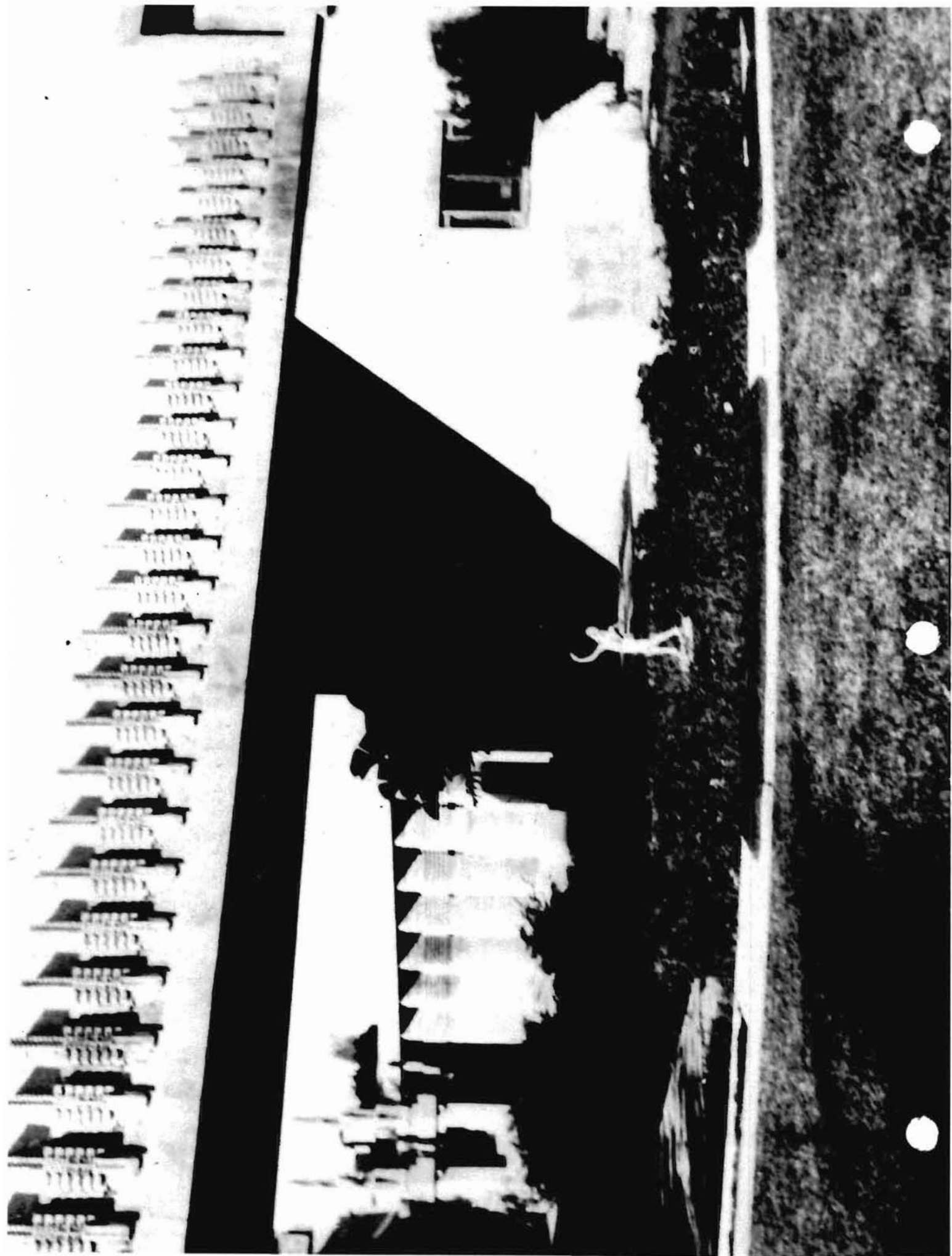
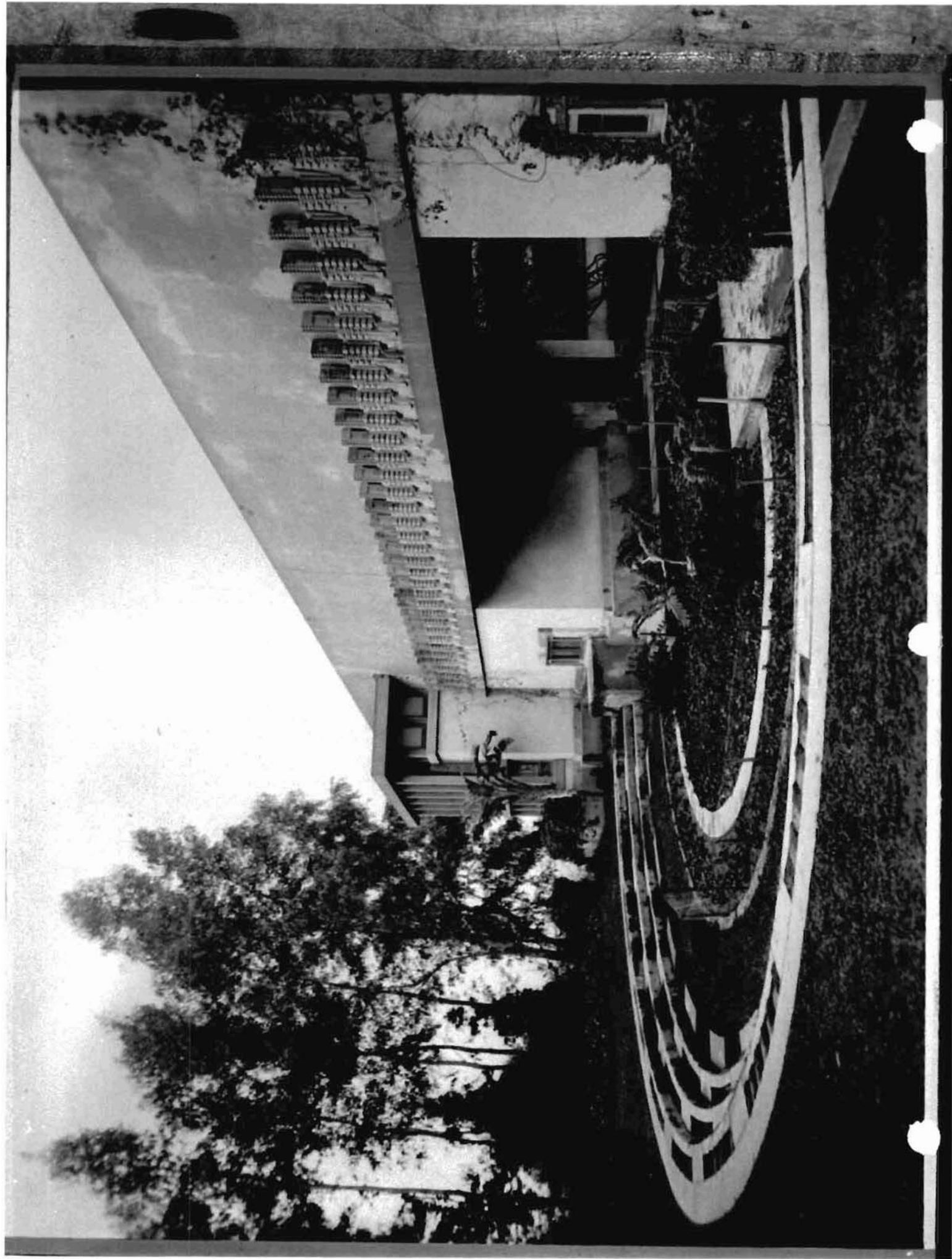
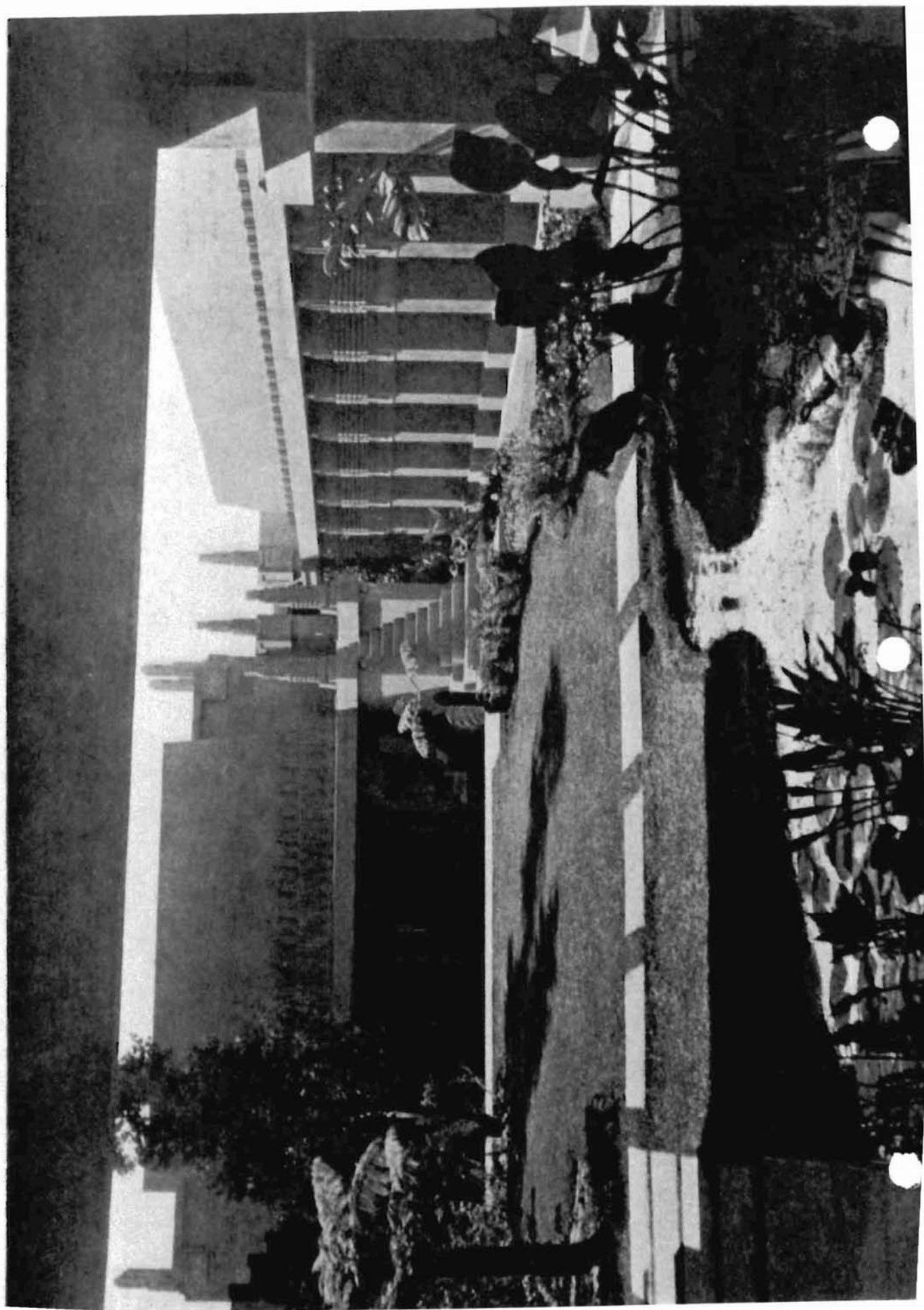


