfelt at the re-enactment scene were shown to the Commission and made a part of the Commission's exhibits.

ACTION: None. For information.



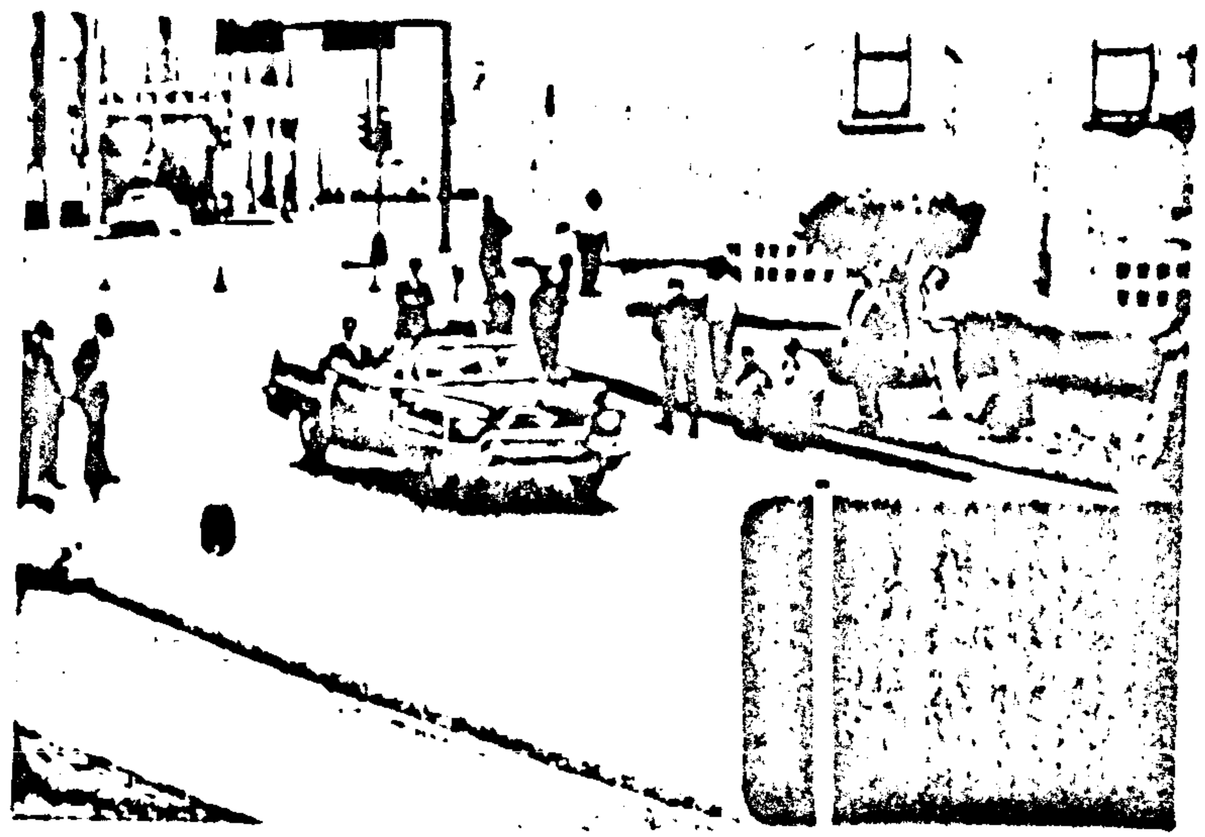
PHOTOGRAPH FROM RE-ENACTMENT

PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	44.9 FT.
DISTANCE TO RIFLE IN WINDOW	91.6 FT.
ANGLE TO RIFLE IN WINDOW	40°10'
DISTANCE TO OVERPASS	447.0 FT.
ANGLE TO OVERPASS	-0°27'

POSITION A

PHOTOGRAPH FROM ZAPRUDER FILM

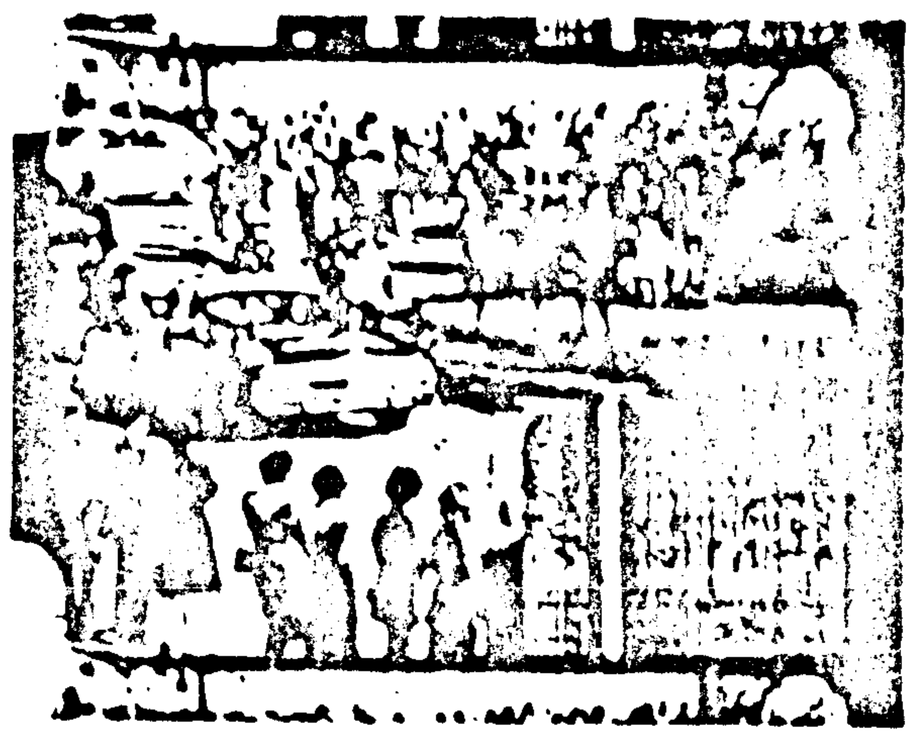


PHOTOGRAPH FROM RE-ENACTMENT

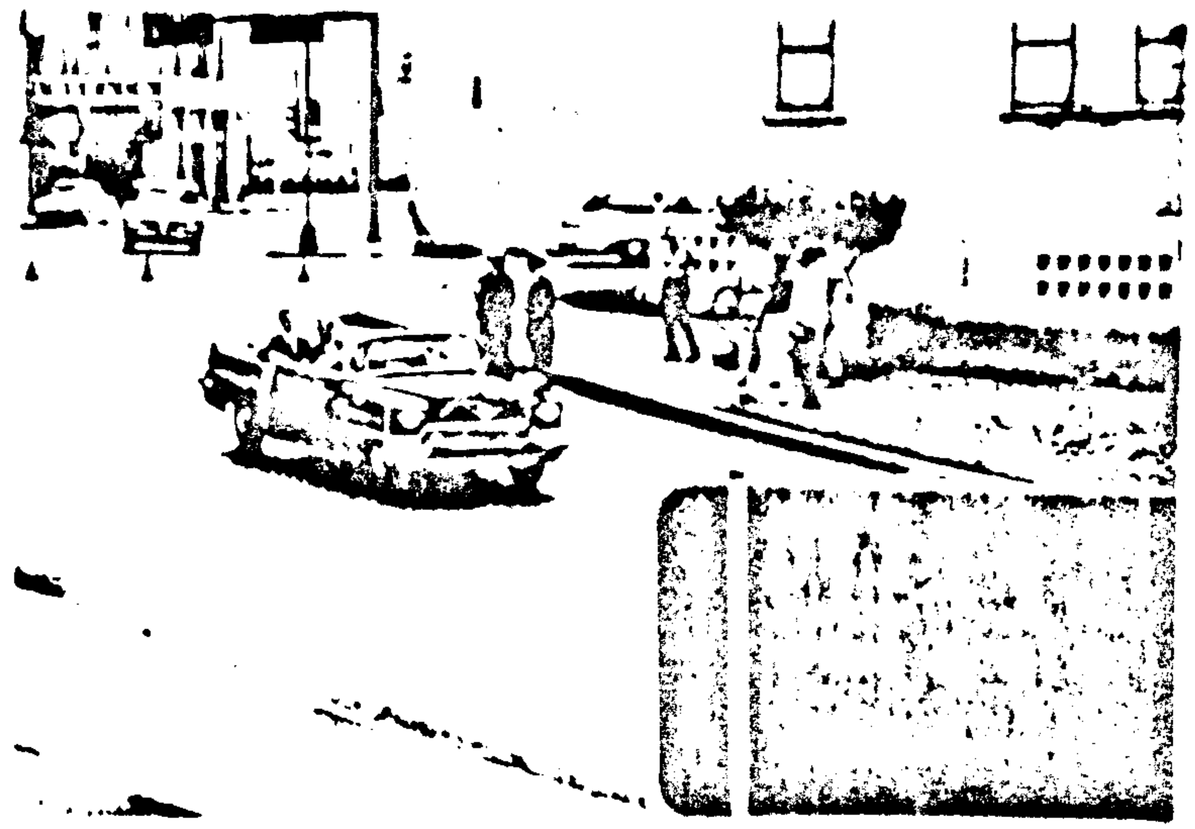
PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	94.7 FT.
DISTANCE TO RIFLE IN WINDOW	137.4 FT.
ANGLE TO RIFLE IN WINDOW	26°58'
DISTANCE TO OVERPASS	392.4 FT.
ANGLE TO OVERPASS	-0°07'

FRAME 161



PHOTOGRAPH FROM ZAPRUDER FILM



PHOTOGRAPH FROM RE-ENACTMENT

PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C ..... 95.6 FT.

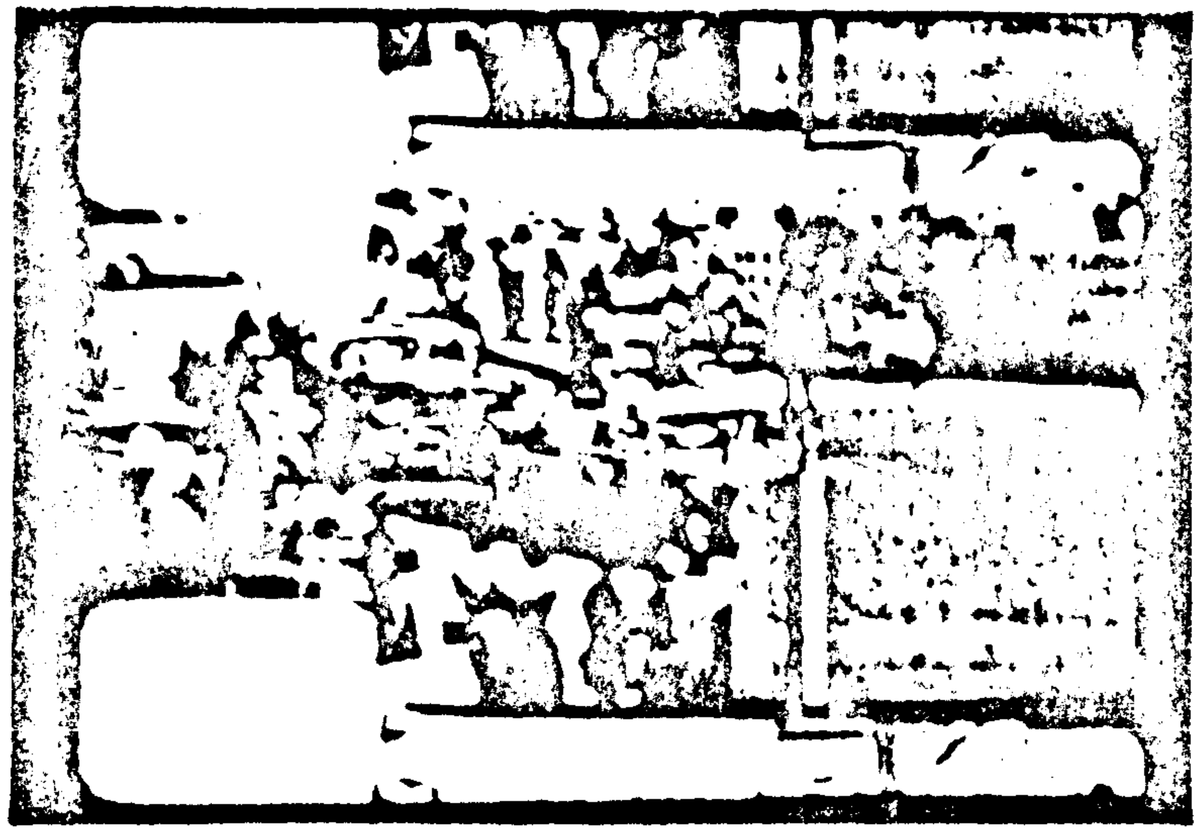
DISTANCE TO RIFLE IN WINDOW ..... 138.2 FT.

ANGLE TO RIFLE IN WINDOW ..... 26°52'

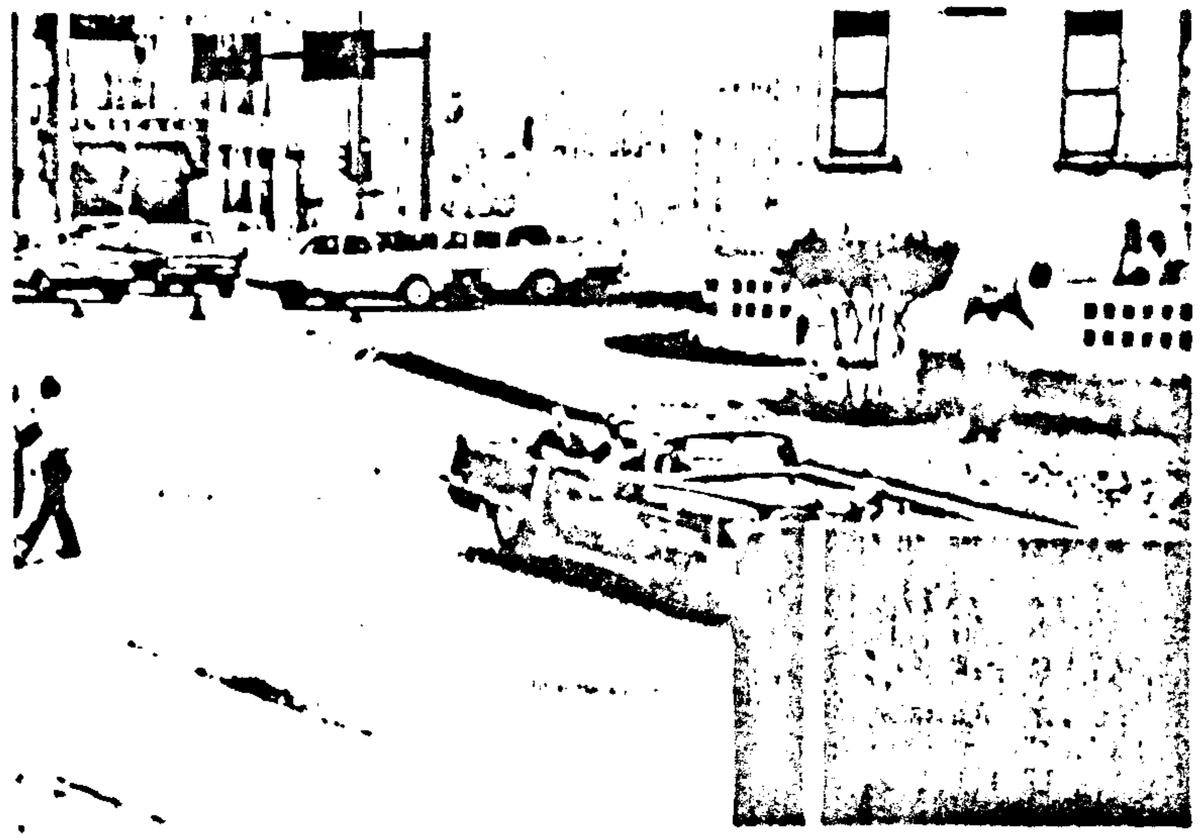
DISTANCE TO OVERPASS ..... 391.5 FT.

