

19/28

ALCANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES

LOS TUNELES DE SAN GERMAN

VAULTED BRICK TUNNEL STORM SEWER <sup>Agto</sup>  
SYSTEM

CALLE FERROCARRIL and CALLE

ESPERANZA

PHOTOGRAPHER: ING. LUIS F. PUMARADA

Julio 1988

SAN GERMAN, P.R. 125

Continuation sheet 7 page 6.

Agto



20/28  
x

AICANTARRILLA PIUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN

VAULTED BRICK TUNNEL STORM

SEWER SYSTEM

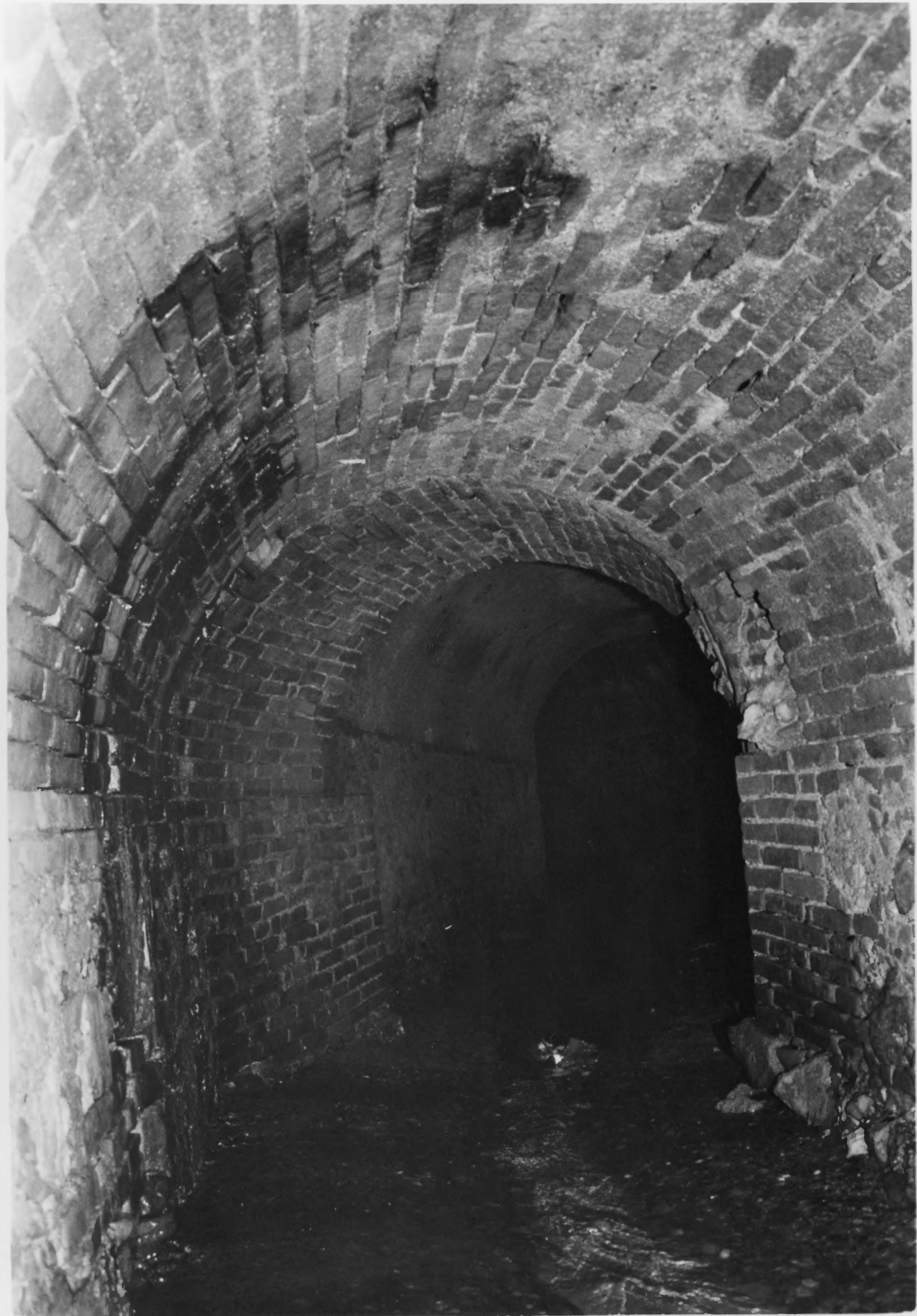
CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAFER: ING. LUIS F. PUMARADA

Julio 1988

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"Addition of a headwall  
to improve flood-flow conditions"  
Continuation sheet 7 page 6.



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ALCANTARRILLA PIVVIAI SOBRE  
LA QUEBRADA MANZANARES

LOS TUNELES DE SAN GERMÁN

VAULTED BRICK TUNNEL STORM

SEWER SYSTEM

CALLE FERROCARRIL OND CALLE ESPERANZA

PHOTOGRAPHER: ING. LUIS F. PUMARIDA

Julio 1988

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A dangerous crack runs accross the  
VAULT near the up stream end of the  
Culvert

afbr



AICANTARRELLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM  
CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAFER: ING. LUIS F. PUMARADA

Julio 1988

SAN GERMAN. P.R. 125

EAST CALLE RAMAS, From Calle Lunca to  
Parque de Santo Domingo





09/198

AICANTARRILLA PLUVIAL SOBRE

LA QUÈBRADA MANZANARES

LOS TUNELES DE SAN GERMAN

UNVITED BRICK TUNNEL STORM

SEWER SYSTEM.

CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAFER: ING LUIS F. DUMARADA

Julio 1988

SAN GERMAN, P.R. 125

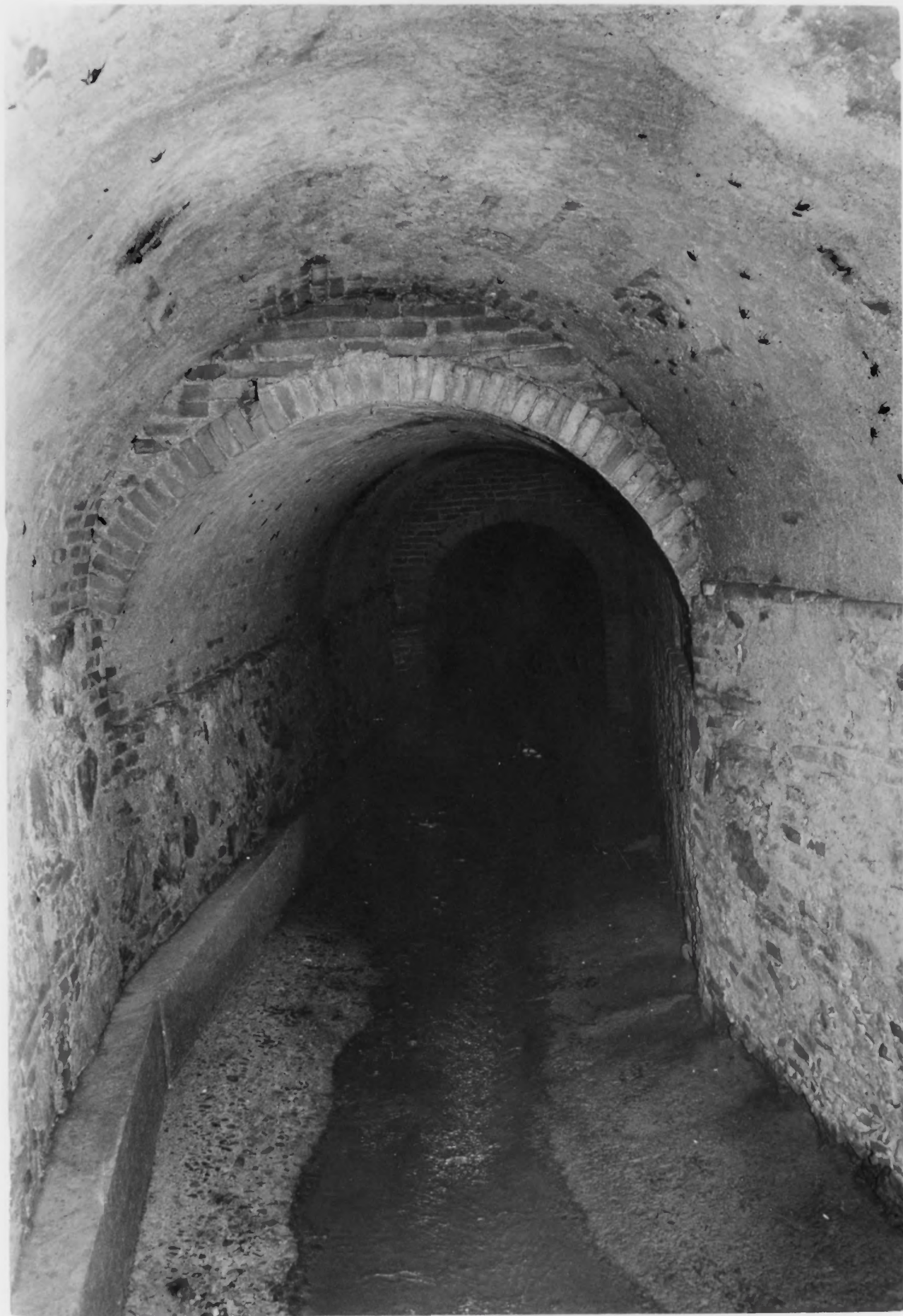


AICANTARRILLA Pluvial SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM SEWER  
SYSTEM

CALLE FERROCARRIL AND CALLE ESPERANZA  
PHOTOGRAPHER: ENG. LUIS F PUMARADA  
Julio 1938

SAN GERMAN PR. 1125

CALLE VIVONI



AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM.

CALLE FERROCARRIL AND  
CALLE ESPERANZA

FOTOGRAFER: LUIS F PUMARADA

Julio 1988

SAN GERMAN, P.R. 125

BRICK VAULT WERE BUILT IN 1892  
by the Compañia Ferrocarrilera de Puerto Rico



AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN

VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM

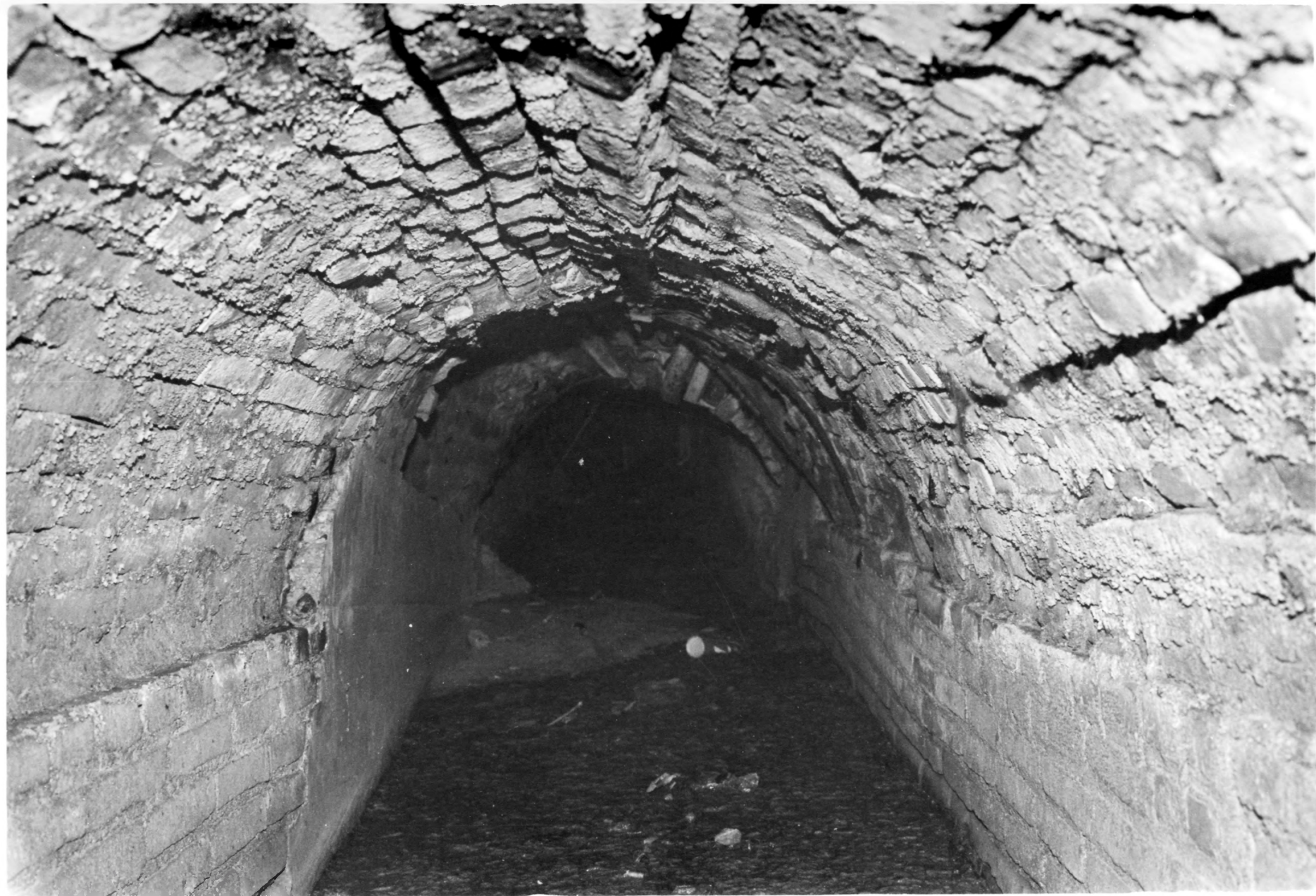
CALLE FERROCARRIL AND  
CALLE ESPERANZA

FOTOGRAFER: ING. LUIS F. PUMARADA  
Julio 1988

SAN GERMAN..P.R 125

RECTANGULAR CONCRETE SECTION, ONLY  
36 INCHES HIGH





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ALCANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM  
CALLE FERRO CARRIL AND  
CALLE ESPERANZA  
FOTOGRAFER: ING. LUIS F PUMARADA  
Julio 1988  
SAN GERMAN. P.R. 125

The rectangular construction ends  
at a serious constriction caused  
by a foundation column which  
projects halfway into the tunnel.



