UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 13, 2000

LICENSEE: Entergy Operations, Inc.

FACILITY: Grand Gulf Nuclear Station, Unit 1

SUBJECT: SUMMARY OF OCTOBER 24, 2000, MEETING TO DISCUSS PROPOSED TESTING OF KAOWOOL FIRE BARRIER MATERIAL FOR THE GRAND GULF NUCLEAR STATION, UNIT 1 (TAC NO. MB0262)

BACKGROUND

A public meeting was held at the Nuclear Regulatory Commission (NRC) headquarters in Rockville, Maryland on Tuesday, October 24, 2000, between the NRC staff and Entergy Operations, Inc. (EOI or the licensee), the licensee for Grand Gulf Nuclear Station (GGNS). The meeting was held at the request of the licensee to discuss the proposed testing of Kaowool fire barrier material used at the GGNS facility to meet regulatory requirements for protection of post-fire safe shutdown equipment. Enclosure 1 is a list of meeting attendees and Enclosure 2 is the presentation material provided by the licensee.

This meeting was held as a follow-up to a previous meeting, held on September 21, 2000, during which GGNS personnel presented a general outline of its proposed Kaowool test program, including factors determining test duration, data evaluation methodology, and exceptions to testing criteria specified in Generic Letter 86-10, Supplement 1. The licensee had requested the follow-up meeting of October 24, 2000, to provide the opportunity for continued discussion of their test plan, with emphasis on the methodology used for identification of bounding Kaowool fire barrier configurations to be used for the proposed full scale fire test.

DISCUSSION

The GGNS plan for resolution of the Kaowool issue includes a proposed full scale fire test designed to determine the actual fire resistance rating of the Kaowool fire barrier configurations specifically used at the GGNS facility. During the October 24, 2000, meeting, GGNS personnel provided a detailed description of the criteria for selection of bounding test configurations for Kaowool material used as fire barriers outside the primary containment. The presentation included photographs of the as-installed fire barriers at GGNS, and discussions with the staff of each Kaowool configuration that has been selected for the full scale fire test. The fire test for Kaowool configurations used as fire barriers outside containment is tentatively scheduled for December 2000 or January 2001. The licensee is continuing its plan for one comprehensive full scale fire test which will include bounding configurations for all Kaowool fire barrier geometries outside containment utilized to meet regulatory requirements for protection of post-fire safe shutdown equipment. As part of the Kaowool Project validation effort, GGNS personnel will continue plant walkdowns of as-installed Kaowool fire barriers for confirmation that they are bounded by the proposed full scale fire test configurations.

The staff expressed interest in reviewing the final test plan, including the final test configurations established as the Kaowool fire barrier geometries which envelope the actual Kaowool fire barriers installed at GGNS outside containment. The licensee agreed that the staff's review of the final test plan would be desirable before conducting the test, and agreed to provide the final test plan at least two weeks prior to the date (not yet firmly scheduled) for conducting the full scale fire test.

GGNS personnel also presented the general approach that will be taken to qualify Kaowool materials installed as radiant energy shields inside the primary containment structure. This effort, although similar in approach to qualification of Kaowool installations outside containment, is expected to require a separate full scale fire test tentatively scheduled for the first quarter of 2001. Another meeting with the staff to discuss the development of the test plan for Kaowool radiant energy shields may be appropriate when the details and schedule for the test are further identified.

The licensee emphasized that compensatory measures, consisting of hourly fire watches and the use of cameras in appropriate locations inside containment for remote monitoring, have been established and will remain in effect until the Kaowool fire barrier issue has been resolved. These compensatory measures are consistent with the GGNS Fire Protection Program requirements for monitoring inoperable fire barriers, including the radiant energy shields inside containment.

The licensee completed its presentation at about 12:30 p.m. and the meeting was closed.

/RA/

S. Patrick Sekerak, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures: 1. List of Meeting Attendees
2. Licensee's Presentation Material

cc w/encls: See next page

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ACCESSION NUMBER:

OFFICE	PDIV-1/PM	PDIV-1/LA	PDIV-1/SC
NAME	PSekerak	DJohnson	RGramm
DATE	12/11/00	12/11/00	12/12/00

DOCUMENT NAME: G:\PDIV-1\GrandGulf\MtsKaowool-102500.wpd
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Division of Licensing Project Management
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cc w/encls: See next page

DISTRIBUTION FOR MEETING SUMMARY FOR OCTOBER 24, 2000, MEETING BETWEEN EOI AND NRC

DATED: December 13, 2000

PUBLIC
PD#IV-1 Reading
RidsOgcRp
RidsAcrsAcnwMailRoom
RidsNrrDlpm (JZwolinski/SBlack)
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P. Lain
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D. Frumkin
E. Weiss
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Meeting with Entergy Operations, Inc.

Kaowool Fire Barriers

October 24, 2000

List of Attendees

NAME	ORGANIZATION
Jerry C. Roberts	EOI/GGNS
Michael R. Cumbest	EOI/GGNS
William T. White	EOI/GGNS
Charles E. Brooks	EOI/GGNS
Ronald Rispoli	EOI
Les Bailey	Southern Nuclear
Eric Weiss	NRR/DSSA/SPLB
Daniel Frumkin	NRR/DSSA/SPLB
Mark H. Salley	NRR/DSSA/SPLB
Paul Lain	NRR/DSSA/SPLB
Leonard N. Olshan	NRR/DLPM
S. Patrick Sekerak	NRR/DLPM

EOI = Entergy Operations, Inc.
GGNS = Grand Gulf Nuclear Station

NRR = Office of Nuclear Reactor Regulation
DSSA = Division of Safety Systems and Analysis
SPLB = Plant Systems Branch
DLPM = Division of Licensing Project Management

Enclosure 1

BOUNDING TEST CONFIGURATIONS FOR THE KAOWOOL FIRE WRAP INSTALLED AT GGNS

NRC MEETING

10/24/2000

Enclosure 2

OBJECTIVES

- Present The Methodology Employed To Select Bounding Test Configurations
- Discuss In Detail Each Configuration That Has Been Selected For Testing
- Gain NRC Acceptance/Approval Of The Configurations To Be Tested

OBJECTIVES

- Status The Actions Taken At GGNS To Address The Use Of KAOWOOL As A Radiant Energy Shield In Containment
- Discuss The Approach That Will Be Employed To Qualify The KAOWOOL For Radiant Energy Shields In The GGNS Containment

MEETING FORMAT

Meeting Will Be Broken Into Three Sessions

Session #1

- GGNS Presentation On Selection Of Configurations

- Session # 2
  - Group Discussion With Staff On Configurations
- Session # 3
  - GGNS Presentation On Radiant Energy Shields

MEETING FORMAT

Session # 1

- Configuration Selection Methodology
- Cable Type & Fill For Bounding Configurations
- Tentative Test Schedule

MEETING FORMAT

Session # 2

- View & Discuss Pictures Of As-Installed GGNS Configurations
- Group Discussion Of Specific Details Associated With Each Bounding Test Configuration
- Get NRC Approval Of The Bounding Test Configurations

MEETING FORMAT

Session # 3

- Actions Taken At GGNS To Address KAOWOOL As A Radiant Energy Shield
- Action Plan For Qualifying The KAOWOOL Fire Wrap Used At GGNS For Radiant Energy Shields In Containment

SESSION # 1

ESTABLISHING BOUNDING CONFIGURATIONS

METHODOLOGY

- Establishment Of Bounding Configurations
  - Based On Applicable Performance Parameters As Specified In NEI Application Guide For Evaluation Of Thermo-Lag 330-1 Fire Barriers, Revision 1
- Cable Fill & Type Based On Bounding As-Installed Configurations
- Segmented Approach Used To Identify Required Test Configurations

NEI APPLICATION GUIDE

Two Primary Considerations

- Commodity
- Barrier

NEI APPLICATION GUIDE

- Commodity
  - Cable Trays
  - Conduits
  - Miscellaneous Fitting & Boxes
  - Air Drops
  - Thermal Short Conditions
  - Structural Support
- Barrier
  - GGNS KAOWOOL Fire Wrap System

CONSIDERATIONS FOR COMMODITY SELECTION

- Type
- Size
- Material
- Contents/Enclosed Mass
- Orientation

CONSIDERATIONS FOR BARRIER SELECTION

- Material Type
- Material Thickness
- Joint Type
- Unsupported Span
- Internal Support

CONSIDERATIONS FOR BARRIER SELECTION

- Fastener Type, Spacing And Distance From Joints
- Structural Support And Intervening Items
- Location Of Enclosures
  - Configuration
  - Location

GENERAL INFORMATION FOR COMMODITIES

- All Associated Cable Trays & Conduits Constructed F~~orm~~rom Steel
- Open Vented Cable Tray Most Limiting Configuration In Use At GGNS
- Cable Trays & Conduits Segregated Into Two Categories
  - Instrumentation
  - Power & Control

GENERAL INFORMATION FOR THE BARRIER

- Two One Inch Blankets Of KAOWOOL
- Butt Joints Used - Staggered Between Layers
- Used On Conduits, Cable Trays & Air Drops
- Aluminized ZETEX Fabric Outer Layer

GENERAL INFORMATION FOR THE BARRIER

- ZETEX - Flame Spread Rating Of 0
- Installed Per GGNS Standard ES-02
- Field Verification Of KAOWOOL Installation For Bounding Configurations

TEST SCHEDULE

- Test Tentatively Scheduled For Mid November
- Testing Will be Conducted at Omega Point
- NRC Is Invited To Attend
- Entergy Will Provide Specific Details When Test Date Has Been Finalized

SESSION # 2

GROUP DISCUSSION ON BOUNDING CONFIGURATIONS

BOUNDING GGNS CONFIGURATIONS

- View Pictures Of And Discuss/Describe The As Installed GGNS Configurations
- Present The Bounding Test Configurations
- Discuss The Basis For Selection And Specific Details Associated With Each Of The Bounding Configurations
- Get NRC Buy In For Test Configurations

DISCUSSION FORMAT

- Specify The Specific Segment Grouping
- Discuss As Installed Configurations That Are Grouped With Specific Test Segment
- Specify The Basis For Establishing The Bounding Configuration To Be Tested
  - Size
  - Cable Fill & Type
  - Application

SESSION # 3

STATUS OF KAOWOOL FIRE WRAP USED AS RADIANT ENERGY SHIELDS AT GGNS

RADIANT ENERGY SHIELDS INSTALLED AT GGNS

- Two One Inch Blankets Of KAOWOOL
- Butt Joints Used
- Used On Conduits Only
  - 1, 2 & 3 Inch Conduits
- Approximately 470 Feet Of Wrapped Conduits In Containment
- Aluminized ZETEX Fabric Outer Layer

QUALIFICATION BASIS

- B&W REPORT DATED 10/24/78
- TEST FOR FIRE PROTECTION FOR COMPLETE FIRE ENGULFMENT OF CABLE TRAYS AND CONDUITS CONTAINING GROUPED ELECTRICAL CONDUCTORS
- RESULTS FROM TEST 3B

COMPENSATORY MEASURES

- GGNS Conservatively Chose To Establish Hourly Fire Watches As Required By The GGNS Fire Protection Program For Inoperable Fire Barriers Until The KAOWOOL Issue Associated With Radiant Energy Shields Has Been Resolved

PROJECT PLAN

- Acknowledge The Positions In SECY-99-204 To Establish Ground Rules
- Revisit Safe Shutdown Analysis To Evaluate Operating Mode Restraints
- Evaluate GGNS Configurations
- Establish Bounding Configurations

PROJECT PLAN

- Conduct Full Scale Fire Test
- Qualify Configurations Based On Hazards And Operating Mode Requirements
- Implement Modifications As Required

Bounding Configurations To Be Tested

Auxiliary Building:

1) Cable Trays:
   - Single 4" x 24" open ventilated bottom steel tray. Instrumentation cables - ~5.93% cable fill (instrumentation cables).
     - Horizontal Run
     - Interface with Vertical 4"x36" Tray (enclosed air drops)
     - Horizontal T-Section
     - 90 degree horizontal turn
   - Single 4" x 36" open ventilated bottom steel tray. Instrumentation cables - ~3.95% cable fill (instrumentation cables).
     - Vertical Run
     - Interface with Horizontal 4"x24" Tray
     - Interface with ceiling penetration

2) Conduits:
   - Single 4" steel conduit. Power & Control cables - ~33.5% cable fill (Power & Control).
     - Penetration seal interface
     - 90 degree turn (Horizontal to Vertical)
     - Horizontal & Vertical Runs
     - Condulet
     -
   - Two 4" steel conduits wrapped together. [~34.7 % cable fill (Power & Control)]
     - Air drop from these into a single 4"x24" open ventilated bottom steel tray
     - Horizontal & Vertical Runs
     - 90 degree turn (Horizontal to Vertical)

3) Boxes:
   - All sides exposed (size to be determined by destructive examination). Supported by unistrut.

4) Supports:
   - Unistrut (trapeze)

5) Thermal Shorts:
   - 4" steel conduit

Bounding Configurations To Be Tested

Containment Building:

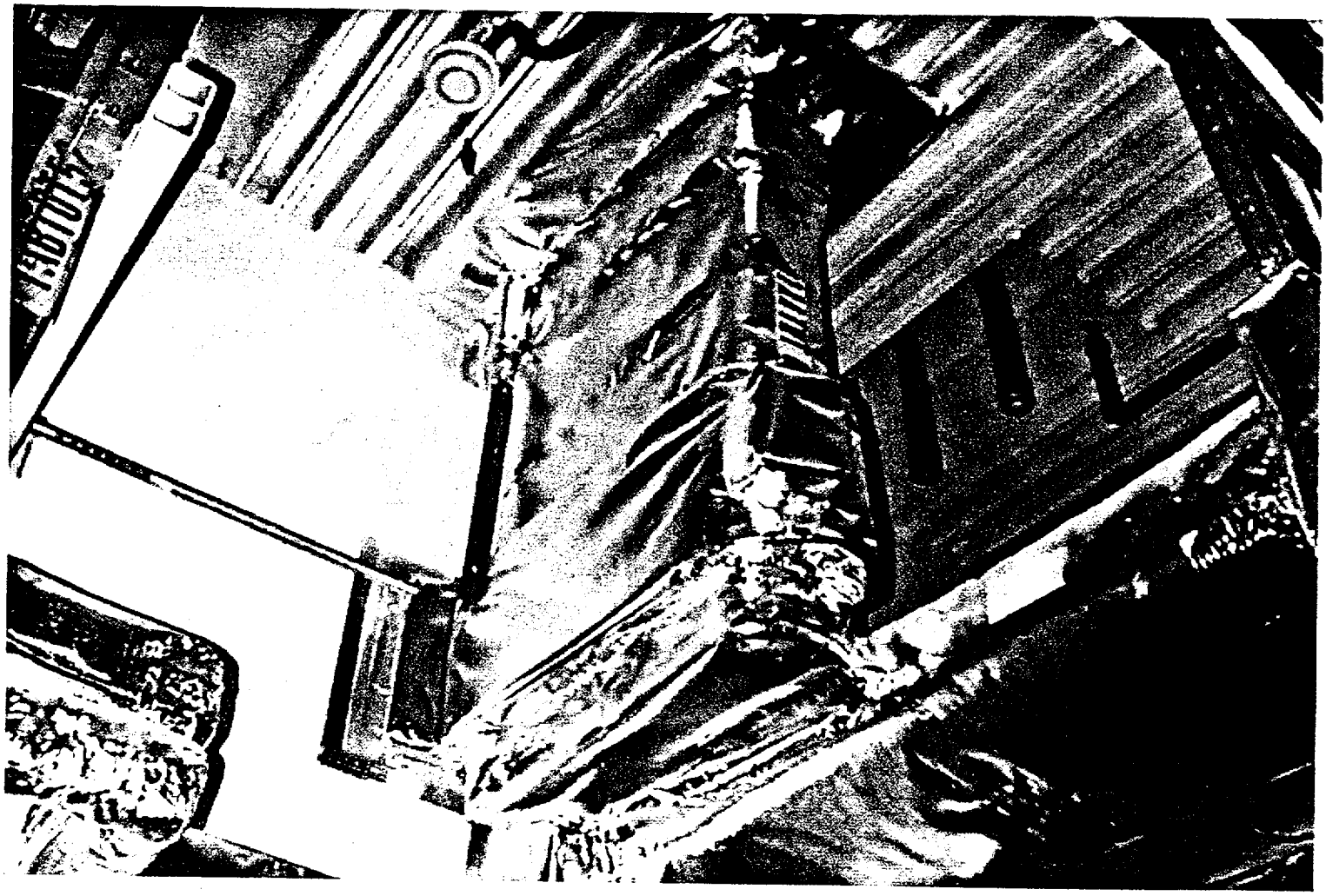
1) Conduits:
   - 1" steel conduit. Instrumentation cables - ~25% cable fill.
     - 90 degree turn (Horizontal to Vertical)
     - Horizontal & Vertical Runs
     - Condulet
   - 2" steel conduit. Instrumentation cables - ~12.8% cable fill.
     - 90 degree turn (Horizontal to Vertical)
     - Horizontal & Vertical Runs
     - Condulet
   - 3" steel conduit. Instrumentation cables - ~8.7% cable fill.
     - 90 degree turn (Horizontal to Vertical)
     - Horizontal & Vertical Runs
     - Condulets

2) Boxes:
   - All sides exposed (size to be determined by destructive examination). Supported by unistrut.