ANGLE TO OVERPASS ..... 0°07'

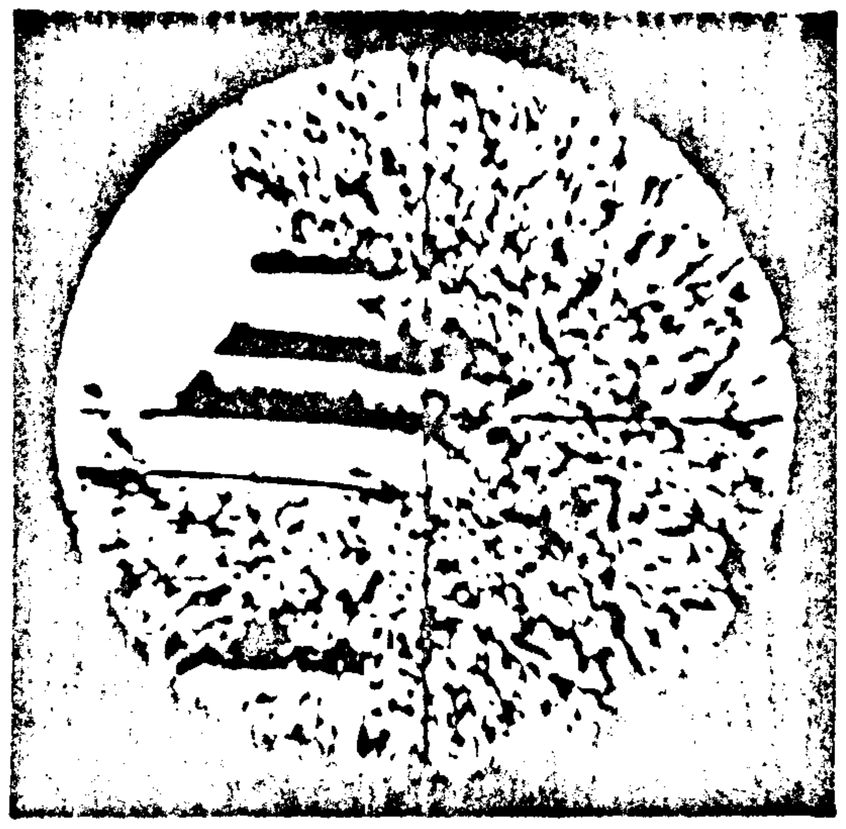
FRAME 166



PHOTOGRAPH FROM ZAPRUDER FILM



PHOTOGRAPH FROM RE-ENACTMENT

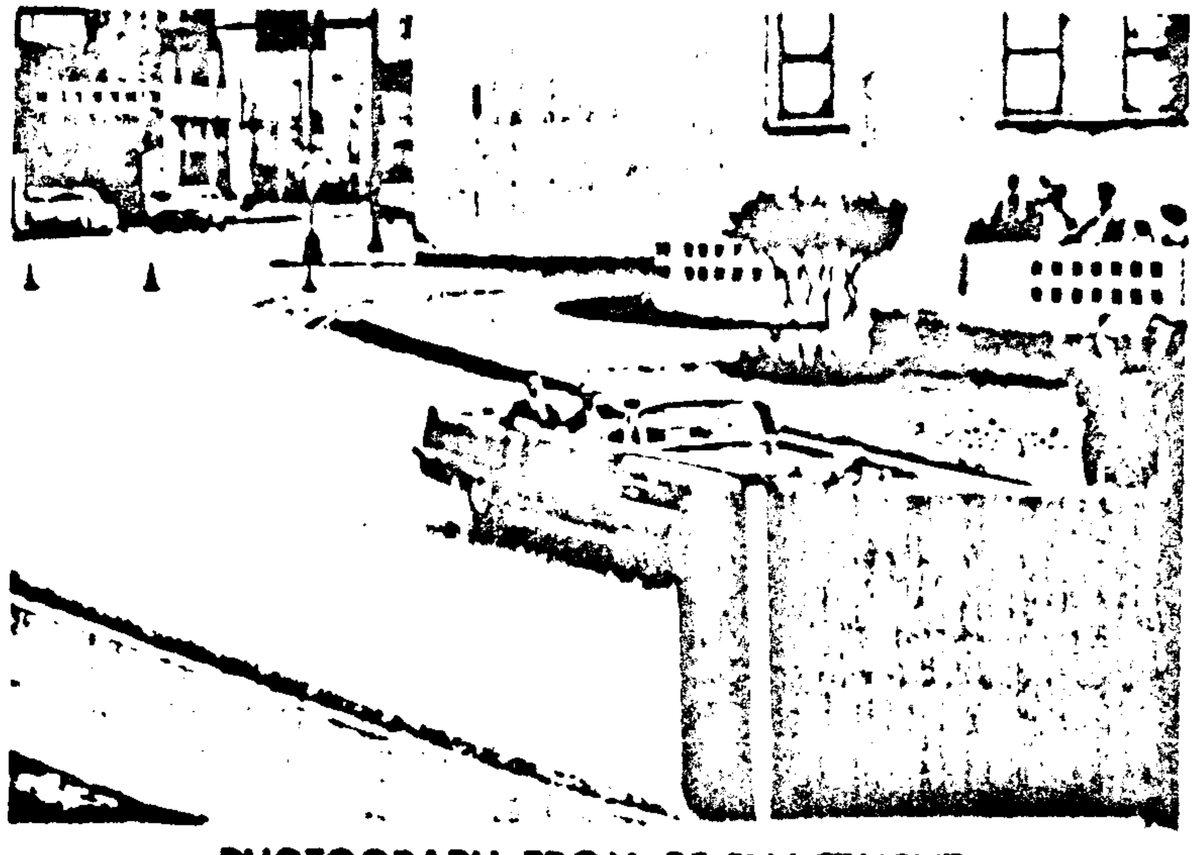


PHOTOGRAPH THROUGH RIFLE SCOPE

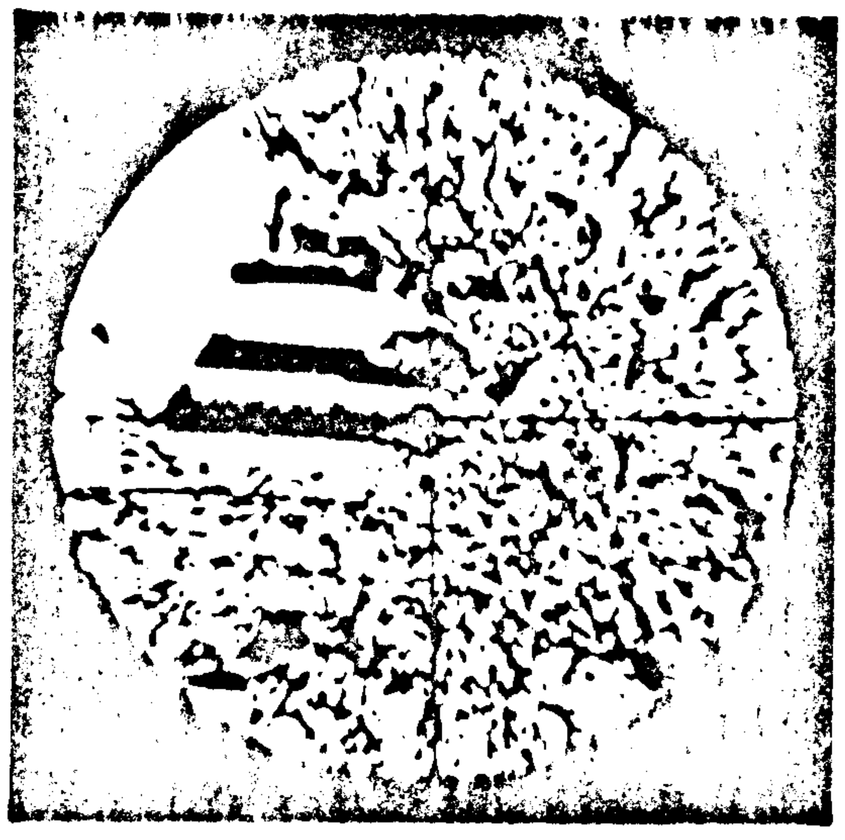
DISTANCE TO STATION C	114.8 FT.
DISTANCE TO RIFLE IN WINDOW	154.9 FT.
ANGLE TO RIFLE IN WINDOW	24°14'
DISTANCE TO OVERPASS	372.5 FT.
ANGLE TO OVERPASS	+0°03'

FRAME 185

PHOTOGRAPH FROM ZAPRUDER FILM



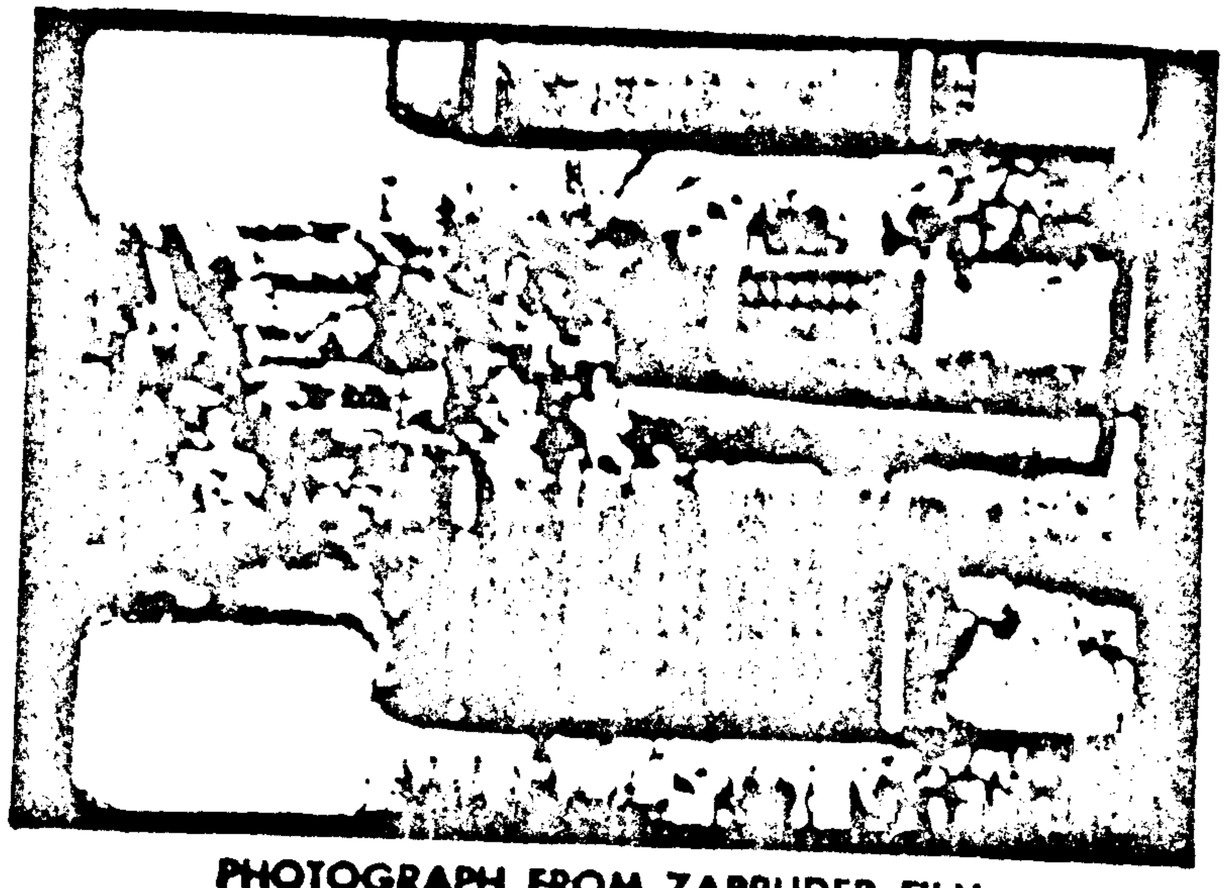
PHOTOGRAPH FROM RE-ENACTMENT



PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C ..... 116.3 FT.
DISTANCE TO RIFLE IN WINDOW ..... 156.3 FT.
ANGLE TO RIFLE IN WINDOW ..... 24°03'
DISTANCE TO OVERPASS ..... 371.7 FT.
ANGLE TO OVERPASS ..... +0°03'

