

Request for Letter of Map Revision,
Flood Insurance Rate Map,
Federal Emergency Management Agency
Technical Data Notebook
Cotton Lane: Glendale Avenue to Northern Avenue

Prepared for: Flood Control District of Maricopa County
2801 West Durango St.
Phoenix, Arizona 85009

Prepared by:
Collins/Piña Consulting Engineers, Inc.
33 North Stone Avenue, 15th Floor
Tucson, Arizona 85701
CPE Job # 3896.1

November, 1997



Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

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Flood Insurance Rate Map,
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November, 1997







Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 98-09-236P

The Honorable Don Stapley
Chairperson, Maricopa County
Board of Supervisors
301 West Jefferson Street
Phoenix, Arizona 85003

Community: Maricopa County, Arizona
Community No.: 040037
Panel Affected: 04013C1595 F
Effective Date of **FEB 23 1998**
This Revision:

102-D

Dear Mr. Stapley:

This responds to a request that the Federal Emergency Management Agency (FEMA) revise the effective Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated November 14, 1997, Mr. Hasan Mushtaq, P.E., Engineering Division, Flood Control District of Maricopa County, requested that FEMA revise the FIRM to show the effects of removal of the Atchison, Topeka & Santa Fe Railway and updated topographic information along Cotton Lane Wash from just downstream of Northern Avenue to just upstream of Glendale Avenue.

All data required to complete our review of this request were submitted with letters from Mr. Mushtaq.

We have completed our review of the submitted data and the flood data shown on the effective FIRM. We have revised the FIRM to modify the floodplain boundary delineations and zone designations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along Cotton Lane Wash from just downstream of Northern Avenue to just upstream of Glendale Avenue. As a result of the modifications, the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, along Cotton Lane Wash has been removed between Northern Avenue and Glendale Road, and the zone designation has been revised to Zone X (shaded), an area that would be inundated by the base flood with average depths of less than 1.0 foot. The modifications are shown on the enclosed annotated copy of FIRM Panel(s) 04013C1595 F. This Letter of Map Revision (LOMR) hereby revises the above-referenced panel(s) of the effective FIRM dated September 30, 1995.

The modifications are effective as of the date shown above. The map panel(s) as listed above and as modified by this letter will be used for all flood insurance policies and renewals issued for your community.

A review of the determination made by this LOMR and any requests to alter this determination should be made within 30 days. Any request to alter the determination must be based on scientific or technical data.

We are processing a revised FIRM and Flood Insurance Study (FIS) report for Maricopa County, Arizona and Incorporated Areas; therefore, we will not physically revise and republish the FIRM and FIS report for your community to incorporate the modifications made by this LOMR at this time. Preliminary copies of the FIRM and FIS report were submitted to your community for review on December 24, 1997. We will incorporate the modifications made by this LOMR into the FIRM and FIS report before they become effective.

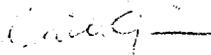
This LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development, and for ensuring all necessary permits required by Federal or State law have been received. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

Because this LOMR will not be printed and distributed to primary users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this LOMR throughout the community, so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information. We also encourage you to prepare an article for publication in your community's local newspaper. This article should describe the changes that have been made and the assistance that officials of your community will give to interested persons by providing these data and interpreting the NFIP maps.

This determination has been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and is in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria are the minimum requirements and do not supersede any State or local requirements of a more stringent nature. This includes adoption of the effective FIRM to which the regulations apply and the modifications described in this LOMR.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the Consultation Coordination Officer (CCO) for your community. Information on the CCO for your community may be obtained by contacting the Director, Mitigation Division of FEMA in San Francisco, California, at (415) 923-7177. If you have any technical questions regarding this LOMR, please contact Mr. Mike Grimm of our staff in Washington, DC, either by telephone at (202) 646-2878 or by facsimile at (202) 646-4596.

Sincerely,


 Matthew B. Miller, P.E., Chief
 Hazards Study Branch
 Mitigation Directorate

Enclosure(s)

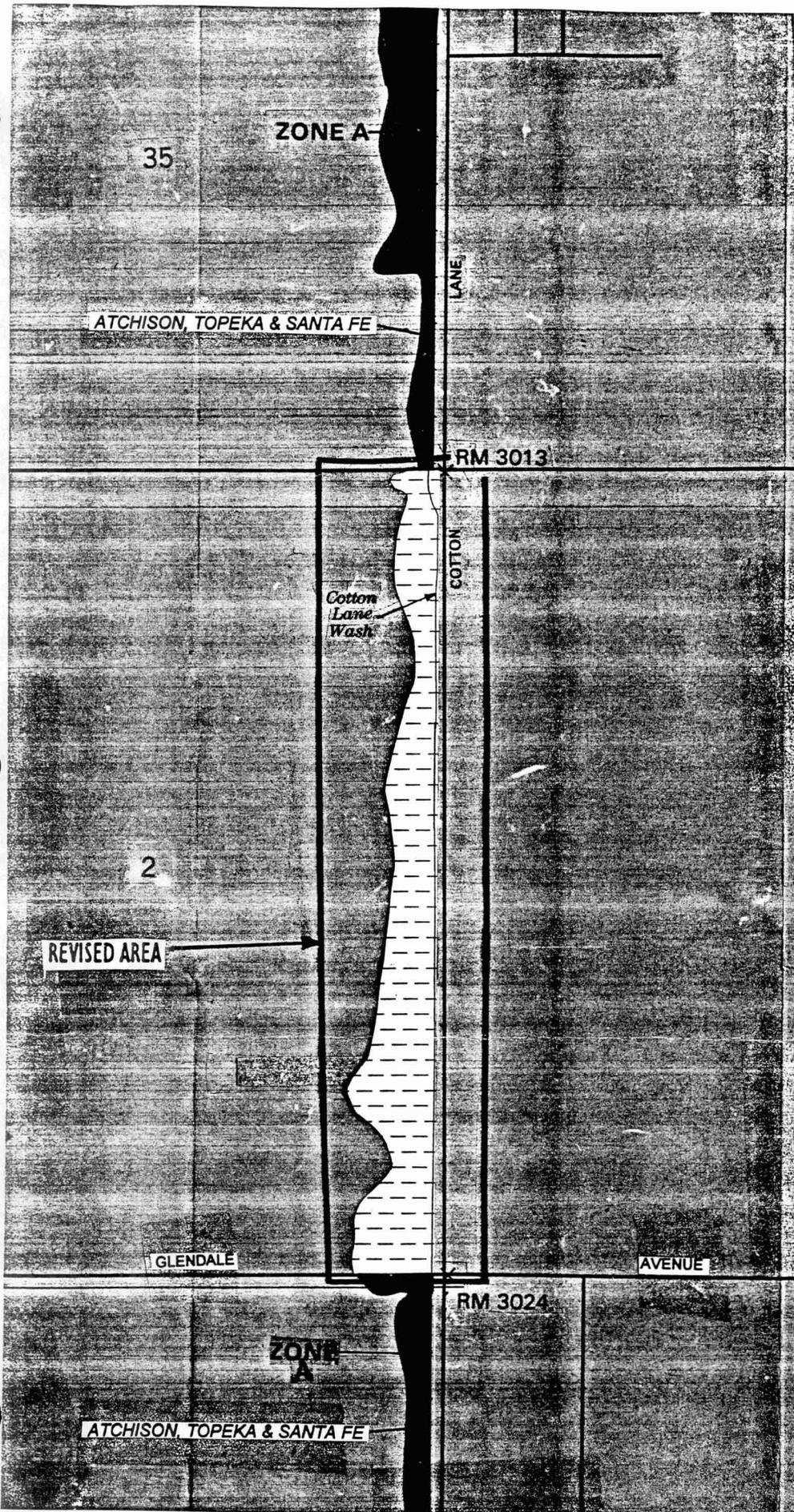
cc: Mr. Hasan Mushtaq, P.E. ✓
 Engineering Division
 Flood Control District of Maricopa County

Ms. Mary Horvach
 Hydrologist
 Collins/Piña Consulting Engineers, Inc.

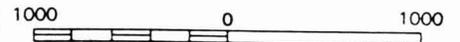
MAP LEGEND



Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY UNINCORPORATED AREAS	040037	1595	F
GLENDALE, CITY OF	040025	1595	F
GOODYEAR, TOWN OF	040046	1595	F
LITCHFIELD PARK, CITY OF	040128	1595	F

MAP NUMBER
04013C1595 F

MAP REVISED:
SEPTEMBER 30, 1995



Federal Emergency Management Agency



Federal Emergency Management Agency

Washington, D.C. 20472

JAN 22 1998

January 20, 1998

Mr. Hasan Mushtaq, P.E.
Engineering Division
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399

IN REPLY REFER TO:
Case No.: 98-09-236P
Community: Maricopa County, Arizona
Community No.: 040037

316-ACK.FRQ

Dear Mr. Mushtaq:

This responds to a letter dated January 2, 1998, concerning your November 14, 1997, request that the Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	White Tanks/Agua Fria ADMS
Flooding Source:	Cotton Lane Wash
FIRM Panel(s) Affected:	04013C1595 F

We have completed an inventory of the items that you submitted. We have received the data and the review and processing fee (\$2,300) required to begin a detailed technical review of your request. If additional data are required, we will inform you within 30 days of the date of this letter.

Please direct all questions concerning your request to our Technical Evaluation Contractor at the following address:

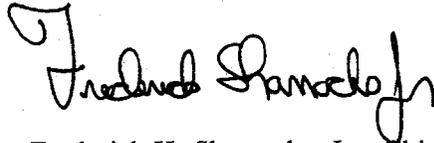
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Attention: Ms. Pernille Buch-Pedersen
(703) 317-6224

When you write us about your request, you must include the case number referenced above in your letter.

If you have any questions concerning FEMA policy, or the National Flood Insurance Program in general, please contact Mr. Mike Grimm of our staff in Washington, DC, either by telephone at (202) 646-2878 or by facsimile at (202) 646-4596.

Sincerely,

A handwritten signature in cursive script, appearing to read "Frederick Sharrocks, Jr.", written in black ink.

Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate

Hasan Mushtaq - FCDX

From: Hasan Mushtaq - FCDX
Sent: Wednesday, December 10, 1997 12:57 PM
To: Linda Hannan - FCDX
Cc: Ed Raleigh - FCDX; Pedro Calza - FCDX
Subject: Application fees for Cotton Lane Wash LOMR

Please process a request for the Application fees for the Cotton lane Wash Letter of Map Revision (LOMR). The required fee for this submittal is \$2,300.00. A copy of the letter, requesting the above-mentioned application, from FEMA is forwarded to you.

Thank you.

Hasan Mushtaq



Federal Emergency Management Agency

Washington, D.C. 20472

December 9, 1997

Mr. Hasan Mushtaq, P.E.
Engineering Division
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

IN REPLY REFER TO:
Case No.: 98-09-236P
Community: Maricopa County, ~~Arizona~~
Community No.: 040037

316-FEE

Dear Mr. Mushtaq:

This responds to your request dated November 14, 1997, for a revision to the Flood Insurance Rate Map (FIRM) for the above-referenced community.

To minimize the financial burden on the policyholders while maintaining the National Flood Insurance Program (NFIP) as self-sustaining, the Federal Emergency Management Agency (FEMA) implemented a procedure to recover costs associated with reviewing and processing requests for modifications to published flood information and maps. Effective October 1, 1996, FEMA revised the fee schedule, establishing flat review and processing fees for most types of requests. Effective March 10, 1997, FEMA modified the fee schedule that became effective on October 1. A copy of the notice published in the *Federal Register* is enclosed for your information. The fee for your request is \$2,300, and must be submitted before we can begin processing your request. Payment of this fee must be made in the form of a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or credit card payment. For identification purposes, the case number referenced above must be included on the check or money order.

If you choose to forward your payment using the U.S. Postal Service, please send it to the following address:

Federal Emergency Management Agency
Fee-Collection System Administrator
P.O. Box 3173
Merrifield, VA 22116-3173

If you choose to forward your payment using an overnight service, please send it to the following address:

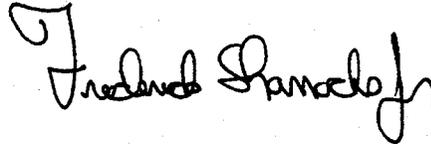
Fee-Collection System Administrator
c/o Dewberry & Davis, METS Division
8401 Arlington Boulevard
Fairfax, VA 22031

Upon receipt of the requested payment, we will begin our technical review of your request. When you write to us about your request, please include the case number referenced above in your letter. Unless otherwise directed by you in writing, we will keep the submitted data in our files.