3) Supports:
   - Unistrut (trapeze)

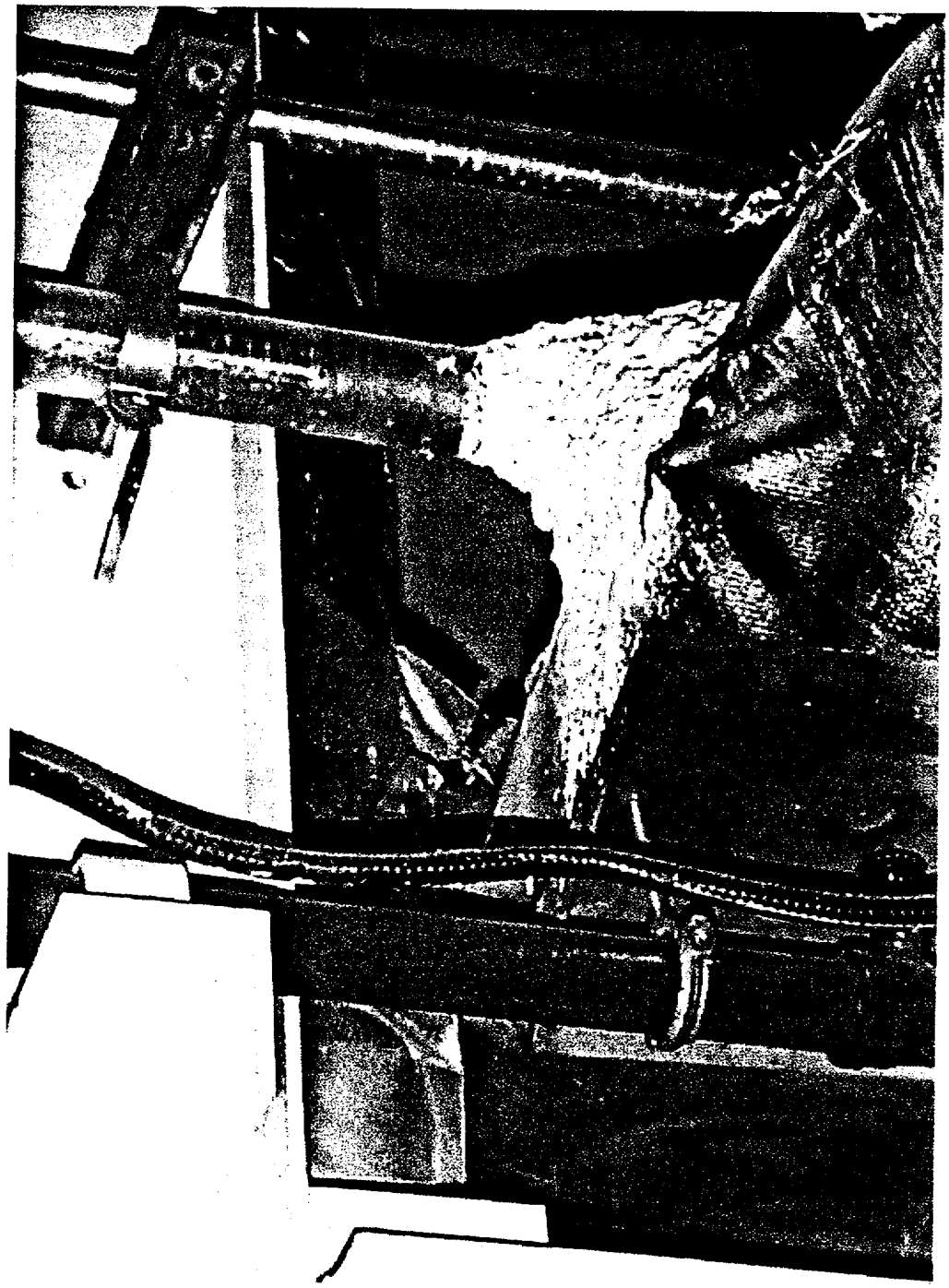
3) Thermal Shorts:
   - To be determined by field walkdown

Aux. Bldg. 93' El.
Looking N.E – 4" x 24" Horizontal Tray 1AATWG40 & 4" X 36" Vertical Tray 1AATWT02. Interface with vertical/horizontal trays. Vertical tray interface with penetration in ceiling. Horizontal tray does not penetrate north wall & vertical tray ends just above the horizontal tray.



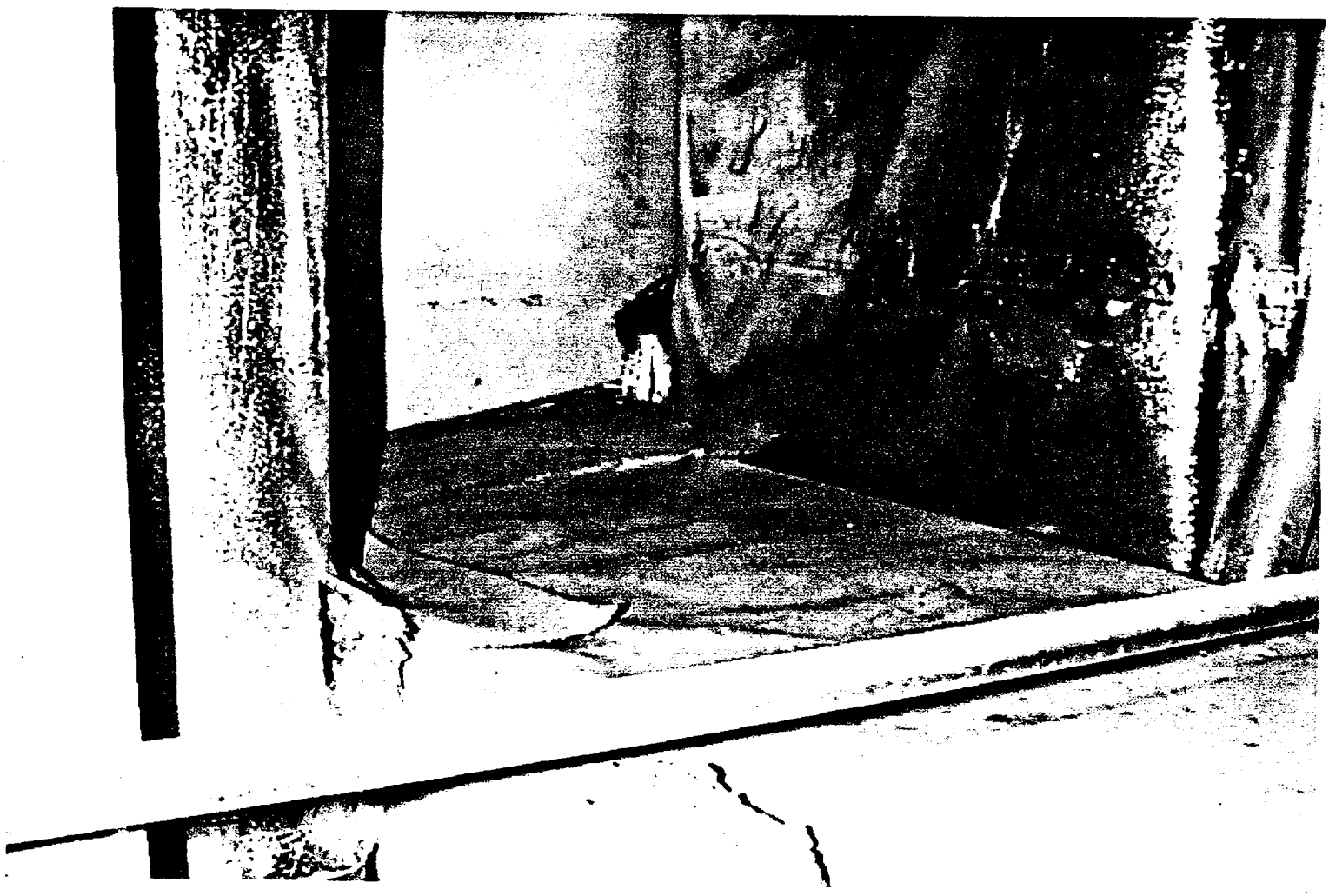
Picture No. 1 (9/28 – image69.jpg)

Aux. Bldg. 119' El. (4" x 36" Vertical Tray 1AATWT04 & 4" x 24" Horizontal Tray 1AATWH73)
Looking N.E. – Interface between vertical & horizontal trays. Open air cables can be seen transitioning from the vertical tray to the horizontal tray (Reference CR-GGN-2000-1481)



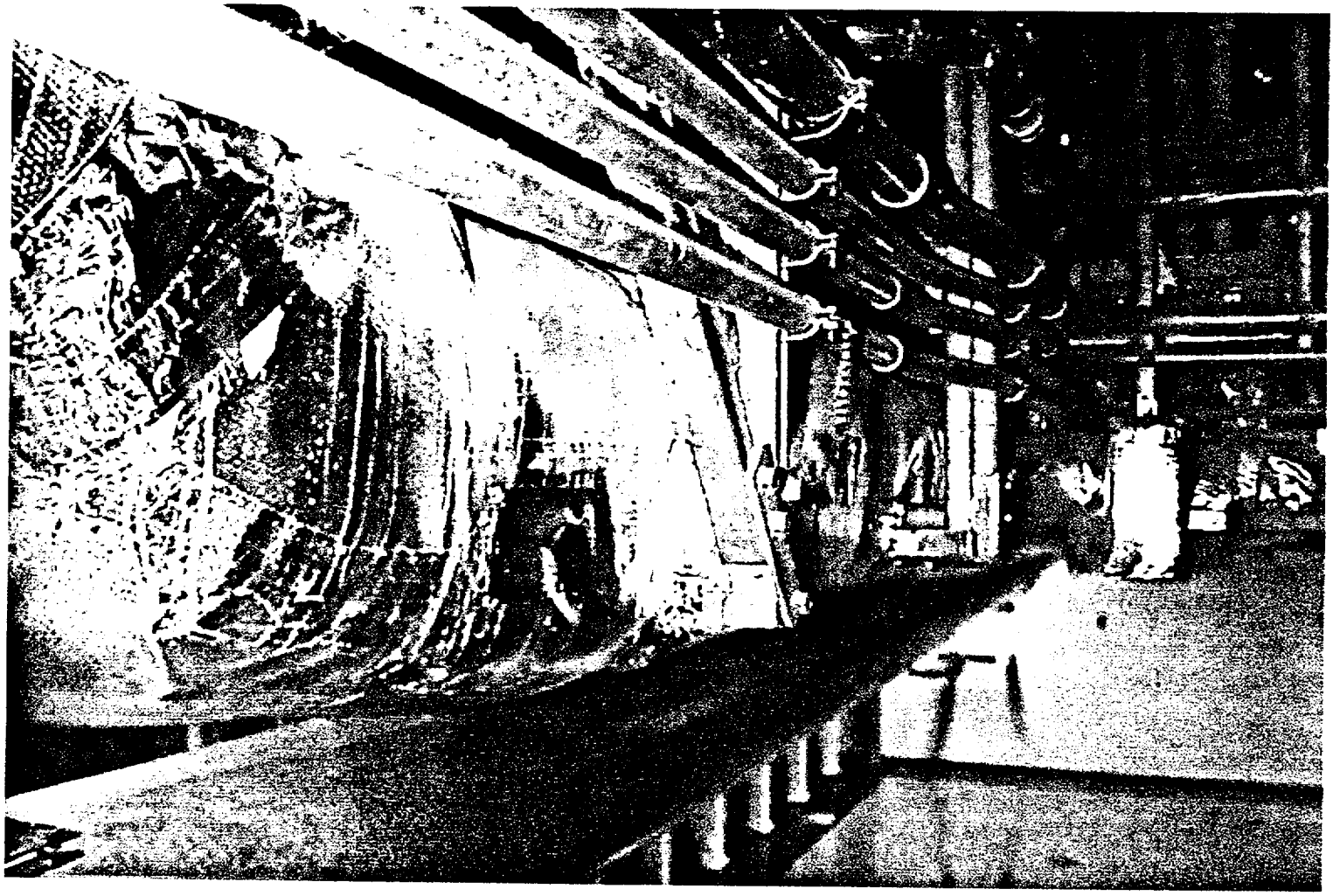
Picture No. 1 (9/27b - image61.jpg)

Aux. Bldg. EL. 119' (4"x 36" Vertical Tray 1AATWT04 & 4"x 24" Horizontal Tray 1AATWH73) Vertical Tray 1AATWT04 on left side of picture. There is no interface with vertical tray on the right side of picture. Note the damaged wrap at the interface between the horizontal and vertical trays – Reference CR-GGN-2000-1481.



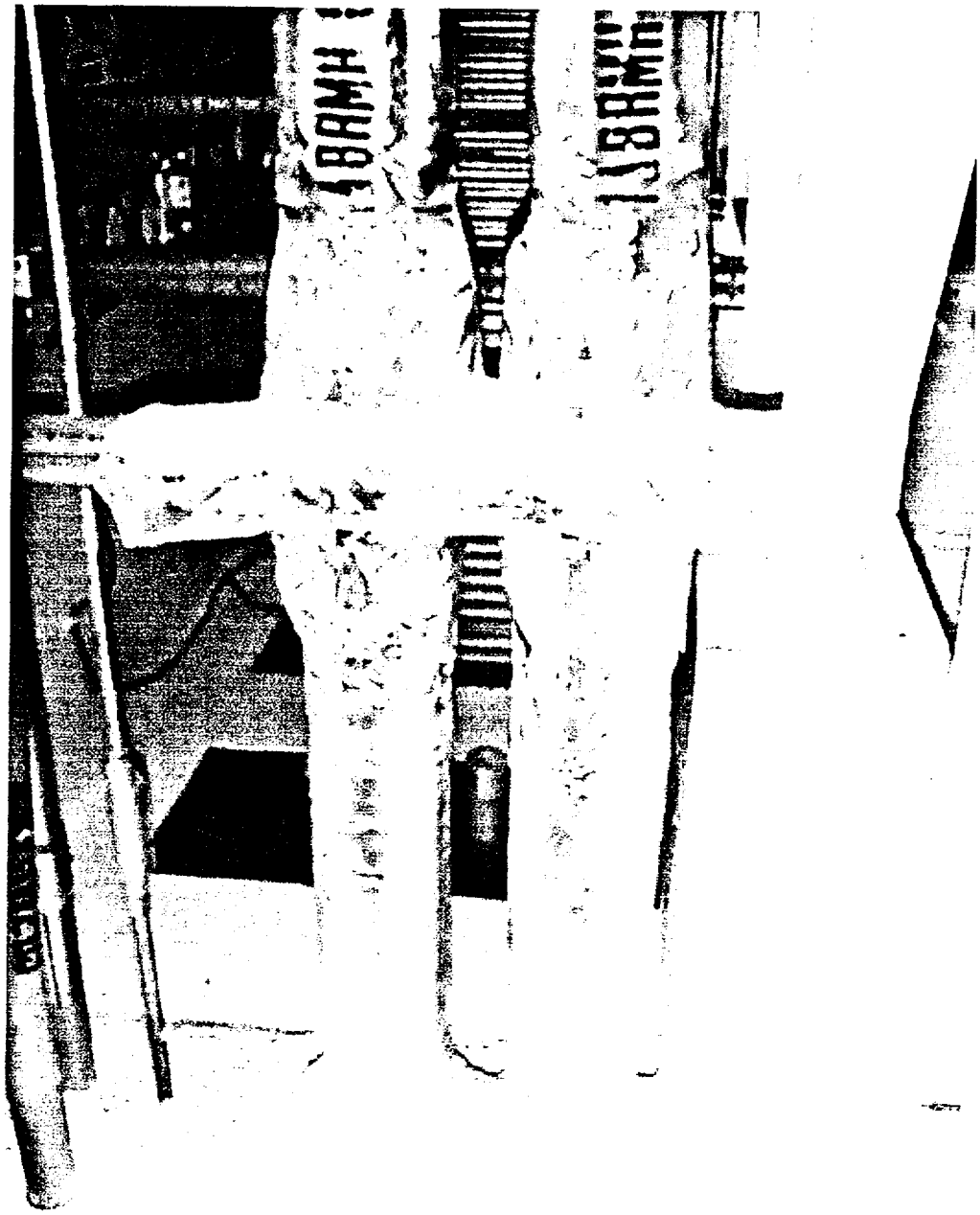
Picture No. 2 (9/28 – image17.jpg)

Aux. Bldg. 119'-0" Elevation (4"x 24" Horizontal Tray 1ABTMH47)
Looking east at south side of tray. The turn in the tray section shown on the right side of picture is the "T" section. Ref. CR-GGN-2000-1481 for unwrapped supports.



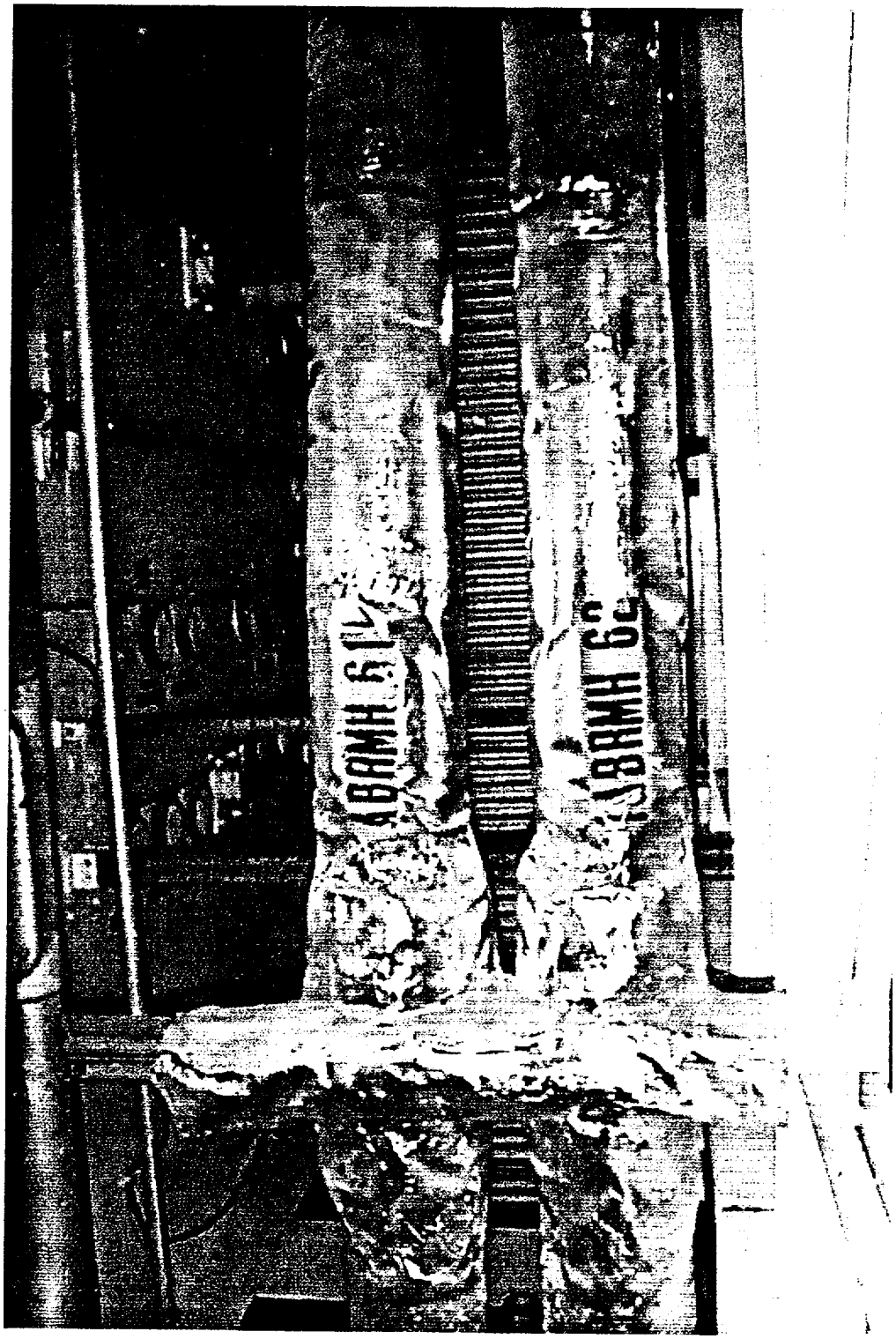
Picture No. 3 (9/28 – image02.jpg)

Auxiliary Building 139' Elevation (2-4" Conduits 1ABRMH61 & 62)
Looking east where the two conduits enter the floor penetration. White material at penetration interface is fire proofing material.