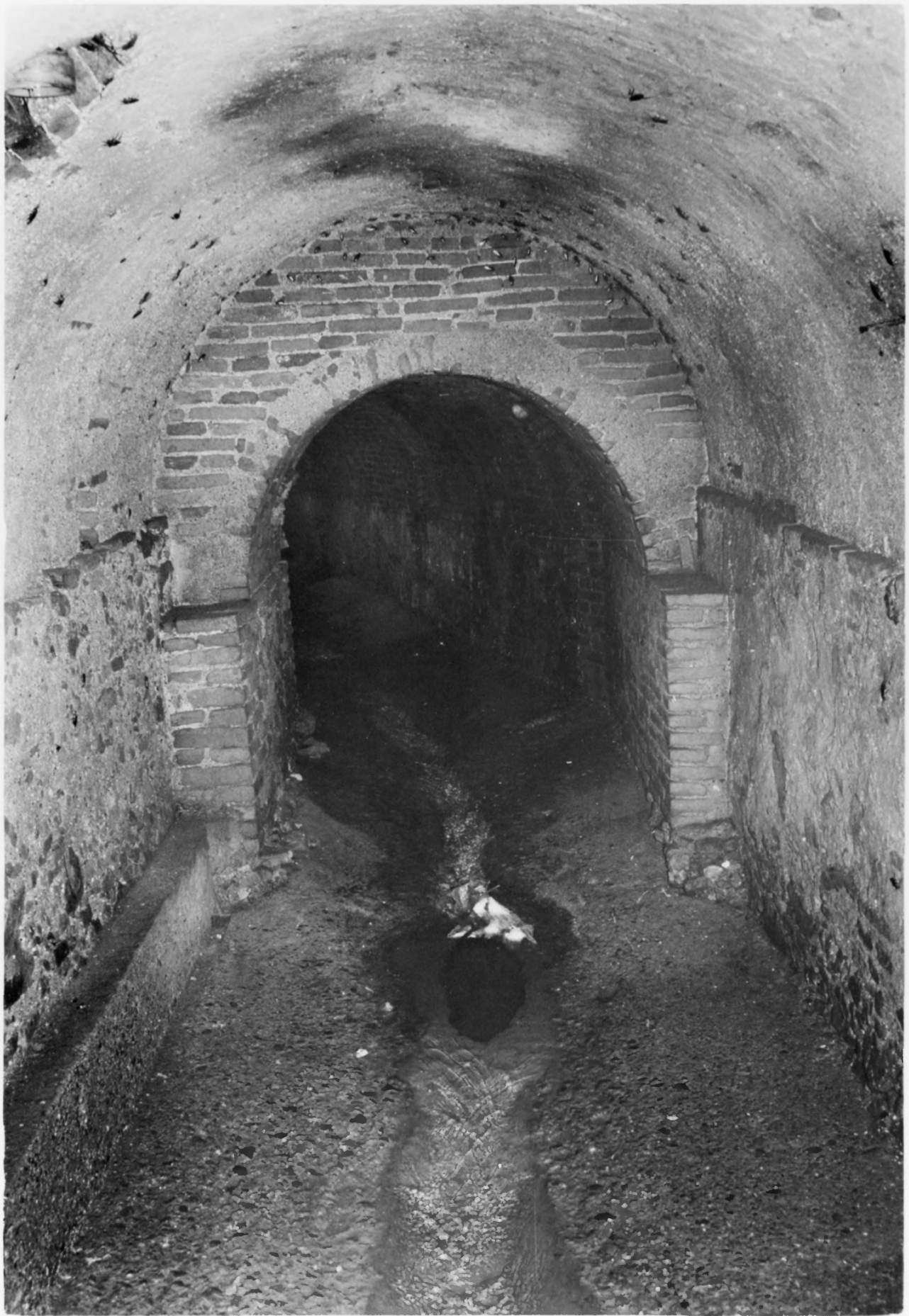
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AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL SYSTEM  
CALLE FERROCARRIL AND  
CALLE ESPERANZA

FOTOGRAFER: ING. LUIS F. PUMARADA  
Julio 1988

SAN GERMAN, PR 125

Calle Tetuan Culvert



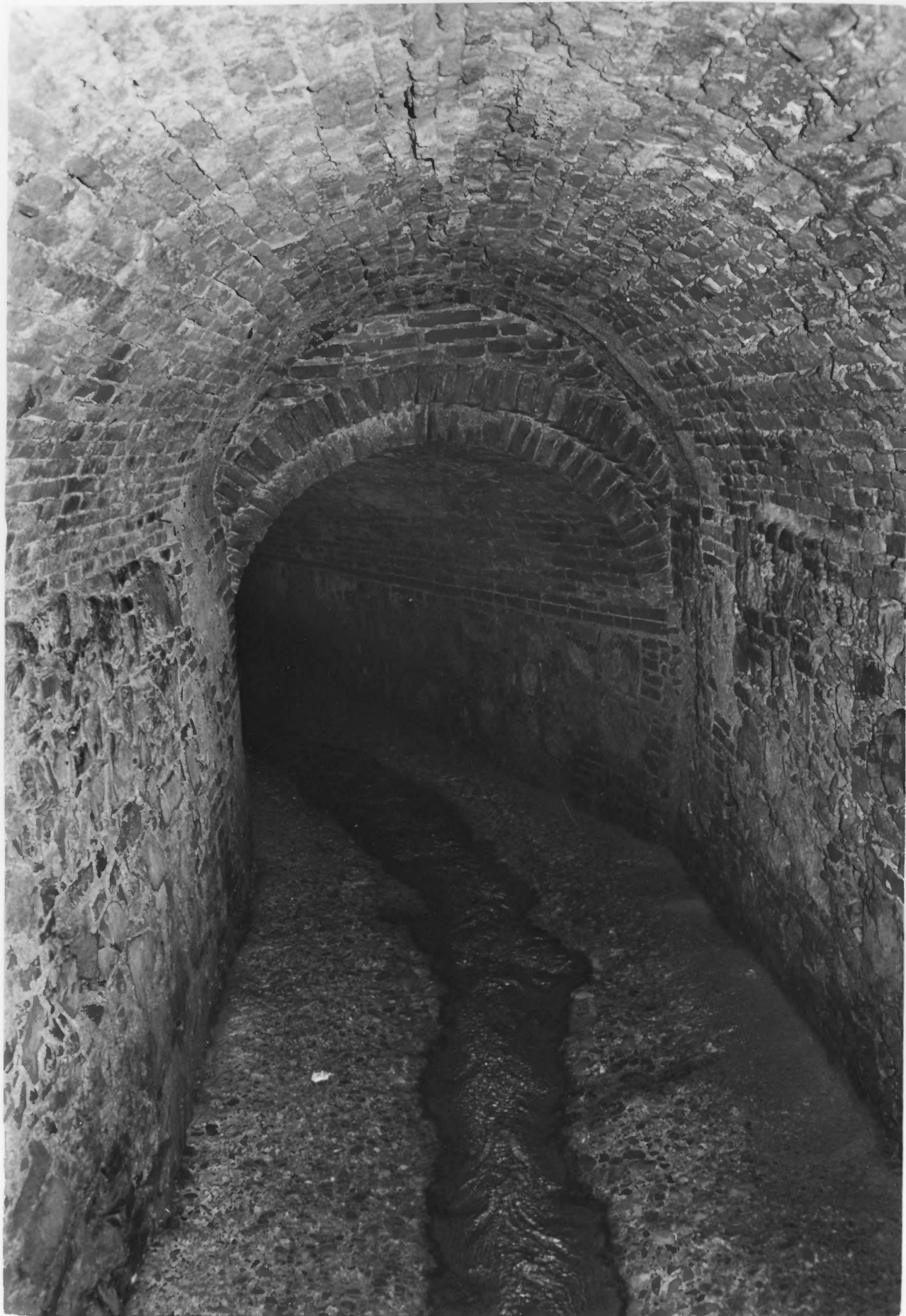
ALCANTARRELLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMÁN  
VAULTED BRICK TUNNEL SYSTEM  
CALLE FERROCARRIL AND CALLE  
ESPERANZA

PHOTOGRAPHER: ING. LUIS F PUMARADA

Julio 1988

SAN GERMÁN, P.R 125

CALLE  
501/ESPERANZA VAULTED BRICK



AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMÁN  
VAULTED BRICK TUNNEL SYSTEM