If you have any questions concerning the processing of your request, please contact our Technical Evaluation Contractor at the following address: Michael Baker Jr., Inc., 3601 Eisenhower Avenue, Suite 600, Alexandria, Virginia 22304. The Revisions Coordinator for your state, Ms. Pernille Buch-Pedersen, may be reached at (703) 317-6224.

If you have any questions regarding FEMA policy or the NFIP in general, please contact Mr. Mike Grimm of our staff in Washington, DC, either by telephone at (202) 646-2878 or by facsimile at (202) 646-4596.

Sincerely,

A handwritten signature in black ink, appearing to read "Frederick H. Sharrocks, Jr.", written in a cursive style.

Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate

Enclosure(s)

FEDERAL EMERGENCY MANAGEMENT AGENCY ANNOUNCES CHANGES IN USER FEES FOR FLOOD MITIGATION PRODUCTS

On August 30, 1996, FEMA published an Interim Final Rule in the *Federal Register* that detailed how and why the Federal Emergency Management Agency (FEMA) changed the fee schedule for several of the products it provides to the public in support of the National Flood Insurance Program (NFIP). These changes, which became effective on October 1, 1996, were made (1) to simplify existing administrative procedures for individuals who request Letters of Map Change and Flood Insurance Study support information and archived data from FEMA and (2) to help maintain the NFIP as a self-supporting, nontaxpayer-funded program. On August 30, 1996, FEMA also published a notice in the *Federal Register* announcing the revised fee schedule for the following NFIP products:

- Conditional Letters of Map Amendment
- Conditional Letters of Map Revision Based on Fill
- Conditional Letters of Map Revision
- Letters of Map Revision Based on Fill
- Letters of Map Revision
- Physical Map Revisions
- Flood Insurance Study Support Information and Archived Data Products

FEMA recently determined it was appropriate to refine the criteria for assessing fees for map change requests and to revise the fee schedule itself before publishing a Final Rule and final fee schedule notice in the *Federal Register*. The most significant revision FEMA made is the restoration of fee exemptions for: (1) Map change requests based on federally sponsored flood-control projects where 50 percent or more of the project's costs are federally funded; and (2) Map change requests based on detailed hydrologic and hydraulic studies conducted by Federal, State, or local agencies to replace approximate studies conducted by FEMA and shown on the effective FIRM. These and other revisions are documented in the Final Rule and the enclosed Notice. The Notice and Final Rule both were published in the *Federal Register* on February 6, 1997.

Individuals who do not have a subscription to the *Federal Register* may obtain this information through FEMA's World Wide Web site (<http://www.fema.gov/MIT/feesch.htm>) or by calling the FEMA Fax-on-Demand, at (202) 646-3362, and requesting Document Number 20018. Hard copies of the Final Rule also may be obtained, free of charge, by contacting Ms. Imelda Edwards at the address shown below.

Federal Emergency Management Agency
Hazard Identification & Risk Assessment Division
500 C Street SW.
Washington, DC 20472
Telephone: (202) 646-3860
Facsimile: (202) 646-4596

Fee Schedule for Requests for Flood Insurance Study Backup Data

Requesters must submit the user fees shown below with requests for FIS backup data dated October 1, 1996 or later. These fees are based on a review of actual cost data for Fiscal Year 1995. They are based on the complete recovery of FEMA's costs for retrieving, reproducing, and distributing the data, as well as a pro rata share of the costs for maintaining the data and operating the fee reimbursement system.

As under the previous fee schedule, all entities except FEMA's Study Evaluation Contractors, FEMA's Technical Evaluation Contractors, and the Federal agencies involved in performing FISs (i.e., U.S. Army Corps of Engineers, U.S. Geological Survey, Natural Resources Conservation Service, and Tennessee Valley Authority) will be charged for requests for FIS backup data. The only other exception is that one copy of the FIS backup data will be provided to a community free of charge if the data are requested during the statutory 90-day appeal period for an initial or revised FIS for that community.

FEMA has established seven categories into which requests for FIS backup data are separated. These categories are:

(1) Category 1—Paper copies, microfiche, or diskettes of hydrologic and hydraulic backup data for current or previously effective FIS

(2) Category 2—Paper or mylar copies of topographic mapping developed during FIS process

(3) Category 3—Paper copies or microfiche of survey notes developed during FIS process

(4) Category 4—Paper copies of individual Letters of Map Change

(5) Category 5—Paper copies of preliminary map panels

(6) Category 6—Computer tapes of Digital Line Graph files

(7) Category 7—Computer diskettes and user's manuals for FEMA programs (e.g., Wave Height, Wave Runup, Alluvial Fan)

A non-refundable fee of \$90, to cover the preliminary costs of research and retrieval, must be submitted to initiate requests for data under Categories 1, 2, and 3. The total costs of processing requests in Categories 1, 2, and 3 above will vary based on the complexity of the research involved in retrieving the data and the volume and medium of data to be reproduced and distributed. The initial fee will be applied against the total costs to process the request, and FEMA will invoice the requester for the balance before the data are provided. No data will be provided to a requester until all required fees have been paid.

No initial fee is required to initiate a request for data under Categories 4 through 7. Requesters will be notified by telephone about the availability of materials and the fees associated with requested data. As with requests for data under Categories 1, 2, and 3, no data will be provided to requesters until all required fees are paid.

The costs for processing requests under Categories 4 through 7 will not

vary. Therefore, FEMA established flat user fees for these categories of requests. The flat user fees are shown below.

Request Under Category 4

First letter, \$ 40

Each additional letter, \$10

Request Under Category 5

First panel, \$35

Each additional panel, \$2

Request Under Category 6 (per county), \$150

Request Under Category 7 (per copy), \$25

Payment Submission Requirements

Fee payments must be made in advance of services being rendered. These payments shall be made in the form of a check or money order or by credit card payment. Checks and money orders must be made payable, in U.S. funds, to the National Flood Insurance Program. FEMA will provide receipts to requesters for their records or billing purposes.

The fees collected will be deposited to the National Flood Insurance Fund, which is the source of funding for providing these services.

Dated: January 28, 1997.

Richard W. Krimm,

Executive Associate Director, Mitigation Directorate.

[FR Doc. 97-2964 Filed 2-5-97; 8:45 am]

BILLING CODE 6718-04-P

FAX TRANSMITTAL COVER SHEET

DATE: December 10, 1997

TO: Mr. Hasan Mushtaq, P.E.

FIRM: Flood Control District of Maricopa County

FAX #: (602) 506-4601

FROM: Pernille Buch-Pedersen

FIRM: MICHAEL BAKER JR., INC.

THIS FAX CONSISTS OF 3 PAGES, INCLUDING THIS SHEET.

SPECIAL INSTRUCTIONS:

**Attached is a copy of the acknowledgment letter for Cotton Lane Wash,
Maricopa County, Arizona. Please call me at (703) 317-6224 if you have any
questions.**

Pernille



Federal Emergency Management Agency

Washington, D.C. 20472

December 9, 1997

Mr. Hasan Mushtaq, P.E.
Engineering Division
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

IN REPLY REFER TO:
Case No.: 98-09-236P
Community: Maricopa County, Arizona
Community No.: 040037

316-FEE

Dear Mr. Mushtaq:

This responds to your request dated November 14, 1997, for a revision to the Flood Insurance Rate Map (FIRM) for the above-referenced community.

To minimize the financial burden on the policyholders while maintaining the National Flood Insurance Program (NFIP) as self-sustaining, the Federal Emergency Management Agency (FEMA) implemented a procedure to recover costs associated with reviewing and processing requests for modifications to published flood information and maps. Effective October 1, 1996, FEMA revised the fee schedule, establishing flat review and processing fees for most types of requests. Effective March 10, 1997, FEMA modified the fee schedule that became effective on October 1. A copy of the notice published in the *Federal Register* is enclosed for your information. The fee for your request is \$2,300, and must be submitted before we can begin processing your request. Payment of this fee must be made in the form of a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or credit card payment. For identification purposes, the case number referenced above must be included on the check or money order.

If you choose to forward your payment using the U.S. Postal Service, please send it to the following address:

Federal Emergency Management Agency
Fee-Collection System Administrator
P.O. Box 3173
Merrifield, VA 22116-3173

If you choose to forward your payment using an overnight service, please send it to the following address:

Fee-Collection System Administrator
c/o Dewberry & Davis, METS Division
8401 Arlington Boulevard
Fairfax, VA 22031

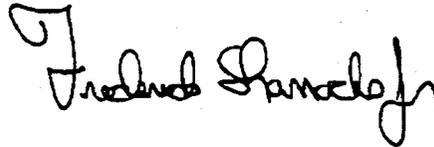
Upon receipt of the requested payment, we will begin our technical review of your request. When you write to us about your request, please include the case number referenced above in your letter. Unless otherwise directed by you in writing, we will keep the submitted data in our files.

2

If you have any questions concerning the processing of your request, please contact our Technical Evaluation Contractor at the following address: Michael Baker Jr., Inc., 3601 Eisenhower Avenue, Suite 600, Alexandria, Virginia 22304. The Revisions Coordinator for your state, Ms. Pernille Buch-Pedersen, may be reached at (703) 317-6224.

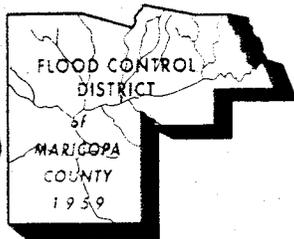
If you have any questions regarding FEMA policy or the NFIP in general, please contact Mr. Mike Grimm of our staff in Washington, DC, either by telephone at (202) 646-2878 or by facsimile at (202) 646-4596.

Sincerely,



Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate

Enclosure(s)



FLOOD CONTROL DISTRICT of Maricopa County

2801 West Durango Street • Phoenix, Arizona 85009-6399
Telephone (602) 506-1501
Fax (602) 506-4601
TT (602) 506-5897

BOARD OF DIRECTORS
Jan Brewer
Fulton Brock
Andrew Kunasek
Don Stapley
Mary Rose Garrido Wilcox

Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate
Federal Emergency Management Agency
500 C Street SW
Washington, D.C. 20472

Attn. : Mr. John Magnotti

Re : LOMR request for Cotton Lane Wash - From Glendale Avenue to Northern Avenue.
FIRM Map Panel 1595 F (09-30-1995)

When replying, please refer to:
FCD Contract No. FCD 97-03

Dear Mr. Sharrocks:

This request is for a revision to the Flood Insurance Rate Map (FIRM), as listed above, for Maricopa County, Unincorporated Areas, Arizona. The revision request covers Cotton Lane Wash from Glendale Avenue to Northern Avenue. Pertinent information about the request is listed below:

Identifier :	White Tanks/Agua Fria ADMS
Flooding Source:	Cotton Lane Wash
FIRM Panels Affected:	1595 F (09-30-1995)

This study reflects the physical changes that have occurred related to the Atchison, Topeka and Santa Fe (ATSF) railroad tracks. Since the railroad tracks have been abandoned, the berm has eroded substantially and washed out at several locations. As a result, the berm has become virtually nonexistent. Therefore, the assumed 300 cfs. of water will not be ponding behind the berm anymore, instead the water will keep flowing to the easterly direction going across the Cotton Lane.

The following information is submitted in support of the LOMR request:

1. A complete set of required FEMA forms.
2. Technical Data Notebook.
3. A set of the field survey notes.

Should additional information be required, please contact Timothy E. Kelly, P.E., Project Manager, Collins/Pina Consulting Engineers, Inc., at (602) 623-7980 or Hasan Mushtaq, P.E., Engineering Division, Flood Control District of Maricopa County at (602) 506-4528.