Picture No. 1 (9/27b – image46.jpg)

Auxiliary Building 139' Elevation (2-4" Conduits 1ABRMH61 & 62)
Looking east at first support from floor.

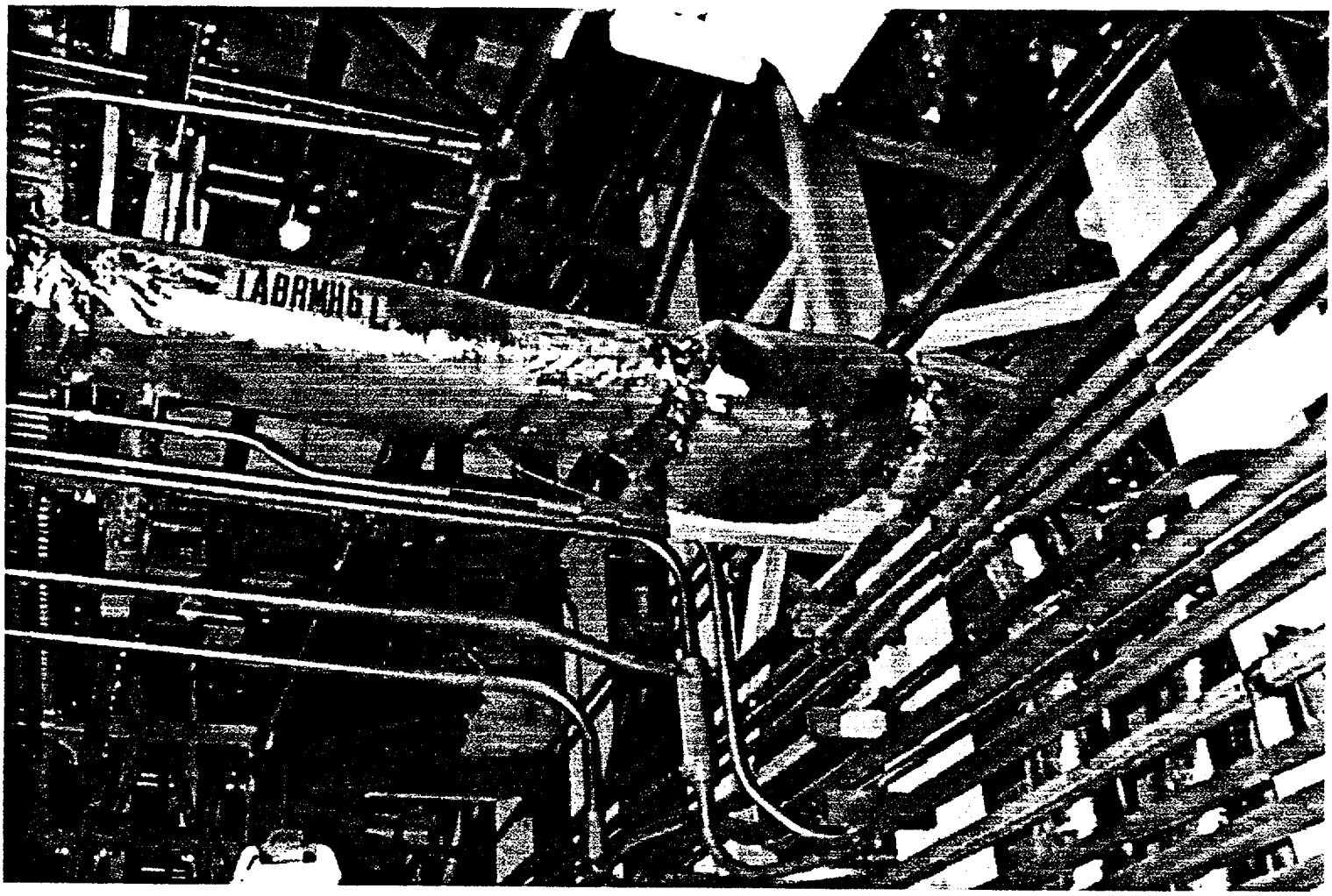


Picture No. 2 (9/27b – image47.jpg)

Auxiliary Building 139' Elevation (2-4" Conduits 1ABRMH61 & 62)
Looking east at top where the conduits turn 90 degrees to the south.

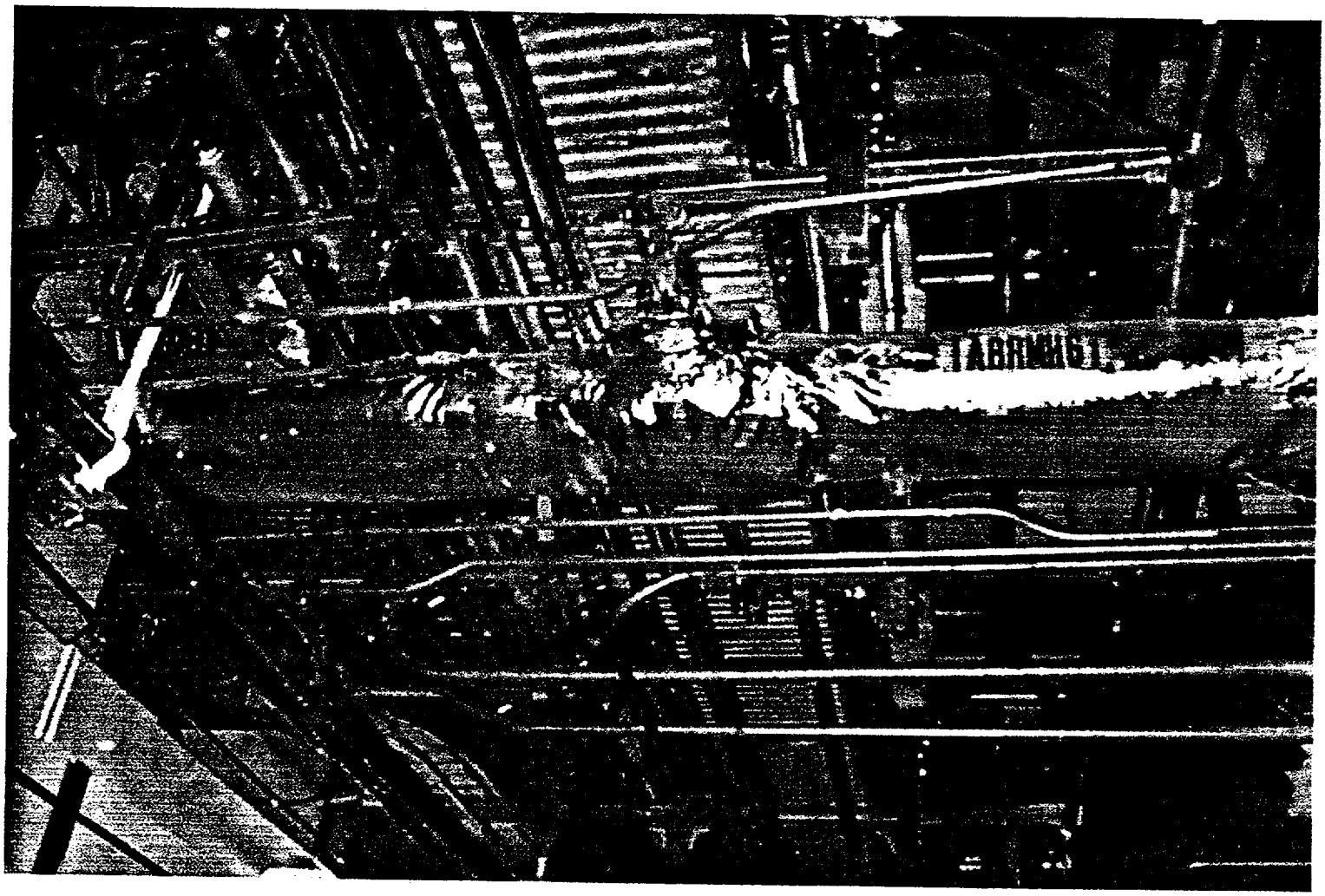
Picture No. 3 (9/27b – image47.jpg)

Auxiliary Building 139' Elevation (2-4" Conduits 1ABRMH61 & 62)
Looking west where the conduits turn 90 degrees to the south and run horizontal. Both conduits are enclosed in the same wrap after they turn horizontal.



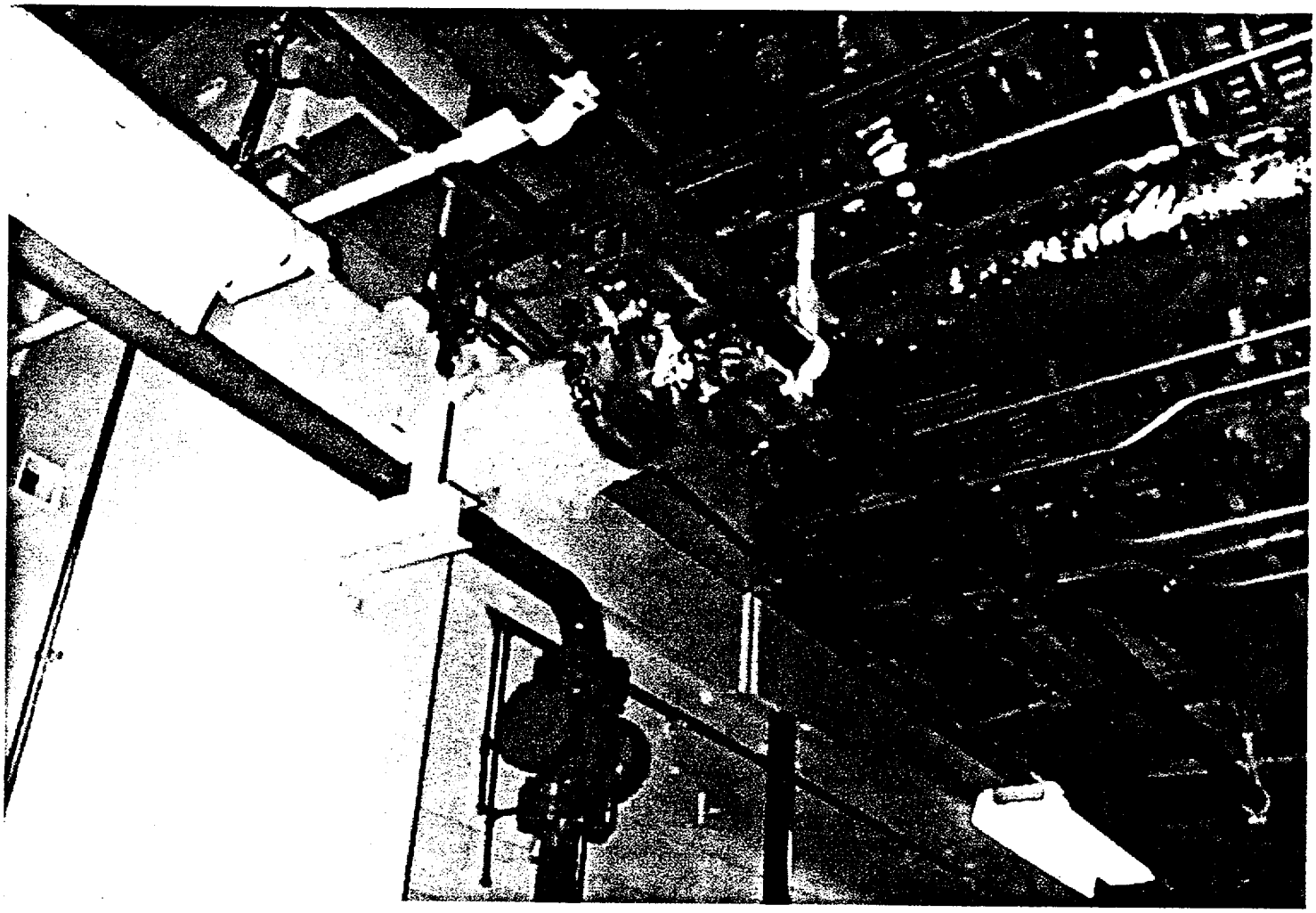
Picture No. 4(9/27b – image49jpg)

Auxiliary Building 139' Elevation (2-4" Conduits 1ABRMH61 & 62)
Looking west where the conduits run horizontal. Unistrut support. Both conduits are enclosed in the same wrap.



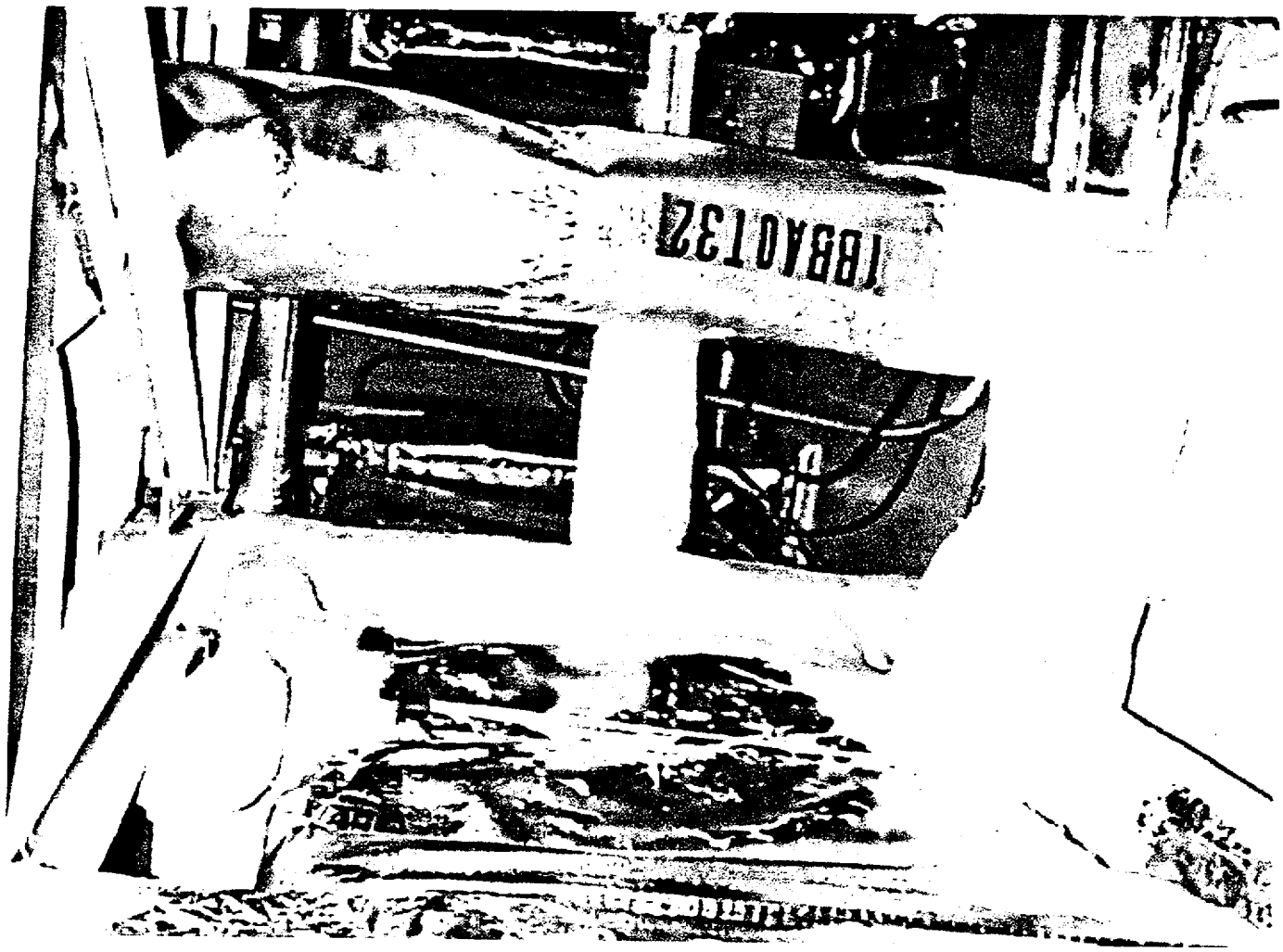
Picture No. 5(9/27b – image50jpg)

Auxiliary Building 139' Elevation - 2-4" Conduits 1ABRMH61 & 62
Looking west where the conduits run horizontal and interface with a wall penetration. Unistrut support. Both conduits are enclosed in the same wrap.



Picture No. 6(9/27b – image51jpg)

Aux. Bldg. 139' EL. (6" Conduit/Sleeve 1BBAOT32)
Looking up from floor level between Vertical Trays 1ABTOT55 & 1AATWT05. Right side of picture is the north wall of the Aux. Bldg. 1BBAOT32 runs horizontal from the wall to Pull Box & Conduits 1ABRMI55 & 56.