CALLE FERRO CARRIL AND CALLE  
ESPERANZA

PHOTOGRAPHER: ING. LUIS F. PUMARADA

Julio 1988

SAN GERMÁN, P.R. 125





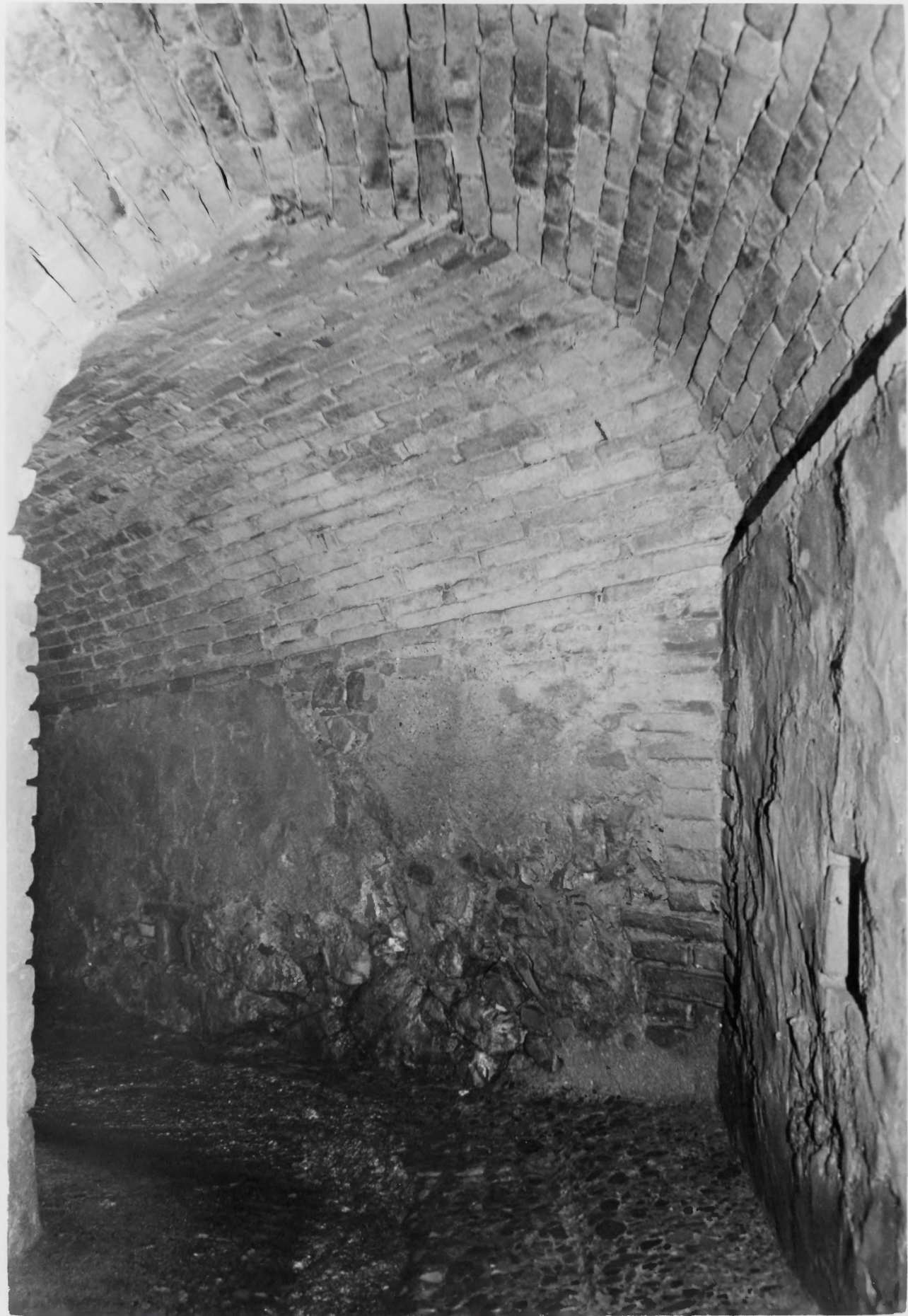
7/28  
AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL SYSTEM  
CALLE FERROCARRIL AND CALLE  
ESPERANZA

PHOTOGRAPHER: ING. LUIS F. PUMARANA

Julio 1988

SAN GERMAN, P.R. 125

CALLE LUNA



AICANTARRILLA Pluvial sobre  
la QUEBRADA MANZANARES

Los TUNELES de SAN GERMAN

UNIFIED BRICK TUNNEL STORM SEWER SYSTEM.

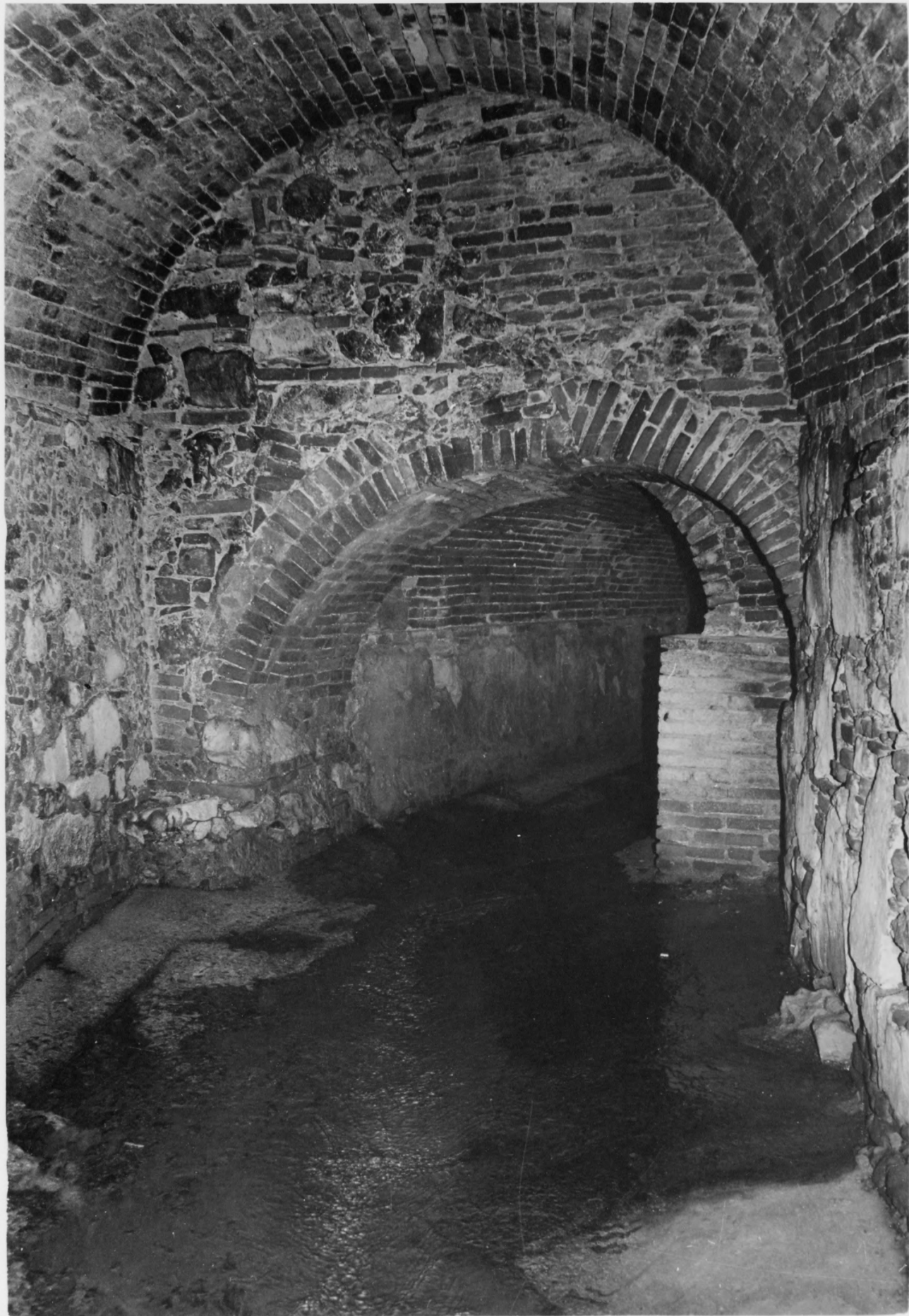
CALLE Ferrocarril and CALLE Esperanza  
STREET

PHOTOGRAPHER: ING. Luis F. Pumarada.