Sincerely,



Hasan Mushtaq, P.E.
Engineering Division

Enclosures

Copy to: Terri Miller, State Coordinator, NFIP
Arizona Department of Water Resources
500 North 3rd Street, Phoenix, Arizona 85004

Timothy E. Kelly, P.E.
Collins/Pina Consulting Engineers, Inc.
33 North Stone Avenue, 15th Floor
Tucson, Arizona 85701





PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average .63 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

This form may be completed by the property owner, registered land surveyor, or registered professional engineer

1. Community Name: Maricopa County and Unincorporated Areas County: Maricopa State: Arizona
Community Number: 040037 Panel or Map Number: 04013C1595F
Effective Date: September 30, 1995

2. Street Address of Property _____

3. Description of Property Lot and Block (if a street address cannot be provided): Cotton Lane
between Glendale Avenue and Northern Avenue

4. Are you requesting that the SFHA designation be removed from (a) all of the land within the bounds of the property, (b) a portion of land within the bounds of the property (metes and bounds description is required) or (c) the structure(s) on the property? (Answer "a", "b" or "c") "a"

5. Is this request for (a) a single residential structure or lot, (b) a single commercial structure or lot, (c) multiple structures or lots? (Answer "a", "b" or "c") "c" If existing structure, what was the date of construction? _____

6. Is this request prior to the transfer of ownership of the property in question from a developer to an individual property owner? Yes No

7. Is this request for (a) existing conditions or (b) proposed project? (Answer "a" or "b") "a"

8. Has fill been placed in an identified SFHA or to elevate a structure(s)? No If yes, when? _____

9. For proposed projects, will fill be placed to elevate this land or structure? N/A

10. Do you know of previous requests that have been submitted to FEMA for this property or adjacent properties?
No

If yes, what was the date of FEMA's response letter? _____

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

11. I have enclosed the following documents in support of this request:

_____ a. Copy of the Plat Map (*with recordation data*) with recorder's seal

OR

_____ b. Copy of the Deed (*with recordation data*), accompanied by a tax assessor's map, plat map or other suitable map showing the surveyed location of the property with recorder's seal (*For these maps a map scale must be provided and they should not be reduced or enlarged*)

XX c. Copy of the effective FIRM panel on which the property location has been accurately plotted (*if the request is for more than one lot/structure, this location must be certified by a licensed land surveyor or registered professional engineer*)

XX d. A map showing the location of any structures existing on or proposed for the property (*certified by a licensed land surveyor or registered professional engineer*)

_____ e. Metes and bounds description and accompanying map (only if the request is for a portion of land within the bounds of the property, not structure(s) only)

XX f. Elevation Information form

_____ g. Community Acknowledgement form (*only if fill has been/will be placed*)

_____ h. Certification of Fill Compaction form (*only if fill has been/will be placed and the request is not for a single residential structure*)

_____ i. Initial fee (*see page 7 of instructions for initial fees and exemptions*)

_____ \$ _____
(Type of request) (amount enclosed)

PAYMENT ENCLOSED

Check or money order only. Make check or money order payable to: National Flood Insurance Program. If paying by Visa or Mastercard please refer to the credit card information form which follows this form.

_____ j. Additional information: _____
(please specify)

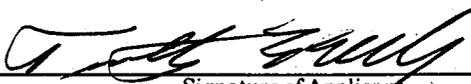
12. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Applicant's Name: Timothy E. Kelly, P.E.
(please print or type)

Mailing Address: 33 North Stone Avenue, 15th Floor; Tucson, Az 85701
(please print or type)

Daytime Telephone Number: (520)623-7980

10/23/97
Date


Signature of Applicant

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average .63 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

This form must be completed by a licensed land surveyor or registered professional engineer. These forms should not be used for requests involving Channelization, Bridges/Culverts, or Fill in the FEMA-Designated Floodway. Forms entitled, "Revisions to National Flood Insurance Program Maps (MT-2)" should be used. The Elevation Information Form must be included for all requests, unless the request is for a determination in which the FIRM already shows the property to be CLEARLY outside the SFHA. Cases in which the determination for the property or structure is uncertain will require the submittal of elevation data to provide a definitive determination. If an elevation certificate has been completed for the subject property it may be submitted in lieu of this form.

(See page 7 of instructions for details)

1. Community Name: Maricopa County

2. Legal Description of Property: Pt. Unit No. 43 Romola of Arizona Grapefruit Unit

3. Flooding Source: Cotton Lane Wash

4. Based on the FIRM, this property is located in Zone(s) A

5. Is any portion of this property located in the regulatory floodway? Yes No
Are any structures (existing or proposed) located in the regulatory floodway? Yes No

6. Is this area subject to land subsidence or uplift? Yes No, If yes, what is the date of the current releveling? _____

7. What is the BFE for this property? (Provide elevation to nearest tenth of a foot and datum)*

11323-1140.9 Elevation NGVD Datum

8. How was the BFE determined? (attach a copy of the Flood Profile or table from the FIS report, if appropriate, or other necessary supporting information including Forms 3 and 4 from forms entitled, "Revisions to National Flood Insurance Program Maps" (MT-2)).

White Tanks/Agua Fria Area Drainage Master Study

9. If a flood profile for the 500-year flood was provided in the FIS Report, what is the 500-year flood elevation for this property? _____ Elevation _____ Datum

10. If this request is to remove the SFHIA designation from a parcel of land or lot(s), what is the existing or proposed elevation of the lowest grade; that is, the lowest ground on the property? (Provide elevation to nearest tenth of a foot and datum)* _____ Elevation _____ Datum

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

11. If this request is to remove the SFHA designation from a structure(s), what is the elevation of the existing or proposed lowest adjacent grade; that is, the lowest ground touching the structure? (Provide elevation to nearest tenth of a foot and datum)* _____ Elevation/Datum
12. If fill has been/will be placed to elevate the structure(s) on this property, what is the existing or proposed elevation of the lowest floor, including basement and/or attached garage? (Provide elevation to nearest tenth of a foot and datum)* _____ Elevation/Datum
13. If any of the above elevations were computed based on a datum different than the effective FIS, what is the conversion factor? FIS Datum = Local Datum +/- _____ Feet

***For multiple lots/structures, complete the appropriate column(s) of the Summary of Elevations-Individual Lot Breakdown form, identifying the elevation for each lot/structure. To support items 9, 10, and 11, please note a map (certified by a licensed surveyor or registered professional engineer) may be required to relate the ground elevations and locations of structures or lots. The map should indicate whether it reflects "as-built" or "proposed" conditions.**

14. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Timothy E. Kelly, P.E.
(please print or type)

Title: Vice President - Public Works
(please print or type)

Registration No. 11587 Expiration Date 6/30/00

State Arizona

Telephone Number: (520)623-7980

Timothy E Kelly
Signature

6/23/97
Date

Seal (Optional)

FEDERAL EMERGENCY MANAGEMENT AGENCY
**SUMMARY OF ELEVATIONS-INDIVIDUAL
 LOT BREAKDOWN**

FEMA USE ONLY

O.M.B. No. 3067-0147
 Expires July 31, 1997

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average .67 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Maricopa County & Unincorporated Areas
 Community Name

7116 - 7428 N. Cotton Lane
 Property Name or Address

LOT NUMBER	BLOCK NUMBER	LOWEST LOT ELEVATION ¹	LOWEST FLOOR ELEVATION ² (INCLUDING BASEMENT)	LOWEST ADJACENT GRADE TO STRUCTURE ³	100-YEAR FLOOD ELEVATION	500-YEAR FLOOD ELEVATION	FOR FEMA USE ONLY
4763E		1139.7	1141.8	1140.5			
4762C		1138.5	1141.1	1138.6			
4761A		1137.7	1139.5	1139.1			
4761C		1136.8	1138.4	1137.3			
4760B		1136.7	1137.4	1136.8			
4760D		1135.8	1137.6	1137.2			
4759A		1135.5	1136.1	1135.7			
4758B		1133.6	1135.2	1134.2			
4757A		1133.5	1134.7	1133.7			
4757B		1133.3	1133.9	1133.4			
4757D		1131.7	1133.6	1131.9			
4756B		1131.8	1133.0	1131.9			

¹For requests that an entire parcel of land be removed from the SFHA; if the request involves an area described by metes and bounds, provide the lowest elevation within that area

²For requests that a structure that has been elevated by fill be removed from the SFHA

³For requests that a structure be removed from the SFHA.

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS.

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.13 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

1. OVERVIEW

1. The basis for this revision request is (are): *(check all that apply)*

- Physical change
 - Existing
 - Proposed
- Improved methodology
- Improved data
- Floodway revision
- Other _____

Explain _____

2. Flooding Source: Cotton Lane Wash
3. Project Name/Identifier: Cotton Lane Floodplain Evaluation, Glendale Avenue to Northern Avenue
4. FEMA zone designations affected: Zone A
 (example: A, AH, AO, A1-A30, A99, AE, V, V1-30, VE, B, C, D, X)
5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	County	State	Map No.	Panel No.	Effective Date
EX: 480301	Katy, City	Harris, Fort Bend	TX	480301	0005D	02/08/83
480287	Harris County	Harris	TX	48201C	0220G	09/28/90
040037	Maricopa County	Maricopa	AZ	04013C	1595F	09/30/95

6. The area of revision encompasses the following types of flooding, structures, and associated disciplines: *(check all that apply)*

- | | | |
|--|--|--|
| <p><u>Types of Flooding</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Riverine <input type="checkbox"/> Coastal <input type="checkbox"/> Alluvial Fan <input checked="" type="checkbox"/> Shallow Flooding (e.g. Zones AO and AH) <input type="checkbox"/> Lakes <p>Affected by wind/wave action</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <p><u>Structures</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> Channelization <input type="checkbox"/> Levee/Floodwall <input type="checkbox"/> Bridge/Culvert <input type="checkbox"/> Dam <input type="checkbox"/> Coastal <input type="checkbox"/> Fill <input type="checkbox"/> Pump Station <input checked="" type="checkbox"/> None <input type="checkbox"/> Channel Relocation <input type="checkbox"/> Excavation <input type="checkbox"/> Other (describe) _____ | <p><u>Disciplines*</u></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Water Resources <ul style="list-style-type: none"> <input type="checkbox"/> Hydrology <input checked="" type="checkbox"/> Hydraulics <input type="checkbox"/> Sediment Transport <input type="checkbox"/> Interior Drainage <input type="checkbox"/> Structural <input type="checkbox"/> Geotechnical <input checked="" type="checkbox"/> Land Surveying <input type="checkbox"/> Other (describe) _____ |
|--|--|--|

Other (describe) _____

* Attach completed "Certification by Registered Professional Engineer and/or Land Surveyor" Form for each discipline checked. (Form 2)

2. FLOODWAY INFORMATION

7. Does the affected flooding source have a floodway designated on the effective FIRM or FBFM? Yes No
8. Does the revised floodway delineation differ from that shown on the effective FIRM or FBFM? Yes No
- If yes, give reason: More accurate mapping is available

Attach copy of either a public notice distributed by the community stating the community's intent to revise the floodway or a statement by the community that it has notified all affected property owners and affected adjacent jurisdictions.

9. Does the State have jurisdiction over the floodway or its adoption by communities participating in the NFIP? Yes No

If yes, attach a copy of a letter notifying the appropriate State agency of the floodway revision and documentation of the approval of the revised floodway by the appropriate State agency.

3. PROPOSED ENCROACHMENTS

10. With floodways:

1A. Does the revision request involve fill, new construction, substantial improvement, or other development in the floodway? Yes No

1B. If yes, does the development cause the 100-year water surface elevation to increase at any location by more than 0.000 feet? Yes No

11. Without floodways:

2A. Does the revision request involve fill, new construction, substantial improvement, or other development in the 100-year floodplain? Yes No

2B. If yes, does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the 100-year water surface elevation to increase at any location by more than one foot (or other surcharge limit if community or state has adopted more stringent criteria)? Yes No

If the answer to either Items 1B or 2B is yes, please provide documentation that all requirements of Section 65.12 of the NFIP regulations have been met, regarding evaluation of alternatives, notice to individual legal property owners, concurrence of CEO, and certification that no insurable structures are impacted.

4. REVISION REQUESTOR ACKNOWLEDGMENT

12. Having read NFIP Regulations, 44 CFR Ch. I, parts 59, 60, 61, and 72, I believe that the proposed revision is is not in compliance with the requirements of the aforementioned NFIP Regulations.