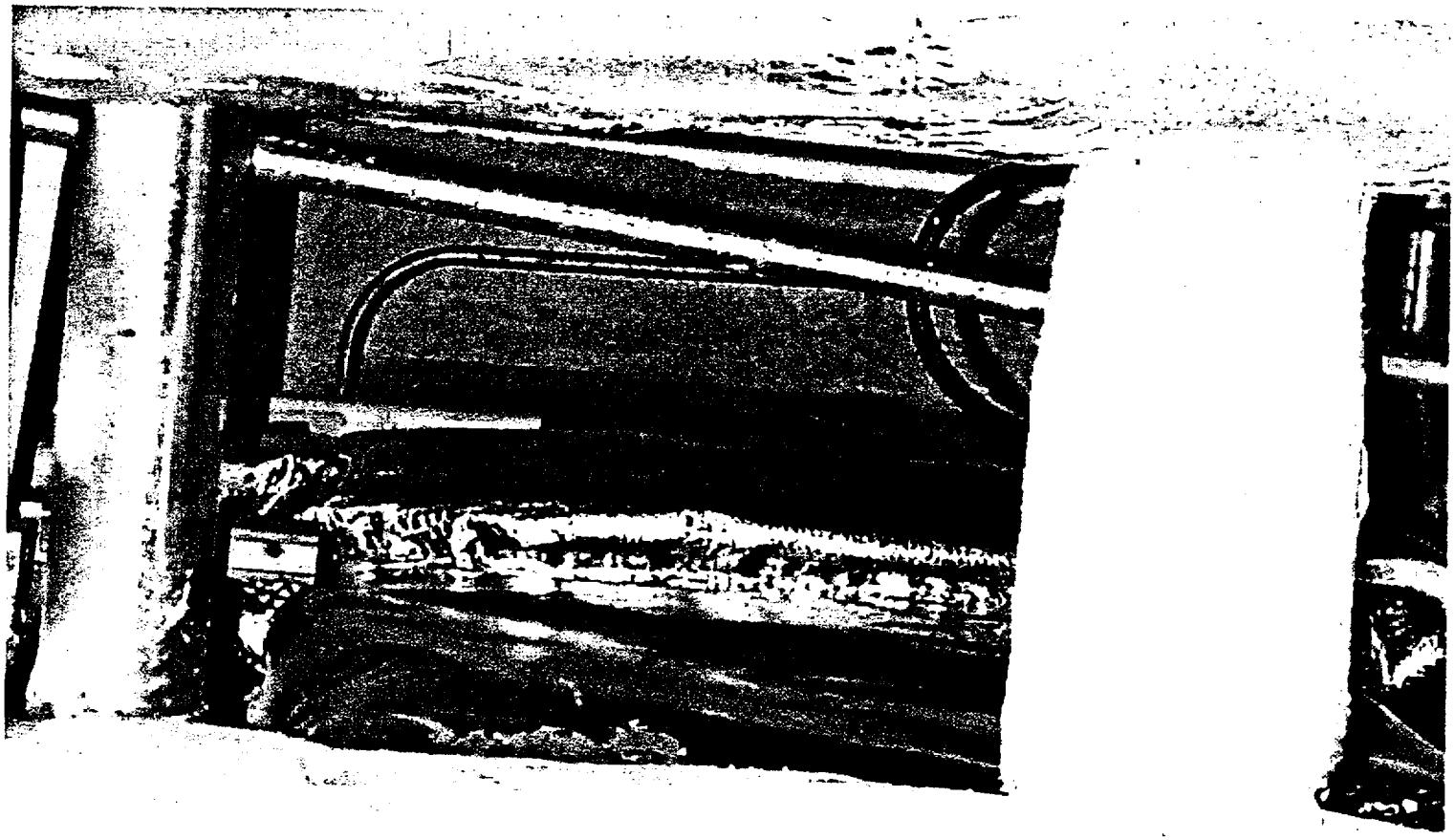


Picture No. 1 (9/26 – image63.jpg)

Aux. Bldg. 139' Elevation (Pull box and 2-4" Conduits 1ABRMI55 & 56)
Looking north & from above at pull box and 2-4: conduits. Two conduits (thermal shorts) entering the top of the box. 1ABRMI55 & 56 exit the pull box (left side of the picture).

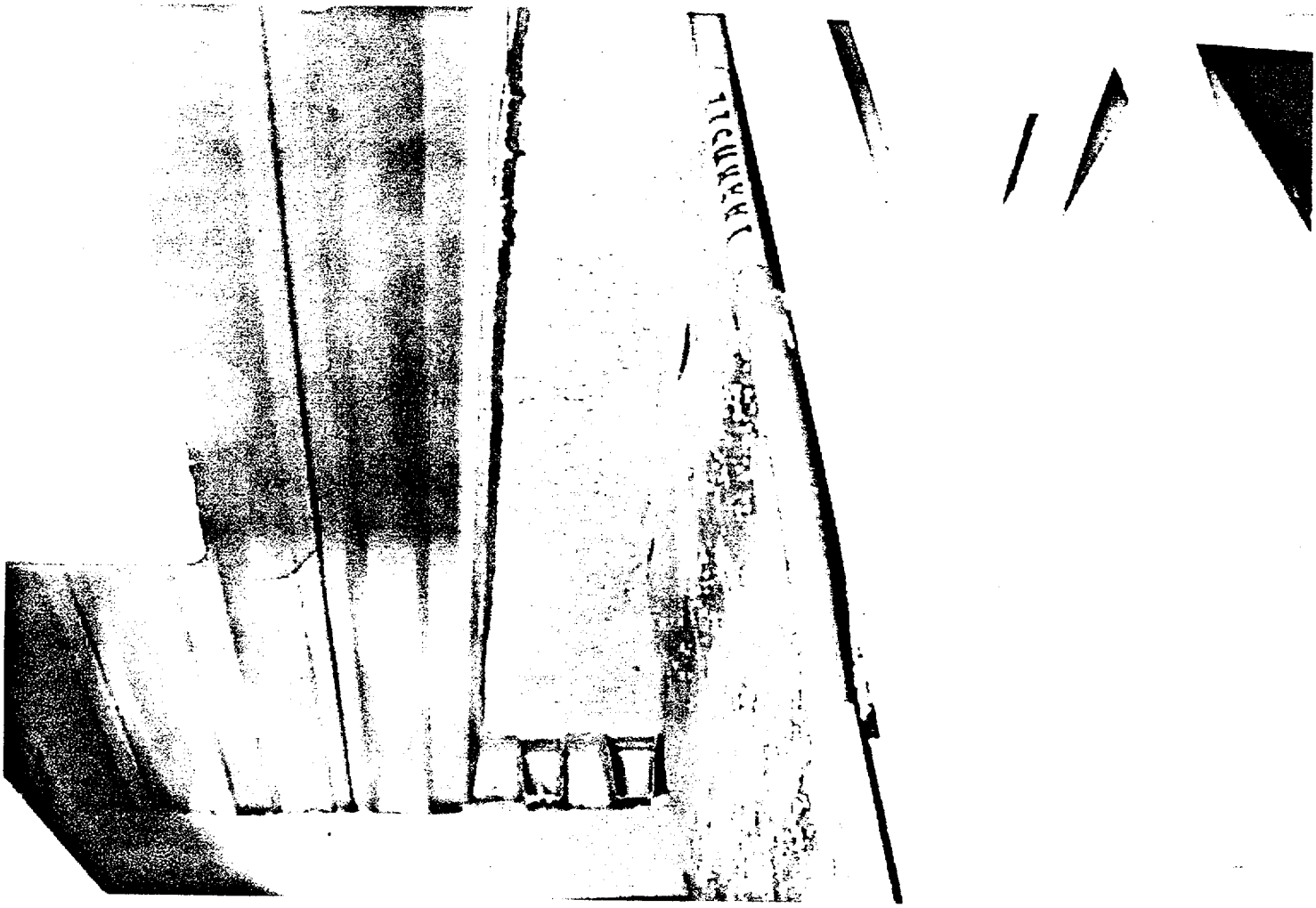
Picture No. 1 (9/27b – image24.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT57)
Looking up from floor between Trays 1ABTOT57 & 1AATWT07. Right side of picture is the north wall of the Auxiliary Building. Kaowool wrap at top of picture is Conduit/Sleeve1BBAOT32. White object at right side of picture is Kaowool wrapped support member with Flamastic covering.



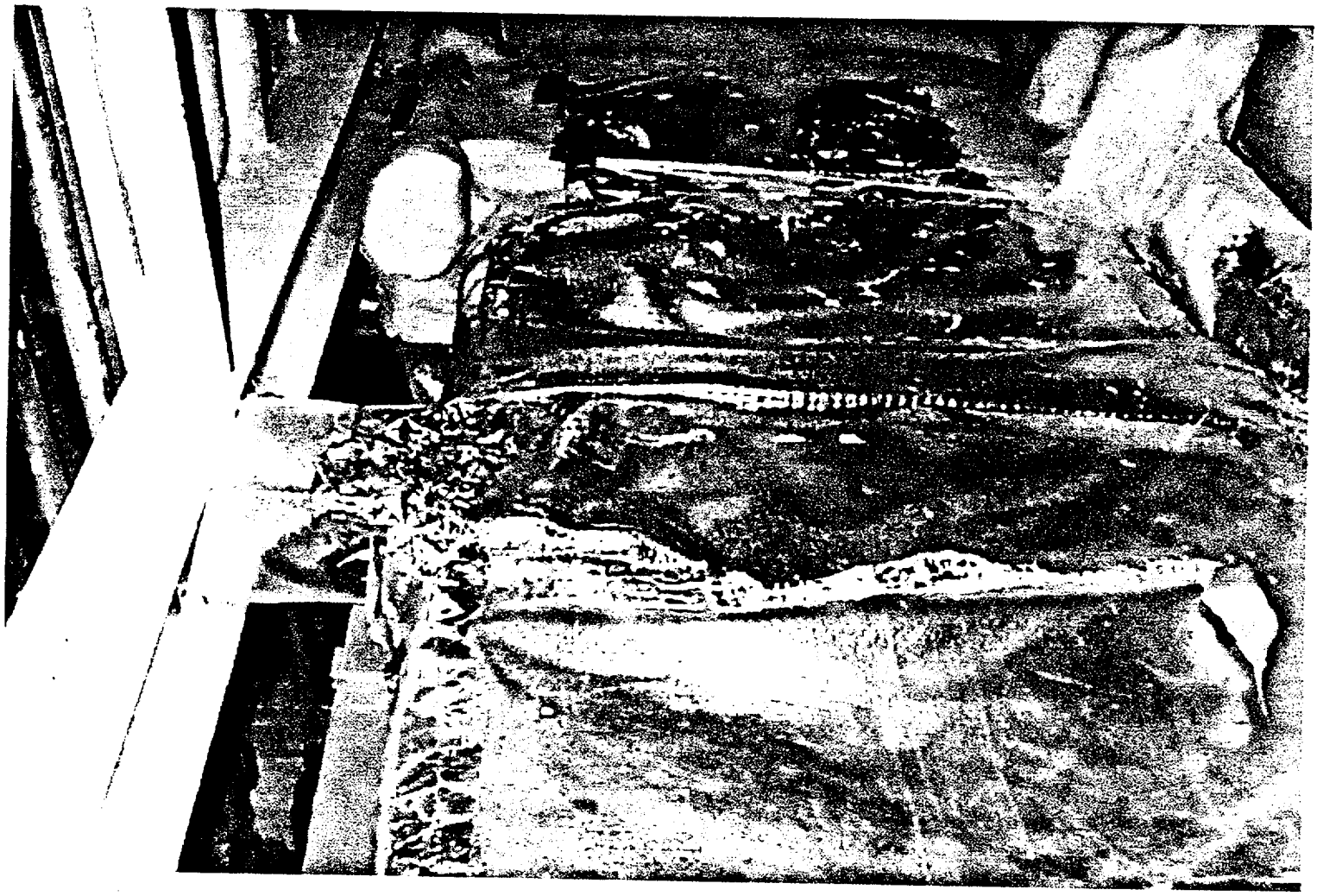
Picture No. 1 (9/26 – image62.jpg)

Aux. Bldg. 139' El. (4" x 36" Horizontal Tray 1ABTOT57
Looking N.E. & up at ceiling interface. Opposite side of tray from picture 1.



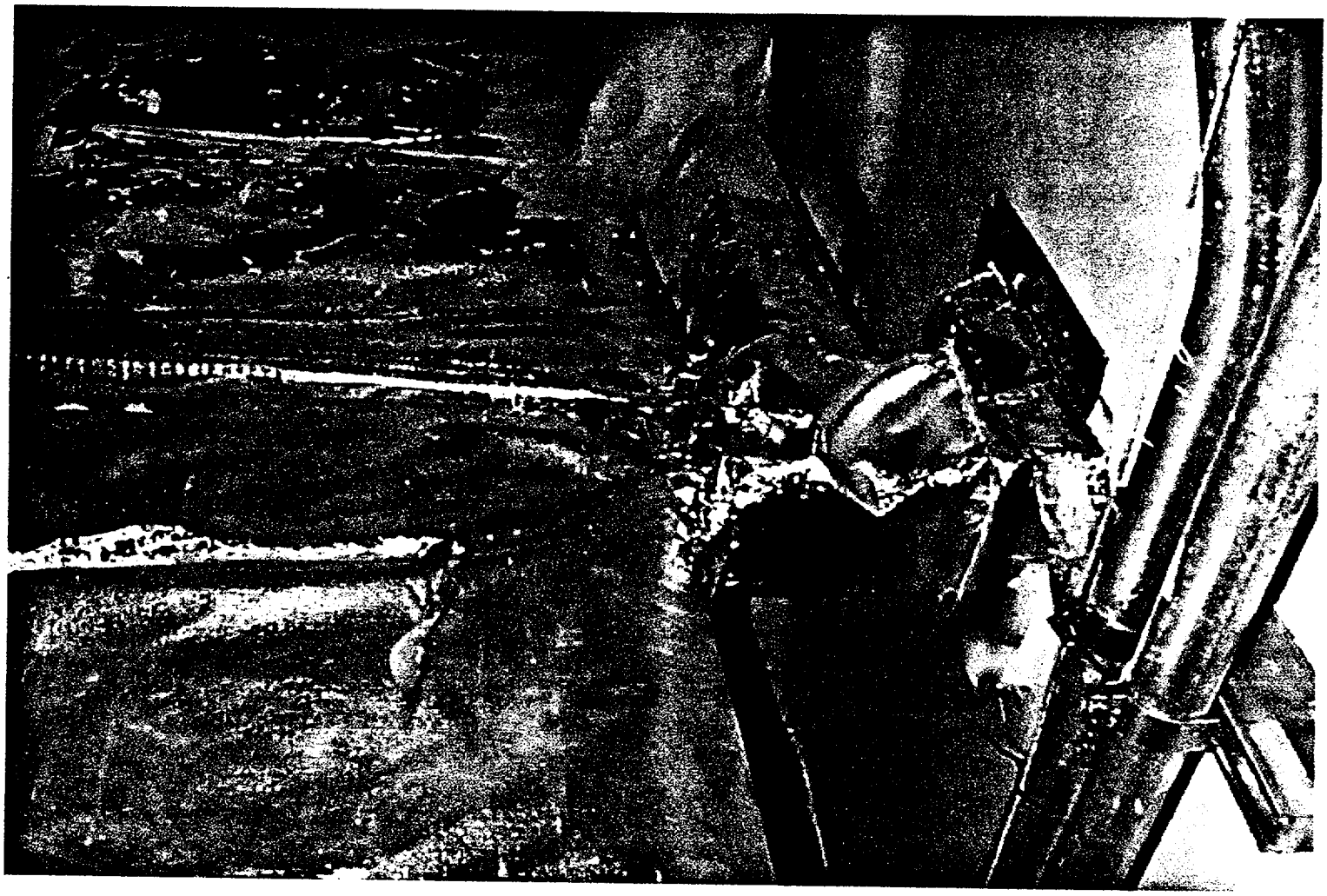
Picture No. 1a (9/27b – image21.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT57)
Looking up from floor between Trays 1ABTOT57 & 1AATWT07. First support down from ceiling. Right and left side of picture is wrapped supports (Flamastic covering). Right side of picture is the north wall of the Auxiliary Building.



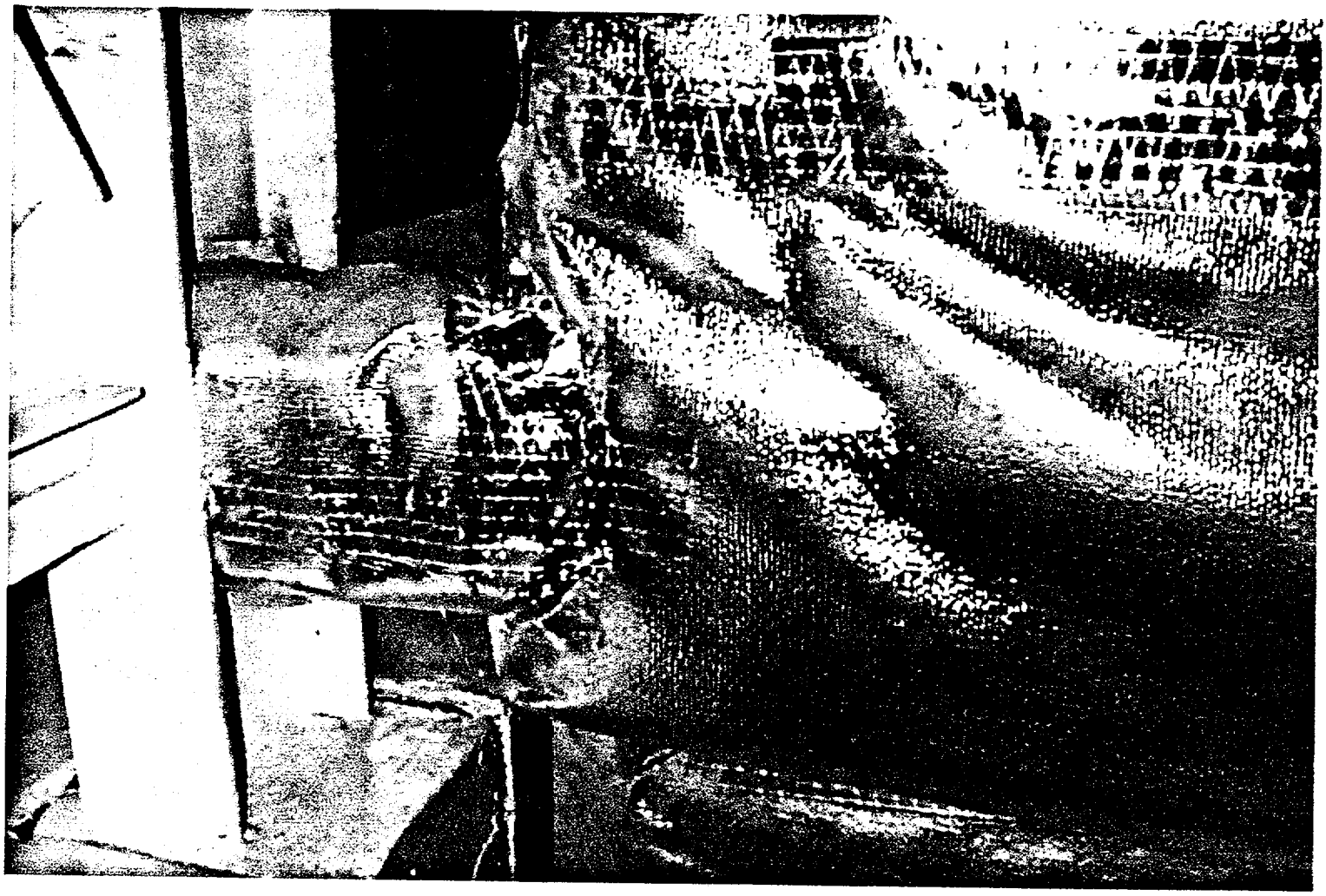
Picture No. 2 (9/26 – image64.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT57)
Looking up from floor between Trays 1ABTOT57 & 1AATWT07. First support down from ceiling. Wrapped support attached to north wall of Auxiliary Building. White material on wrap is Flamastic covering.