FRAME 186



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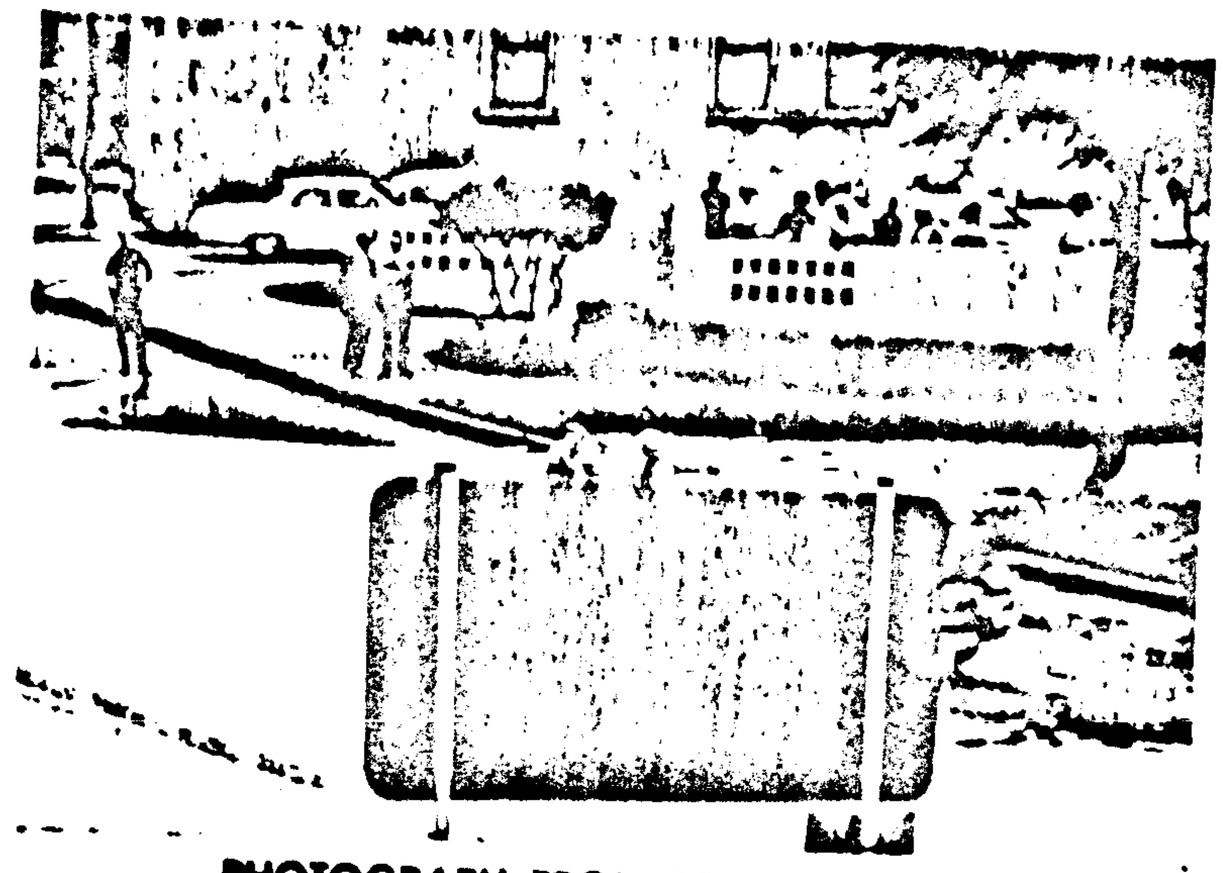

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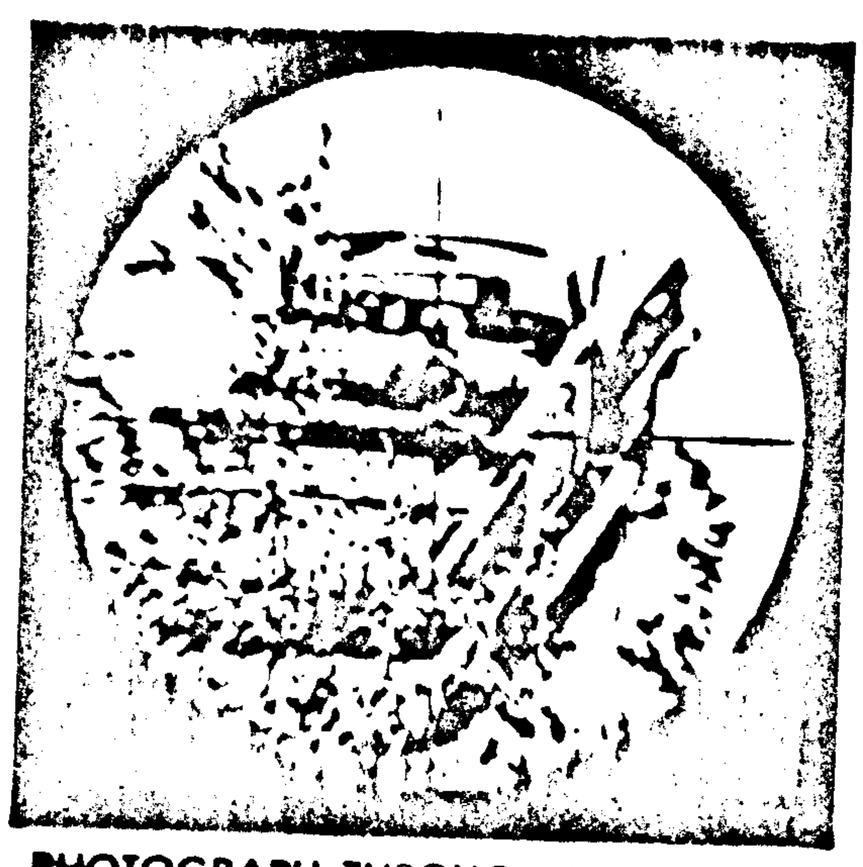
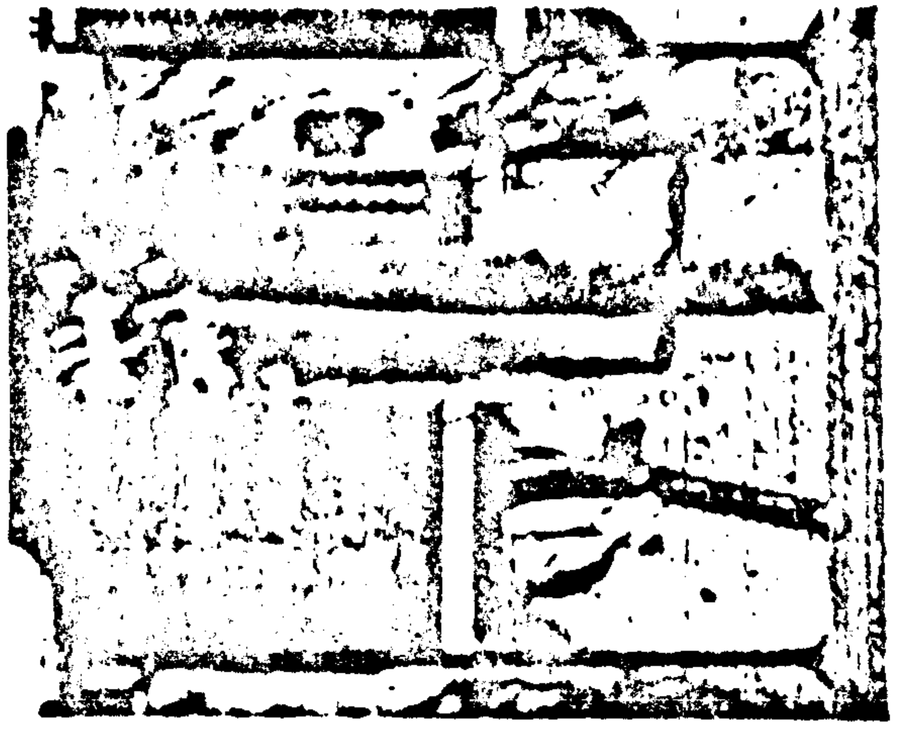


PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	136.6 FT.
DISTANCE TO RIFLE IN WINDOW	174.9 FT.
ANGLE TO RIFLE IN WINDOW	21°50'
DISTANCE TO OVERPASS	350.9 FT.
ANGLE TO OVERPASS	+0°12'

FRAME 207



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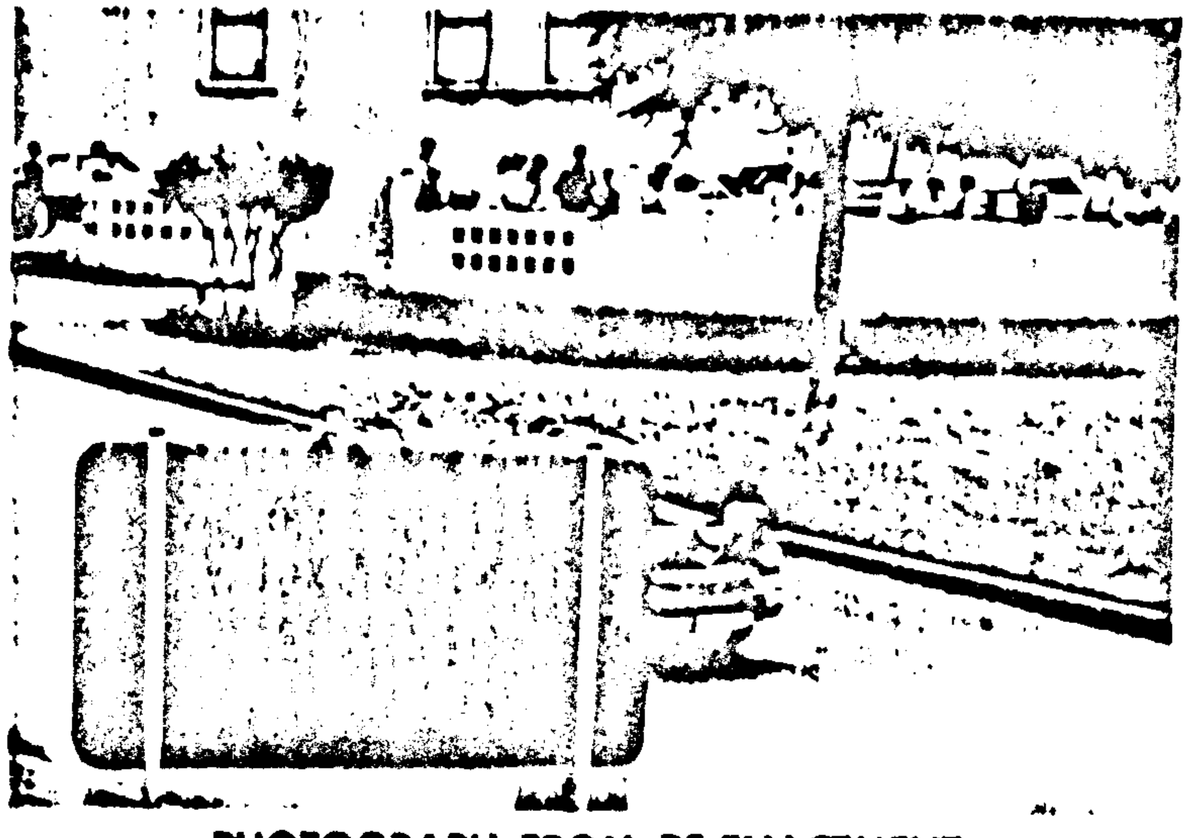

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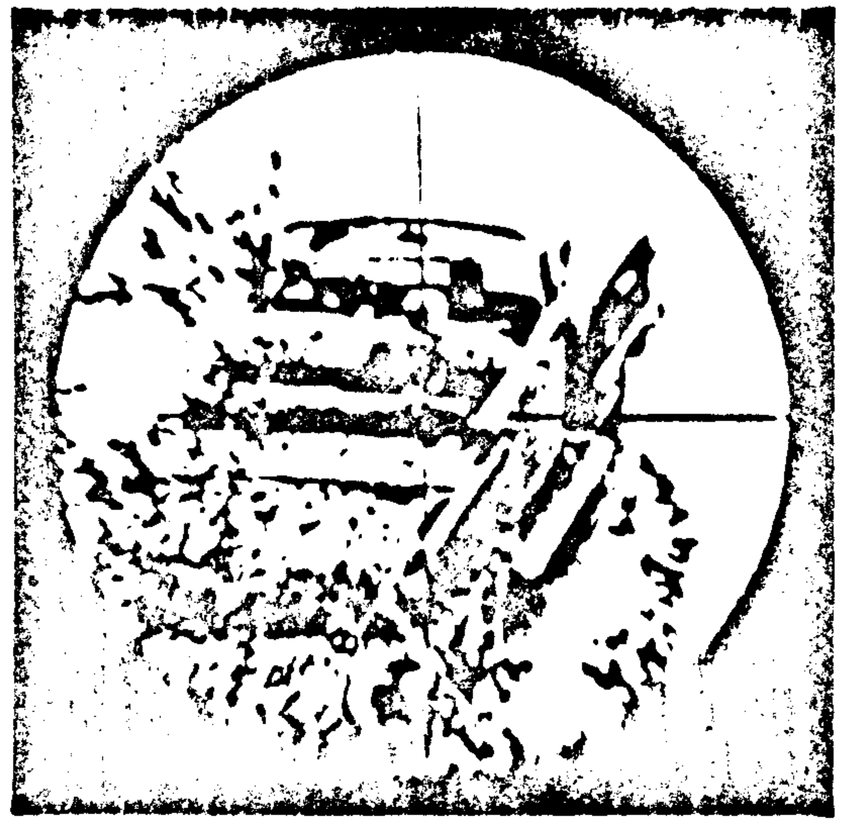
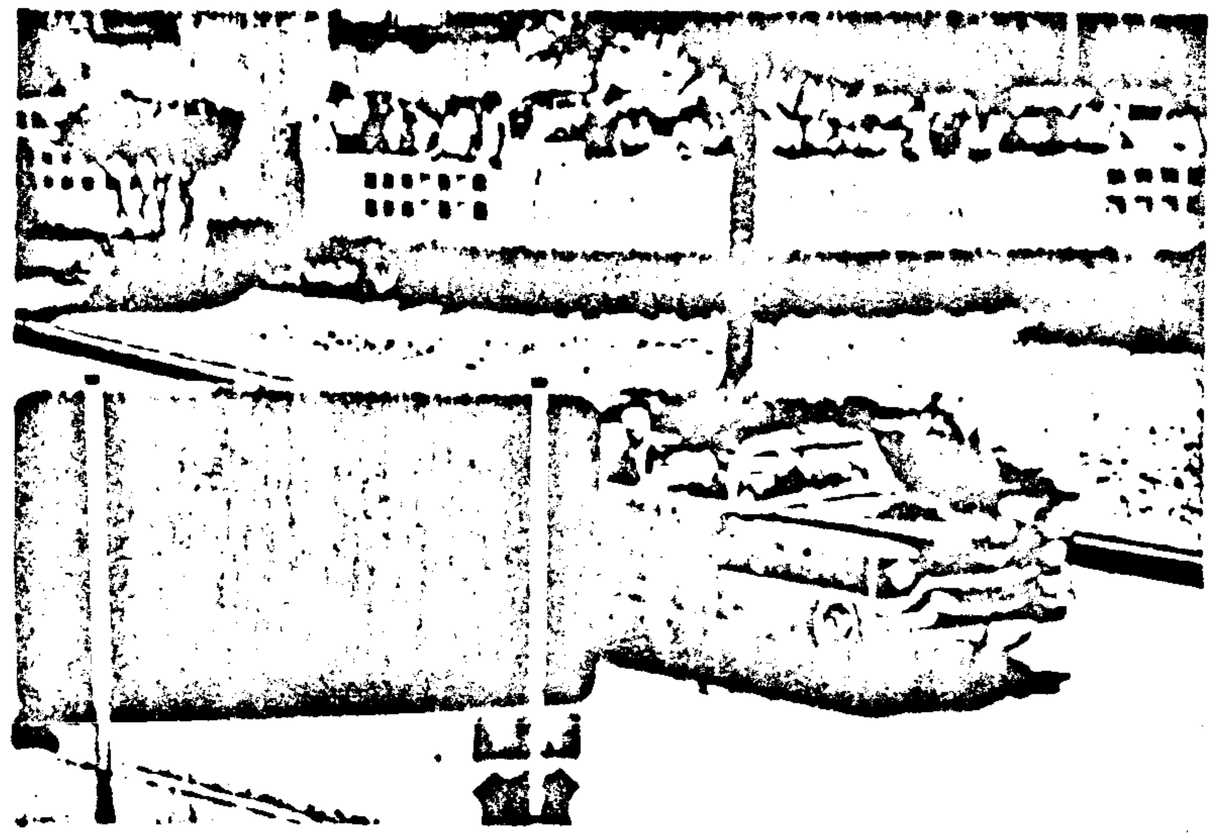


PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	138.9 FT.
DISTANCE TO RIFLE IN WINDOW	176.9 FT.
ANGLE TO RIFLE IN WINDOW	21°34'
DISTANCE TO OVERPASS	348.8 FT.
ANGLE TO OVERPASS	+0°22'

FRAME 210

PHOTOGRAPH FROM ZAPRUDER FILM



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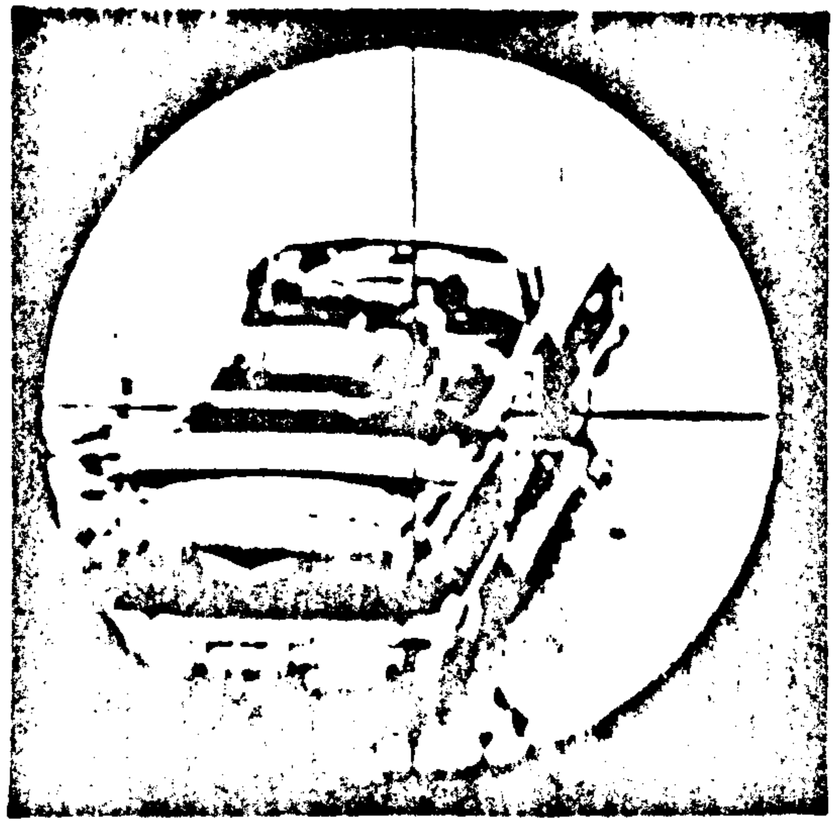
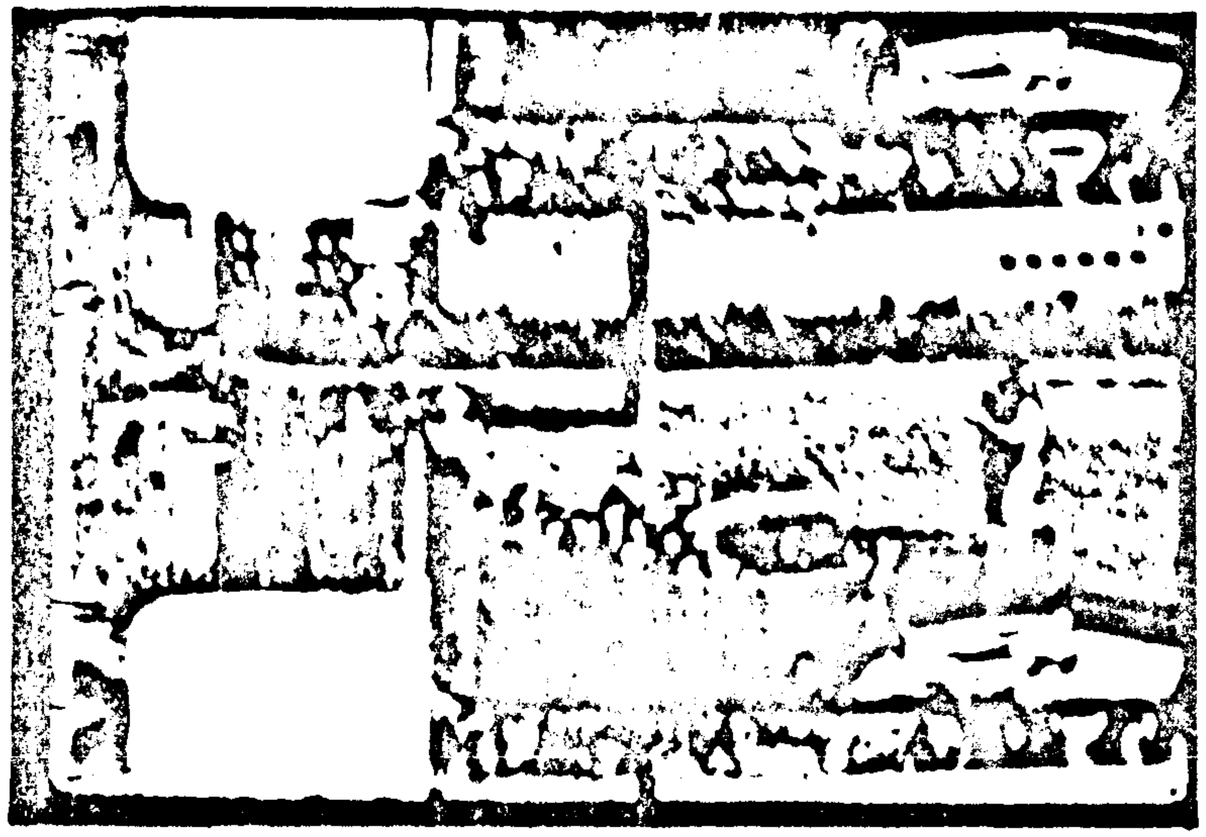


PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	151.4 FT.
DISTANCE TO RIFLE IN WINDOW	188.6 FT.
ANGLE TO RIFLE IN WINDOW	20°23'
DISTANCE TO OVERPASS	336.4 FT.
ANGLE TO OVERPASS	+0°24'

FRAME 222



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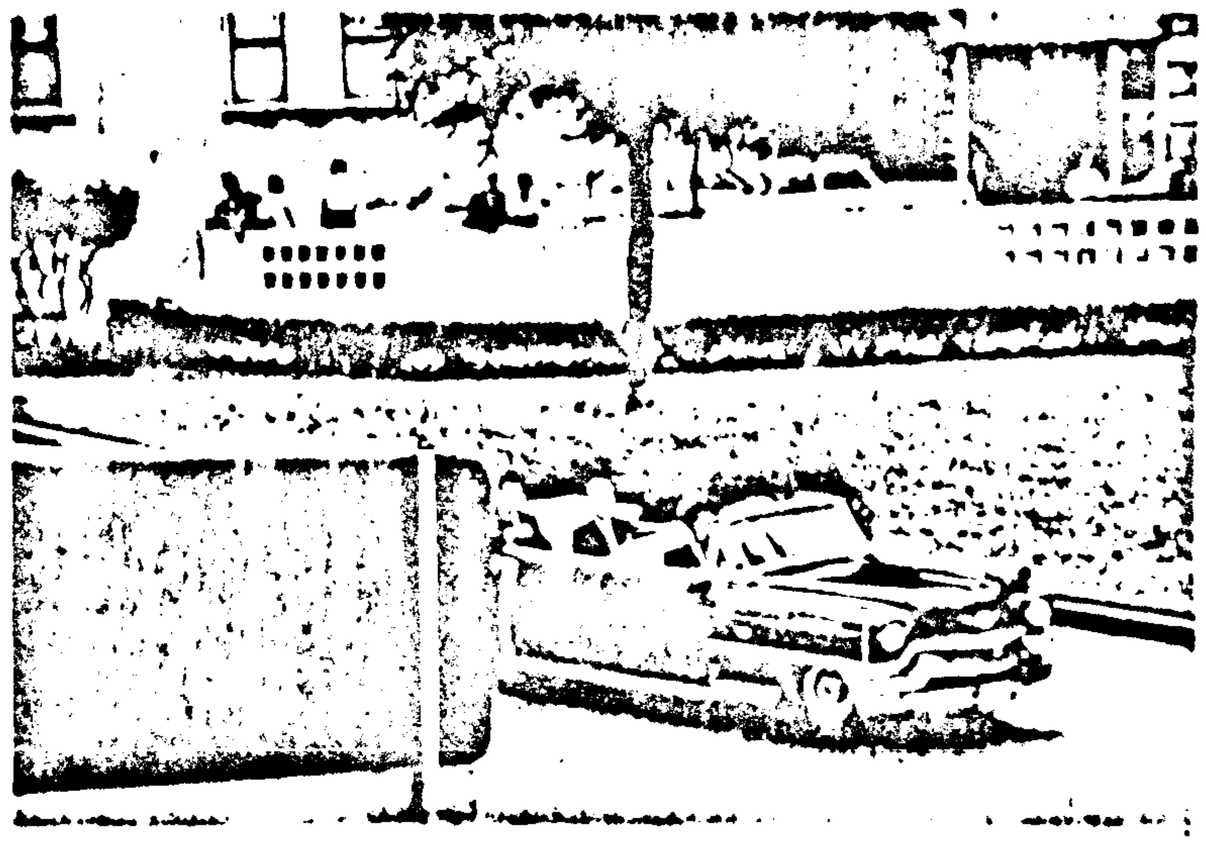

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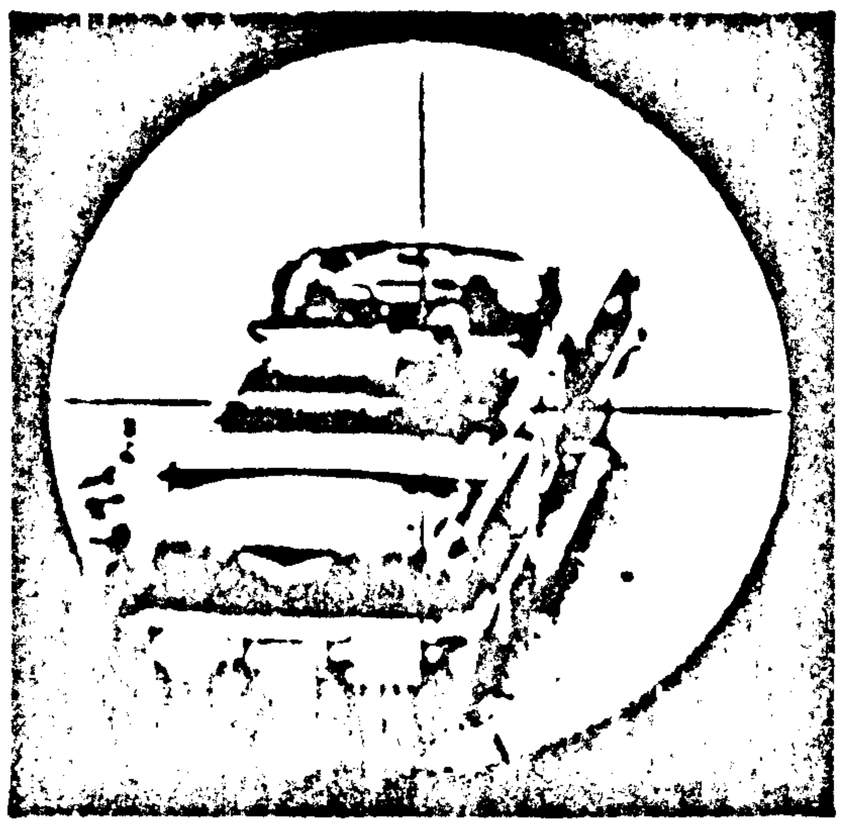
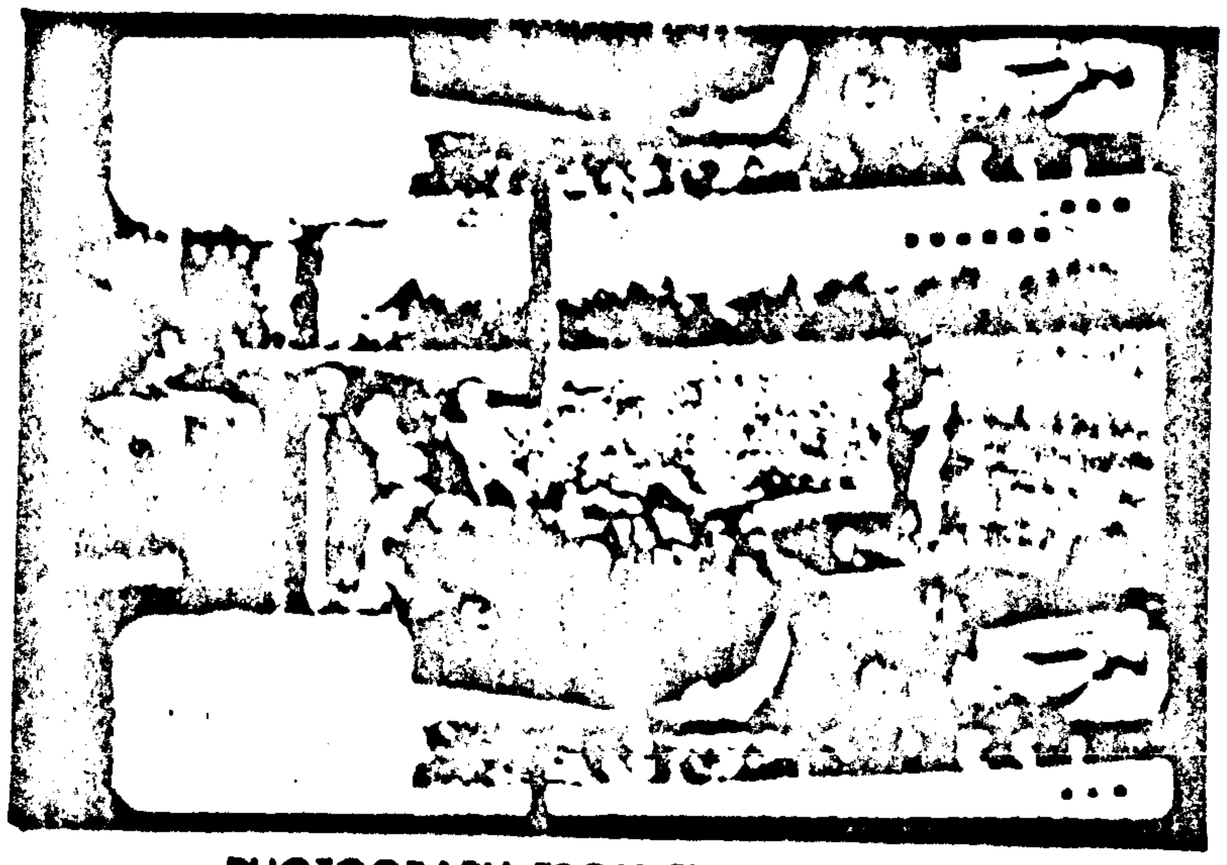


PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	153.8 FT.
DISTANCE TO RIFLE IN WINDOW	190.8 FT.
ANGLE TO RIFLE IN WINDOW	20°11'
DISTANCE TO OVERPASS	334.0 FT.
ANGLE TO OVERPASS	+0°26'

FRAME 225



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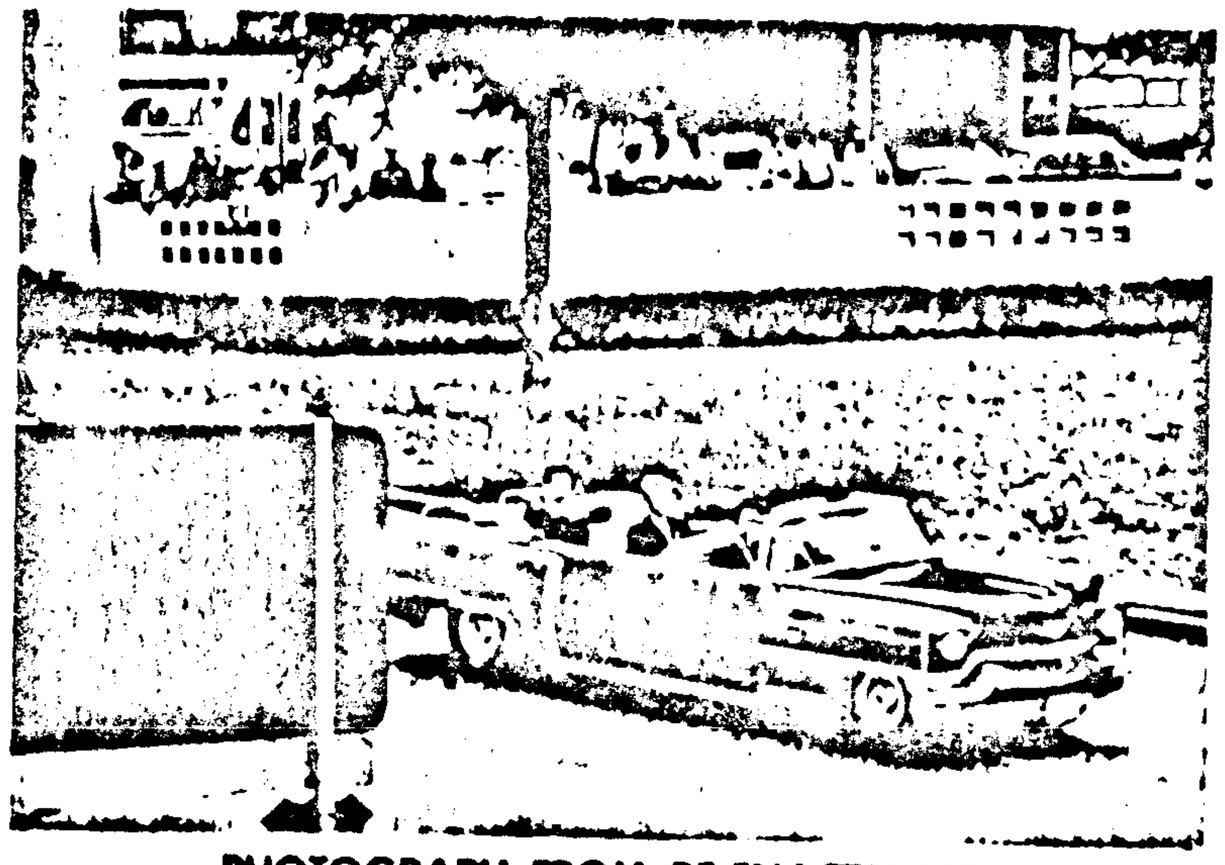

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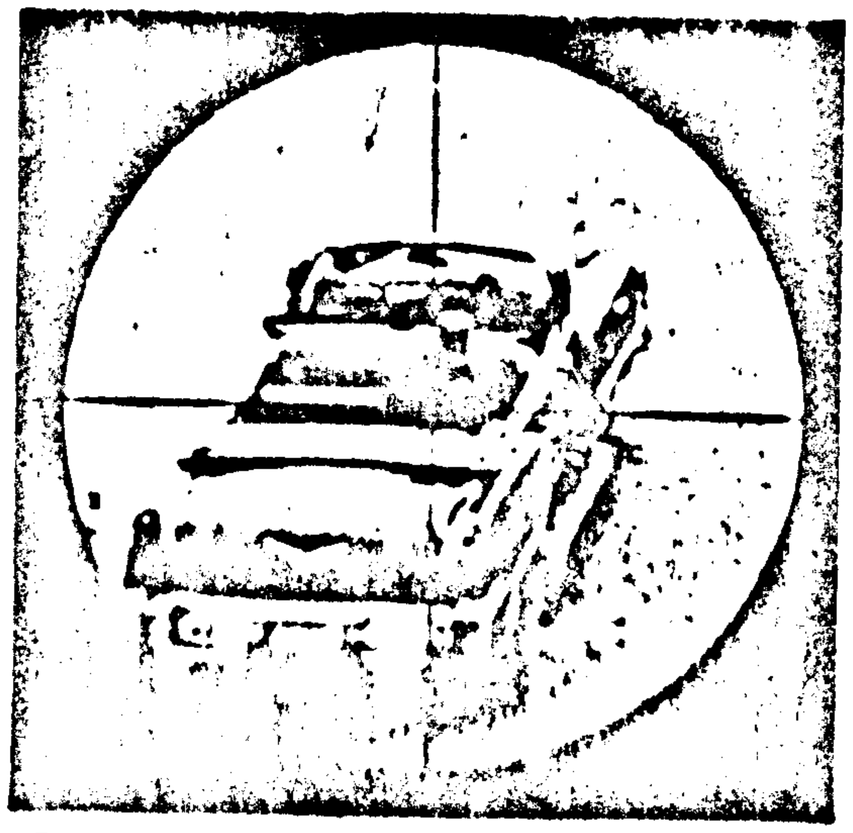
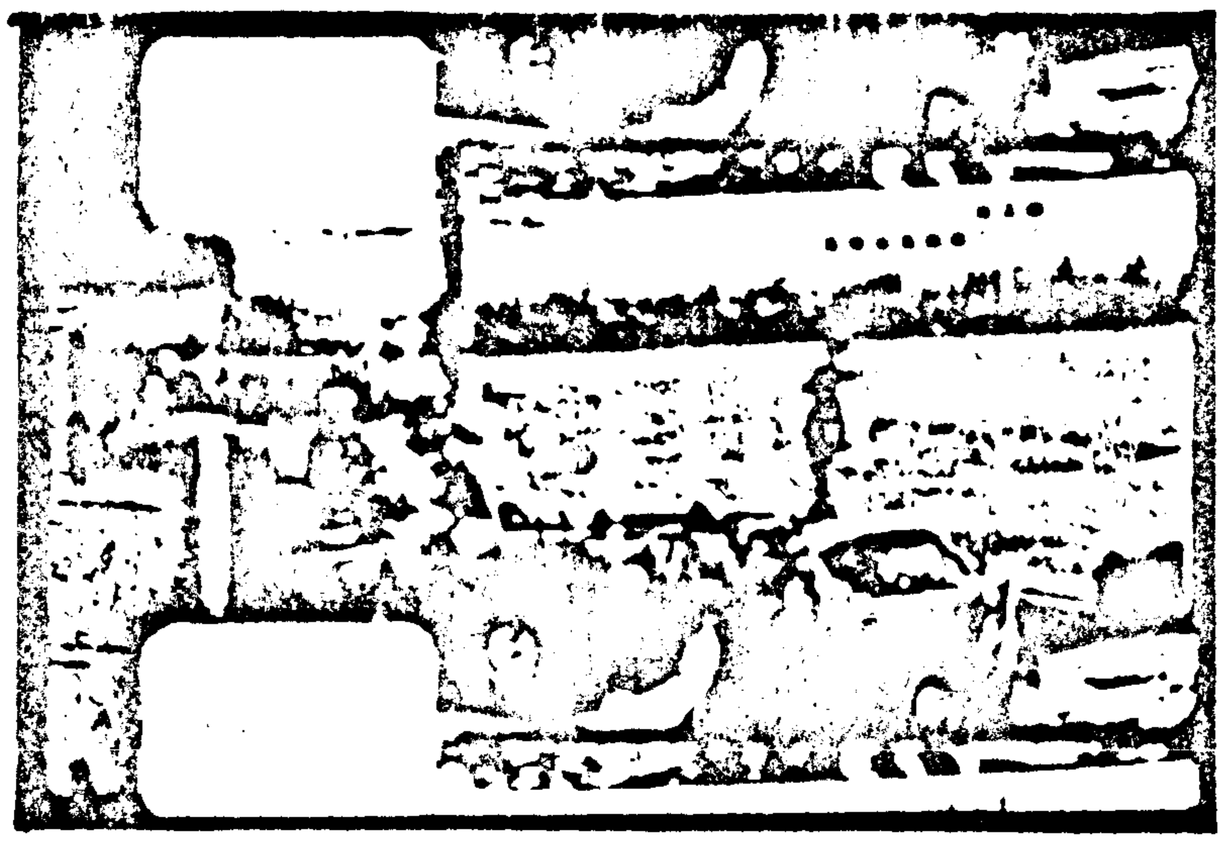


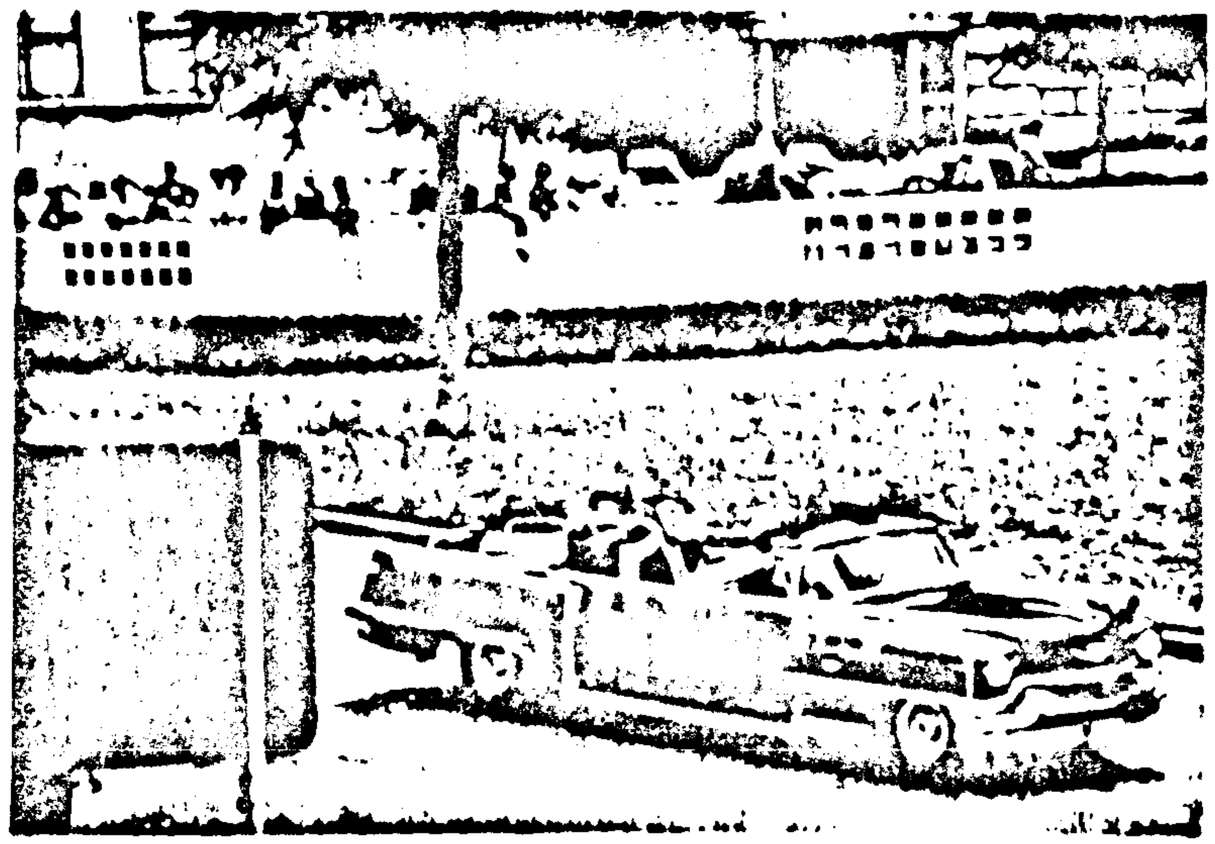
PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	159.0 FT.
DISTANCE TO RIFLE IN WINDOW	196.0 FT.
ANGLE TO RIFLE IN WINDOW	19°47'
DISTANCE TO OVERPASS	329.0 FT.
ANGLE TO OVERPASS	+0°28'