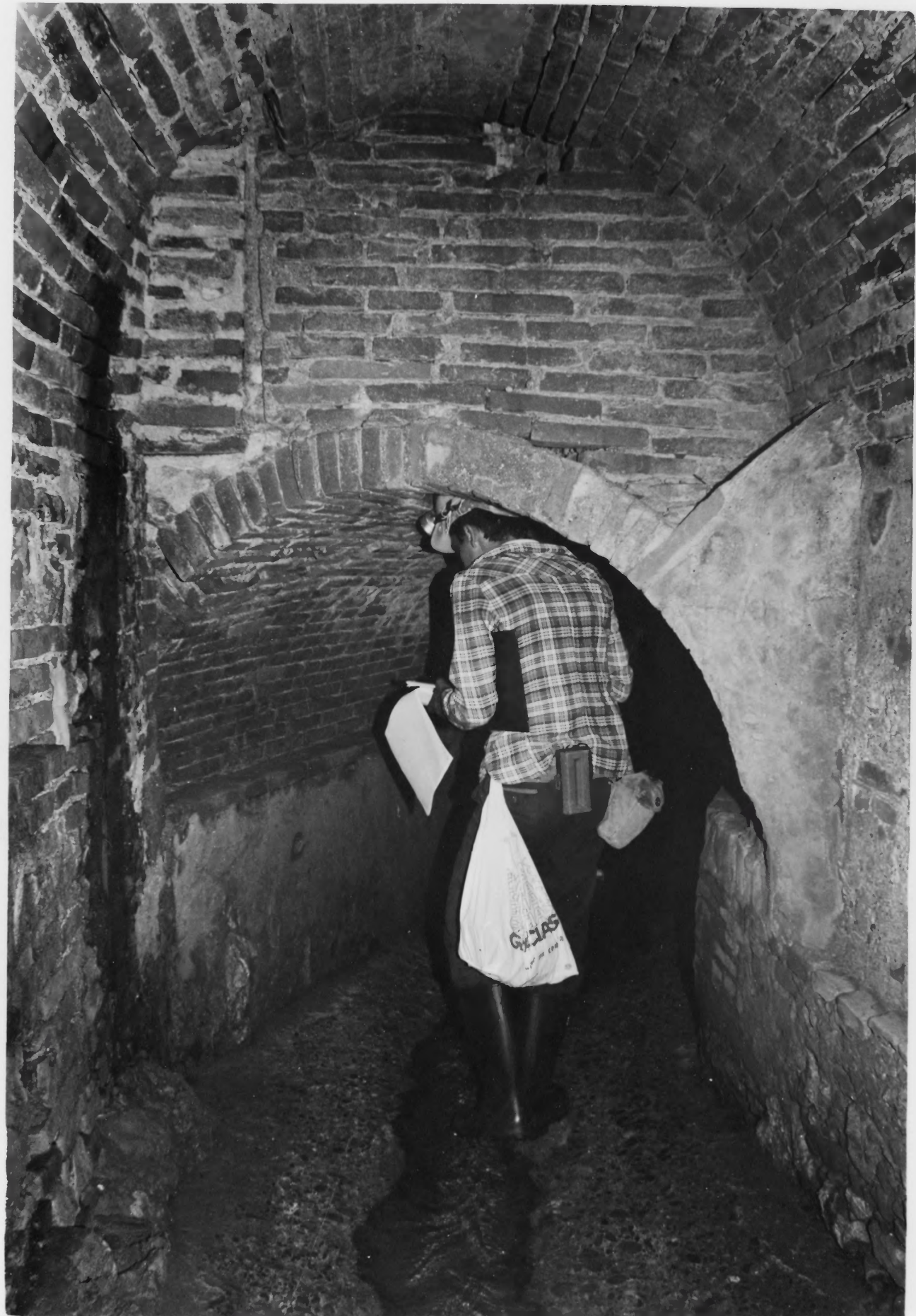
Julio 1988

SAN GERMAN, P.R. 125

Unified Brick culvert coming from the north side of  
CALLE LUNA.



ALCANTARRILLA PLUVIAL SOBRE  
LA QUE BRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM SEWER SYSTEM  
CALLE FERROCARRIL AND CALLE ESPERANZA  
PHOTOGRAPHER: ING LUIS F PUMAYADA  
Julio 1988  
San Germain P.R. 125



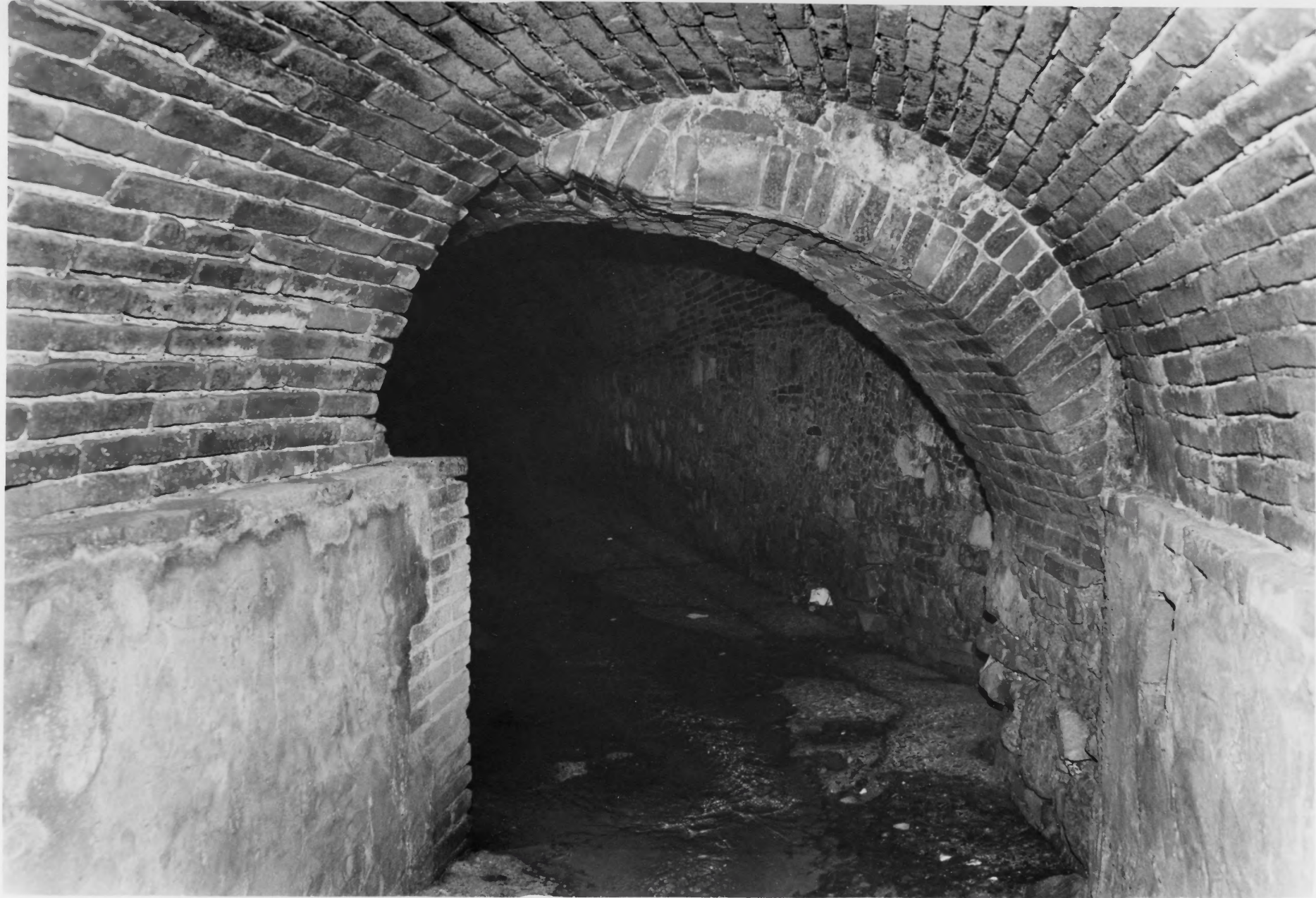
ALCANTARRILLA PLUMIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM SEWER  
SYSTEM.