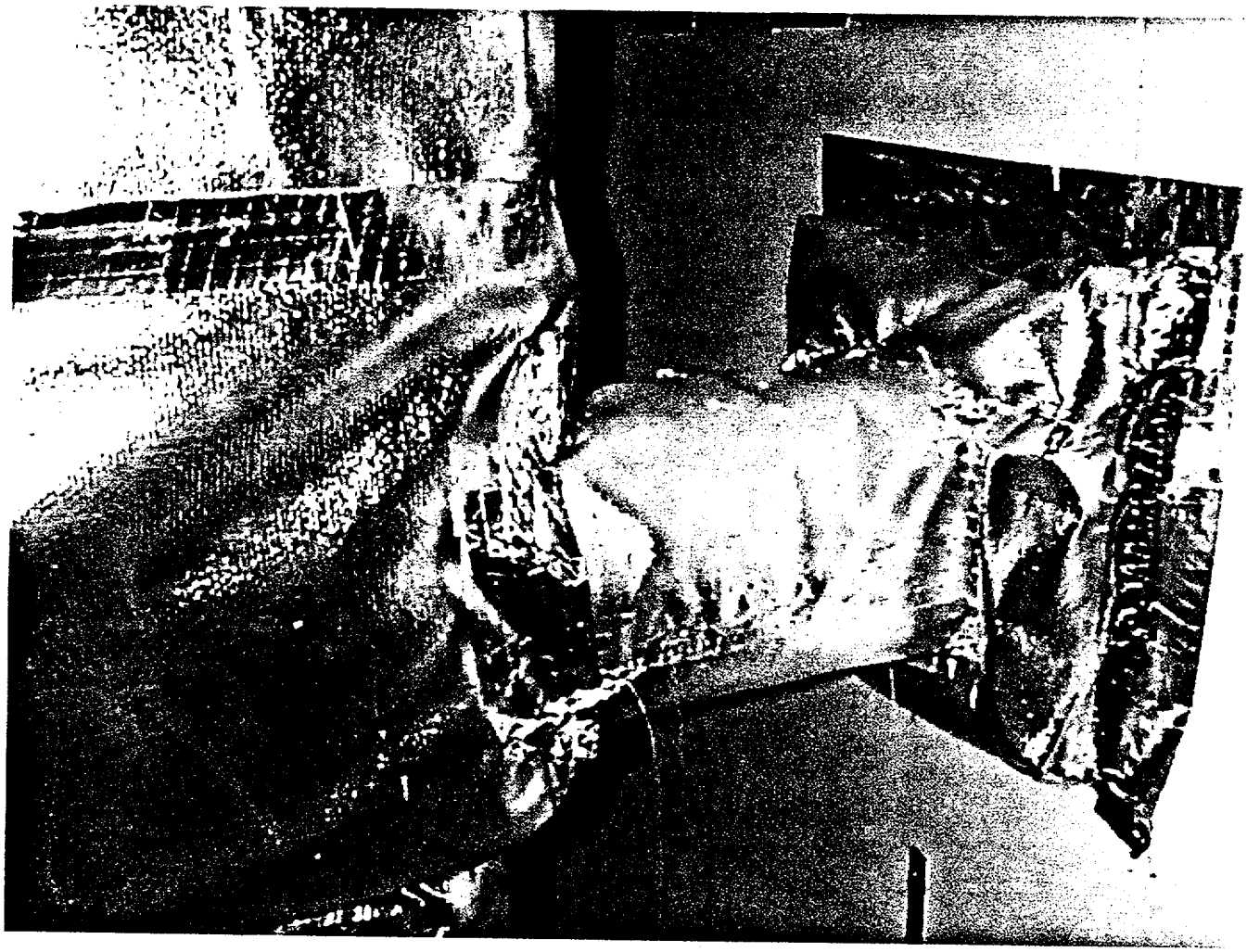
Picture No. 3 (9/26 – image65.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking west at support on south side of tray. Fourth support from ceiling and first support from the floor.



Picture No. 4 (9/26 – image66.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking N.W. at support on north side of tray where it attaches to the north wall of the Auxiliary Building. Fourth support from ceiling and first support from the floor.



Picture No. 5 (9/26 – image67.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking west at tray interface with the floor at elevation 139'. Wall to the left side of picture is the wall of a partial height pipe chase. White material at floor is sprayed on fire proofing.

Picture No. 6 (9/26 – image68.jpg)

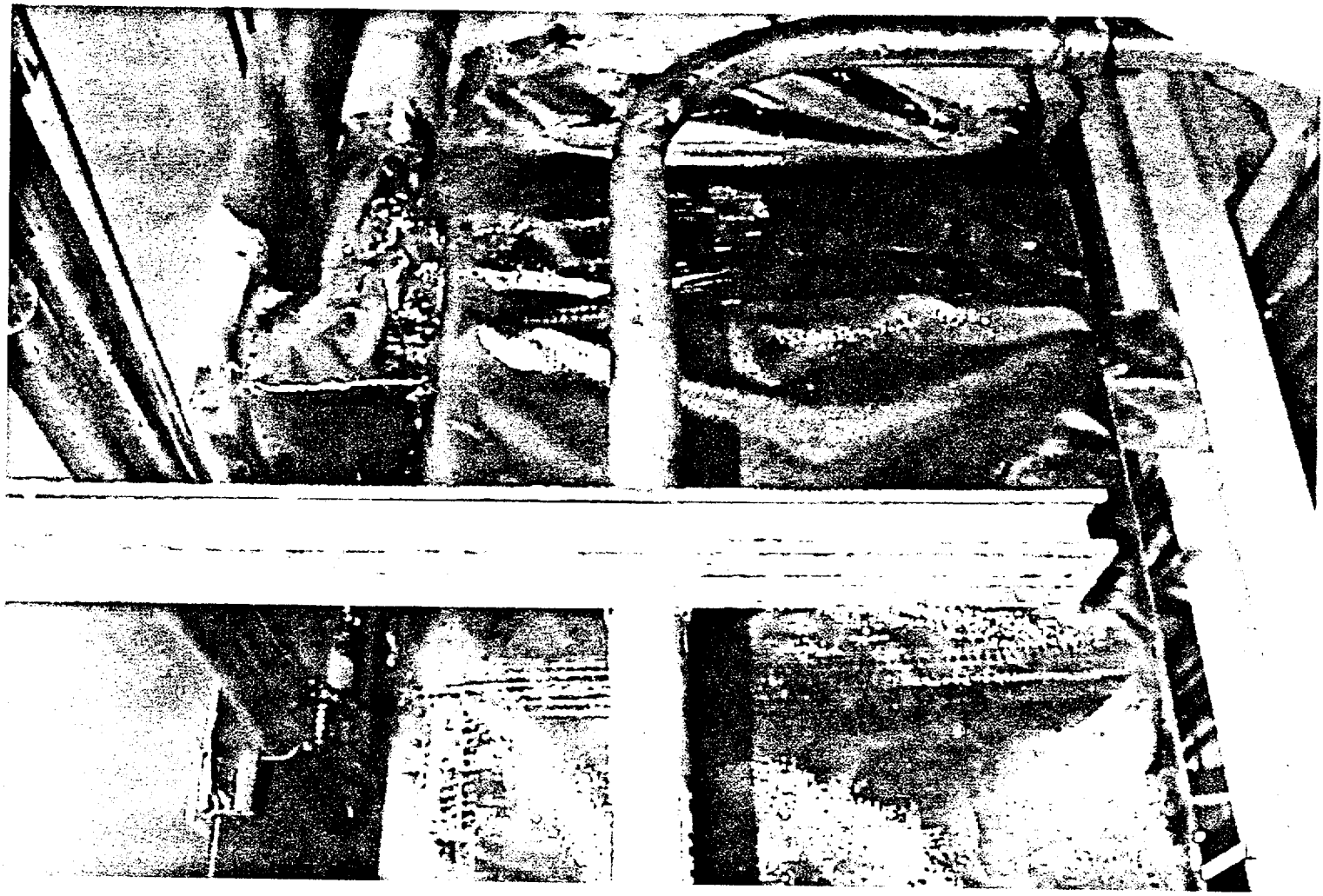
Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking N.W. at tray interface with the floor at elevation 139'. Wall to the right side of picture is the north wall of the Auxiliary Building. White material at floor is sprayed on fire proofing over floor penetration seal.

Picture No. 7 (9/26 – image69.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking east at tray interface with the bottom of a boxed enclosure for air drops that exit the west side of the tray and enter 6" sleeves through the north wall of the Auxiliary Building. The enclosure has unistrut as internal supports. White material at interface and thermal shorts is Flamastic.

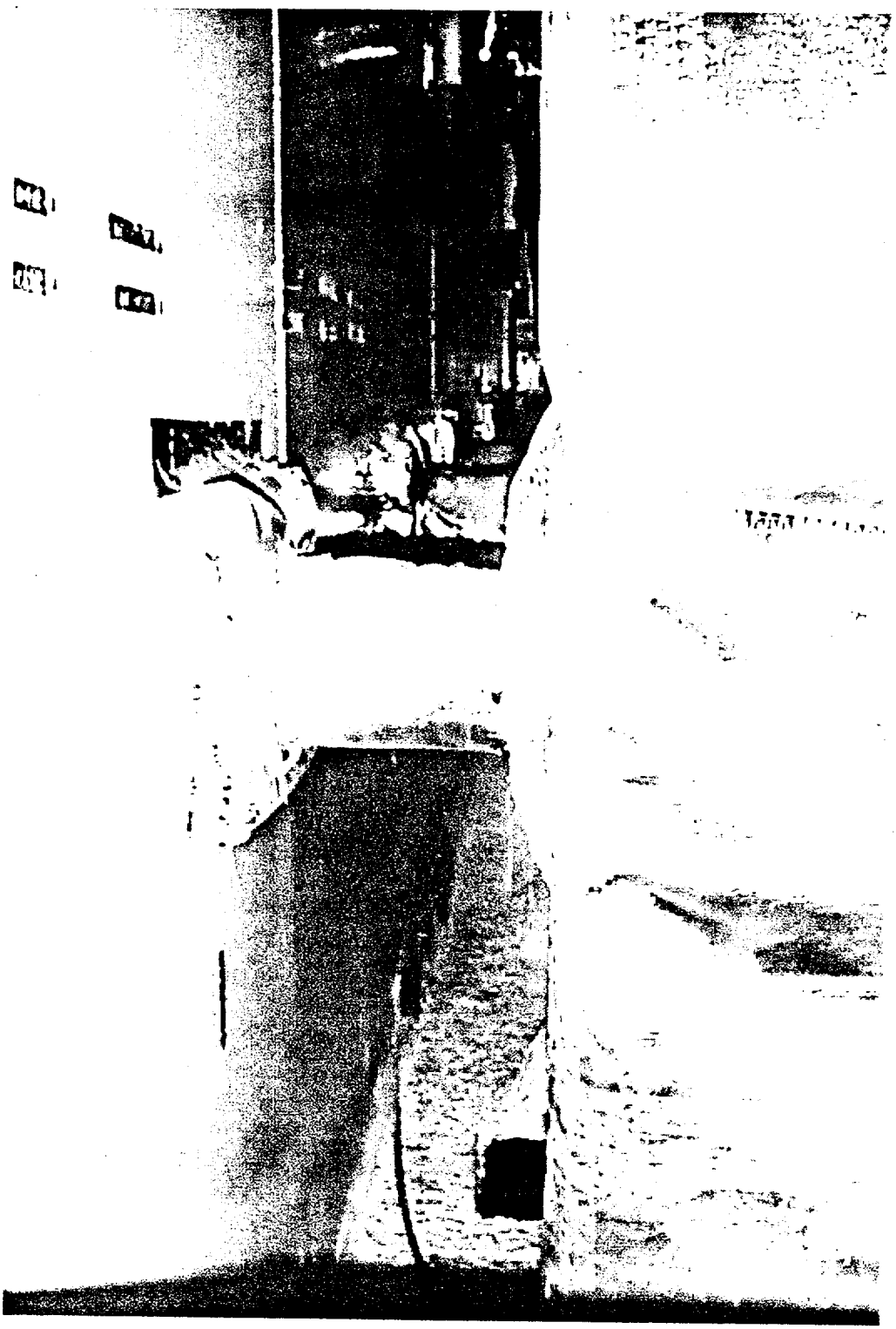
Picture No. 8 (9/26 – image70.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking east at tray support (opposite side of tray is picture #3).



Picture No. 9 (9/26 – image71.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT54)
Looking east at tray support attachment to north wall of the Auxiliary Building.



Picture No. 10 (9/26 – image72.jpg)

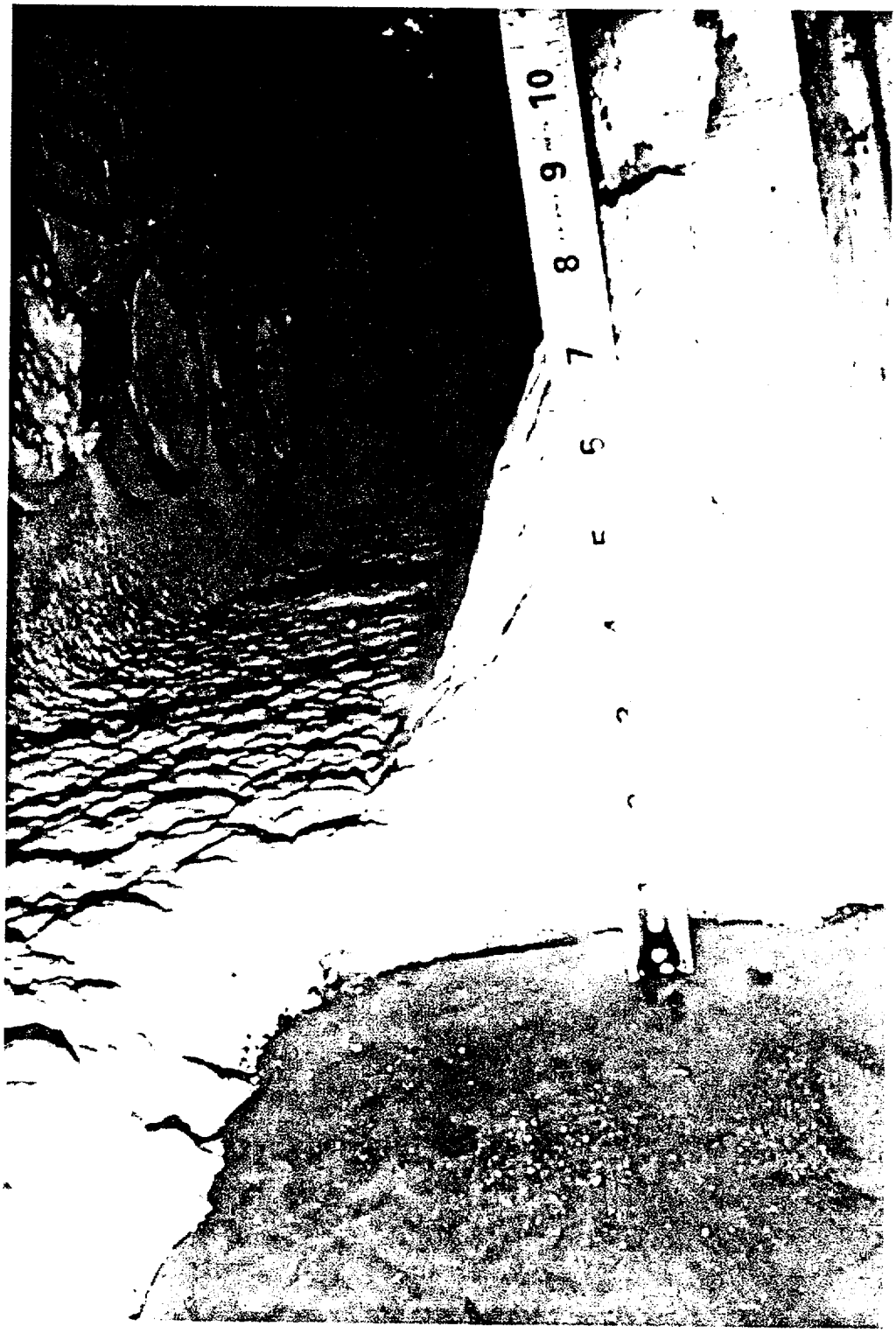
Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT54)
Looking east at tray support attachment to steel I-Beam column.

Picture No. 11 (9/26 – image73.jpg)

Aux. Bldg. 139' El. (4" x 36" Vertical Tray 1ABTOT55)
Looking east at tray interface with the floor at elevation 139'. Wall to the right side of picture is the wall of a partial height pipe chase. Wall to the left side is the north wall of the Auxiliary Building. White material at floor is sprayed on fire proofing.