5. COMMUNITY OFFICIAL ACKNOWLEDGMENT

13. Was this revision request reviewed by the community for compliance with the community's adopted floodplain management ordinances? Yes No

14. Does this revision request have the endorsement of the community? Yes No

If no to either of the above questions, please explain: _____

Please note that community acknowledgment and /or notification is required for all requests as outlined in Section 65.4 (b) of the NFIP Regulations.

6. OPERATION AND MAINTENANCE

15. Does the physical change involve a flood control structure (e.g., levees, floodwalls, channelization, basins, dams)? Yes No

If yes, please provide the following information for each of the new flood control structures:

A. Inspection of the flood control project will be conducted periodically by _____ entity
_____ with a maximum interval of _____ months between inspections.

B. Based on the results of scheduled periodic inspections, appropriate maintenance of the flood control facilities will be conducted by _____ (entity)

to ensure the integrity and degree of flood protection of the structure.

C. A formal plan of operation, including documentation of the flood warning system, specific actions and assignments of responsibility by individual name or title, and provisions for testing the plan at intervals not less than one year, has has not been prepared for the flood control structure.

D. The community is willing to assume responsibility for performing overseeing compliance with the maintenance and operation plans of the _____

(Name)

flood control structure. If not performed promptly by an owner other than the community, the community will provide the necessary services without cost to the Federal government.

Attach operation and maintenance plans

7. REQUESTED RESPONSE FROM FEMA

16. After examining the pertinent NFIP regulations and reviewing the document entitled "Appeals, Revisions, and Amendments to Flood Insurance Maps: A guide for Community Officials," dated January 1990, this request is for a:

- a. CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision (*LOMR* or *PMR*), or proposed hydrology changes (*see 44 CFR Ch. I, Parts 60, 65, and 72*).
- XX b. LOMR A letter from FEMA officially revising the current NFIP map to show changes to floodplains, floodways, or flood elevations. LOMRs typically depict decreased flood hazards. (*See 44 CFR Ch. I Parts 60 and 65.*)
- c. PMR A reprinted NFIP map incorporating changes to floodplains, floodways, or flood elevations. Because of the time and cost involved to change, reprint, and redistribute an NFIP map, a PMR is usually processed when a revision reflects increased flood hazards or large-scope changes. (*See 44 CFR Ch. I, Parts 60 and 65.*)
- d. Other: Describe _____

8. FORMS INCLUDED

17. Form 2 entitled, "Certification By Registered Professional Engineer and/or Land Surveyor" must be submitted. The following forms should be included with this request if (check the included forms):

- Hydrologic analysis for flooding source differs from that used to develop FIRM Hydrologic Analysis Form (Form 3)
- Hydraulic analysis for riverine flooding differs from that used to develop FIRM Riverine Hydraulic Analysis Form (Form 4)
- The request is based on updated topographic information or a revised floodplain or floodway delineation is requested Riverine/Coastal Mapping Form (Form 5)
- The request involves any type of channel modification Channelization Form (Form 6)
- The request involves new bridge or culvert or revised analysis of an existing bridge or culvert Bridge/Culvert Form (Form 7)
- The request involves a new revised levee/floodwall system Levee/Floodwall System Analysis Form (Form 8)
- The request involves analysis of coastal flooding Coastal Analysis Form (Form 9)
- The request involves coastal structures credited as providing protection from the 100-year flood Coastal Structures (Form 10)
- The request involves an existing, proposed, or modified dam Dam Form (Form 11)
- The request involves structures credited as providing protection from the 100-year flood on an alluvial fan Alluvial Fan Flooding Form (Form 12)

9. INITIAL REVIEW FEE

18. The minimum initial review fee for the appropriate request category has been included. Yes No

Initial fee amount: \$ _____

Check or money order only. Make check or money order payable to : **National Flood Insurance Program**. If paying by Visa or Mastercard please refer to the credit card information form which follows this form.

or

19. This request is for a project that is for public benefit and is primarily intended for flood loss reduction to insurable structures in identified flood hazard areas which were in existence prior to the commencement of construction of the flood control project. Yes No

or

20. This request is to correct map errors, to include the effects of natural changes within the areas of special flood hazard, or solely to provide more detailed data. Yes No

Note: I understand that my signature indicates that all information submitted in support of this request is correct.



Signature of Revision Requester

Timothy E. Kelly, P.E./Vice President

Printed Name and Title of Revision Requester

Collins/Pina Consulting Engineers, Inc.

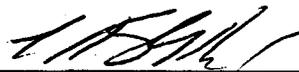
Company Name

(520)623-7980

Telephone No.

Date

Note: Signature indicates that the community understands, from the revision requester, the impacts of the revision on flooding conditions in the community.



Signature of Community Official

Michael S. Ellegood, P.E.
Chief Engineer and General Manager

Printed Name and Title of Community Official

Maricopa County

Community Name

11/14/97

Date

Does this request impact any other communities? Yes No

If yes, attach letters from all affected jurisdictions acknowledging revision request and approving changes to floodway, if applicable.

Note: Although a photograph of physical changes is not required, it may be helpful for FEMA's review.

PUBLIC BURDEN DISCLOSER NOTICE

"Public reporting burden for this form is estimated to average 6 minutes per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the burden estimate and any suggestions for reduction this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC, 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0147), Washington, DC 20503".

If paying by credit card, this form must be completed. **THIS FORM SHOULD NOT BE INCLUDED WITH THE REST OF THE FORMS PACKAGE. IT MUST BE MAILED OR FAXED TO:**

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, Virginia 22116
Fax: (703) 849-0282

Case# _____ (if known) Amount: \$ _____

- INITIAL FEE ADDITIONAL INITIAL FEE INVOICE
 VISA MASTERCARD

CARD NUMBER

<input type="text"/>															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Signature

EXP. DATE
 -
Month Year

NAME (AS IT APPEARS ON CARD): _____

ADDRESS: _____

DAYTIME PHONE: _____

NOTICE: A COPY OF THE PROPERTY INFORMATION FORM BEING SUBMITTED FOR THIS REQUEST MUST BE ATTACHED TO THIS FORM.

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average . 23 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Water Resources
[example: water resources (hydrology, hydraulics, sediment transport, interior drainage)* structural, geotechnical, land surveying.]
3. I have 30 years experience in the expertise listed above.
4. I have prepared reviewed the attached supporting data and analyses related to my expertise.
5. I have have not visited and physically viewed the project.
6. In my opinion, the following analyses and /or designs, is/are being certified:
Survey and Hydraulic Study with field visit
7. Base upon the following review, the modifications in place have been constructed in general accordance with plans and specifications.

Basis for above statement: (check all that apply)

 - a. Viewed all phases of actual construction.
 - b. Compared plans and specifications with as-built survey information.
 - c. Examined plans and specifications and compared with completed projects.
 - d. Other Reviewed Hydrology and the changed condition
8. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Timothy E. Kelly, P.E.
(please print or type)

Title: Vice-President - Public Works
(please print or type)

Registration No. 11587 (AZ) Expiration Date: 06/30/2000

State Arizona

Type of License Civil Engineering

Timothy E. Kelly
Signature

6/23/97
Date

Seal
(Optional)

*Specify Subdiscipline

Note: Insert not applicable (N/A) when statement does not apply.

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average .23 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Land Surveying
[example: water resources (*hydrology, hydraulics, sediment transport, interior drainage*)* structural, geotechnical, land surveying.]
3. I have 17 years experience in the expertise listed above.
4. I have prepared reviewed the attached supporting data and analyses related to my expertise.
5. I have have not visited and physically viewed the project.
6. In my opinion, the following analyses and /or designs, is/are being certified:
Finish Floor Elevations and adjacent Grade
7. Base upon the following review, the modifications in place have been constructed in general accordance with plans and specifications.

Basis for above statement: (check all that apply)

- a. Viewed all phases of actual construction.
- b. Compared plans and specifications with as-built survey information.
- c. Examined plans and specifications and compared with completed projects.
- d. Other N/A

8. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Arthur A. Witzell, PLS
(please print or type)

Title: Survey Supervisor, Phoenix Division
(please print or type)

Registration No. 26412 Expiration Date: 09/30/98

State Arizona

Type of License Registered Land Surveyor

Signature _____

Date _____



Seal
(Optional)

*Specify Subdiscipline

Note: Insert not applicable (N/A) when statement does not apply.

2. EARTH FILL PLACEMENT

1. The fill is: Existing Proposed
2. Has fill been placed/will be placed in the regulatory floodway? Yes No
If yes, please attach completed Riverine Hydraulic Analysis Form. (Form 4)
3. Has fill been/will be placed in floodway fringe (area between the floodway and 100-year floodplain boundaries)? Yes No

If yes, then complete A, B, C, and D below.

- a. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? Yes No

If yes, justify steeper slopes _____

- b. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? (Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.) Yes No

If no, describe erosion protection provided _____

- c. Has all fill placed in the revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? Yes No
- d. Can structures conceivably be constructed on the fill at any time in the future? Yes No

If yes, provide certification of fill compaction (Item c. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer.

4. Has fill been placed/will be placed in a V-zone? Yes No
- If yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall? Yes No

If yes, attach the coastal structures form.

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden, to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: Maricopa County

Flooding Source: Cotton Lane Wash

Project Name/Identifier: Cotton Lane Floodplain Evaluation, Glendale Avenue to Northern Avenue

1. MAPPING CHANGES

1. A topographic work map of suitable scale, contour interval, and planimetric definition must be submitted showing (indicate N/A when not applicable):

- | | Included |
|---|--|
| A. Revised approximate 100-year floodplain boundaries (Zone A)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| B. Revised detailed 100- and 500-year floodplain boundaries? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| C. Revised 100-year floodway boundaries? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| D. Location and alignment of all cross sections used in the revised hydraulic model with stationing control indicated? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| E. Stream alignments, road and dam alignments? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| F. Current community boundaries? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| G. Effective 100- and 500-year floodplain and 100-year floodway boundaries from the FIRM/FBFM reduced or enlarged to the scale of the topographic work map? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| H. Tie-ins between the effective and revised 100- and 500-year floodplains and 100-year floodway boundaries? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| I. The requestor's property boundaries and community easements? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| J. The signed certification of a registered professional engineer? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| K. Location and description of reference marks? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| L. Vertical datum (example: NGVD, NAVD etc.)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A |
| M. Coastal zone designations tie into adjacent areas not being revised? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A |
| N. Location and alignment of all coastal transects used to revise the coastal analyses? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |

If any of the items above are marked no or N/A, please explain: No detailed analysis was completed in existing FIRM (Zone A), no floodway is determined, not coastal area

2. What is the source and date of the updated topographic information (example: orthophoto maps, July 1985; field survey, May 1979, beach profiles, June 1987, etc.)? Field Survey - August 1997

3. What is the scale and contour interval of the following workmaps?
 a. Effective FIS 1"=400' scale 2 Contour interval
 b. Revision Request 1"=400' scale 2 Contour interval

NOTE: Revised topographic information must be of equal or greater detail.

4. Attach an annotated FIRM and FBFM at the scale of the effective FIRM and FBFM showing the revised 100- and 500-year floodplain and the 100-year floodway boundaries and how they tie into those shown on the effective FIRM and FBFM downstream and upstream of the revisions or adjacent to the area of revision for coastal studies. Attach additional pages if needed.

PLEASE REFER TO THE INSTRUCTION FOR THE APPROPRIATE MAILING ADDRESS

5. Flood Boundaries and 100-year water surface elevations:

- a. Has the 100-year floodplain been shifted or increased or the 100-year water surface elevation increased at any location on property other than the requestor's or community's? Yes No

If yes, please give the location of shift or increase and an explanation for the increase.

- b. Have the affected property owners been notified of this shift or increase and the effect it will have on their property? Yes No

If yes, please attach letters from these property owners stating they have no objections to the revised flood boundaries if a LOMR is being requested.

- c. What is the number of insurable structures that will be impacted by this shift or increase? _____

6. Have the floodway boundaries shifted or increased at any location compared to those shown on the effective FBFM or FIRM? Yes No

If yes, explain:

7. If a V- zone has been designated, has it been delineated to extend landward to the heel of the primary frontal dune? Yes No

If no, explain:

8. Manual or digital map submission:

- Manual
 Digital

Digital map submissions may be used to update digital FIRMs (DFIRMs). For updating DFIRMs, these submissions must be coordinated with FEMA Headquarters as far in advance of submission as possible.