CALLE FERROCARRIL and CALLE ESPERANZA

PHOTOGRAPHER: ENG. Luis Pumarada  
Julio 1988

SAN GERMAN, PR. 125





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ALCANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES

LOS TUNELES DE SAN GERMAN

VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM.

CALLE FERROCARRIL AND CALLE ESPERANZA

PHOTOGRAPHER ING. LUIS F PUMARADA  
Julio 88  
SAN GERMAN, P.R. 125



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AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMÁN  
VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM.

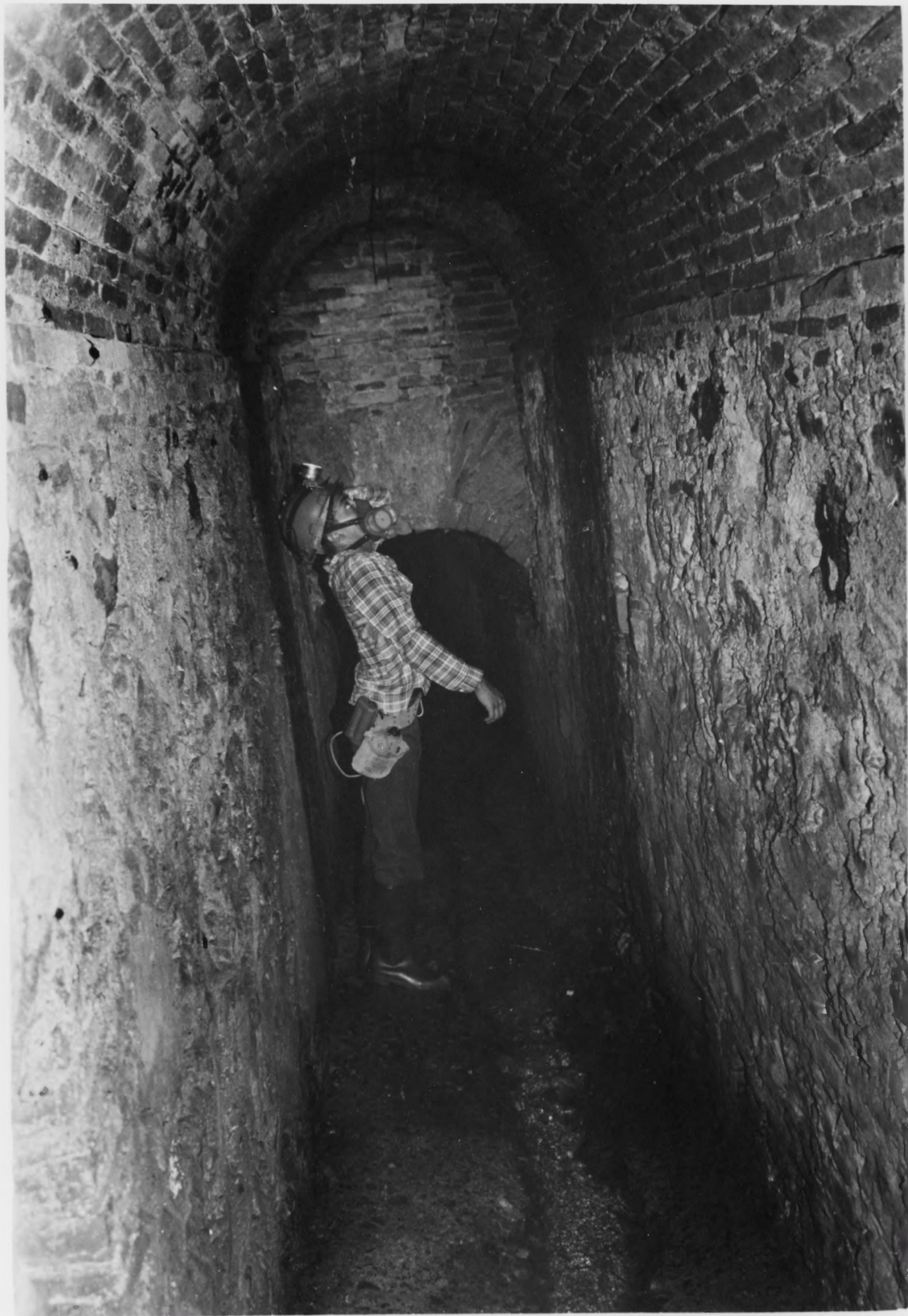
CALLE FERROCARRIL AND CALLE  
ESPERANZA

PHOTOGRAPHER: LUIS F. PUMARACIA

Julio 1988

SAN GERMÁN P.R. 125.

The tunnel under Farmacia Cooperativa



19/28

AICANTARRILLA PLUVIAL SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM.

CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAPHER: ING. LUIS EPUMARADA

JULIO 1989

SAN GERMAN, PR 125.

The Calle Orul vaulted bridge (1835)  
which spans 148 inches.



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AICANTARRILLA PLUVIAL SOBRE

LA QUEBRADA MANZANARES

LOS TUNELES DE SAN GERMÁN

VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM.

CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAFER: ING Luis F. Pumarada

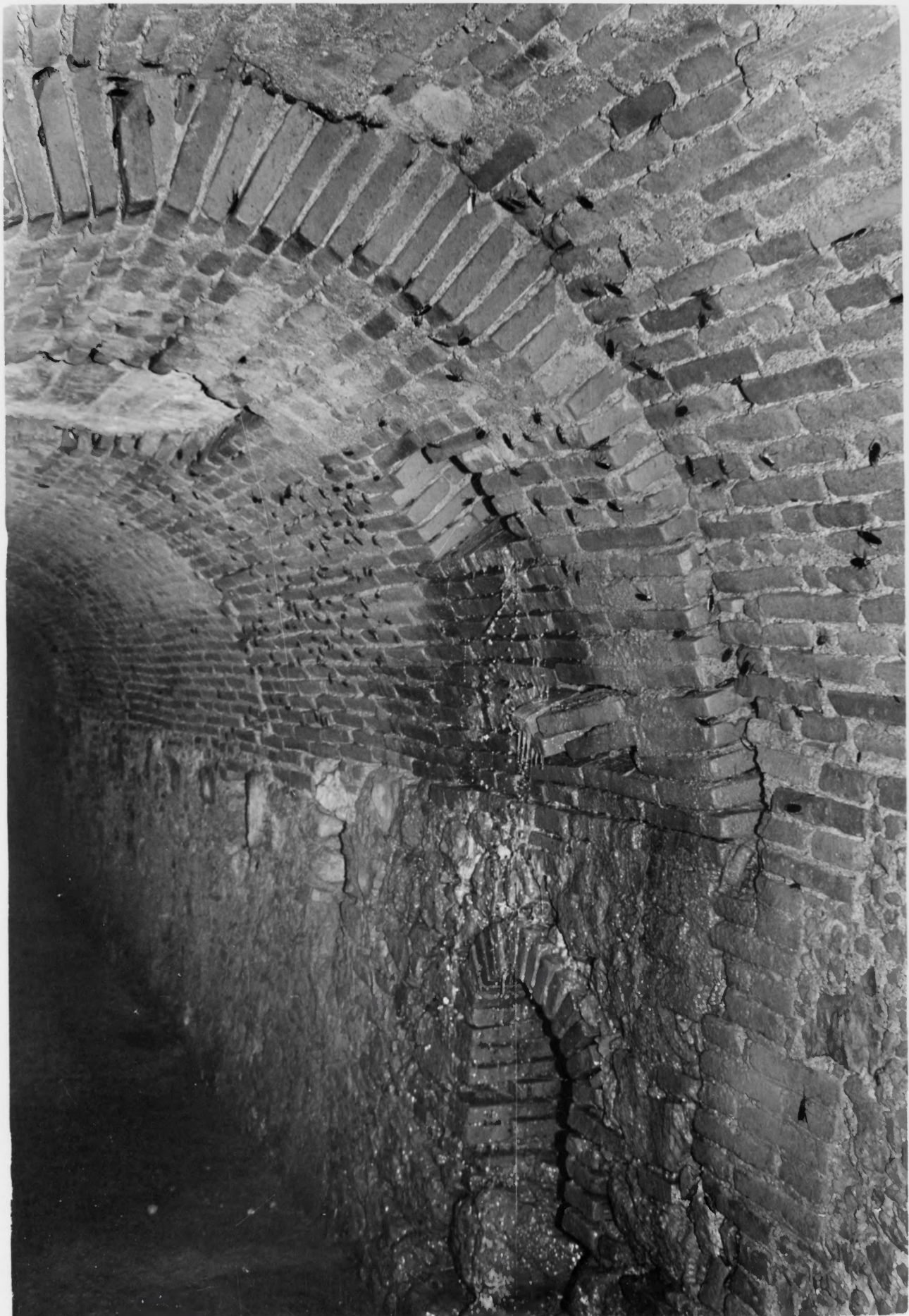
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SAN GERMÁN, P.R. 125.

A series of conspicuous and  
unsightly concrete repair patches

calle luna and calle cruz



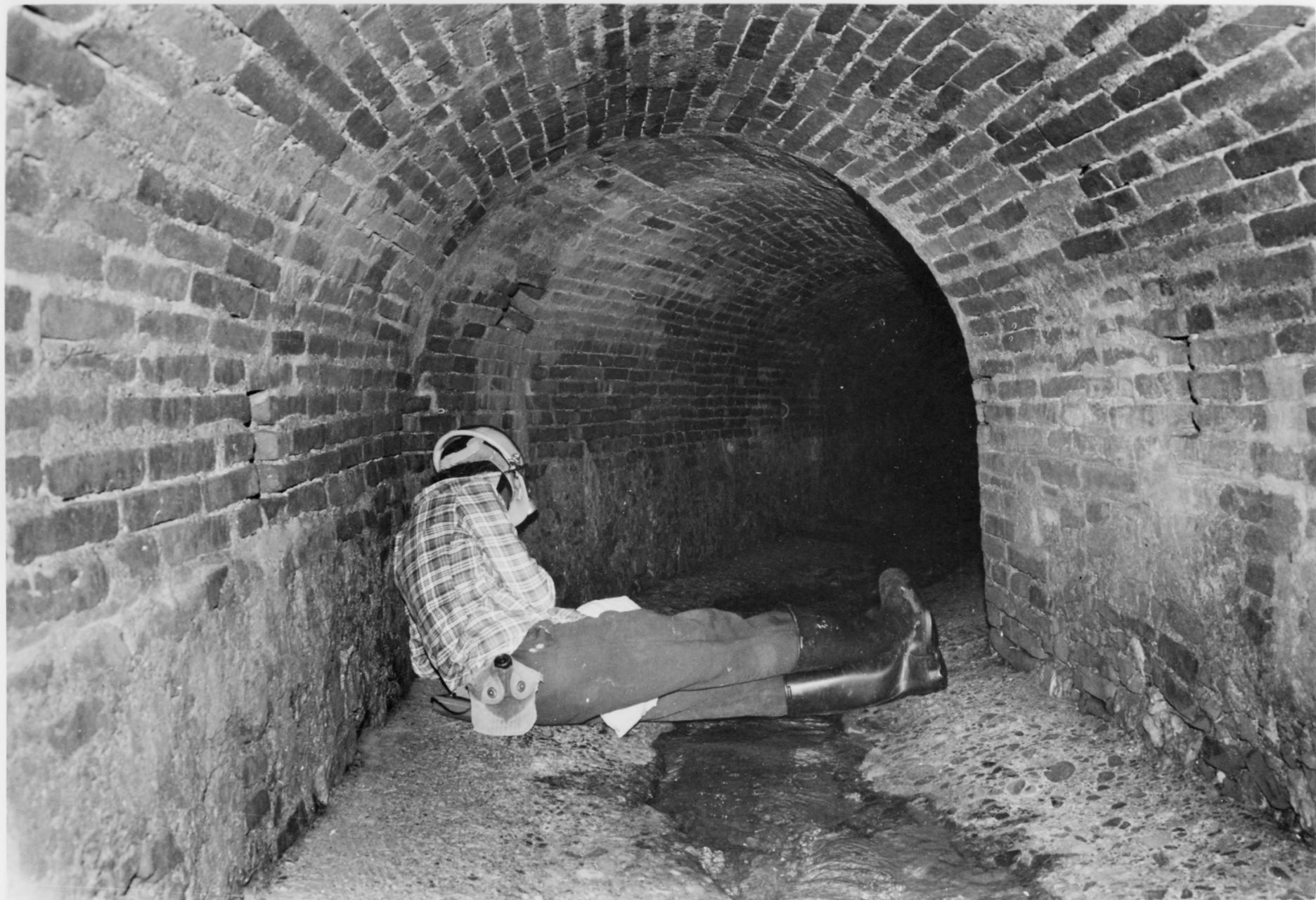


ALCANTARILLA Pluvial SOBRE  
LA QUEBRADA MANZANARES  
LOS TUNELES DE SAN GERMAN  
UNUNITED BRICK TUNNEL STORM SEWER SYSTEM  
CALLE FERROCARRIL AND CALLE ESPERANZA  
PHOTOGRAPHER: ING. LUIS F. PUMARADA  
Julio 1988  
San Germain. P.R. 125

This segment ends at a slight bend, on  
a diagonal-projecting arch.

Located:

Intersection of calle Esperanza and calle Sol



ALCANTARRILLA PLUVIAL SOBRE

LA QUEBRADA MANZANARES

LOS TUNELES DE SAN GERMAN

VAULTED BRICK TUNNEL STORM  
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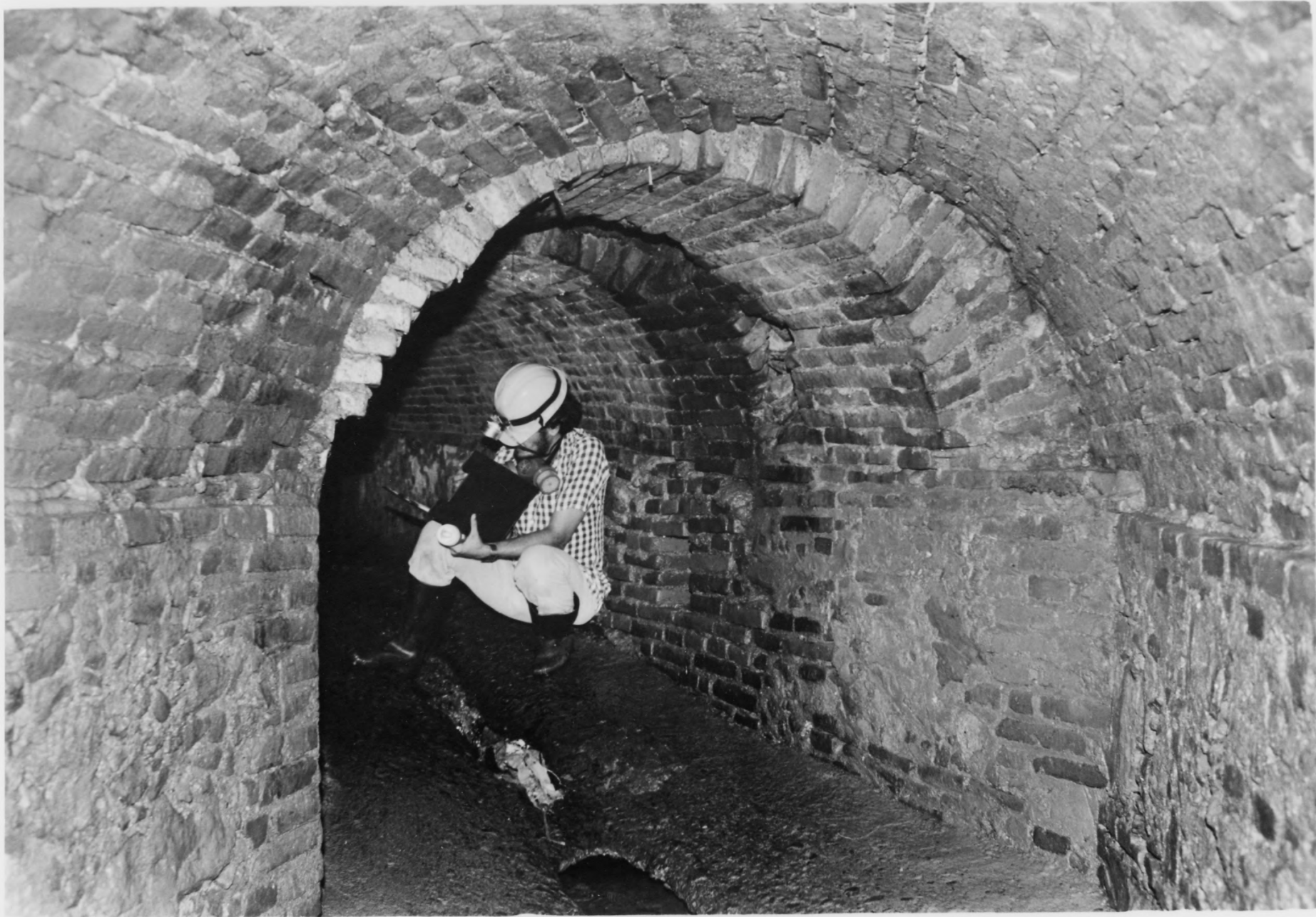
CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAFER: ING. LUIS F. PUMARADA

Julio 1988.

SAN GERMAN, P.R. 125.

SEGMENT DOWN : calle Carro



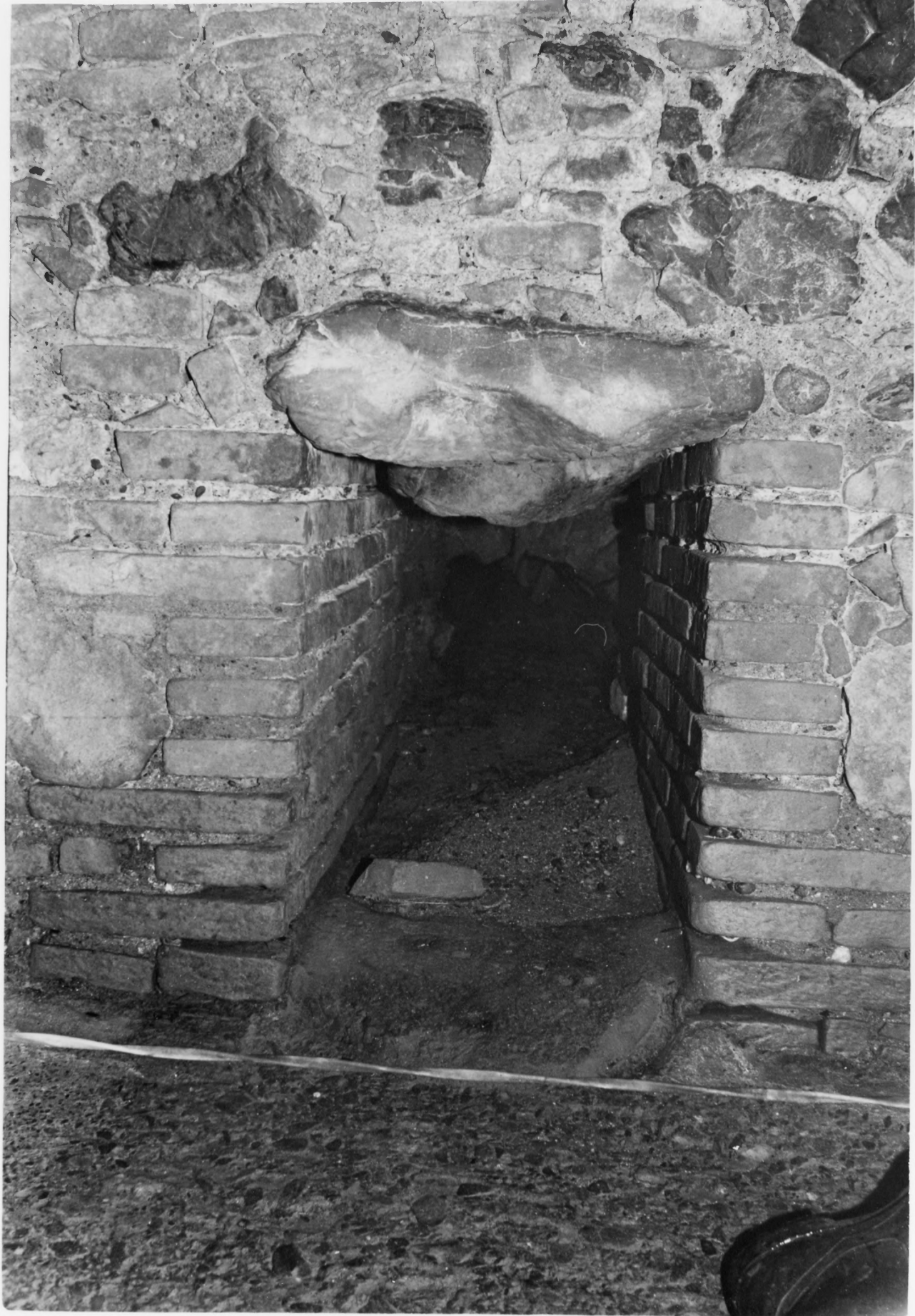
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VAULTED BRICK TUNNEL STORM  
SEWER SYSTEM.

CALLE FERROCARRIL AND CALLE ESPERANZA  
FOTOGRAFER: ING. LUIS F. PUMARADA

Julio 1988.

SAN GERMAN, P.R. 125.

Continuation sheet of page 5.



ALCANTARRILLA PLUVIAL SOBRE

LA QUEBRADA MANZANARES

LOS TUNGLES DE SAN GERMAN

VAULTED BRICK TUNNEL STORM

SEWER SYSTEM.

CALLE FERROCARRIL AND CALLE ESPERANZA

FOTOGRAFER: ING. LUIS F. PUMARADA

Julio 1988

SAN GERMAN, P.R. 125.

A Horizontal vaulted brick Branch, about 58 inches.