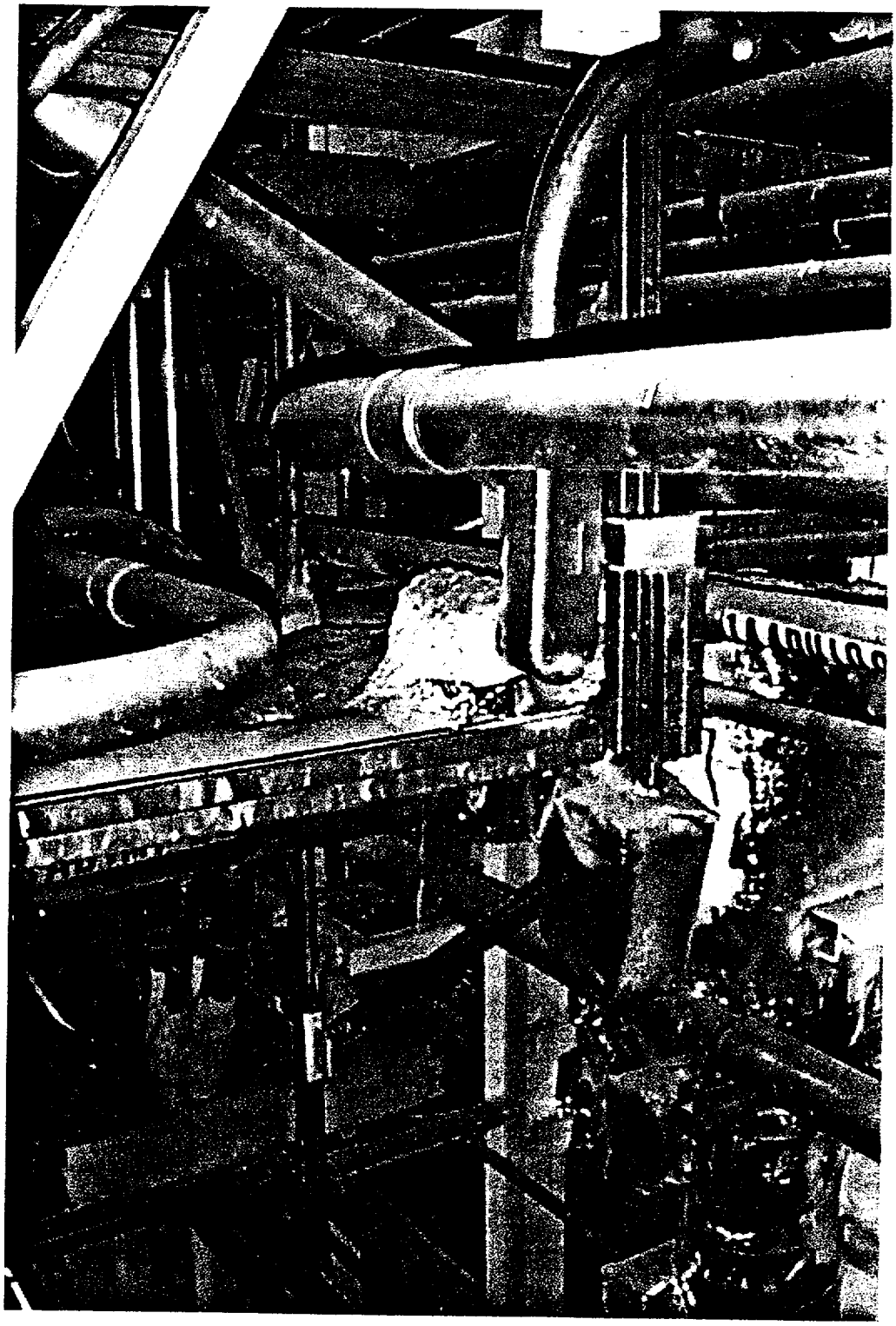
Picture No. 12 (9/26 – image74.jpg)

Aux. Bldg. 139' El. (Standard fire proofing installation on top of floor penetration seal and wrapped tray interface.



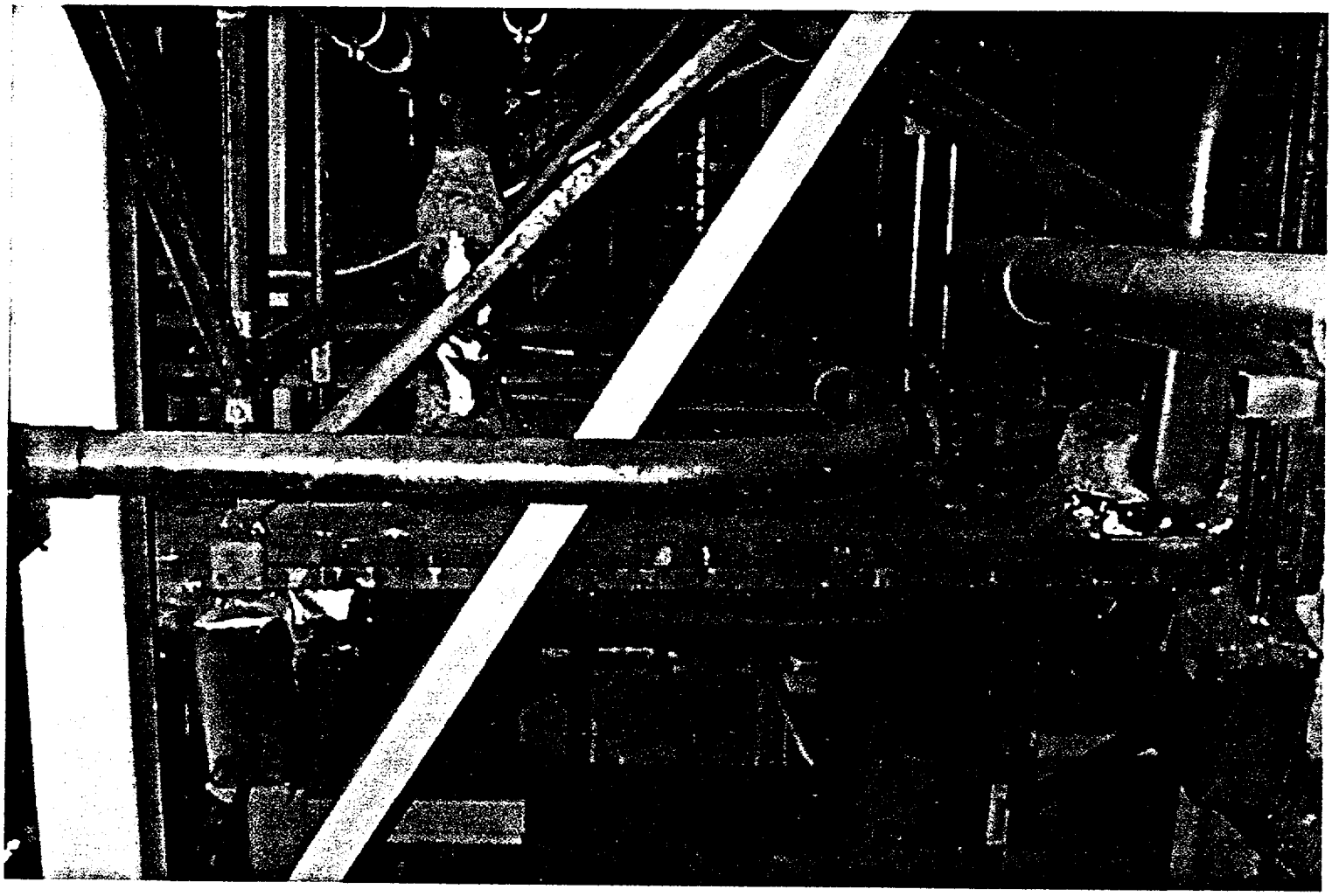
Picture No. 13 (9/26 – image61.jpg)

Aux. Bldg. 139' El. (4" x 24" Horizontal Tray 1ABTMI28)
Looking N.W. at the top of the above tray where a thermal short (4" conduit) enters the top of the tray. The tray runs north and air-drops into vertical tray 1ABTOT57. It also runs south where it turns 90 degrees to the west.



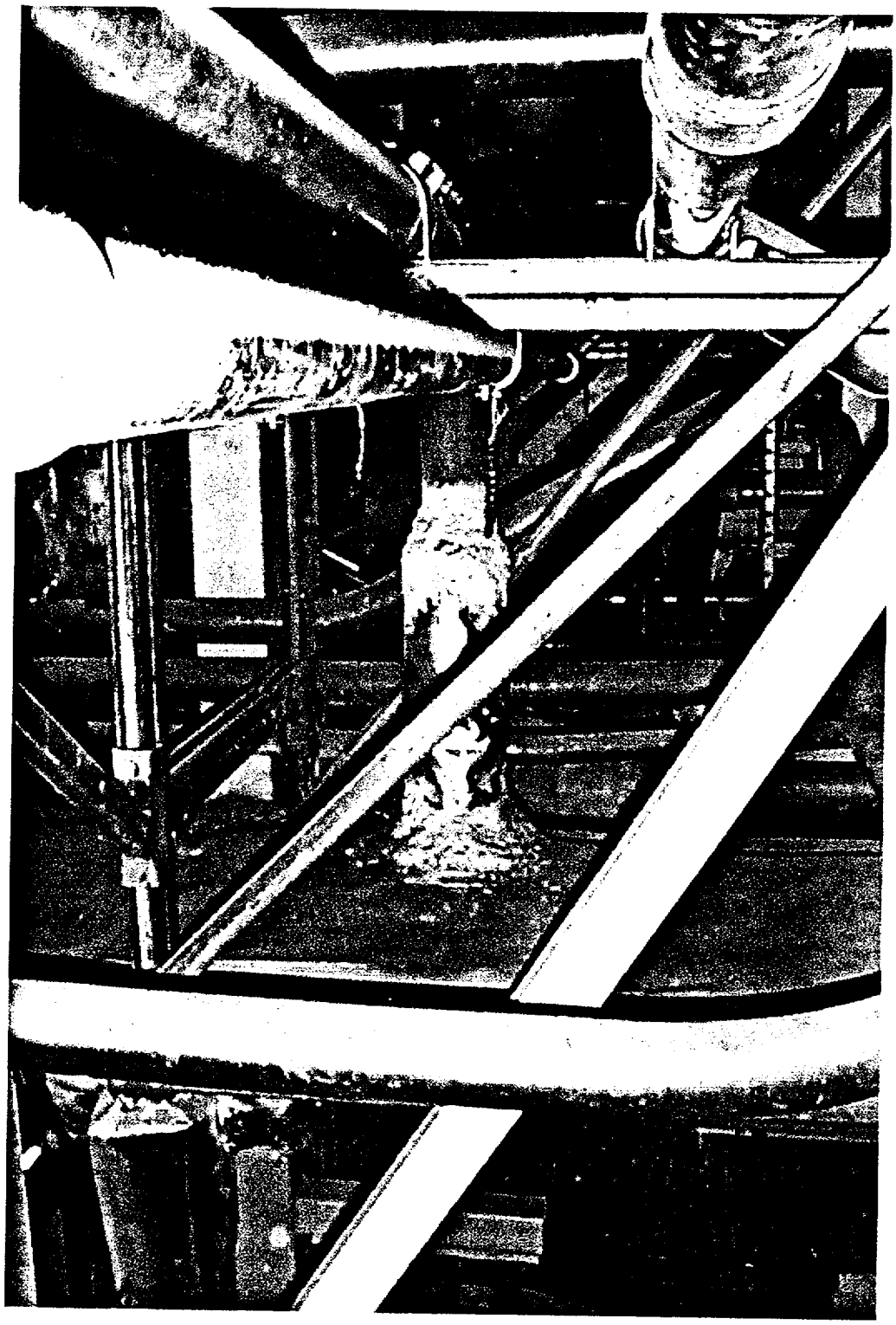
Picture No. 1 (9/27b – image27.jpg)

Aux. Bldg. 139' El. (4" x 24" Horizontal Tray 1ABTMI28)
Looking west at the top of the above tray where two thermal shorts [2-4" conduits 1ABRMI44 (right side) & 1ABRMI52 (left side)] enters the top of the tray. The tray runs north and air-drops into vertical tray 1ABTOT57. It also runs south where it turns 90 degrees to the west.



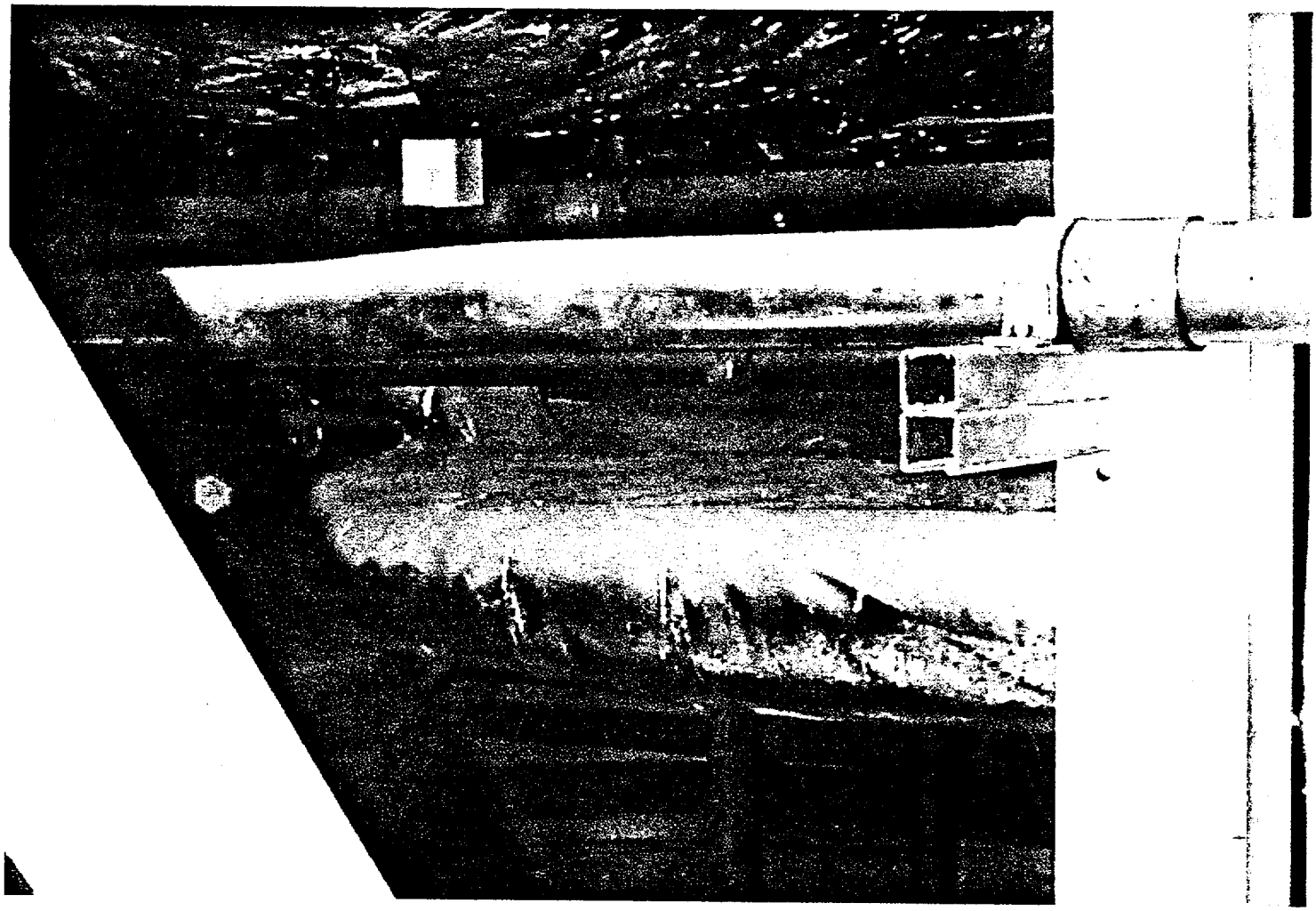
Picture No. 2 (9/27b – image29.jpg)

Aux. Bldg. 139' El. (4" x 24" Horizontal Tray 1ABTMI28)
Looking east at the top of the above tray where a thermal short (4" conduit 1ABRMI52) enters the top of the tray.



Picture No. 3 (9/27b – image28.jpg)

Aux. Bldg. 139' El. (4" x 24" Horizontal Tray 1ABTMI27)
Looking west at the top of the tray where it turns 90 degrees to the south. A thermal short (4" conduit) enters the top of the tray from the south. Insulated HVAC duct is shown at the top of the picture.

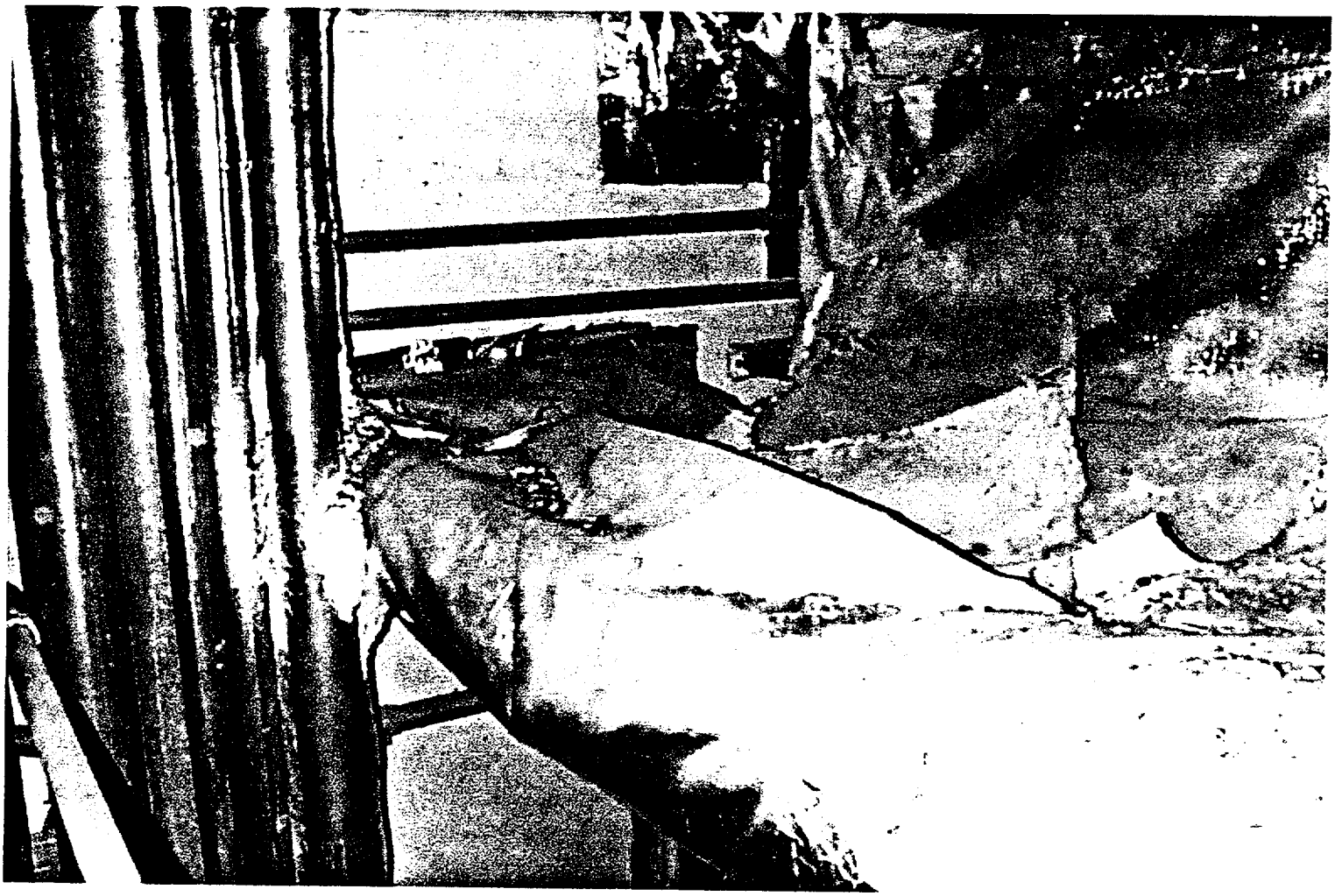


Picture No. 4 (9/27b – image30.jpg)

Aux. Bldg. 166' El.
Looking North – 4" x 24" Horizontal Tray 1ABTMJ27 (Bottom of tray at interface with north wall & vertical tray 1ABTOT59. Horizontal tray does not penetrate north wall.)