## Appendix

1. Archival photo of round fountain
2. Archival photo of round fountain
3. Archival photo of round fountain
4. Archival photo of round fountain
5. Existing round fountain overall photo
6. Crack detail; north and south
7. Piping detail, overflow pipe and possible pump location
8. Make-up water detail
9. Interior surface detail
  
10. Archival photo of square photo
11. Archival photo of square fountain
12. Existing square fountain overall photo
13. Crack detail
14. Make-up water detail
15. Interior surface detail
  
16. Typical detail of structural repair method for round fountain
17. Typical underground filtration device – Vault Pack
18. Typical automatic fill device with overflow
19. Typical lighting suggestions
20. Bonding requirement











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**Eastern Fountain Round Terraced Overall Photo**



**Eastern Fountain, Round Terraced – Crack Detail North**

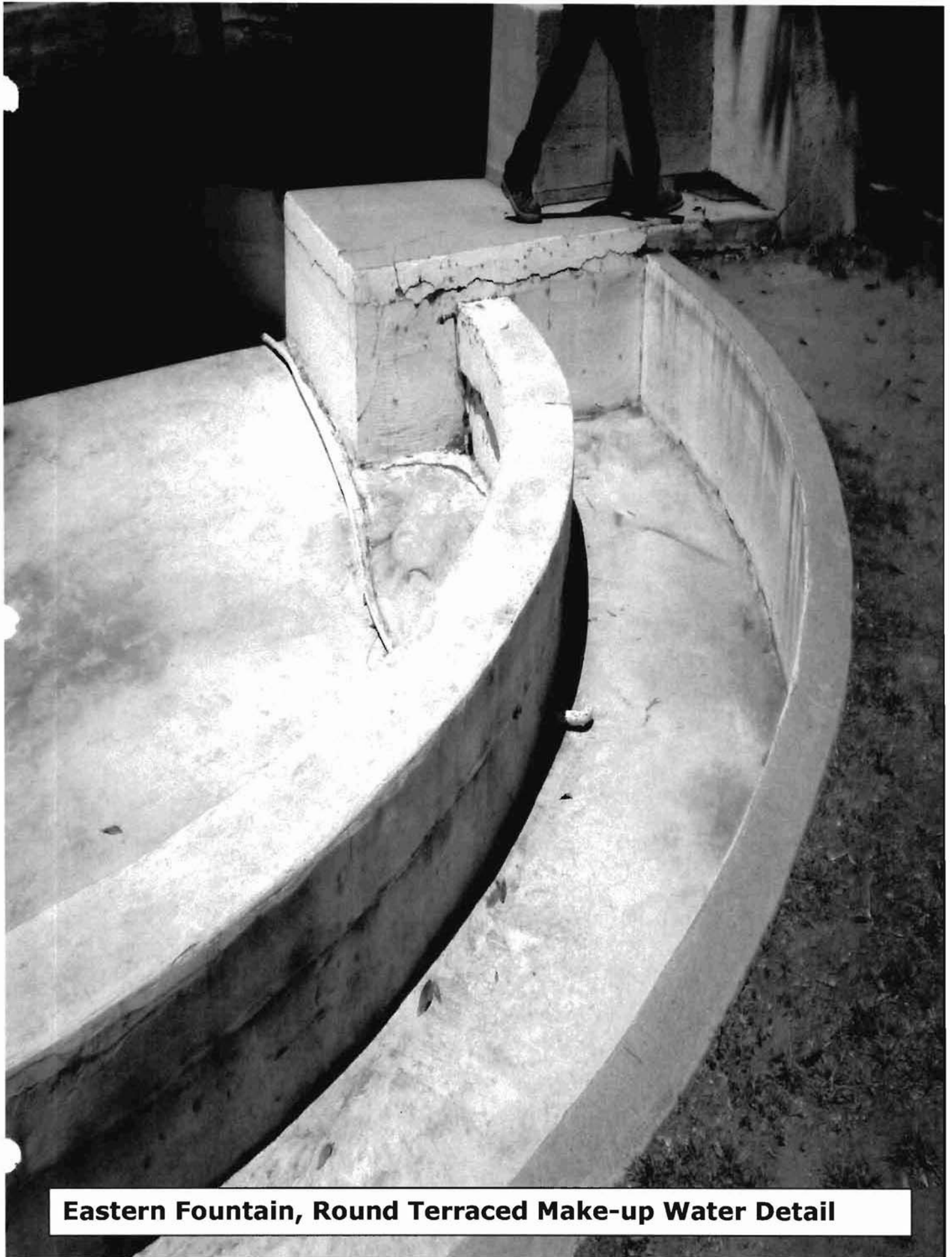


**Eastern Fountain, Round Terraced – Crack Detail South**

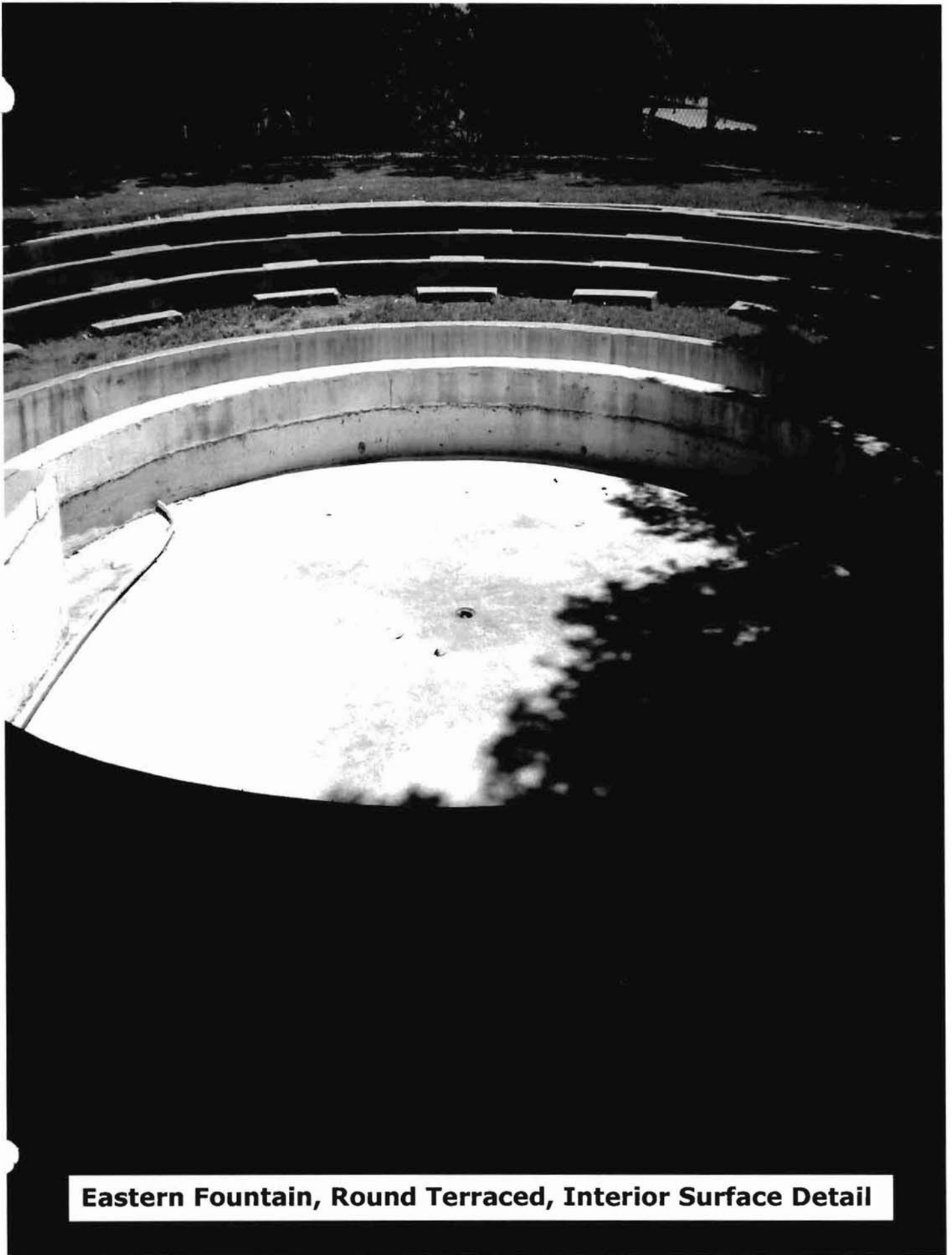




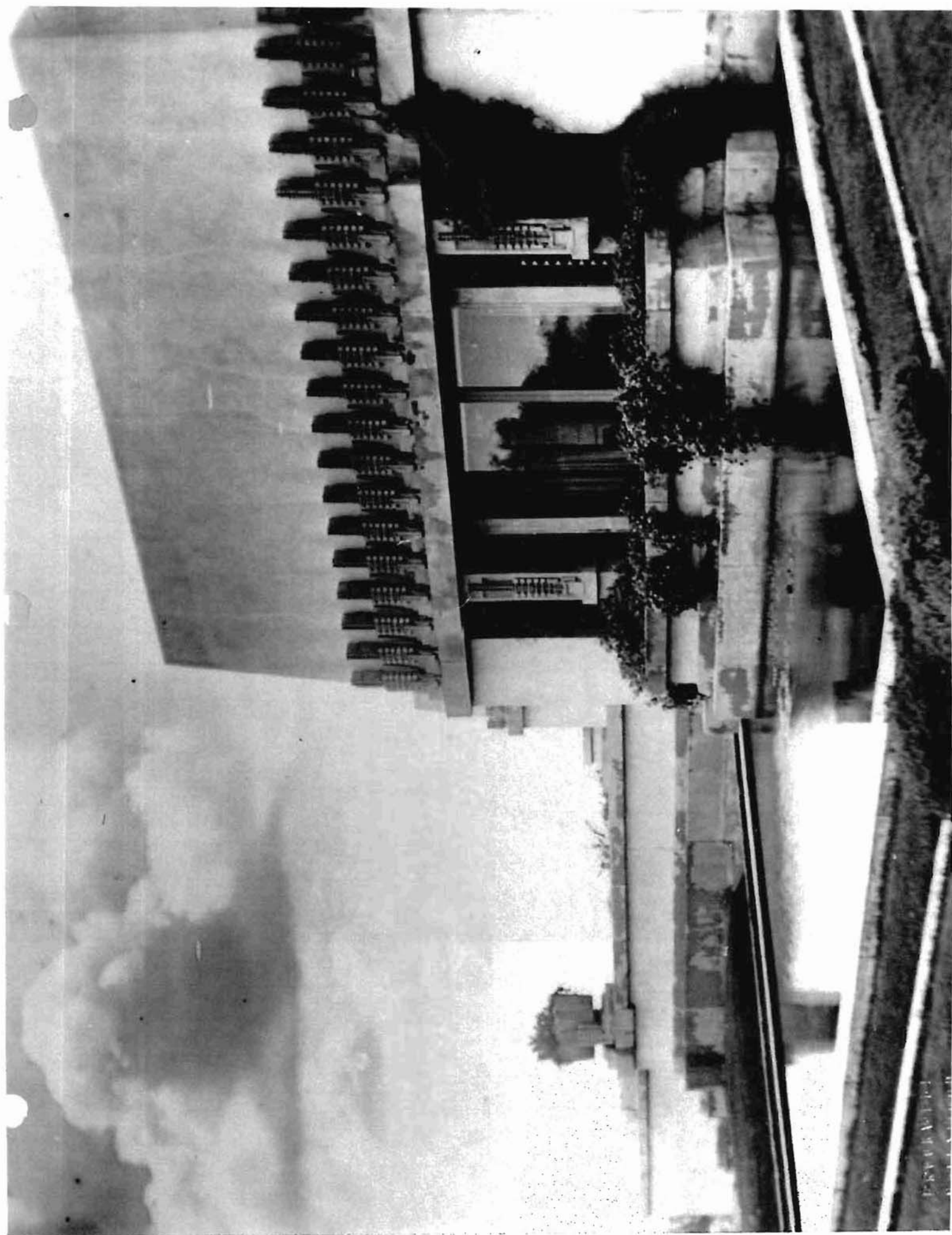
**Eastern Fountain, Round Terraced  
Piping Detail and Possible Pump Location**