FRAME 231



PHOTOGRAPH FROM ZAPRUDER FILM



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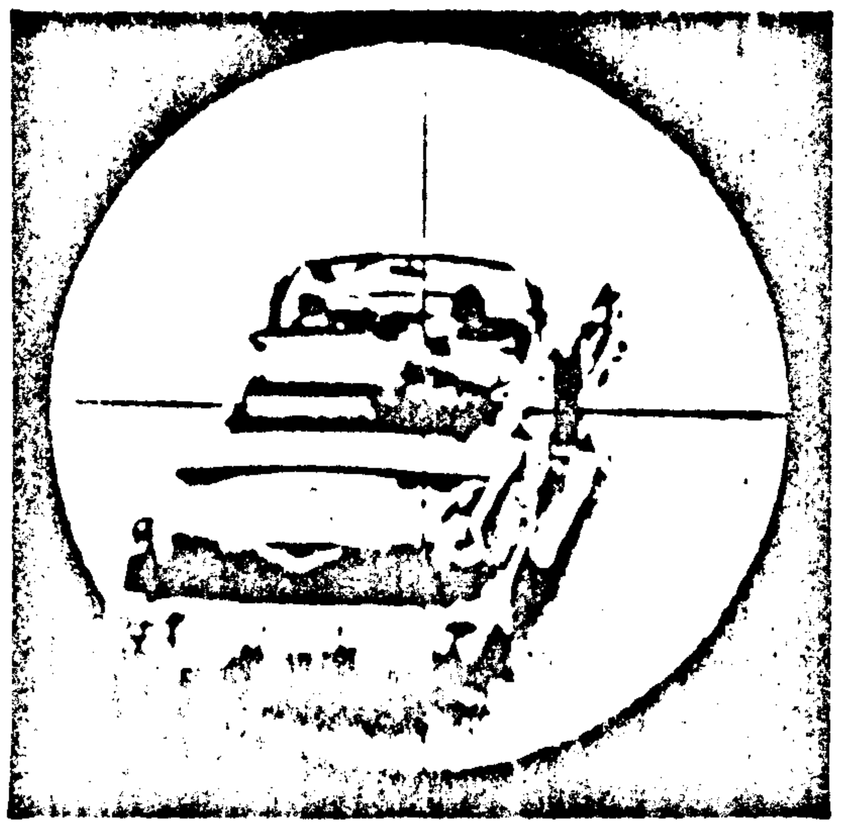
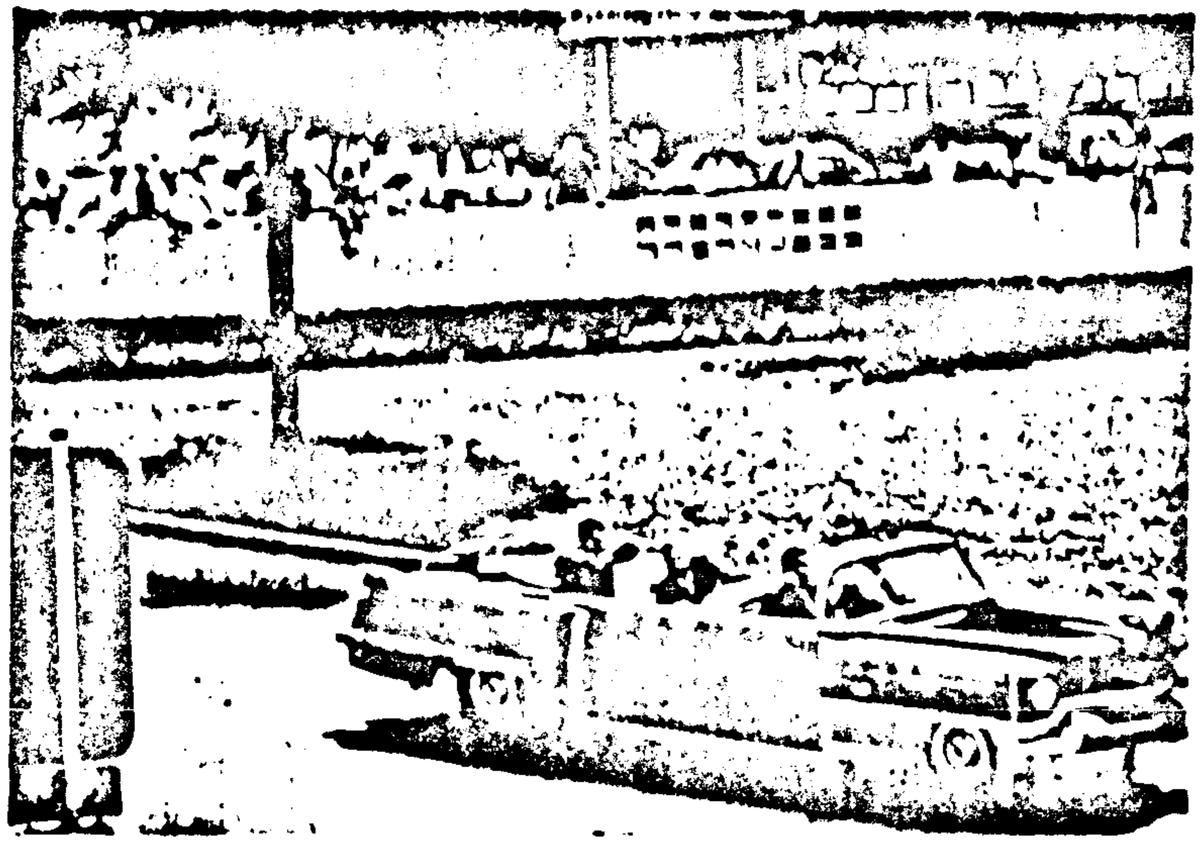


PHOTOGRAPH THROUGH RIFLE SCOPE

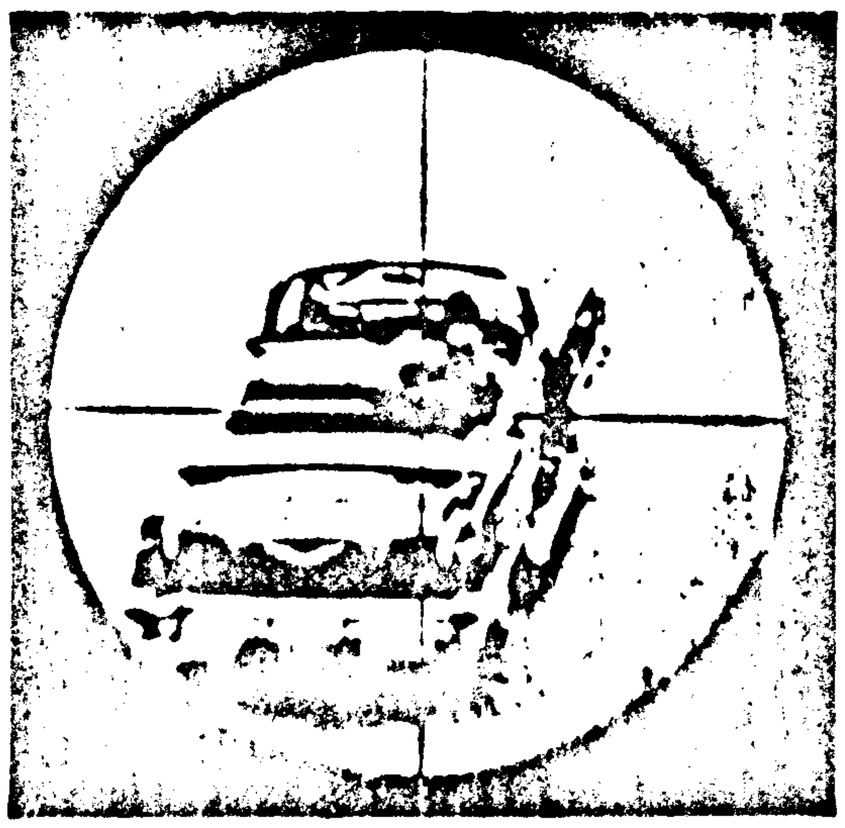
DISTANCE TO STATION C	162.3 FT.
DISTANCE TO RIFLE IN WINDOW	199.8 FT.
ANGLE TO RIFLE IN WINDOW	19°26'
DISTANCE TO OVERPASS	326.8 FT.
ANGLE TO OVERPASS	+0°30'

FRAME 235

PHOTOGRAPH FROM ZAPRUDER FILM



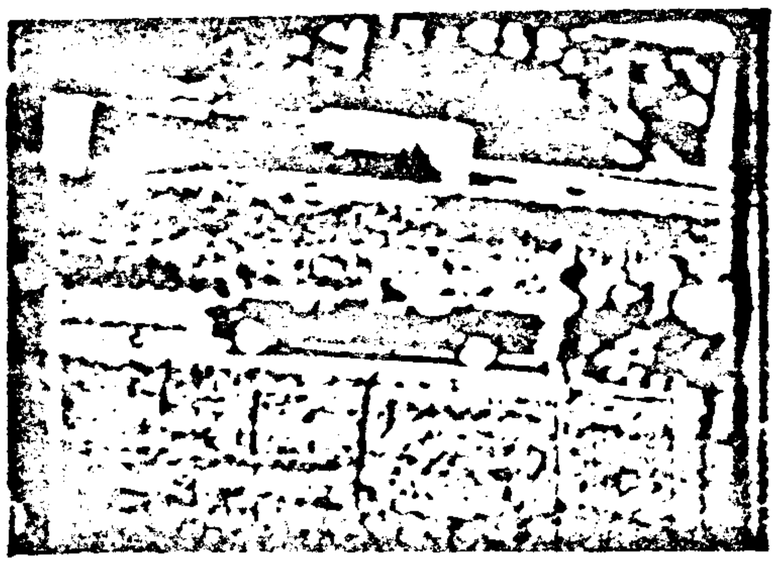
PHOTOGRAPH FROM RE-ENACTMENT



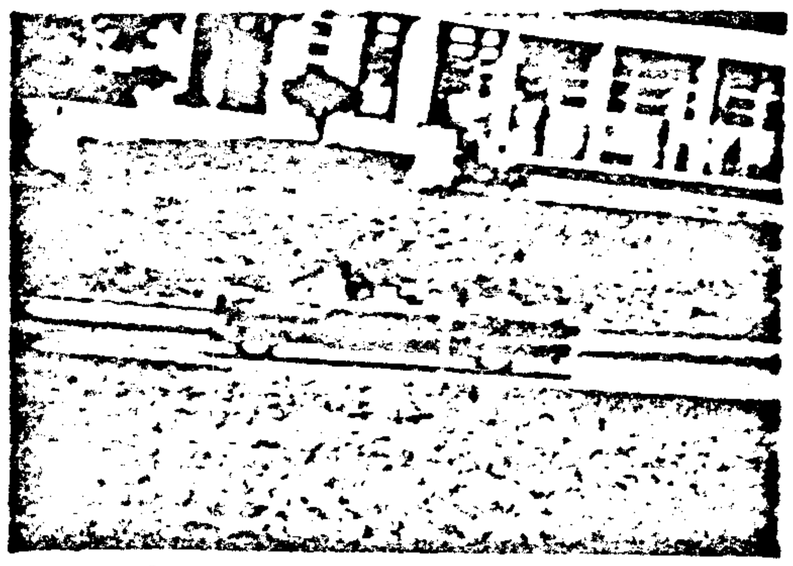
PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	167.8 FT.
DISTANCE TO RIFLE IN WINDOW	204.3 FT.
ANGLE TO RIFLE IN WINDOW	19°01'
DISTANCE TO OVERPASS	328.4 FT.
ANGLE TO OVERPASS	+8°34'

FRAME 240



PHOTOGRAPH FROM NIX FILM



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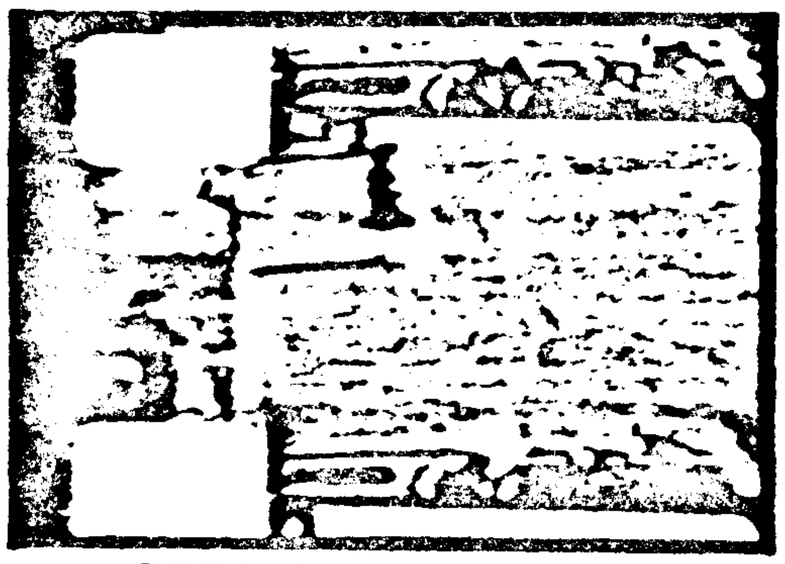
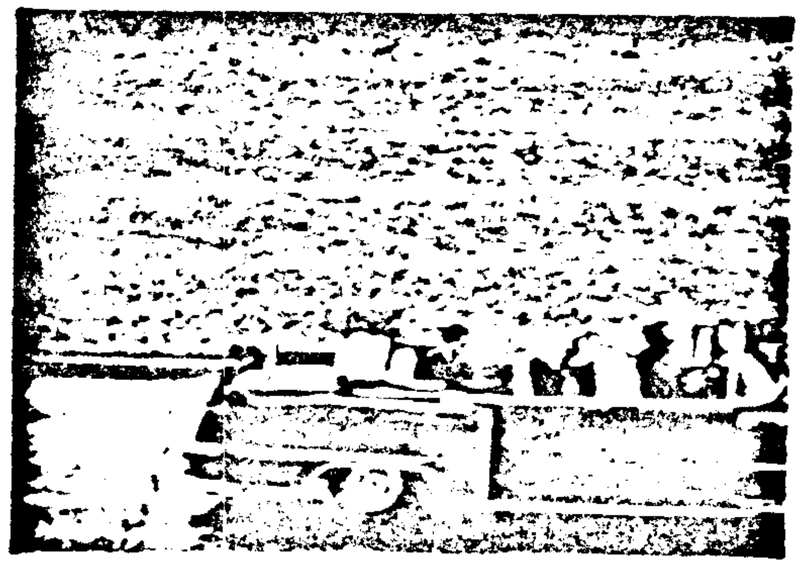
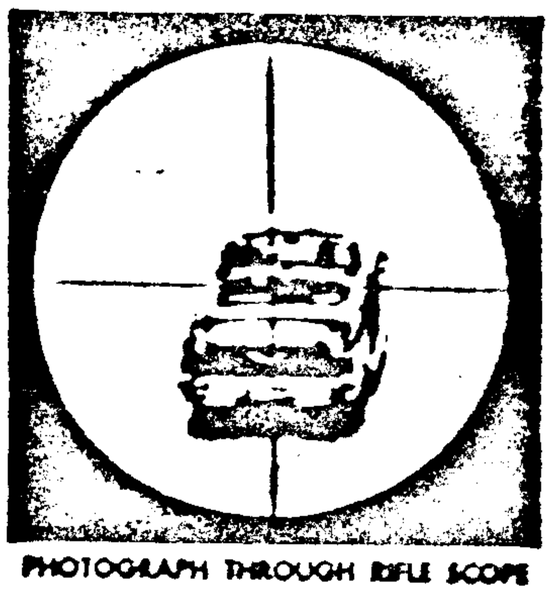