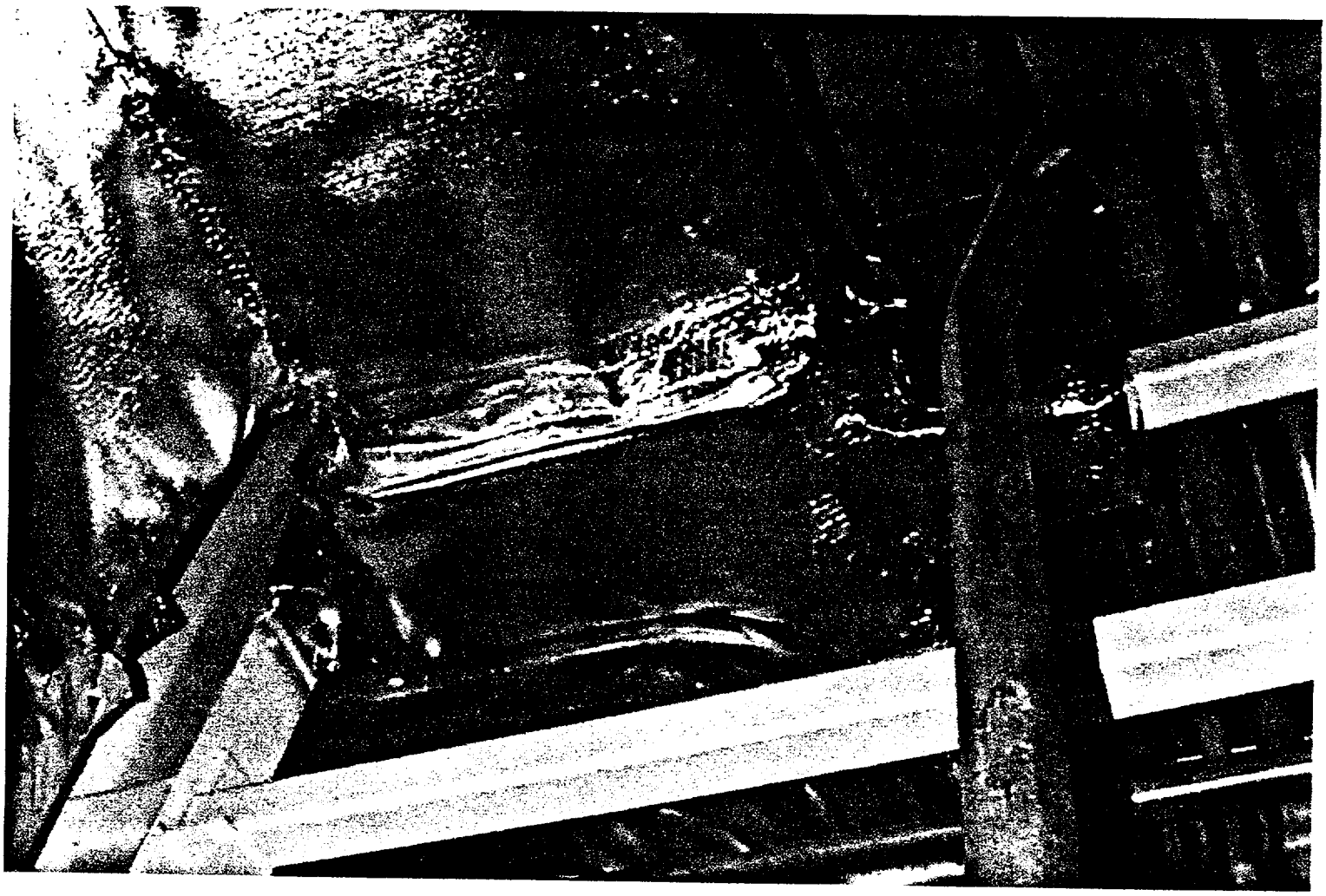
Picture No. 1 (9/29 – image10.jpg)

Aux. Bldg. 166' El.
Looking north – 4" x 24" Horizontal Tray 1ABTMJ27 (Top of tray at north wall interface. Interface with vertical tray 1ABTOT59 can be seen in top right corner of picture. Horizontal tray does not penetrate north wall.)



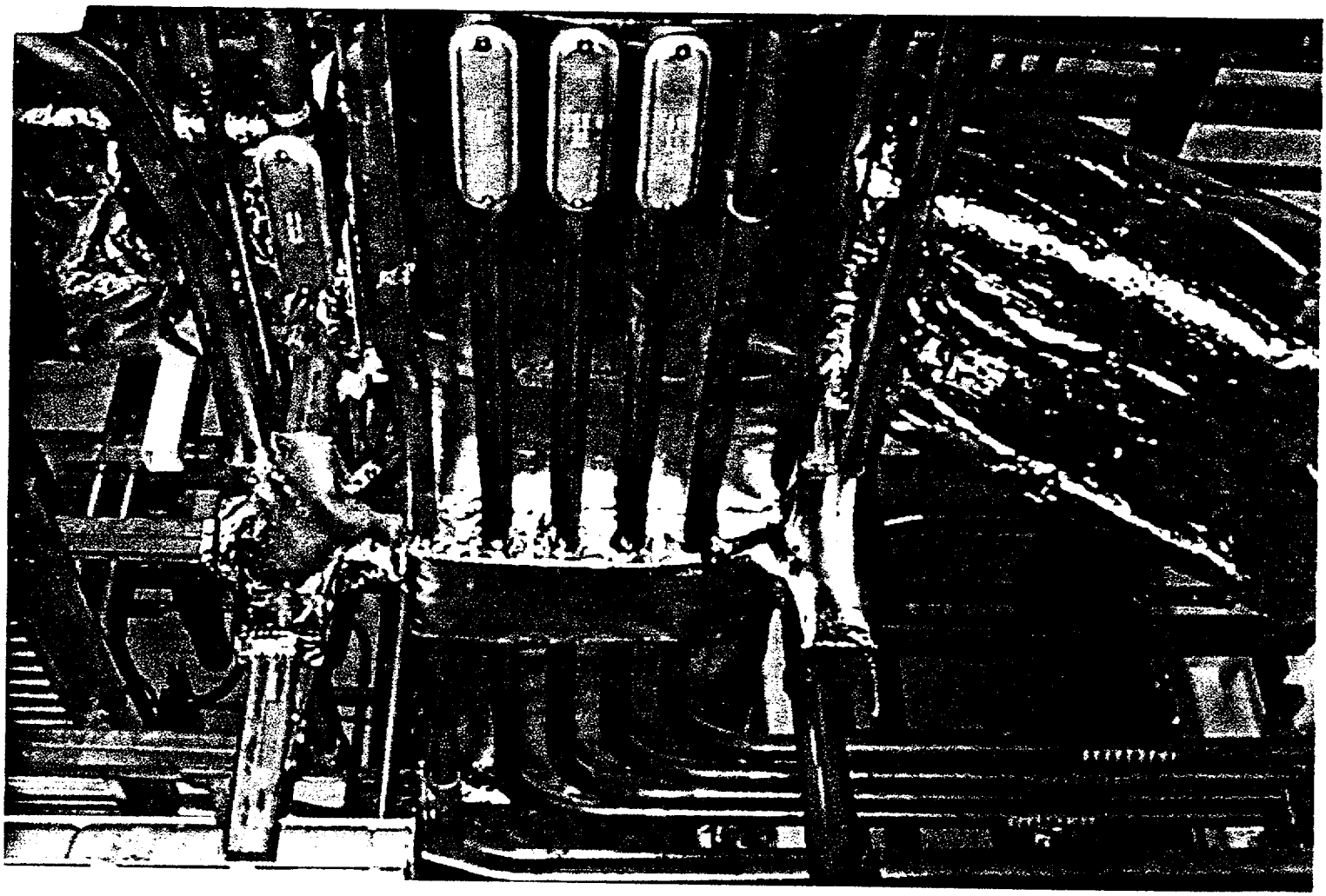
Picture No. 2 (9/29 – image17.jpg)

Aux. Bldg. 166' El.
Looking south – 4" x 24" Horizontal Tray 1ABTMJ27 (Bottom of tray at 2nd support from north wall. Interface with vertical tray 1ABTOT59 can be seen in top right corner of picture. Horizontal tray does not penetrate north wall.)



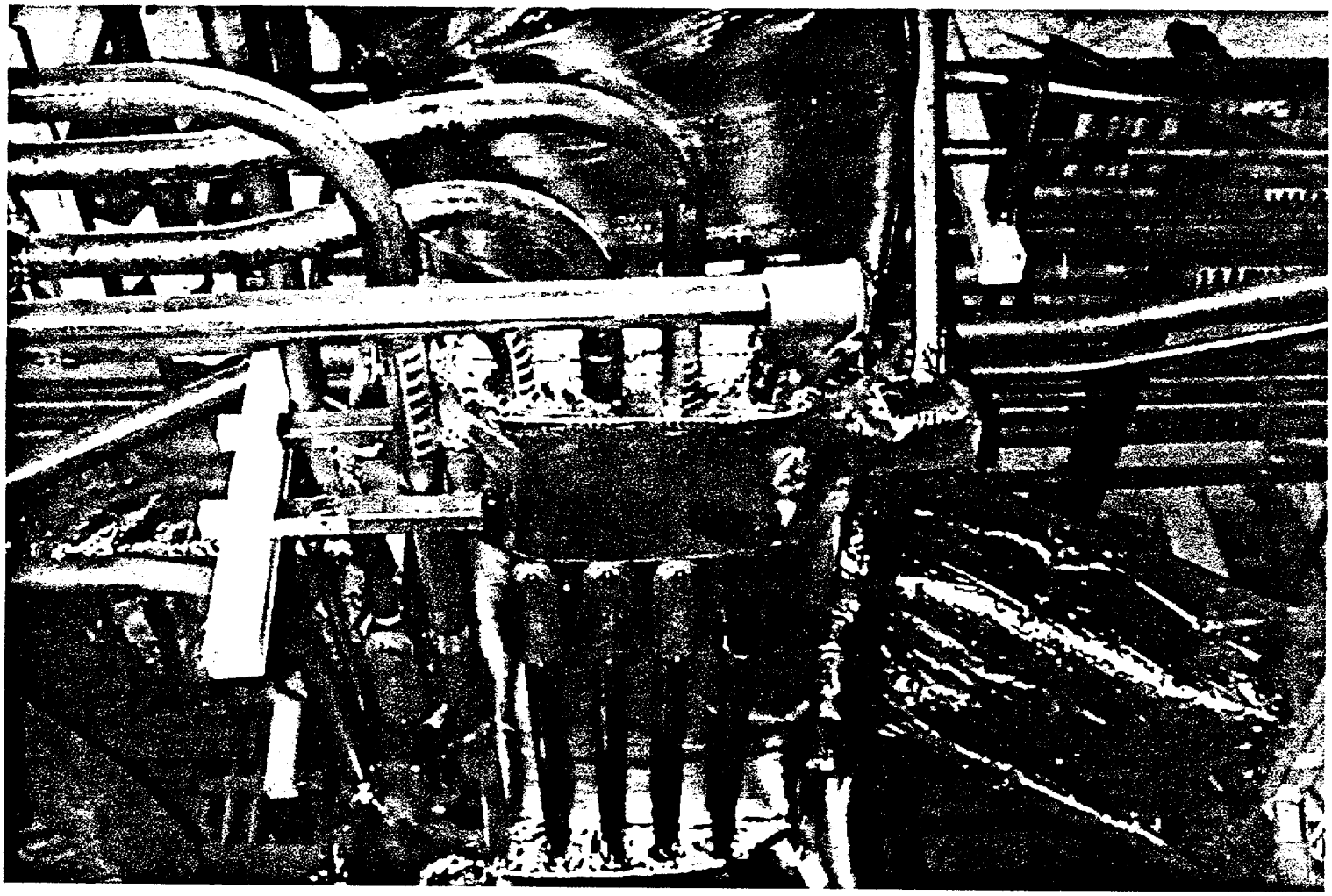
Picture No. 3 (9/29 – image11.jpg)

Aux. Bldg. 166' El.
Looking north – 4" x 24" Horizontal Tray 1ABTMJ27 (Bottom of tray at 3rd support from north wall. Interface with vertical tray 1ABTOT59 can be seen in bottom center portion of picture. The wrapped item running over the top of Horizontal Tray 1ABTMJ27 is an HVAC duct.)



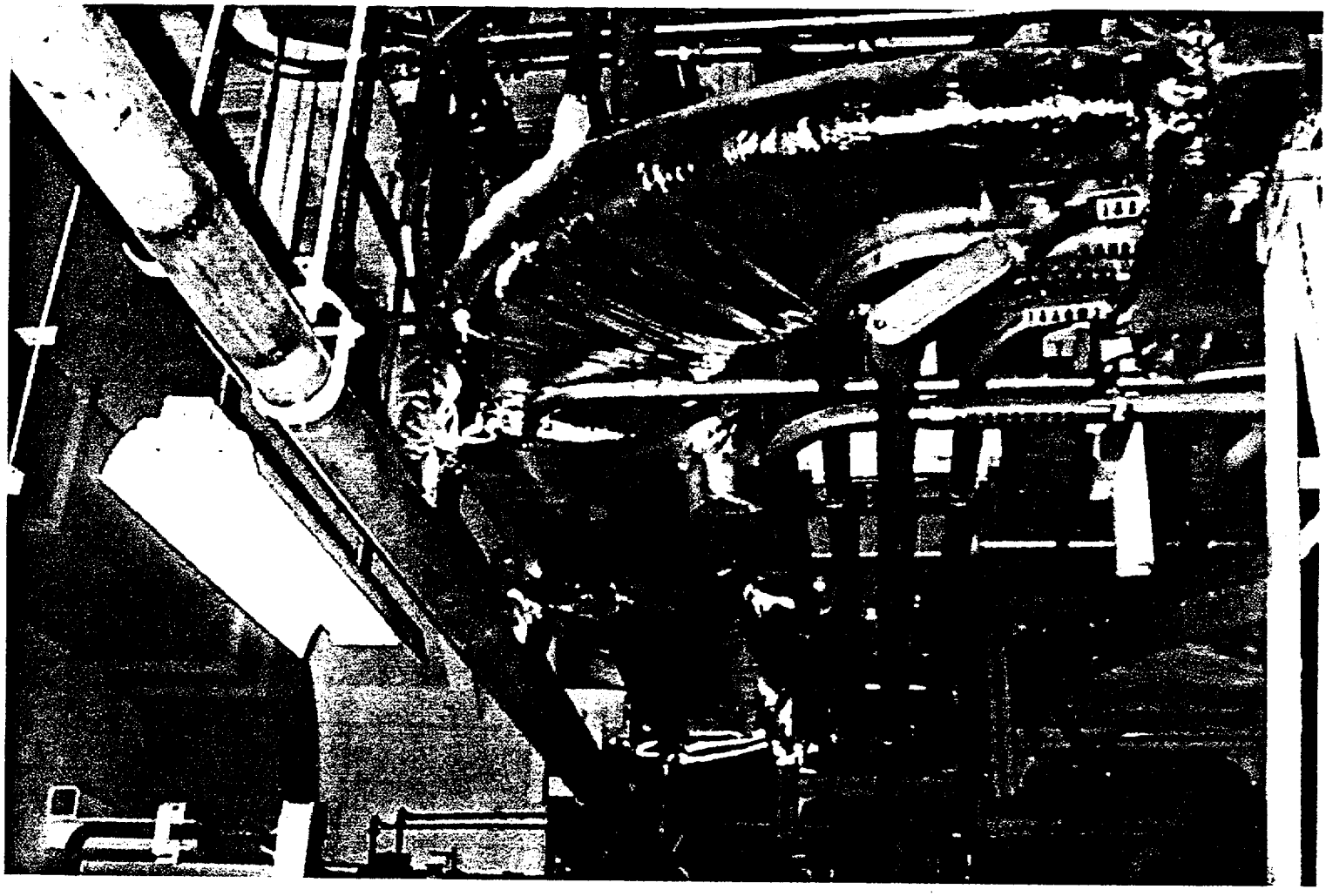
Picture No. 4 (9/29 – image12.jpg)

Aux. Bldg. 166' El.
Looking north – 4" x 24" Horizontal Tray 1ABTMJ27 (Bottom of tray at 3rd & 4th supports from north wall. Start of the 90 degree turn to the west can be seen in the top center portion of picture. The wrapped item running over the top of Horizontal Tray 1ABTMJ27 is an HVAC duct.)