**Eastern Fountain, Round Terraced Make-up Water Detail**



**Eastern Fountain, Round Terraced, Interior Surface Detail**



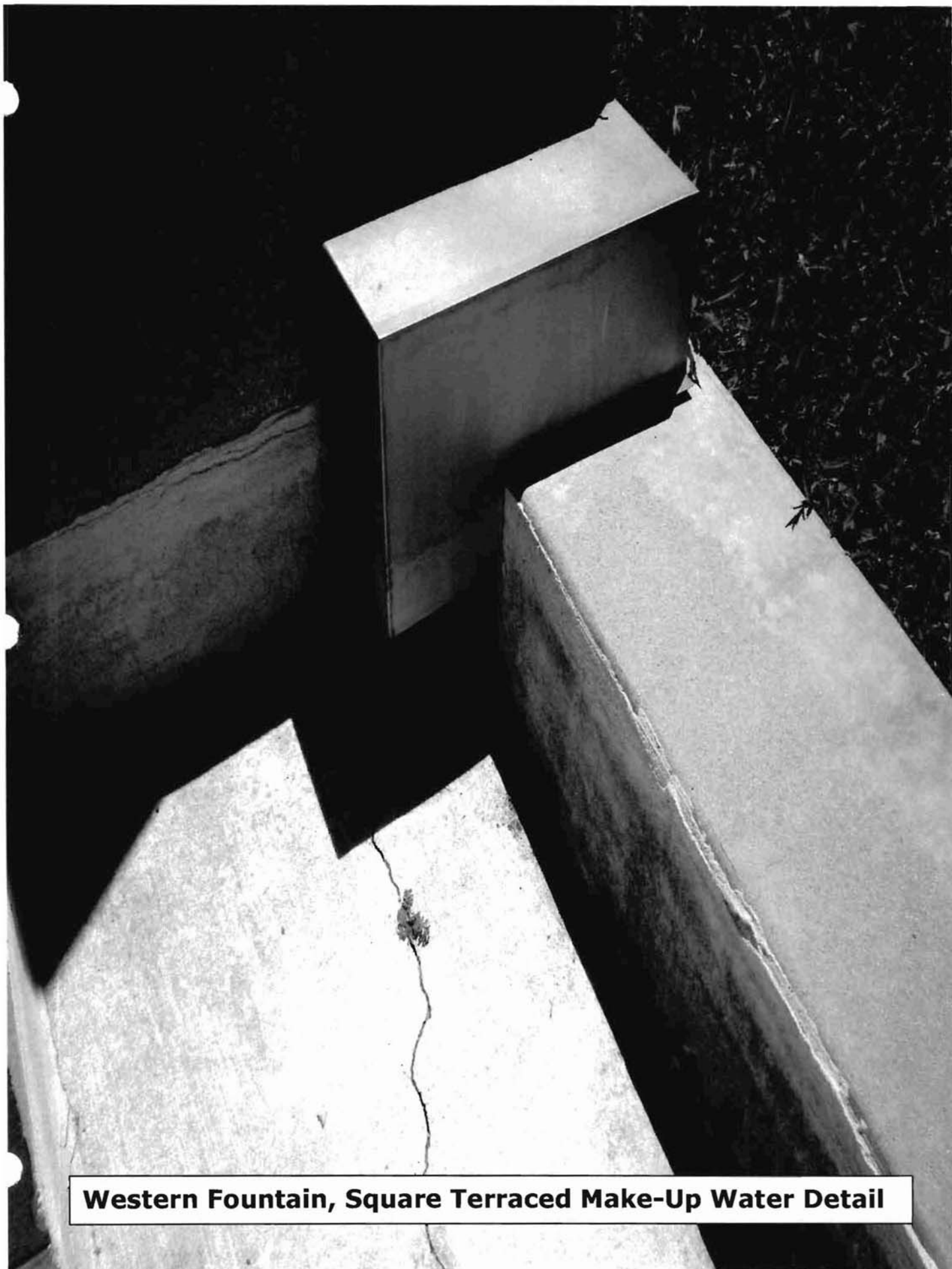




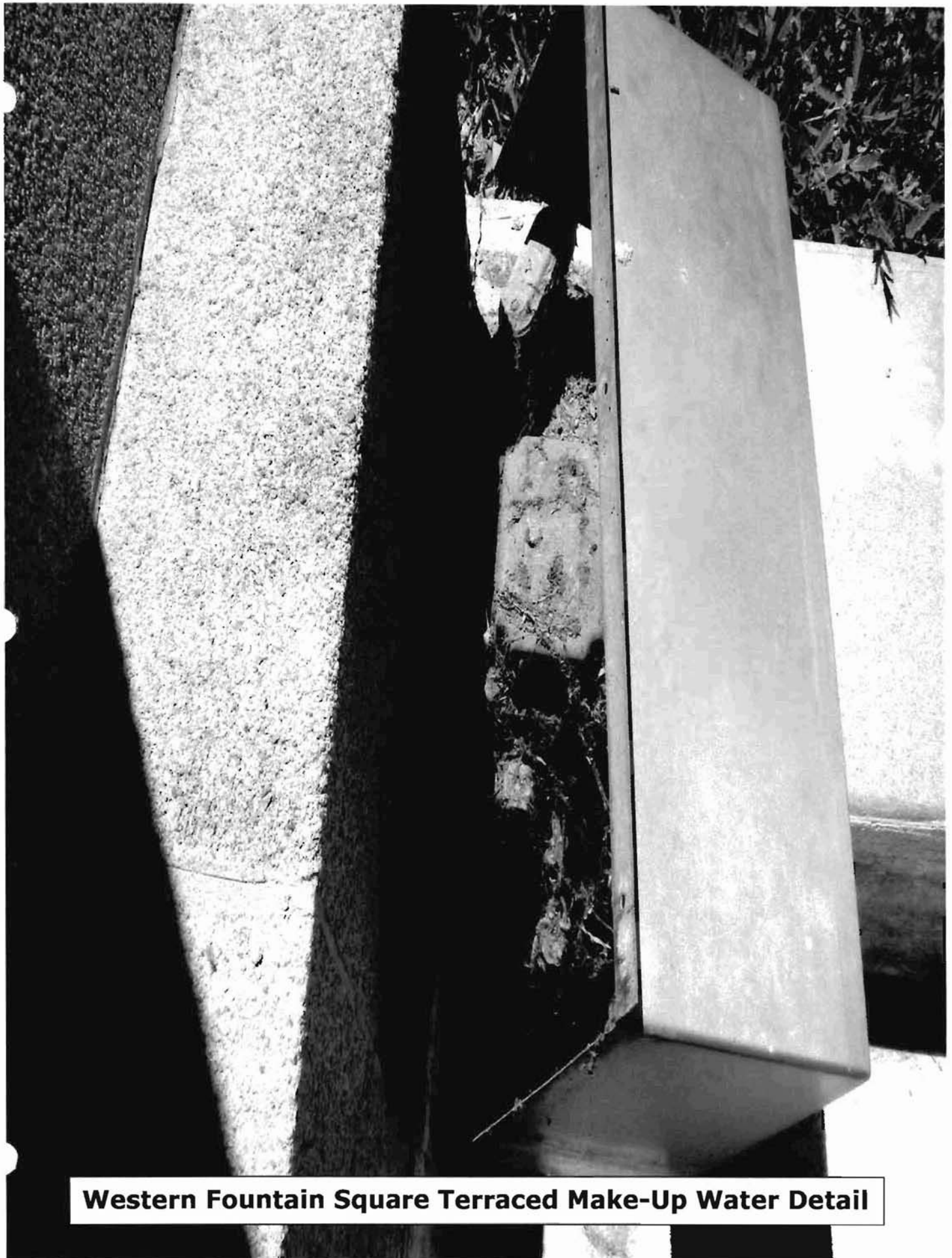
**Western Fountain, Square Terraced Overall Photo**



**Western Fountain Square Terraced Crack Detail**



**Western Fountain, Square Terraced Make-Up Water Detail**



**Western Fountain Square Terraced Make-Up Water Detail**

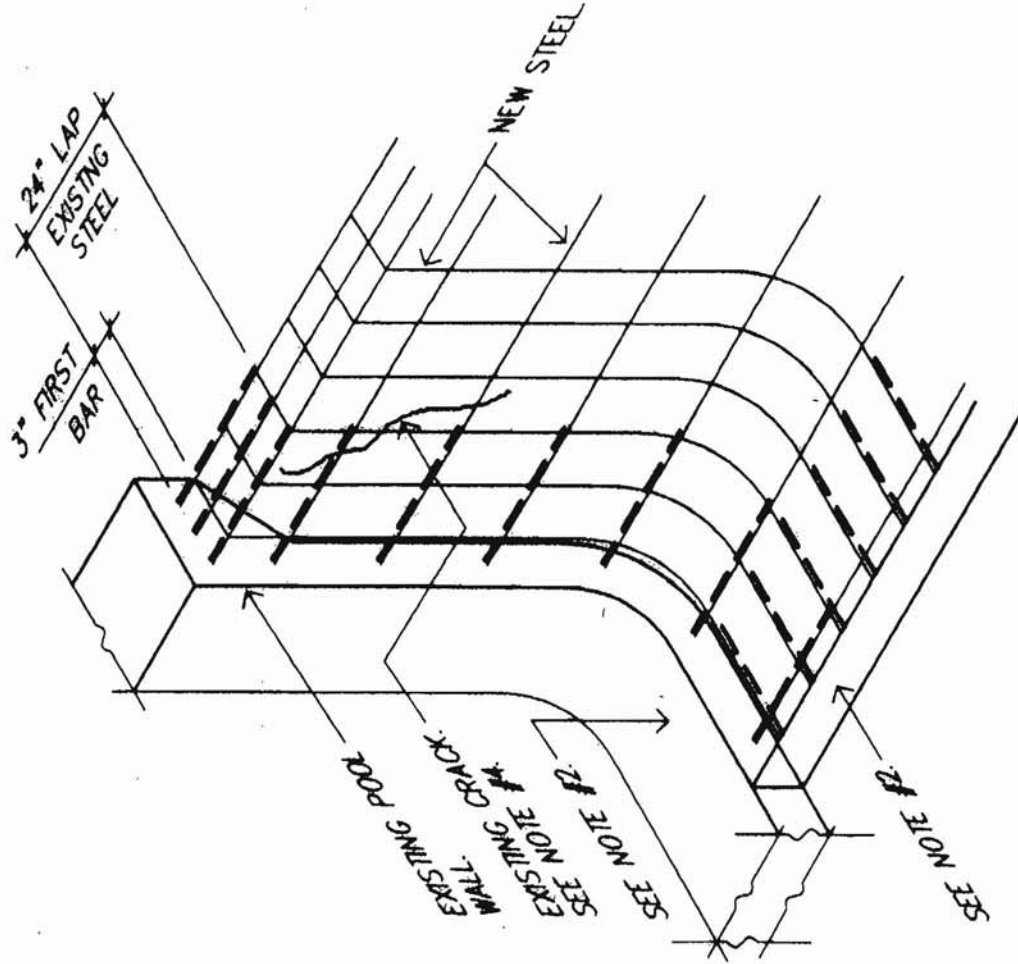




**Western Fountain Square Terraced Interior Surface Detail**

## GENERAL NOTES:

1. EPOXY TO BE SIMPSON STRONGTIE ACRYLIC-TIE EPOXY OR EQUAL INSTALL PER MANUFACTURERS SPECIFICATIONS. (ICC REPORT ER-5791)
2. BONDING TO EXISTING SURFACE:
  - A. EXISTING SURFACES MUST BE SOUND, FREE OF DEFECTS, CLEAN AND FREE OF BOND INHIBITING MATERIALS.
  - B. EXISTING SURFACES SHALL BE ROUGHENED BY CHIPPING OR OTHER SUITABLE MEANS TO PROVIDE OPEN PORE STRUCTURE. ALL LOOSE, CRACK OR DETERIORATED MATERIALS SHALL BE REMOVED.
  - C. CLEAN EXISTING SURFACES BY WATER BLASTING.
  - D. CEMENT PASTE OR OTHER BONDING AGENTS SHALL BE BRUSHED ONTO THE SUBSTRATE FOR ABSORPTION INTO PORE STRUCTURE. SATURATED, SURFACE DRY CONDITION OF THE SUBSTRATE SHALL BE MAINTAINED TO PREVENT PREMATURE DRYING OF BONDING PASTE.
3. USE GRADE 40 REINFORCING STEEL
4. IF REINFORCING SHOWS SIGNS OF EXCESSIVE DETERIORATION (RUST), CUT EXISTING REINFORCING 6" PAST DETERIORATION SECTION & LAP WITH NEW STEEL 24".