Request for Letter of Map Revision,
Flood Insurance Rate Map,
Federal Emergency Management Agency
Technical Data Notebook
Cotton Lane: Glendale Avenue to Northern Avenue

Prepared for: Flood Control District of Maricopa County
2801 West Durango St.
Phoenix, Arizona 85009



Prepared by:
Collins/Piña Consulting Engineers, Inc.
33 North Stone Avenue, 15th Floor
Tucson, Arizona 85701

October, 1997

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1.0 Introduction

This project is an analysis of a one mile stretch of floodplain west of Cotton Lane, from Glendale Avenue to Northern Avenue. The White Tanks/Agua Fria Area Drainage Master Study (ADMS) generated the current FEMA floodplain delineation in the area. The ADMS determined that the floodplain west of Cotton Lane, Zone A, is caused by ponding upstream of the Atchison, Topeka and Santa Fe (ATSF) Railroad tracks that paralleled Cotton Lane approximately 30-feet west of the edge of the roadway. This ponded water, although not in a drainage channel naturally or by design, was labeled the "Cotton Lane Wash" by the Flood Control District of Maricopa County. Several houses within the project limits are currently in the FEMA floodplain because of this ponding.

The railroad has been abandoned and the berm that formerly elevated the railroad tracks has been partially regraded and has eroded significantly since the removal of the railroad tracks. The objective of this project is to determine the new floodplain, taking into account the regrading and erosion that has occurred since the abandonment of the railroad, from Glendale Avenue, north to Northern Avenue.

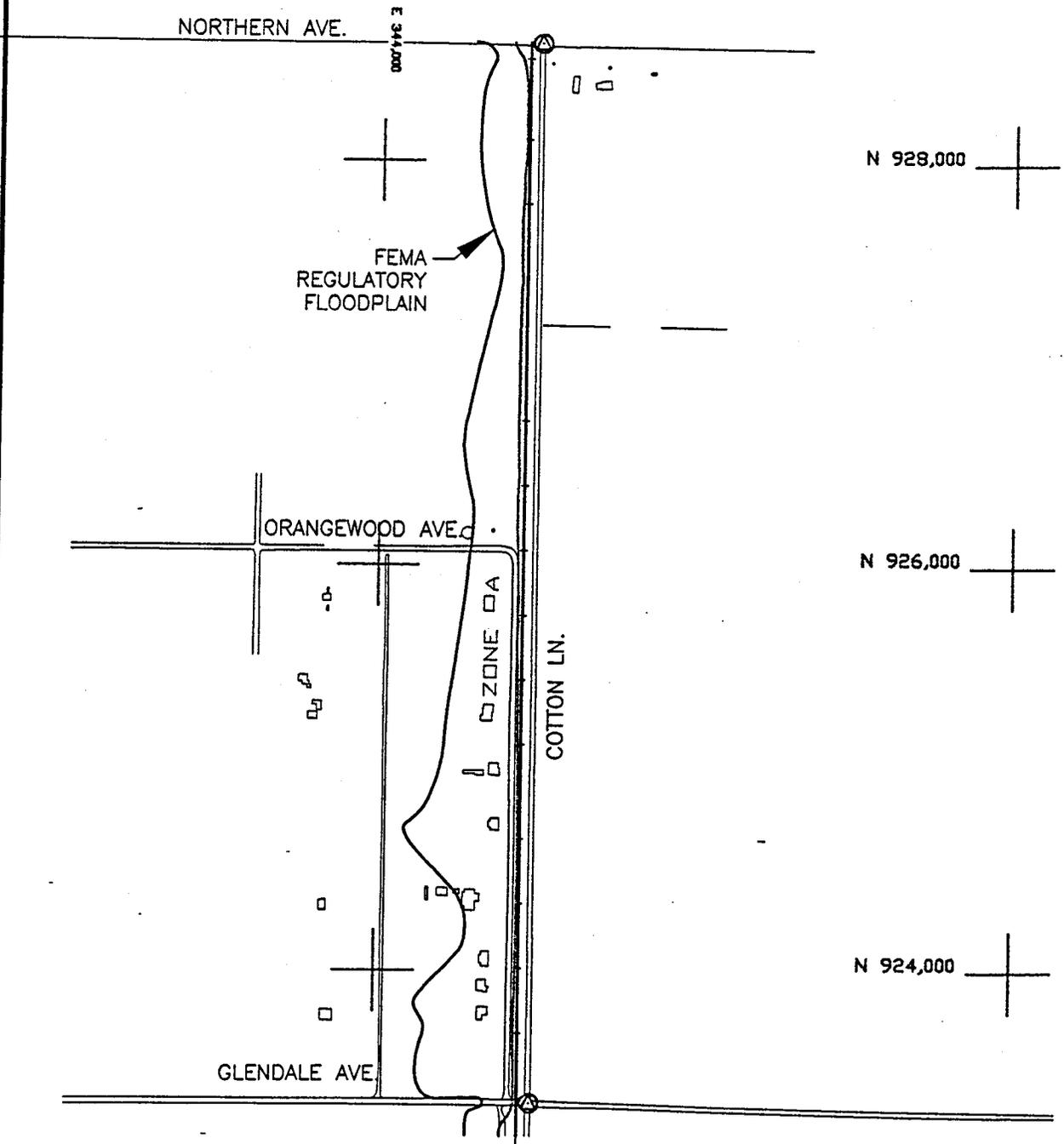
See Figure 1 for location map and current FEMA floodplain delineation.

1.1 Site Description

Cotton Lane, from Glendale Avenue north to Northern Avenue, is in the eastern portion of Section 2 of Township 2 North, Range 2 West, of the Gila Salt River Meridian. It is within an unincorporated region of Maricopa County, Arizona and the Agua Fria River watershed. Stormwater runoff impacting the stretch of roadway is generated from as far away as the White Tank Mountains, approximately 9 miles to the west. Stormwater runoff travels from northwest to southeast as sheet flow or within streets in the area of the project stretch of Cotton Lane; defined drainage channels in the area are minimal. Cotton Lane and the surrounding land is sparsely residential with some farms and much open space. Low brush and scattered desert broom trees are the predominant vegetation.

Cotton Lane a paved, 30-foot wide roadway has two-foot wide shoulders and no curb. There is a shallow ditch to the east (approximately 0.5 foot deep from edge of pavement) and a slight berm east of the ditch (approximately 2-feet above the toe of ditch). East of the berm, the land is consistently sloped east. There is a shallow ditch to the west of the roadway (approximately 1-foot deep from edge of pavement) and a remnant of what was the elevated railroad tracks west of the ditch (varies from 1.5-feet to 5-feet above the toe of ditch). A gravel access road, west of the railroad berm, parallels Cotton Lane from Glendale Avenue to Orangewood Avenue, a gravel street parallel and approximately halfway between Glendale and Northern Avenues. West of the gravel road, land is consistently sloped east.

FIGURE 1: LOCATION MAP
 COTTON LANE BETWEEN GLENDALE AVENUE &
 NORTHERN AVENUE: A PORTION OF SECTION 2,
 TOWNSHIP 2 NORTH, RANGE 2 WEST, G. & S.R.M.



C:\BLOCKS\FIG-8X11, 07/01/92 at 1103



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 DATE OCT 97
 JOB NO. 3896.10

The homes in the project site that are currently in the FEMA floodplain are located along the gravel access road between Glendale and Orangewood Avenues. The road is low relative to the railroad berm and the driveways of the homes. Along much of the project stretch, the railroad berm has been significantly down-graded and eroded, at points, leaving wide gaps in the berm. See Figure 2 for schematic of roadway.

1.2 Previous Studies

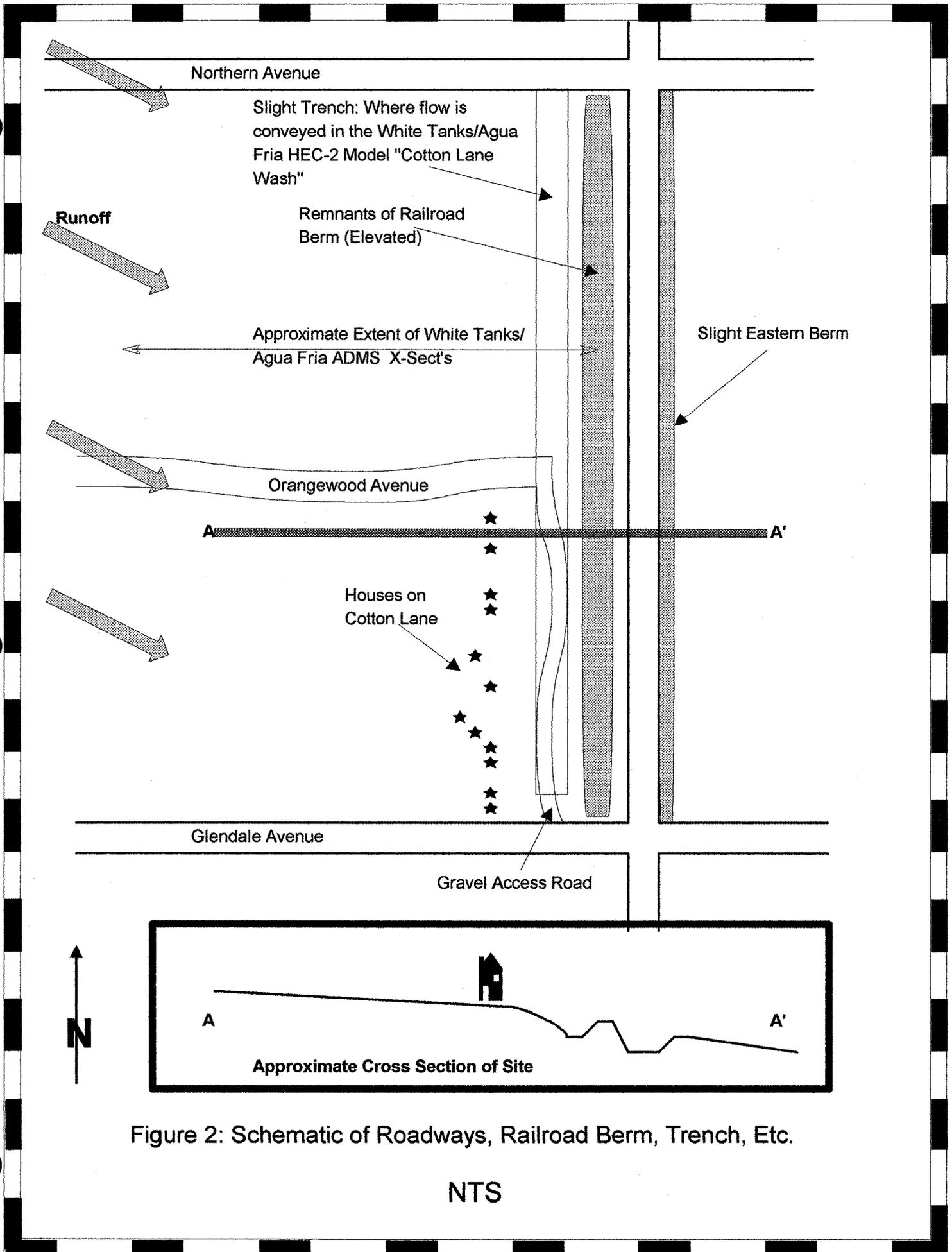
The 1.0 mile project stretch of Cotton Lane was part of the area analyzed in the White Tanks/Agua Fria ADMS, completed in 1991 by WLB for the Flood Control District of Maricopa County. The study calculated the 100-year peak flows intersecting Cotton Lane and the 100-year floodplain limits of these peak flows. The ATSF railroad was in operation at the time of the study.

According to the HEC-1 model in the White Tanks/Agua Fria ADMS, a peak flow of approximately 2400 cfs concentrates at the Cotton Lane and Northern Avenue intersection, approximately 1300 cfs flows south in the "Cotton Lane Wash" during the 100-year storm. Between Northern and Glendale Avenues, approximately 600 cfs is generated to the east and flows to Cotton Lane as sheetflow. At Glendale Avenue, a peak of 600 cfs concentrates at Cotton Lane from the west.