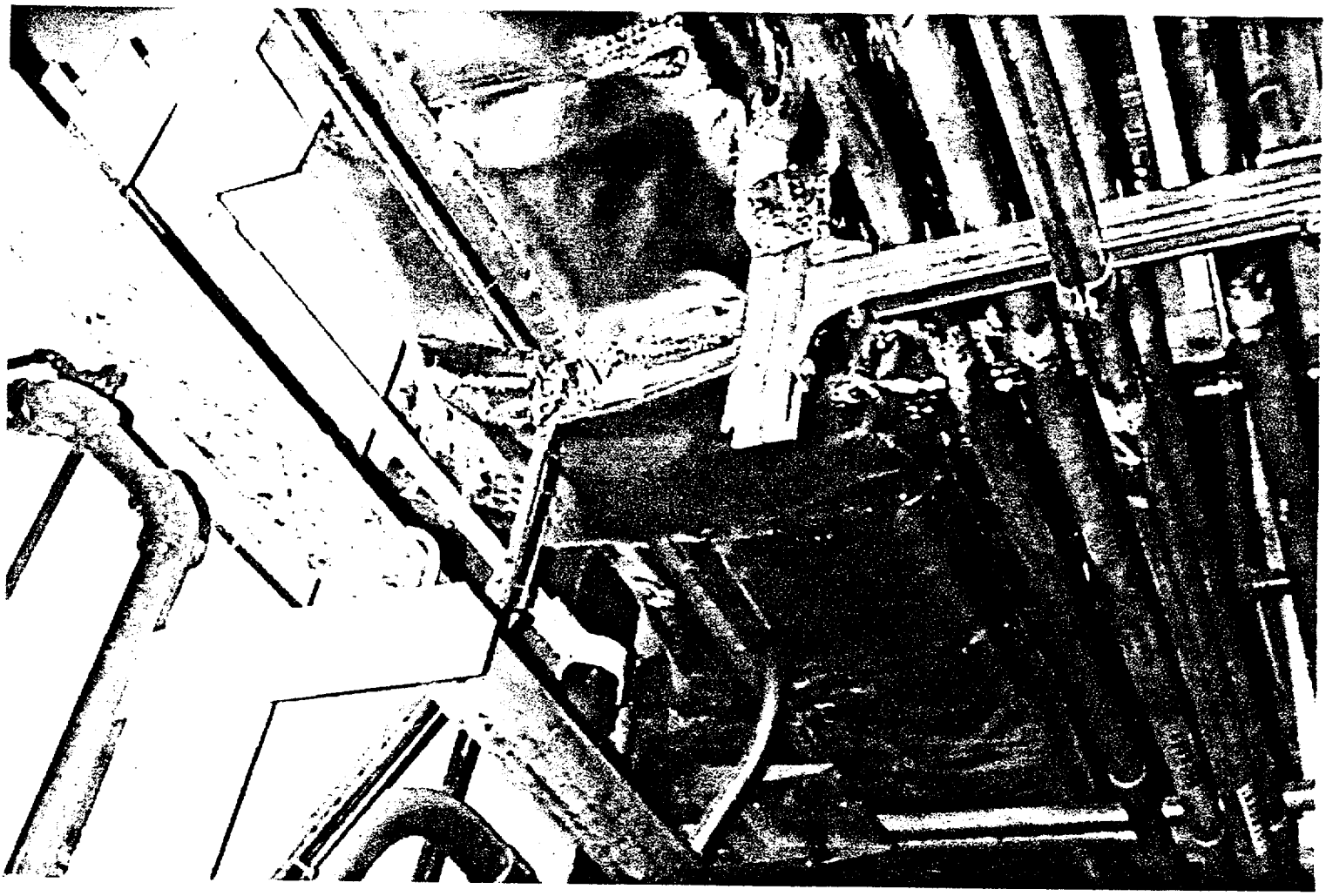
Picture No. 5 (9/29 – image13.jpg)

Aux. Bldg. 166' El.
Looking west – 4" x 24" Horizontal Tray 1ABTMJ27 (Bottom of tray at 4th, 5th, 6th, & 7th supports from north wall & the 90 degree turn to the west. Conduit drop into top of tray can be seen at west end of 90 degree turn.)



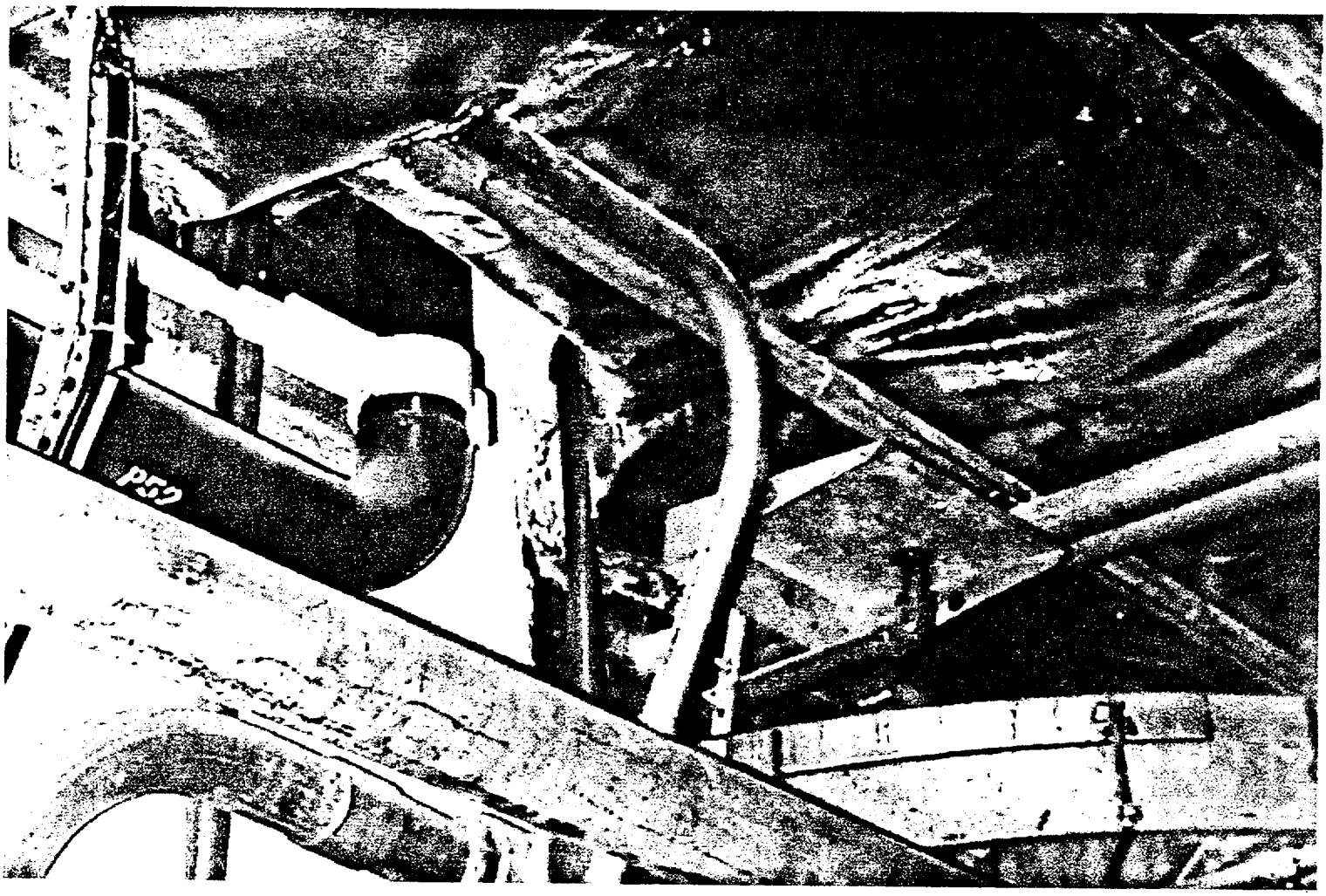
Picture No. 6 (9/29 – image14.jpg)

Aux. Bldg. 166' El.
Looking S.W. – 4" x 24" Horizontal Tray 1ABTMJ27 (Bottom of tray at 7th supports from north wall.)



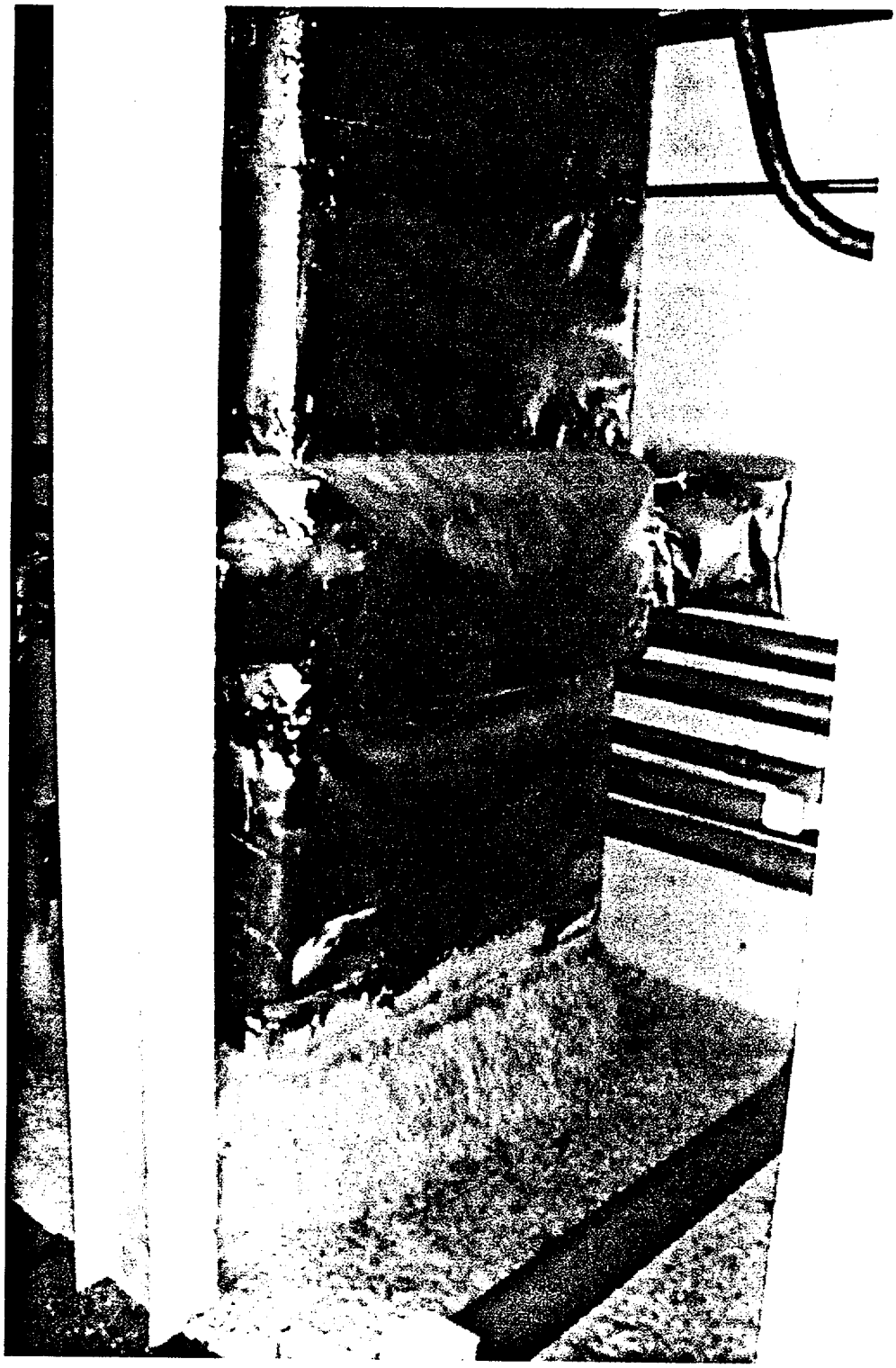
Picture No. 7 (9/29 – image15.jpg)

Aux. Bldg. 166' El.
Looking S.W. – 4" x 36" Horizontal Tray 1ABTMJ27 - Bottom of tray at T section (T runs to the south). T is located between the 7th support and the end of the wrap on the tray on the west end.



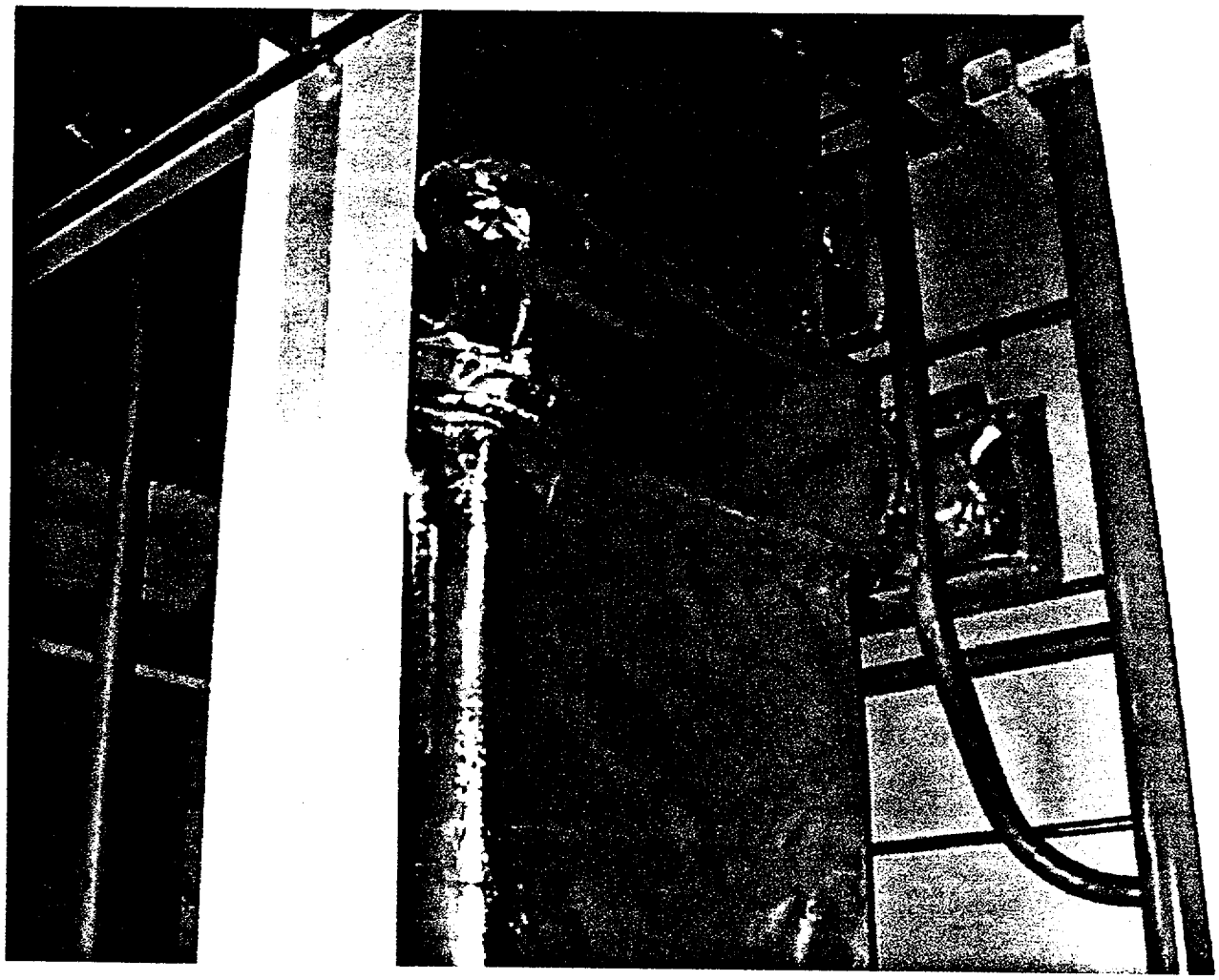
Picture No. 8 (9/29 – image16.jpg)

Aux. Bldg. 166' El.
Looking N.W. – (36" wide tray 1ABTOT57 – 59 at floor in Fire zone 1A417)



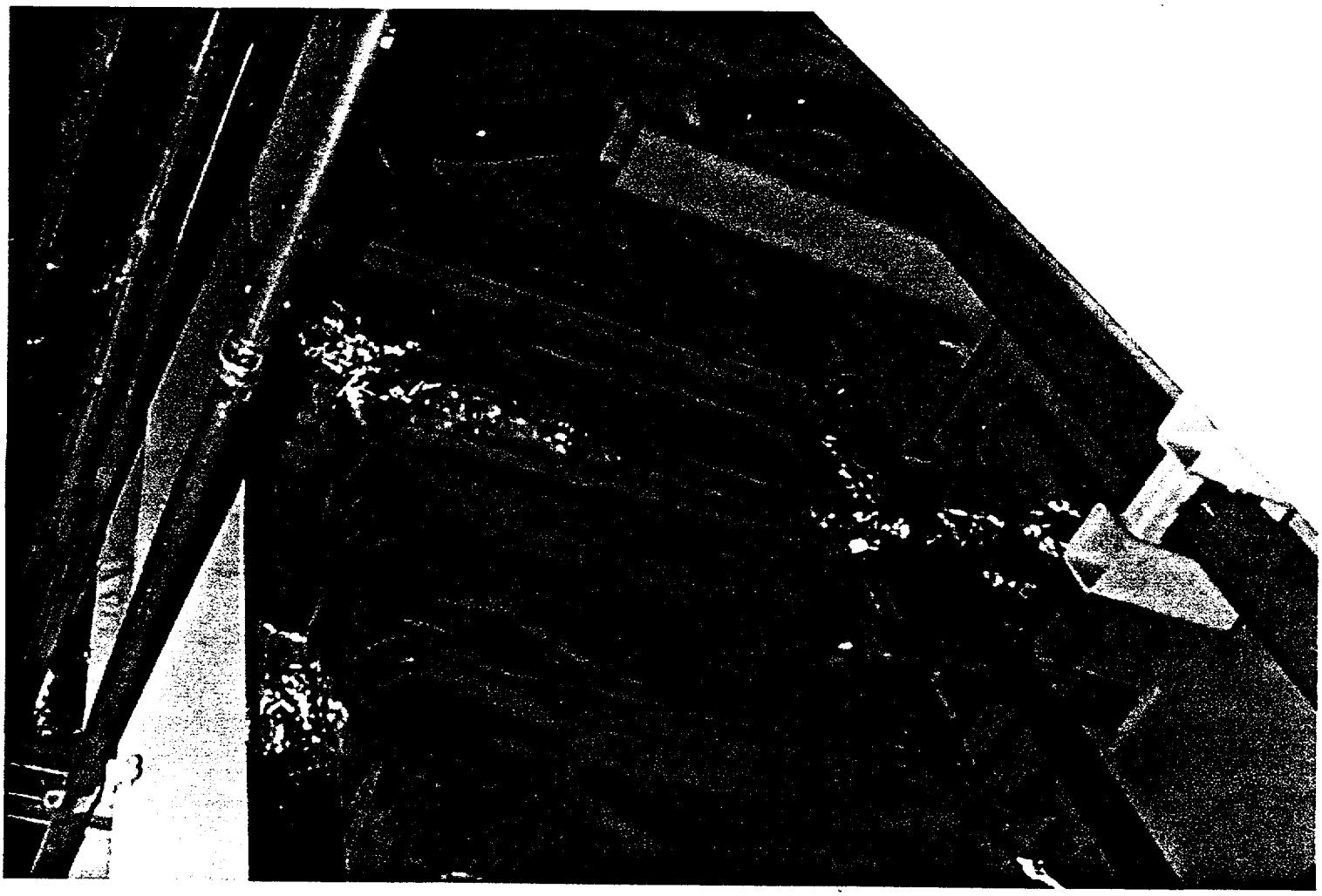
Picture No. 1 (9/29 - image07.jpg)

Aux. Bldg. 166' El.
Looking N.W. – (36" wide tray 1ABTOT57 – 59 (2nd. support from floor)



Picture No. 2 (9/29 - image08.jpg)

Aux. Bldg. 166' El.
Looking N.W. – 4" x 36" tray 1ABTOT57 – 59 (3rd . support from floor – top of tray – tray stops at support & does not continue through ceiling. Cut off portion of picture at top right is actually a vertical I-Beam support column). Horizontal tray 1ABMJ27 interface with 1ABTOT59 can be seen at lower portion of picture.



Picture No. 3 (9/29 - image09.jpg)