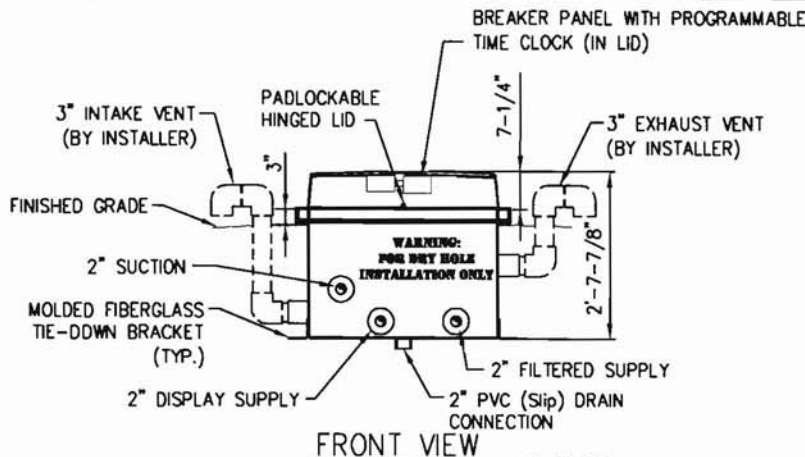


REMOVE GUNITE OR CONCRETE TO EXPOSE 24" OF REINFORCING STEEL (EXISTING) EACH SIDE OF CRACK FOR 24" MIN. LAP SPLICE WITH NEW REINFORCING.

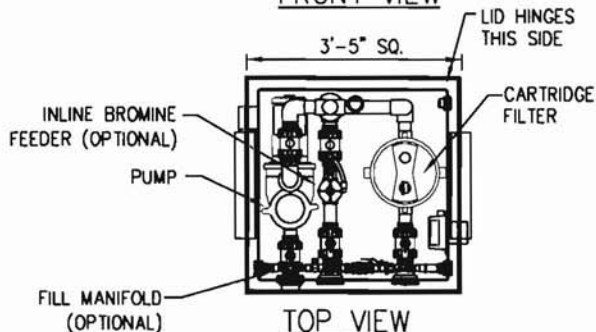
SEE APPROPRIATE DETAIL FOR REBAR SPACING & GUNITE THICKNESS.

POOL REMODEL OR REPAIR

C



FRONT VIEW



TOP VIEW

**NOTE:**  
Due to our continuing product improvement program, Roman Fountains reserved the right to change the specifications without notice.



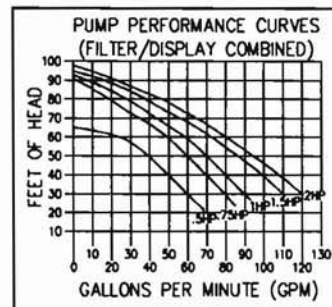
**NOTE:** THIS INFORMATION REPRESENTS MANUFACTURERS TYPICAL UNIT. VARIATIONS MAY OCCUR IN SPECIFIED UNIT TO MEET FOUNTAIN DESIGN & MECHANICAL REQUIREMENTS.

**WARNING: FOR 'DRY HOLE' INSTALLATION ONLY.**

#### TECHNICAL AND HYDRAULIC DATA

| MODEL NO. | PUMP HP | AVAILABLE SYSTEM POWER OPTIONS |                   |
|-----------|---------|--------------------------------|-------------------|
| RDP-1-050 | 1/2     | 120/208-240v., 1Ø              | 208/240/460v., 3Ø |
| RDP-1-075 | 3/4     | 120/208-240v., 1Ø              | 208/240/460v., 3Ø |
| RDP-1-100 | 1       | 120/208-240v., 1Ø              | 208/240/460v., 3Ø |
| RDP-1-150 | 1-1/2   | 120/208-240v., 1Ø              | 208/240/460v., 3Ø |
| RDP-1-200 | 2       | 120/208-240v., 1Ø              | 208/240/460v., 3Ø |

- NOTES:**
1. Hatch opening must be located in flood-safe area.
  2. Slope finished grade away from pump module.
  3. Protect pump module gravity drain from back flow and gas.
  4. Top of pump module must be at, or below lowest pool water level.



**SPECIFICATION DATA:** Pre-Fabricated Direct Burial Pump Vault; includes a recirculating pump with the horsepower as designated by the catalog number, a 50 sq. ft. cartridge filter, (optional) in-line bromine feeder, (optional) 3/4" make-up/fill manifold; necessary isolation and check valves, power distribution breaker panel and lid-mounted solid state programmable time clock. Pump box is constructed of heavy duty fiberglass with white gel-coat interior and brown gel-coat exterior furnished with stainless steel piano-hinged lid with padlock point, 'hold-open' arm and travel limiting cable, 2" floor drain, tie-down brackets and 115 CFM fan-forced ventilation system. Unit is pre-wired and pre-plumbed Schd. 80 PVC and factory tested, prior to shipment. See power options above.

**DESIGN/APPLICATION DATA:** Roman fountains RDP-Series 1, direct burial pump stations are designed for small fountains where concrete pump stations are not practical and interior mechanical space is not available. All units are factory assembled and tested prior to shipment to job site, minimizing installation and maintenance costs. Systems can be furnished with optional fill manifold, G.F.C.I. protected lighting circuit and bromine chemical feeder; consult factory.

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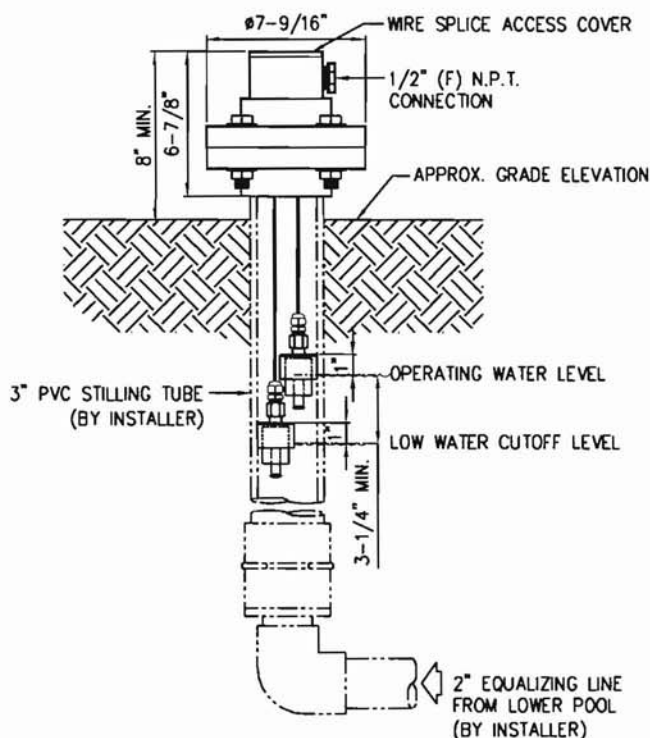
TYP. ( ) ITEM # \_\_\_\_\_



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| No.        | Date     | By |
| 7          | 01/31/08 | FG |
|            |          |    |
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|            |          |    |
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| Pre-Fabricated Direct Burial           |              |
|--|--------------|
| Pump Vault w/ Fiberglass Landscape Lid |              |
| Drawn By: F.J.G.                       | Model No.    |
| Checked By: J.M.                       | <b>RDP-1</b> |
| Scale: None                            | Drawing No.  |
| Date: 04/05/99                         | <b>7.7</b>   |



**NOTE:**

Due to our continuing product improvement program, Roman Fountains reserved the right to change the specifications without notice.