The cross sections within the HEC-2 model of the White Tanks/Agua Fria ADMS, along Cotton Lane from Glendale Avenue north to Northern Avenue, extend from 80-feet west to 700-feet west of the edge of pavement of Cotton Lane. The eastern limit of each cross section is the railroad berm. The full 100-year peak flow intersecting Cotton Lane exceeds the conveyance defined by these cross sections. The eastern edge of each cross section along the project stretch is vertically extended, in the HEC-2 model, between 2 to 4-feet, suggesting considerable breakout flow to the east.

To define an approximate floodplain along the Cotton Lane, a second floodplain profile was computed in the White Tanks/Agua Fria ADMS HEC-2 model. The flow in the second profile was limited so that the vertical extension over the railroad berm, or the eastern edge of the cross section, did not exceed 1.5-feet. This constraint restricted the flow along Cotton Lane between Northern Avenue and Glendale Avenue to 300 cfs, with the assumption that the remainder of the peak flow weirs over the railroad tracks to flow east into Cotton Lane and beyond.

The 300 cfs profile was used to delineate the Zone A floodplain in the 1995 Flood Insurance Rate Map west of Cotton Lane between Northern and Glendale Avenues. All of the houses in the current project site are located within the floodplain's limits. According to the HEC-2 water surface profile and the recent survey data, the water surface elevation (WSEL) exceeds the finished floor elevations (FFE's) of 3 out of the 12 houses. 7 of the 12 houses have an FFE greater but less than 1-foot above the relevant WSEL, and 2 out of the 12 are more than 1-foot above the WSEL.



2.0 Methodology

No new hydrological analysis of the area was performed for this project. Instead, the 100-year peak flow results were obtained from the White Tanks/Agua Fria ADMS HEC-1 model.

To analyze the effect of the removal of the railroad tracks on the 100-year floodplain delineation, along Cotton Lane from Glendale Avenue to Northern Avenue, new survey data was collected. Cross sections of Cotton Lane were surveyed at approximately 100-foot intervals from Glendale Avenue to Northern Avenue. The cross sections extend from the ridge east of Cotton Lane to 100-feet west of the edge of pavement, describing the shallow ditches on either sides of the roadway, the slight berm to the east of the roadway, the railroad berm, and the gravel road west of the roadway. The FFE of each house within the project limits was collected.

To compliment the field survey, photographs of the field site were taken, showing the regrading and erosion of the railroad berm that has occurred since the removal of the railroad tracks.

Because only a small portion of the 100-year peak flow can be conveyed in the "Cotton Lane Wash", no water surface profile modeling was completed for this project. A HEC-RAS model would simply show the inability of the "Cotton Lane Wash" to contain even the 300 cfs that was previously used for the Zone A delineation.

3.0 Results

The field survey and site visit to Cotton Lane clarified the inaccuracies of the current FIRM relative to the houses along Cotton Lane. The roadway of Cotton Lane is, on average, three feet below the western railroad berm and two feet below the entrenched area to the west of the berm, or "Cotton Lane Wash". A percentage of the stormwater runoff generated in all storm events previously was conveyed in this elevated trench because it could not escape and flow to the lower roadway and east due to the railroad berm. The berm has been down-cut along much of the project site, still slightly above the lowest point along the gravel road area. At several locations along the project stretch of Cotton Lane, there are wide gaps in the berm, where any flow carried in "Cotton Lane Wash" can escape and flow to the lower Cotton Lane roadway and east. These gaps are as wide as 20-feet wide.

To demonstrate the regrading and significant erosion of the railroad berm, photos of the site have been included as Exhibit 1. The photos are numbered from north, near Northern Avenue, to south, near Glendale Avenue. An explanation of each photo follows.

Photo 1: On Northern Avenue looking south along Cotton Lane. Remnants of railroad tracks are visible.

Photo 2: West of berm, approximately 150-feet south of Northern Avenue looking east to Cotton Lane. Mass wasting of berm is visible.

Photo 3: Along western shoulder of Cotton Lane, approximately 200-feet south of Northern Avenue, looking west. Mass wasting of berm is visible.

Photo 4: Along western shoulder of Cotton Lane, looking west, approximately 400-feet south of Northern Avenue. Although all of berm has not eroded, mass wasting is evident.

Photo 5-7: Large gap in the railroad berm, approximately 1300 feet south of Northern Avenue. Photo 5: looking northwest along the shoulder of Cotton Lane; Photo 6: looking northeast, west of railroad berm; Photo 7: looking west, on Cotton Lane.

Photo 8: On Cotton Lane looking west toward Orangewood Avenue. Mass wasting is visible.

Photo 9: West of Cotton Lane, looking south to Orangewood Avenue. Again, mass wasting is visible.

Photo 10-11: Driveway, approximately 230 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm. Photo 10: on eastern shoulder of Cotton Lane, just south of Orangewood Avenue, looking northwest; Photo 11: on eastern shoulder looking southwest.

Photo 12-14: Driveway, approximately 500 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm. Photo 12: on gravel access road looking northeast to driveway; Photo 13: on eastern shoulder of Cotton Lane, looking northwest to driveway; Photo 14: on western shoulder of Cotton Lane looking south to driveway.

Photo 15: On shoulder of Cotton Lane, between Orangewood and Glendale Avenues, looking north. Houses are visible to the west.

Photo 16: On western edge of gravel access road looking north to driveways and lots of houses along Cotton Lane. Lots, houses and driveways are above gravel road.

Photo 17: On gravel access looking north to driveways of houses along Cotton Lane. Driveways and lots are elevated relative to the gravel access road.

Photo 18: North of the Glendale Avenue and Cotton Lane intersection, on east side of gravel access road looking north. Regrading of the berm is evident.

Photo 19: Northwest corner of Glendale and Cotton Lane looking north. Railroad berm is west, slight berm to the east of the road is visible. Erosion of the western berm is evident

The twelve houses along Cotton Lane within the project limits are all above the highest elevation of the railroad berm directly to the east. Table 1, for each house, shows the FFE's versus the height of the railroad berm directly east of the location of the house. Figure 3 shows the locations of the houses.

House #	FFE	Elev of Adjacent Grade	Elev RR Berm	Difference between FFE and Berm
1	1141.8	1140.5	1139.3	2.5
2	1141.1	1138.6	1138.4	2.7
3	1139.5	1139.1	1137.8	1.7
4	1138.4	1137.3	1136.8	1.6
5	1137.4	1136.8	1136.6	0.4
6	1137.6	1137.2	1135.5	2.1
7	1136.1	1135.7	1134.7	1.4
8	1135.2	1134.2	1133.7	1.5
9	1134.7	1133.7	1133.2	1.5
10	1133.9	1133.3	1132.75	1.2
11	1133.6	1131.9	1132.3	1.3
12	1133.0	1131.9	1132.4	0.6

Table 1: FFE of houses along Cotton Lane vs. highest elevation of railroad berm directly across from house. House locations are shown on Figure 3; house numbers correspond to Figure 3.

4.0 Discussion

Currently, the White Tanks/Agua Fria ADMS and the FIRM, completed prior the removal of the railroad tracks, describes the following runoff scenario along Cotton Lane, between Northern Avenue and Glendale Avenue. In the 100-year storm event, a flow of greater than 2000 cfs concentrates at the intersection of Northern Avenue and Cotton Lane, flowing from west on Northern Avenue and from the northwest as sheetflow. This flow splits, and a peak of 1300 cfs flows south along Cotton Lane. A portion of this runoff, 300 cfs in the ADMS, is conveyed within an elevated trench west of the roadway, unable to flow east to the lower roadway and eastern fields due to the maintained, elevated ATSF railroad tracks. The depth of flow of the 300 cfs exceeds the eastern elevation of the trench by an average of 1.5-feet. Additional runoff collects west of Cotton Lane between Northern and Glendale Avenue. All flow beyond the 300 cfs weirs over the railroad to flow east into the roadway of Cotton Lane. The 300 cfs is contained west of the railroad berm and poses a flood hazard to the western properties along Cotton Lane.

The ATSF railroad tracks have been removed; the berm on which they were built is not maintained. In several locations, the berm has been regraded to a lower elevation or has eroded significantly, leaving large lateral gaps. These gaps, at 200 and 1300-feet south of Northern Avenue, and 230 and 500-feet south of Orangewood Avenue, will allow a significant percentage of any ponded flow to breakout from the berm and flow east to the lower roadway and beyond. Consequently, the conveyance possible in "Cotton Lane Wash" is minimal. Stormwater runoff that concentrates at Northern Avenue and Cotton Lane to flow south west of the roadway will be unhindered in its route to the lower eastern slope. Flow that is generated to the west that flows to Cotton Lane as sheetflow can escape the berm. This will not cause significant ponding west of the roadway. It will flow east to the lower roadway through the several large lateral gaps.

Any flow that does pond upstream of the railroad berm will not reach a WSEL that could potentially flood the houses simply because the elevation of the berm in all locations is below the elevation of the houses directly to the west. The FFE's of 10 out of the 12 houses on Cotton Lane within the project site are over 1-foot above the highest point of the railroad berm directly across from them. Stormwater will weir over the berm before posing a flood risk to the houses.

The two houses that are less than 1-foot above the railroad berm directly to the east are House 5 and House 12 (see Figure 3 for house location). House 5 is 0.4-feet above the corresponding railroad berm elevation. 200-feet north of house 5, the berm elevation goes to 0.6 feet below its FFE. House 12 is the most southern property within the project boundaries. Its FFE is 0.6 feet above the highest elevation of the berm directly to the east. It is downstream of the all four of the breakout points along the project site. It is unlikely that either of these properties will flood due to ponding upstream of the railroad berm.

5.0 Conclusion and Recommendations

Since the removal of the railroad tracks, the ponding ability of the "Cotton Lane Wash" has decreased. The railroad berm has been degraded due to regrading and erosion. Stormwater runoff can break out from the railroad berm at several locations.

It is recommended that this area be removed from the Zone A floodplain delineation. Pondered water upstream of the ATSF railroad tracks will not interfere with the properties on Cotton Lane between Northern and Glendale Avenues. If removal from Zone A of stretch west of Cotton Lane is not possible, it is recommended that the houses along Cotton Lane from Northern Avenue south to Glendale Avenue be removed from the Zone A classification. These houses are not at risk of flooding because of the "Cotton Lane Wash" and the now eroding and regraded railroad berm.

6.0 References

The WLB Group, 1991, White Tanks/Agua Fria, Area Master Drainage Study, completed for the Flood Control District of Maricopa County, HEC-1 and HEC-2 models included.

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, 1995, Flood Insurance Rate Map, Maricopa County, Arizona and Incorporated Areas, Community -Panel Number 04013C1595 F.

Exhibit 1: Photographs of Project Site: Cotton Lane, Northern Avenue to Glendale Avenue.



Photo 1: On Northern Avenue looking south along Cotton Lane. Remnants of railroad tracks are visible.



Photo 2: West of berm, approximately 150-feet south of Northern Avenue looking east to Cotton Lane. Mass wasting of berm is visible.



Photo 3: Along western shoulder of Cotton Lane, approximately 200-feet south of Northern Avenue, looking west. Mass wasting of berm is visible.



Photo 4: Along western shoulder of Cotton Lane, looking west, approximately 400-feet south of Northern Avenue. Although all of berm has not eroded, mass wasting is evident.



Photo 5: Large gap in the railroad berm, approximately 1300 feet south of Northern Avenue, looking northwest along the shoulder of Cotton Lane



Photo 6: Large gap in the railroad berm, approximately 1300 feet south of Northern Avenue, looking northeast, west of railroad berm.



Photo 7: Large gap in the railroad berm, approximately 1300 feet south of Northern Avenue, looking west, on Cotton Lane.



Photo 8: On Cotton Lane looking west toward Orangewood Avenue. Mass wasting is visible.



Photo 9: West of Cotton Lane, looking south to Orangewood Avenue. Again, mass wasting is visible.



Photo 10: Driveway, approximately 230 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm, on eastern shoulder of Cotton Lane, just south of Orangewood Avenue, looking northwest.



Photo 11: Driveway, approximately 230 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm, on eastern shoulder looking southwest.



Photo 12: Driveway, approximately 500 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm, on gravel access road looking northeast to driveway.



Photo 13

Driveway, approximately 500 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm, on eastern shoulder of cotton Lane, looking northwest to driveway.