PHOTOGRAPH FROM ZAPRUDER FILM



PHOTOGRAPH FROM RE-ENACTMENT

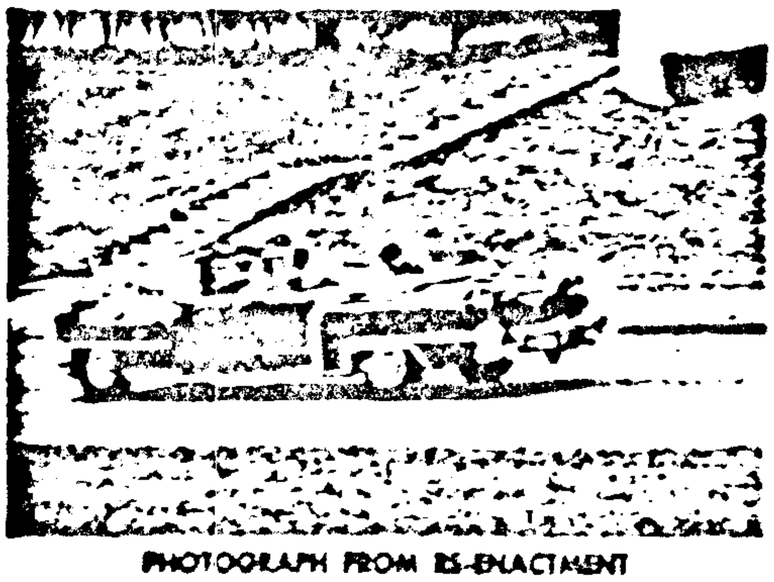


PHOTOGRAPH THROUGH RIFLE SCOPE

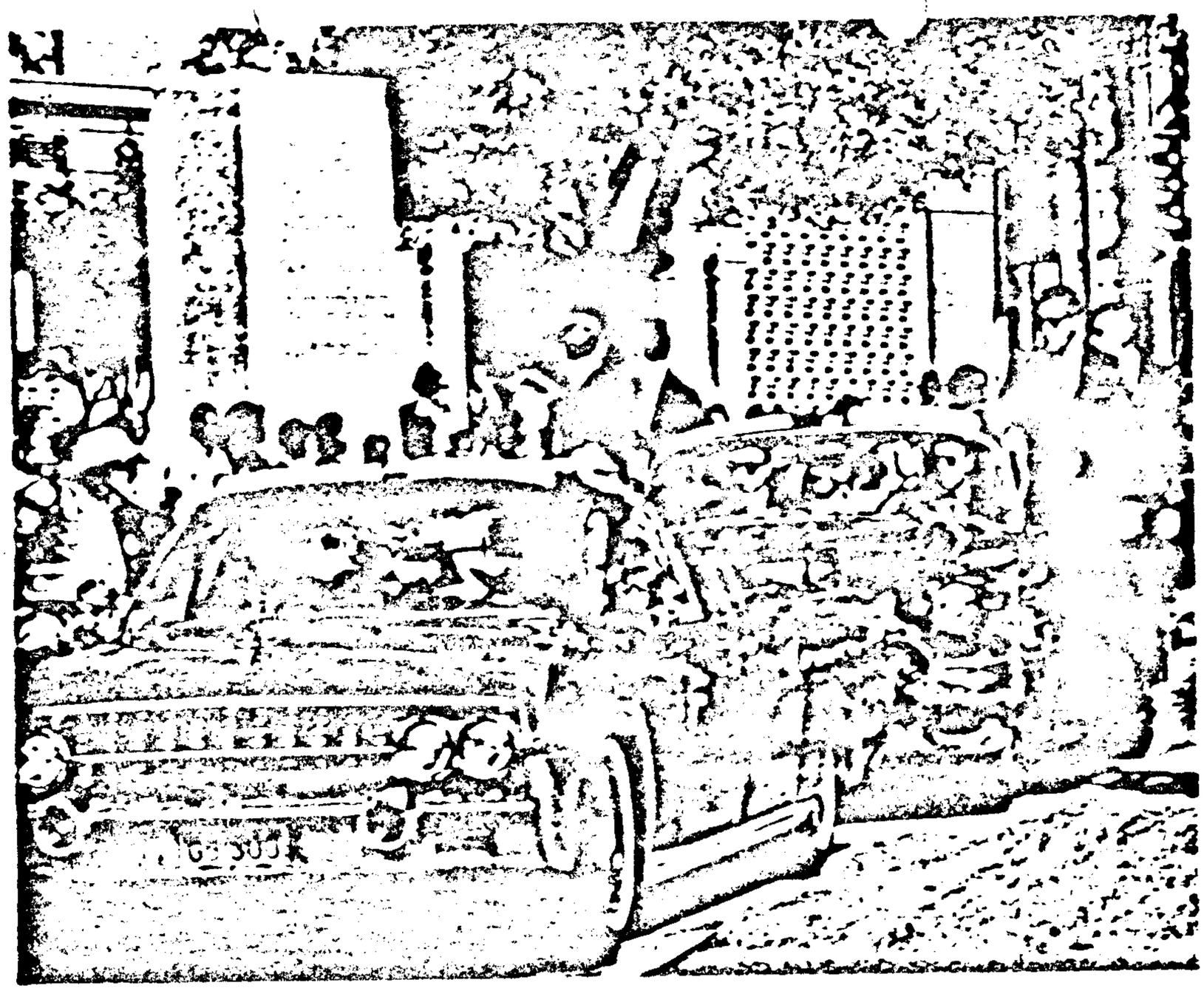
DISTANCE TO STATION 8 ..... 2268 FT.
DISTANCE TO RIFLE IN WINDOW ..... 265.5 FT.
ANGLE TO RIFLE IN WINDOW ..... 15°21'
DISTANCE TO OVERPASS ..... 268.5 FT.
ANGLE TO OVERPASS ..... +1°28'