**NOTE:**

DESIGNED FOR REMOTE, ABOVE GRADE SENSOR APPLICATIONS.

**TECHNICAL DATA**

| MODEL    | MOUNTING TYPE | CONDUIT CONNECTION | PRIMARY VOLTAGE | PROBE VOLTAGE |
|----------|---------------|--------------------|-----------------|---------------|
| RCOM-RNF | 3" PVC RISER  | 1/2"               | 120V.           | 12V.          |

**WARNING:** Do not run sensor cable in conduit with any other conductors.

**NOTES:**

1. Ideal for applications where minimal pool depth or freeboard exist, or where sensor may not be visible within pool structure.
2. Sensor mounting height and (level) equalizing line depth as required for application.
3. A normally closed electrically actuated, 120V, solenoid valve is required to operate water makeup function; specify RSV-Series valve.
4. A lighting and/or motor contactor is required to operate the low level cutoff function; consult factory.
5. Unit is designed to monitor the lower pool water level from a remote location.

**SPECIFICATION DATA:** Remote Location Sensor Housing Make-up/Low Level Cutoff Housing, consisting of heavy duty Schedule 80 PVC housing with two (2) suspension type float switches each with integral 6 foot long float cable standard; 100 feet of pre-attached, 4-conductor, color-coded sensor cable; 1/2" (F) N.P.T. conduit connection and stainless steel fasteners. When specified as a system, package includes a RCOM-Series dual function solid state relay control board in a NEMA 1 enclosure (for indoor use only) rated for 120VAC with internally transformed 24 VAC sensor output circuit.

**DESIGN/APPLICATION DATA:** RCOM Series, combination water make-up and low water level cutoff housing is designed for use in fountains and reflecting pools where automatic water level monitoring is required. Unit provides simultaneous water level control and automatic fill, in addition to low water level monitoring, enabling circuit shutdown for pump and/or lighting circuit(s) in the event of a low water level condition.

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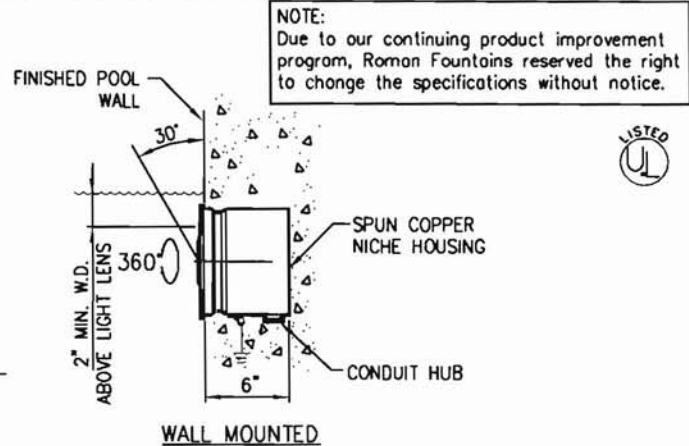
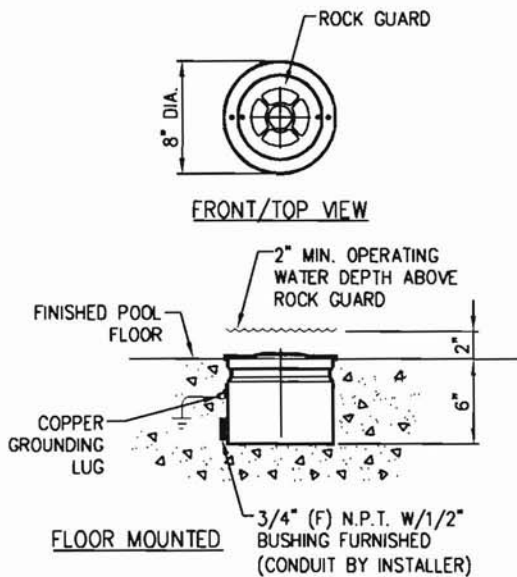


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| 1          | 05/31/07 | FG |
| 2          | 01/31/08 | FG |
|            |          |    |
|            |          |    |
|            |          |    |
|            |          |    |

| Remote Location Sensor Housing<br>Make-up/Low Level Cutoff Housing |             |  |
|--|-------------|--|
| Drawn By: F.J.G.   | Model No.   |  |
| Checked By: J.M.   | RCOM-RNF    |  |
| Scale: None  | Drawing No. |  |
| Date: 04/10/06   | 4.14a       |  |





NOTE: PHOTO SHOWN WITH COLOR LENS COVER OPTIONS.

NOTE: NOT TO BE USED IN SWIMMING POOL OR SPA APPLICATIONS.

20' CORD LENGTH IS STANDARD

| TECHNICAL DATA |         |         |                      |             |                            |                       |
|----------------|---------|---------|----------------------|-------------|----------------------------|-----------------------|
| MODEL          | WATTAGE | VOLTAGE | AVAILABLE REFLECTORS | * LAMP TYPE | APPROXIMATE INITIAL LUMENS | APPROXIMATE LAMP LIFE |
| RFL-100-EN     | 100 W.  | 120 V.  | (SP)(M)(FL)          | 100 Q/CL    | 1900                       | 2000 HOURS            |
| RFL-150-EN     | 150 W.  | 120 V.  | (SP)(M)(FL)          | 150 Q/CL    | 2800                       | 2000 HOURS            |
| RFL-250-EN     | 250 W.  | 120 V.  | (SP)(M)(FL)          | 250 Q/CL    | 4800                       | 2000 HOURS            |
| RFL-500-EN     | 500 W.  | 120 V.  | (SP)(M)(FL)          | 500 Q/CL    | 9800                       | 2000 HOURS            |

NOTE:  
LAMP IS FURNISHED SEPARATELY (WHEN ORDERED) & INSTALLED BY ELECTRICIAN.

- NOTES:
- \*1. Lamps are not included with fixtures unless specifically listed in specification data or quotation.
  2. Lamp life and lumens published by lamp manufacturer; not guaranteed by Roman Fountains.
  3. A submersible junction box and potting compound may be required for installation; consult factory.
  4. All fixtures are thermally protected with an internal cutoff device.
  5. Additional cable lengths, in 10' increments, available; consult factory.