Photo 14: Driveway, approximately 500 feet south of Orangewood Avenue, leading to gravel access road, that has degraded the railroad berm, on western shoulder of Cotton Lane looking south to driveway.



Photo 15: On shoulder of Cotton Lane, between Orangewood and Glendale Avenues, looking north. Houses are visible to the west.



Photo 16: On western edge of gravel access road looking north to driveways and lots of houses along Cotton Lane. Lots, houses and driveways are above gravel road.



Photo 17: On gravel access looking north to driveways of houses along Cotton Lane. Driveways and lots are elevated relative to the gravel access road.



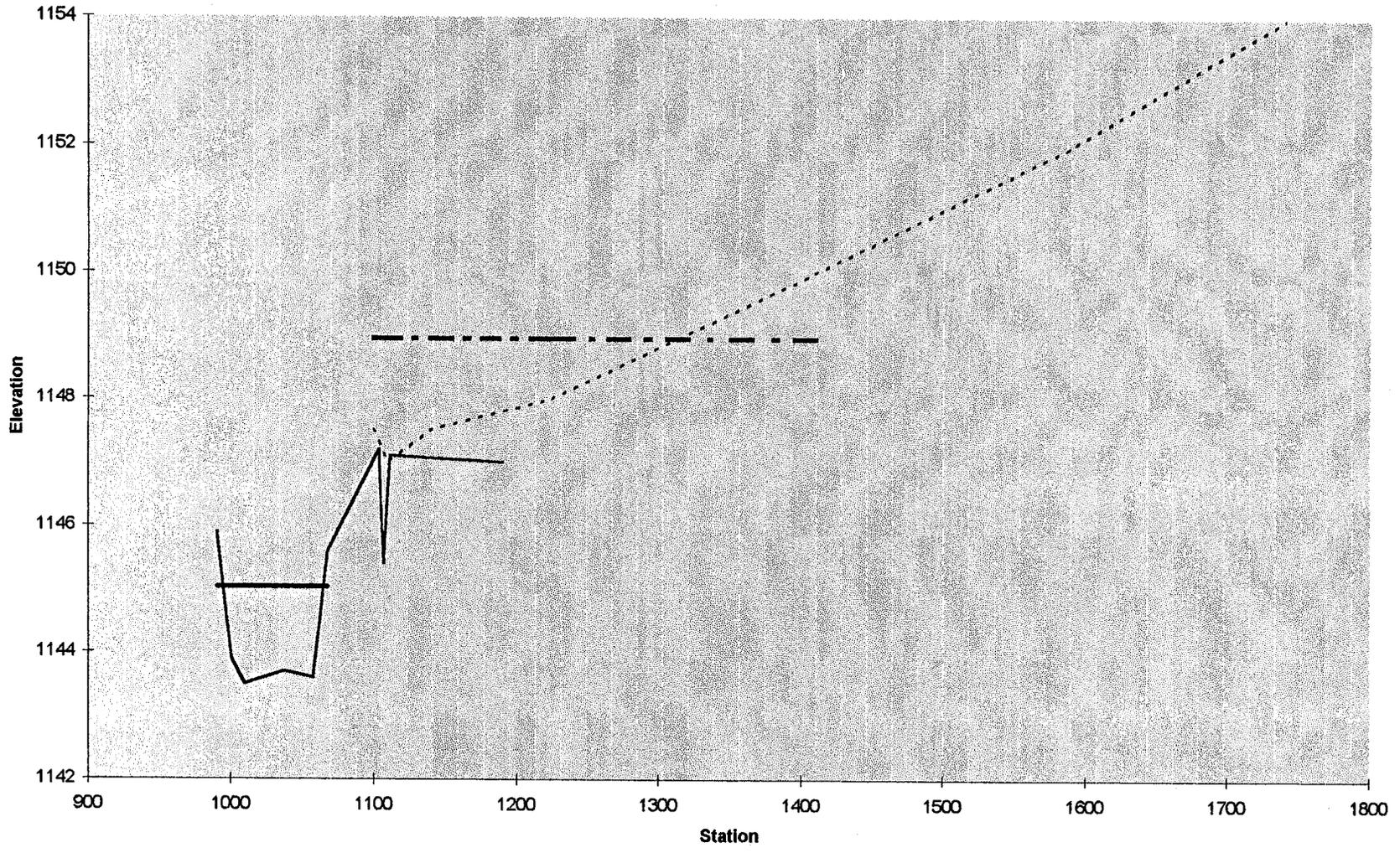
Photo 18: North of the Glendale Avenue and Cotton Lane intersection, on east side of gravel access road looking north. Regrading of the berm is evident.



Photo 19: Northwest corner of Glendale and Cotton Lane looking north. Railroad berm is west, slight berm to the east of the road is visible. Erosion of the western berm is evident.

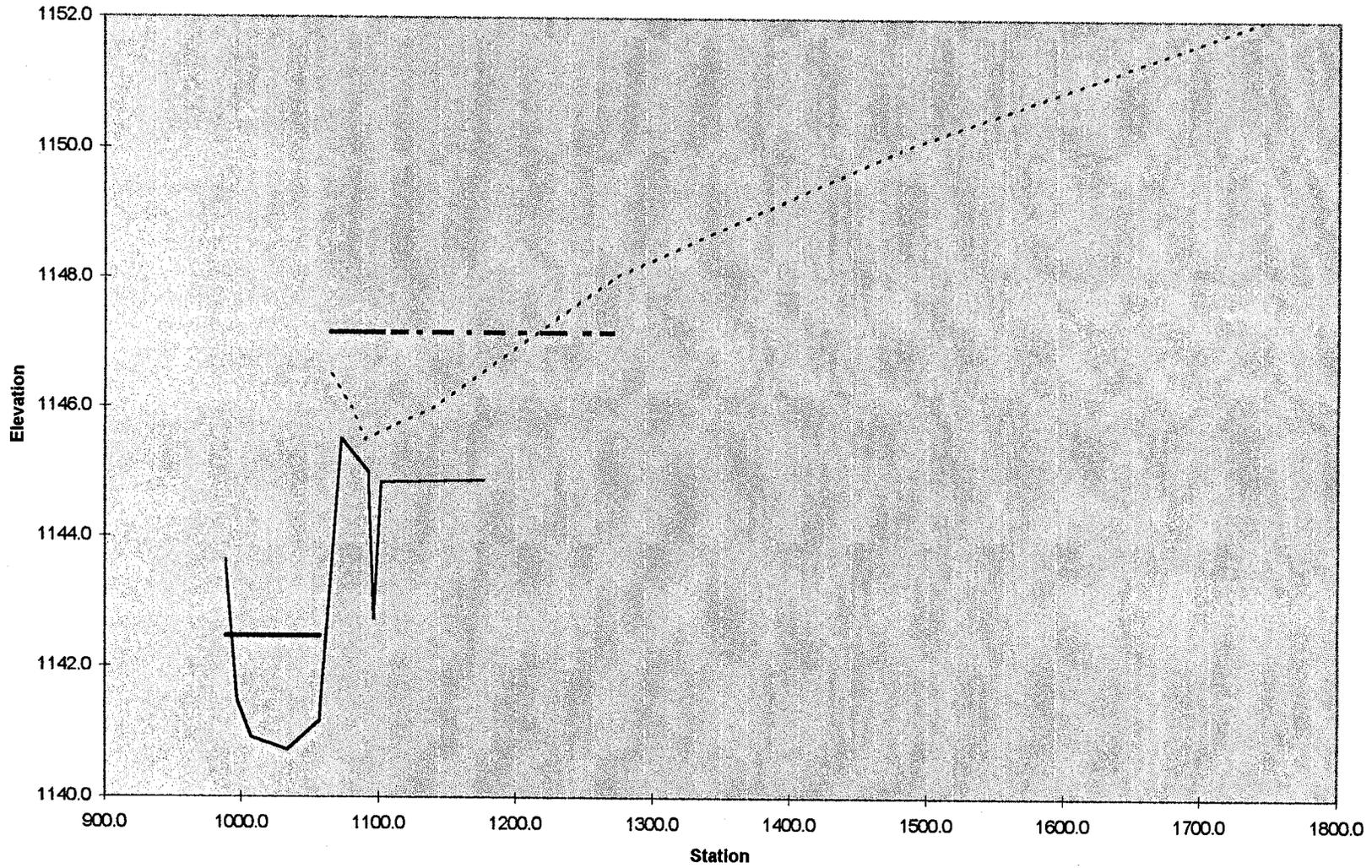
Exhibit 2: White Tank/Agua Fria Area Drainage Master Study
vs. Current Study, Cross Sections of Cotton Lane, Northern
Avenue to Glendale Avenue.

4580 ft North of Glendale



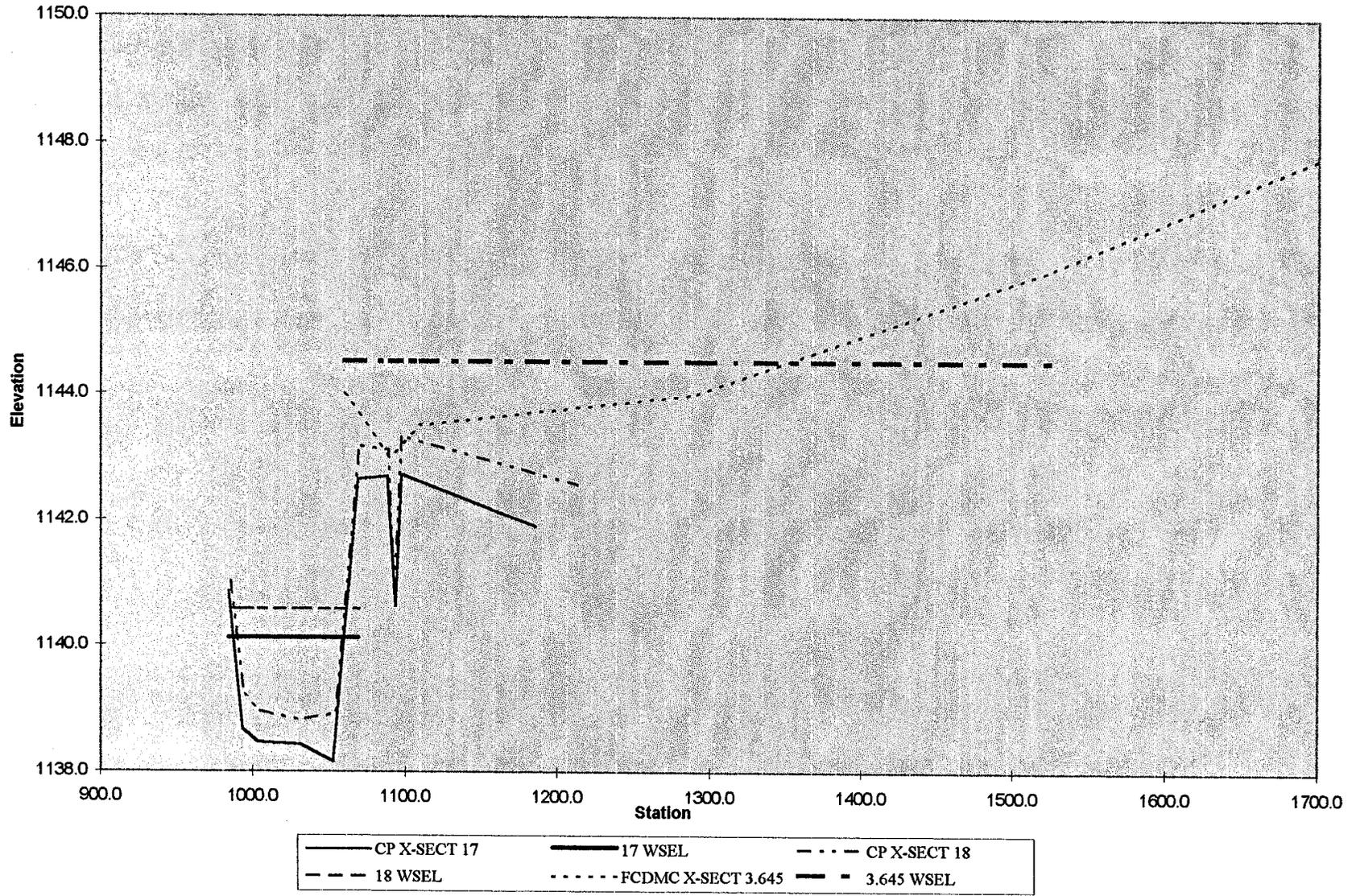
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3960 ft North of Glendale