FRAME 313

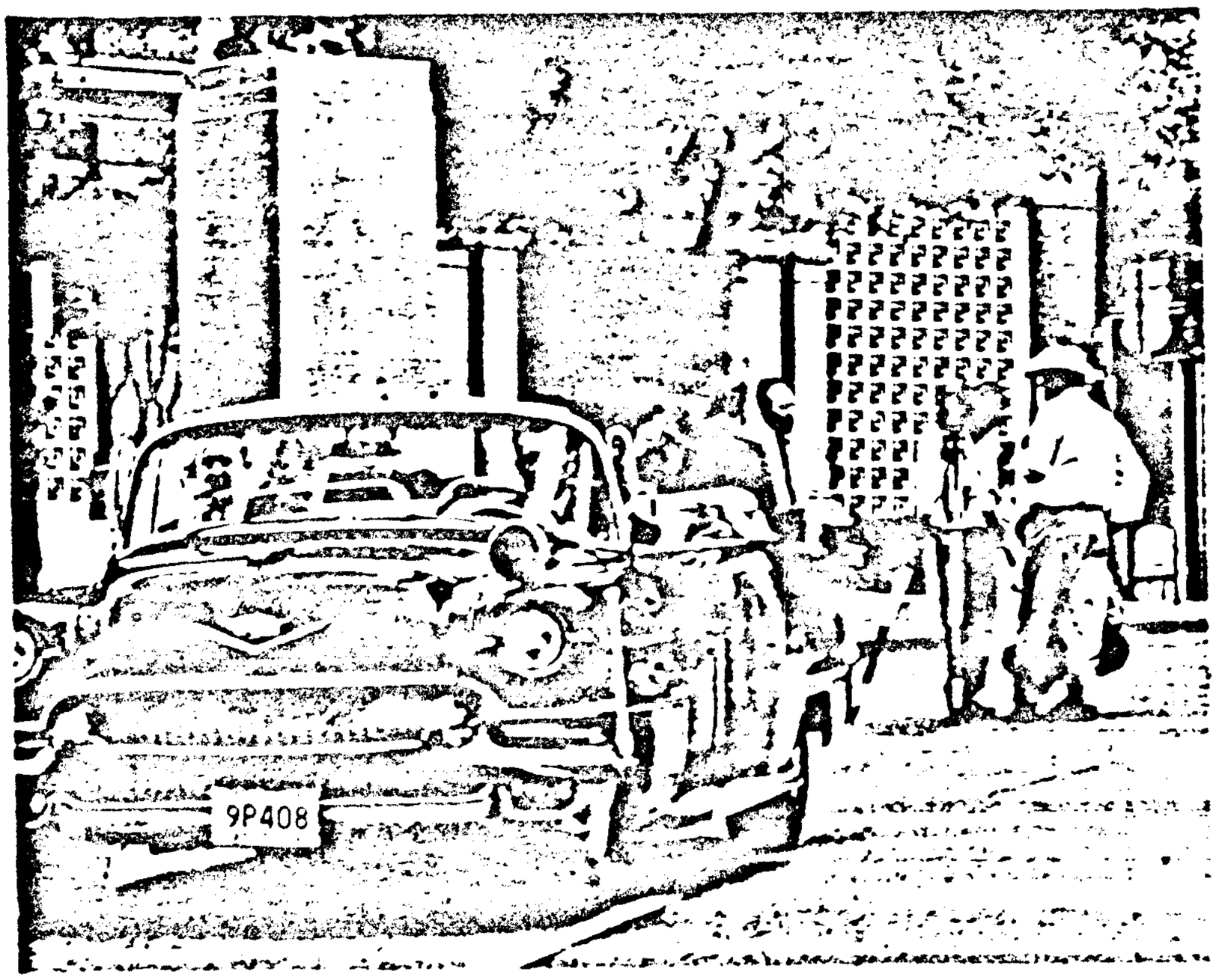
PHOTOGRAPH FROM MUCHMORE FILM



PHOTOGRAPH FROM RE-ENACTMENT



PHOTOGRAPH BY AP PHOTOGRAPHER



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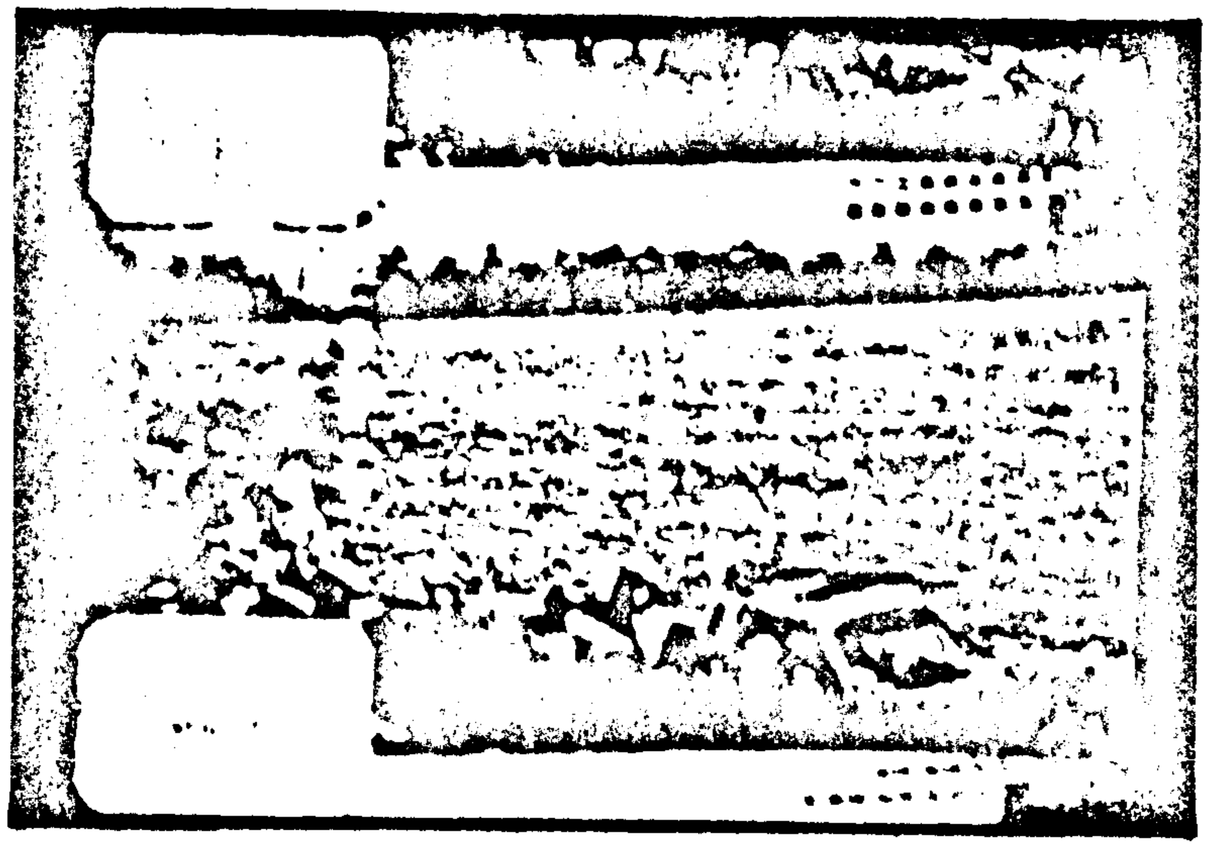
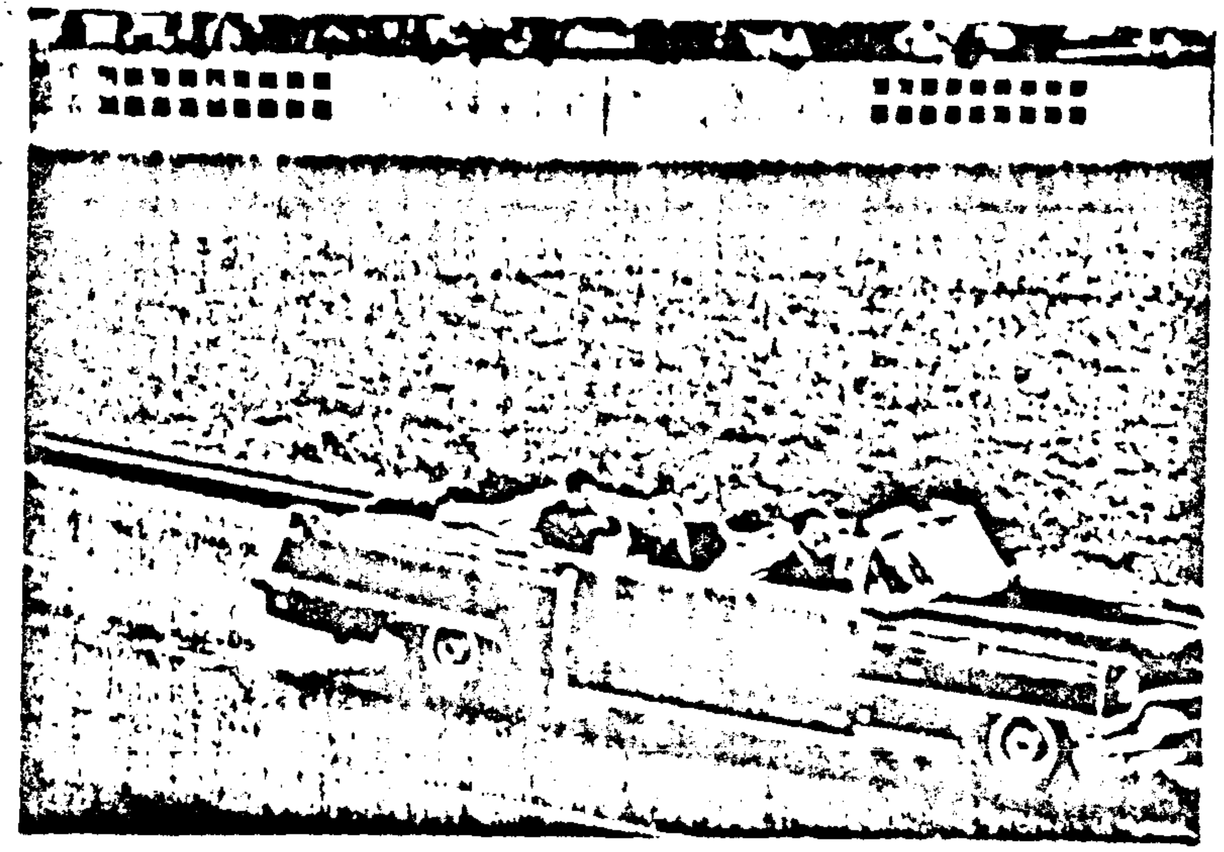
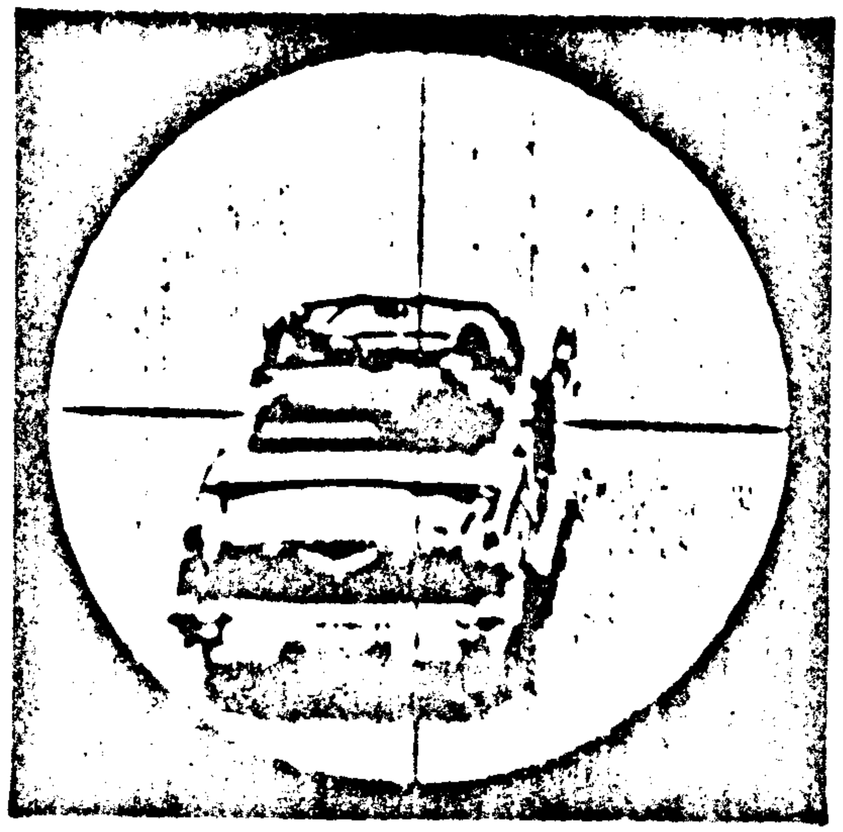


PHOTOGRAPH FROM ZAPRUDER FILM



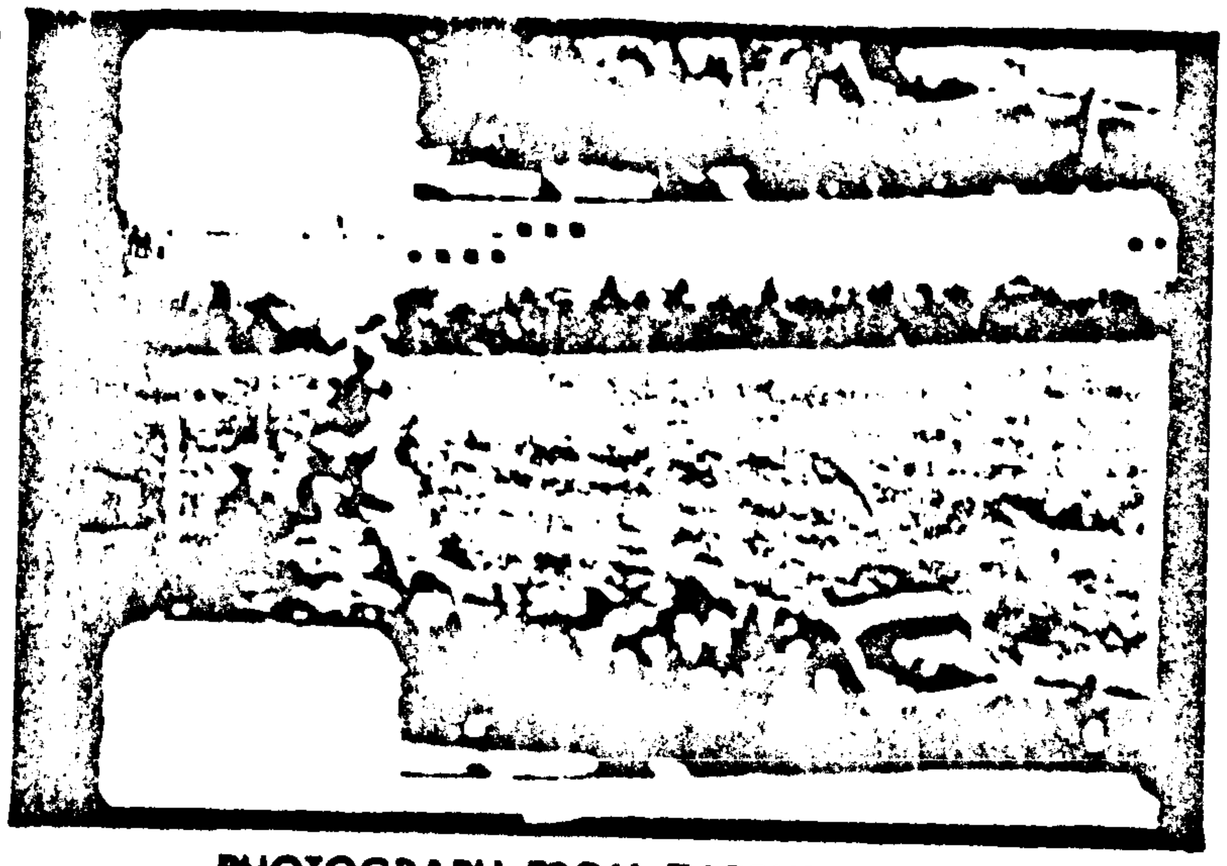
PHOTOGRAPH FROM RE-ENACTMENT



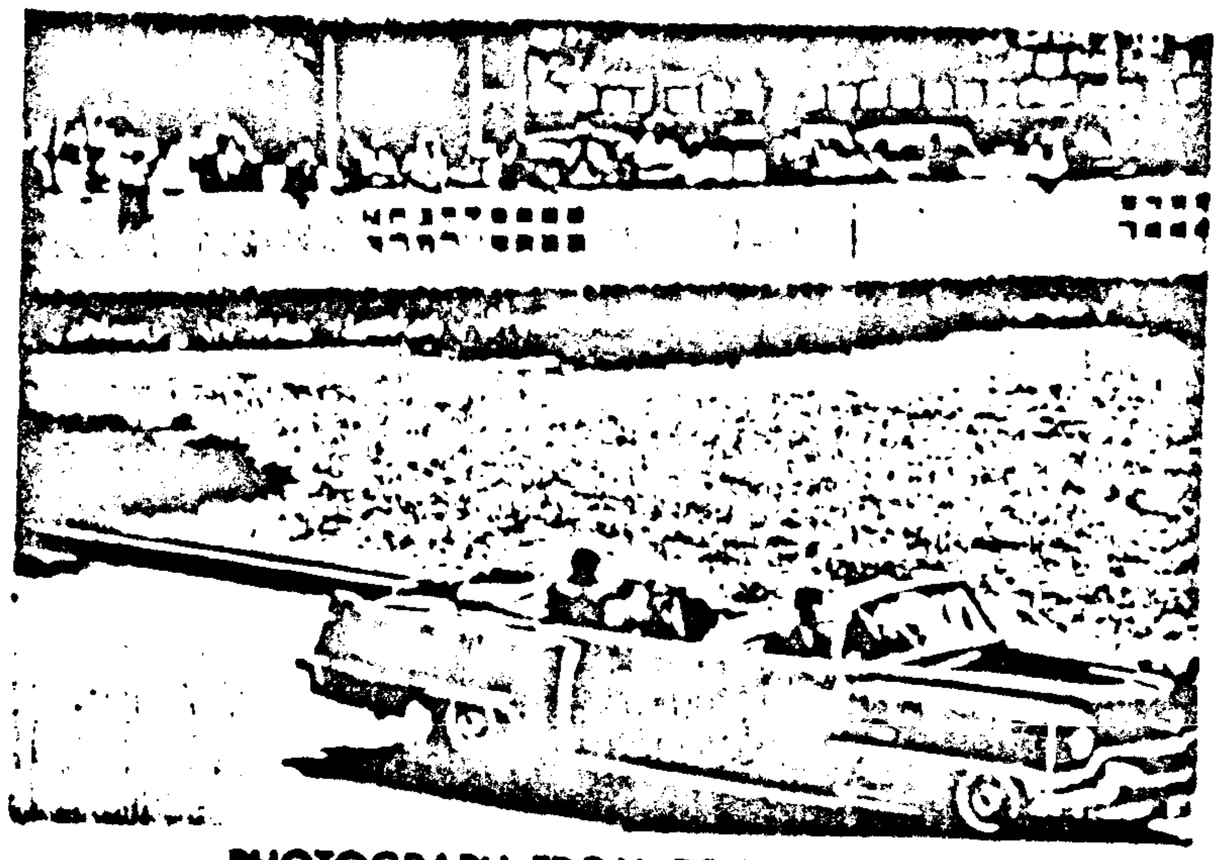
PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	181.9 FT.
DISTANCE TO RIFLE IN WINDOW	218.9 FT.
ANGLE TO RIFLE IN WINDOW	18°03'
DISTANCE TO OVERPASS	307.1 FT.
ANGLE TO OVERPASS	+8°44'

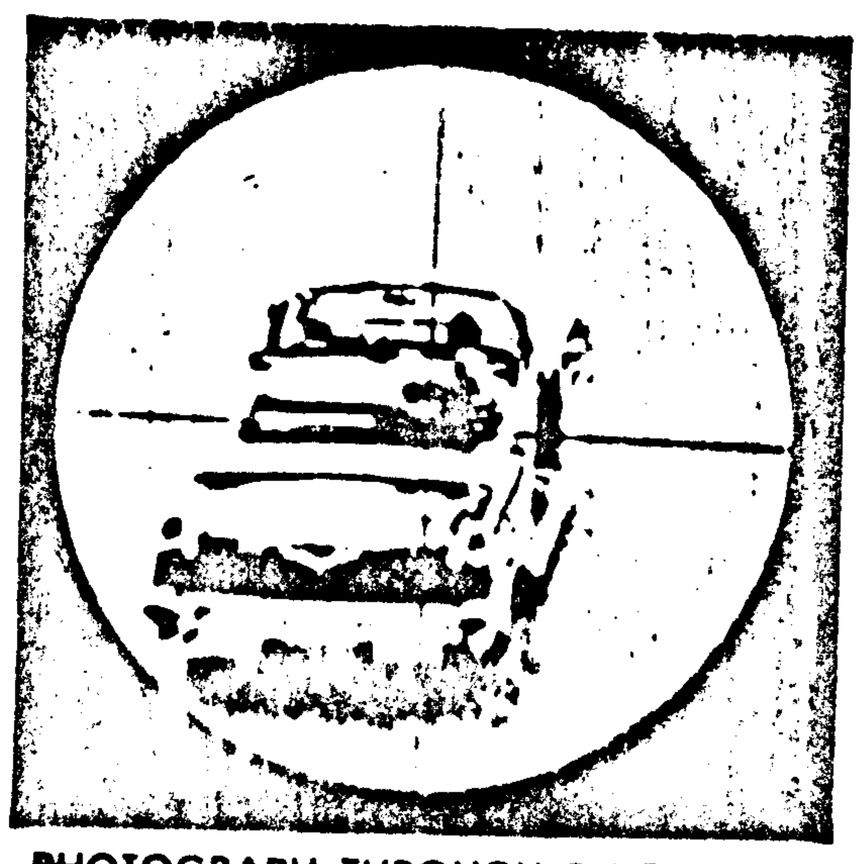
FRAME 255



PHOTOGRAPH FROM ZAPRUDER FILM



PHOTOGRAPH FROM RE-ENACTMENT



PHOTOGRAPH THROUGH RIFLE SCOPE

DISTANCE TO STATION C	175.5 FT.
DISTANCE TO RIFLE IN WINDOW	211.9 FT.
ANGLE TO RIFLE IN WINDOW	18°32'
DISTANCE TO OVERPASS	313.1 FT.
ANGLE TO OVERPASS	+0°40'

FRAME 249