**SPECIFICATION DATA:** Adjustable, Niche-Mounted Submersible Light Fixture, Adjustable aiming underwater light fixture of cast bronze construction with integral rockguard, stainless steel and bronze fasteners, spun copper niche with 3/4" (F) N.P.T. conduit entry with 3/4"x1/2" brass reducer bushing, clear tempered glass lens, silicone molded, U-shaped gasket, integral thermal cutoff device and 20 feet of submersible 16-3 S/T cord.

Fixture shall be U.L. Listed for 120-volt operation, 500 watt max.

**DESIGN/APPLICATION DATA:** Roman Fountains RFL-EN Series adjustable niche-mounted submersible light fixtures are designed for use in fountain or reflecting pools where a niche-mounted fixture with angle and rotation adjustments is required. Available in a range of wattages, their compact design allows use in depths as shallow as 2", when floor mounted (see illustration above).

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| No.        | Date     | By |
| 1          | 02/25/04 | FG |
| 2          | 01/03/05 | FG |
| 3          | 08/09/05 | FG |
| 4          | 10/18/05 | FG |
| 5          | 01/13/06 | FG |
| 6          | 01/31/08 | FG |

## Adjustable Niche Mounted Submersible Light Fixture

Drawn By: F.J.G.

Model No.

Checked By: J.M.

RFL-EN Series

Scale: None

Drawing No.

Date: 04/07/99

5.3

## #20. 680.26 EQUIPOTENTIAL BONDING

This change requires an equipotential bonding grid to be installed to reduce voltage gradients in and around permanently installed pools, outdoor spas, and outdoor hot tubs.

**(B) Bonded Parts.** The following parts of a permanently installed pool, outdoor spa, and outdoor hot tub must be bonded to a equipotential bonding grid of the type specified in 680.26(C).

**Author's Comment:** See 680.42(B) for the bonding methods permitted for outdoor spas and hot tubs.

**(1) Metallic Parts of Structure.** All metallic parts of the water structure, including the reinforcing metal of the permanently installed pool, outdoor spa, and outdoor hot tub shell and deck, must be bonded to the equipotential grid. The usual steel tie wires are considered suitable for bonding the reinforcing steel together for this purpose. Welding or special clamping is not required, but the tie wires must be made tight. (Fig. 20)

Where the reinforcing steel of the permanently installed pool, outdoor spa, and outdoor hot tub shell and deck are encapsulated with a nonconductive compound or if it's not available, an equipotential grid constructed in accordance with 680.26(C) must be installed to mask stray voltage gradients.

**(2) Underwater Lighting.** All metal forming shells for underwater permanently installed pool, outdoor spa, and outdoor hot tub luminaires and speakers.

**(3) Metal Fittings.** Metal fittings within or attached to the permanently installed pool, outdoor spa, and outdoor hot tub structure, such as ladders and handrails.

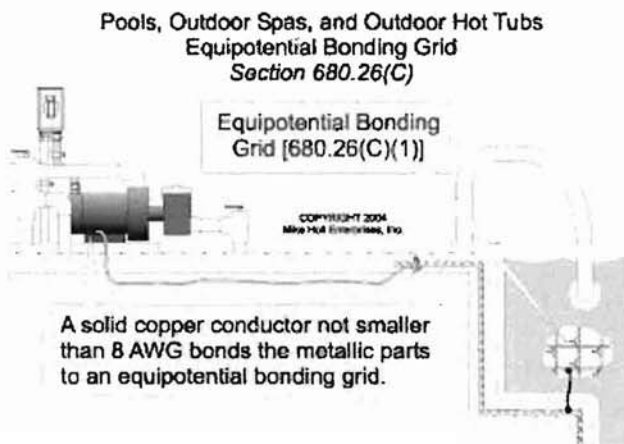
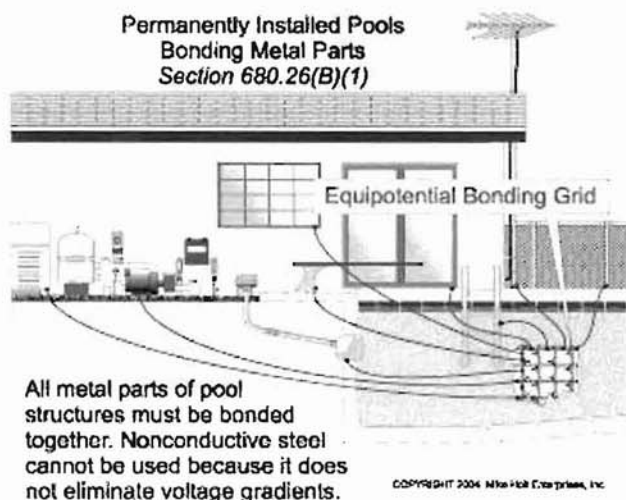
**(4) Electrical Equipment.** Metal parts of electrical equipment associated with the permanently installed pool, outdoor spa, and outdoor hot tub water circulating system, such as water heaters and pump motors. Accessible metal parts of listed equipment incorporating a system of double insulation and providing a means for grounding internal metal parts are not required to be directly bonded to the equipotential grid.

**(5) Metal Wiring Methods and Equipment.** Metal-sheathed cables and raceways, metal piping, and all fixed metal parts, as well as metallic surfaces of electrical equipment, must be bonded to the equipotential grid if located:

- (1) Within 5 ft horizontally of the inside walls of the permanently installed pool, and outdoor spa or hot tub, and
- (2) Within 12 ft measured vertically above the maximum water level of the permanently installed pool, outdoor spa, and outdoor hot tub, or any observation stands, towers, or platforms or any diving structures.

An equipotential grid is now required in or under the permanently installed pool, outdoor spa, and outdoor hot tub deck to help mask stray voltage from utility wiring errors, deteriorating primary utility neutral conductors, ground faults that haven't cleared, as well as appliance and equipment leakage current.

**(C) Equipotential Grid.** A solid copper conductor not smaller than 8 AWG must be used to bond the metallic parts of a permanently installed pool, outdoor spa, and outdoor hot tub as specified in 680.26(B) to an equipotential grid. The termination of the bonding conductor must be made by exothermic welding, listed



pressure connectors, or listed clamps that are suitable for the purpose. (Fig. 21)

To properly mask stray voltage, an equipotential grid must extend under the permanently installed pool, outdoor spa, and outdoor hot tub, and walking surfaces for 3 ft horizontally from the water. The equipotential grid must be formed from one or more of the following: (Fig. 22 below)

(1) **Structural Reinforcing Steel.** Structural reinforcing steel of the concrete permanently installed pool, outdoor spa, and outdoor hot tub.

(2) **Bolted or Welded Metal Pools.** The walls of a bolted or welded metal permanently installed pool, outdoor spa, and outdoor hot tub.

(3) **Other Methods.** The equipotential grid can be constructed as specified in (a) through (c).

(a) **Materials and Connections.** The equipotential grid can be constructed with 8 AWG bare solid copper conductors that are bonded to each other at all points of crossing.

(b) **Grid.** The equipotential grid must cover the contour of the permanently installed pool, outdoor spa, and outdoor hot tub, and deck extending 3 ft horizontally from the water. The equipotential grid must be arranged in a 1 ft x 1 ft network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 4 in.

(c) **Securing.** The equipotential grid must be secured.