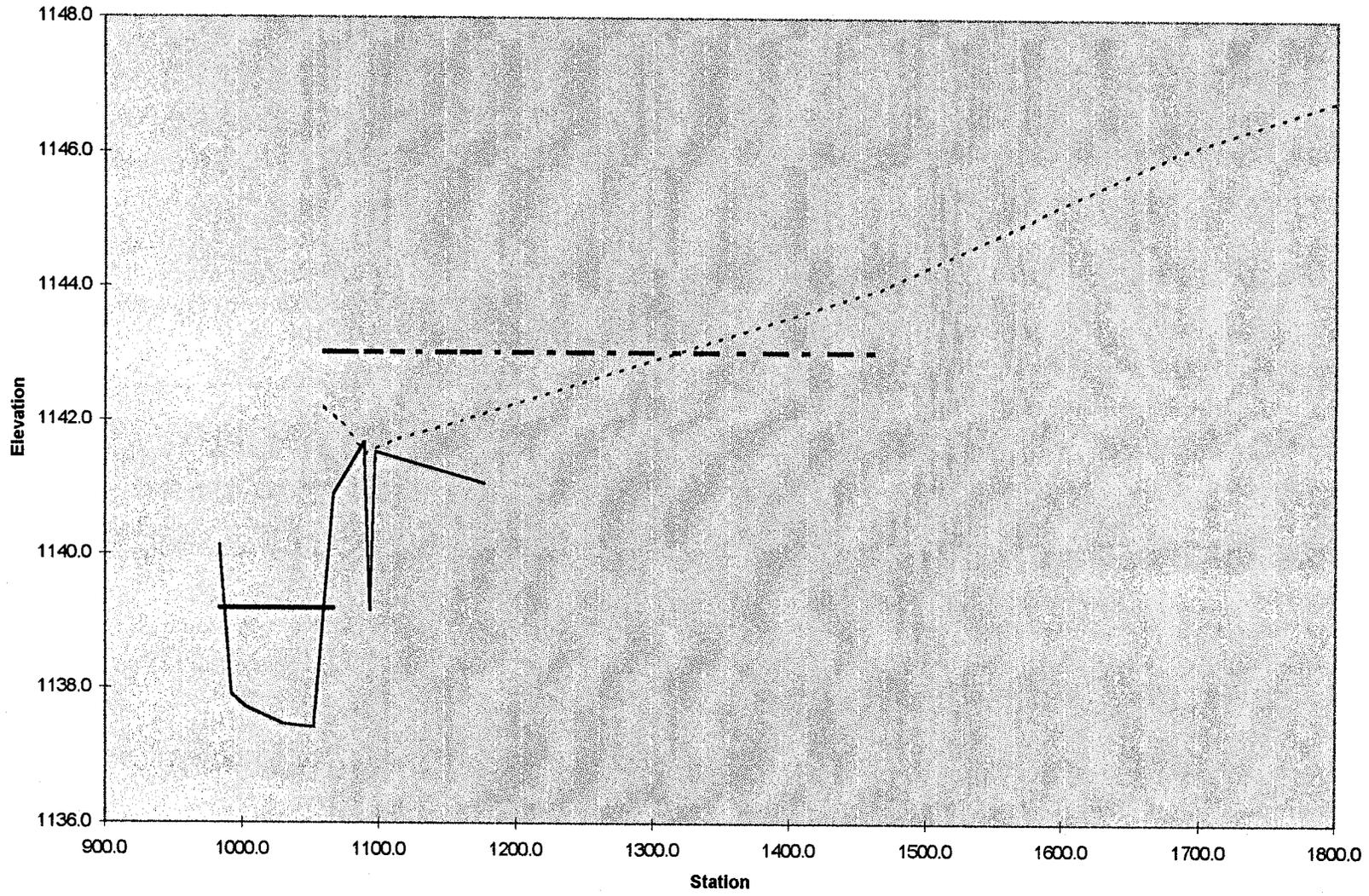


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3300 ft North of Glendale

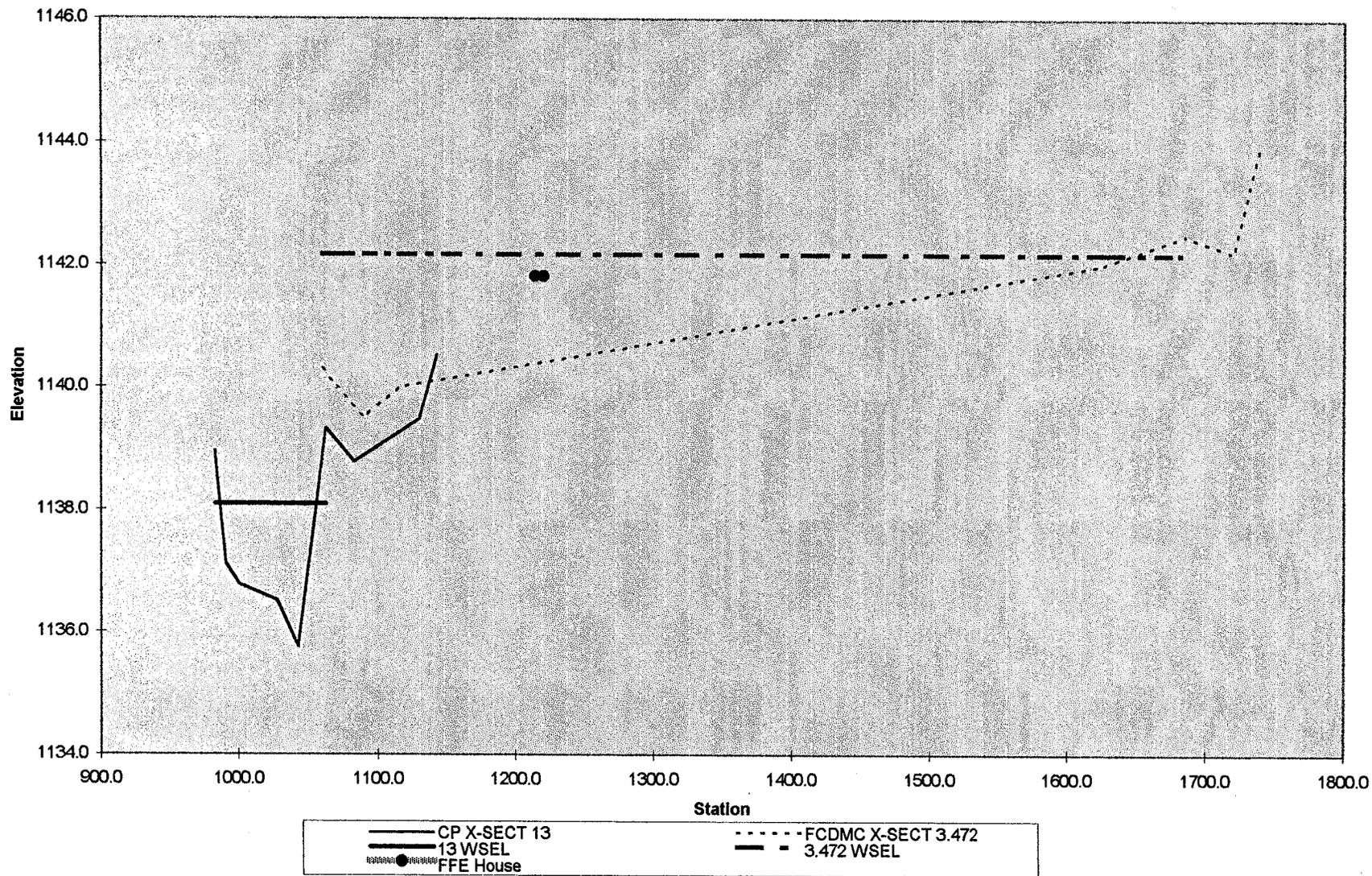


2940 ft North of Glendale

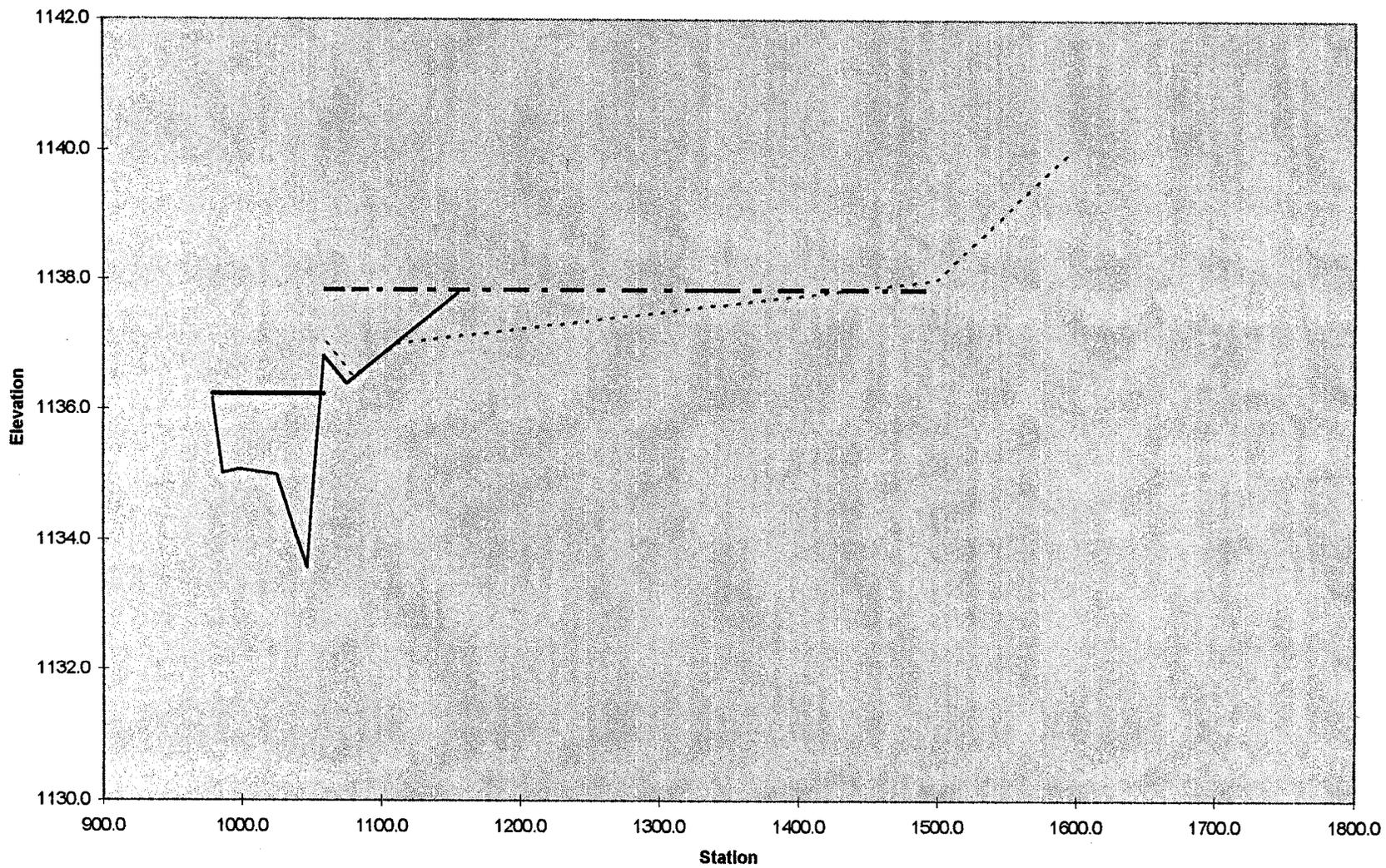


CP X-SECT 15 15 WSEL FCDMC X-SECT 3.526 3.562 WSEL

2450 ft North of Glendale

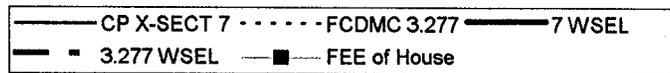
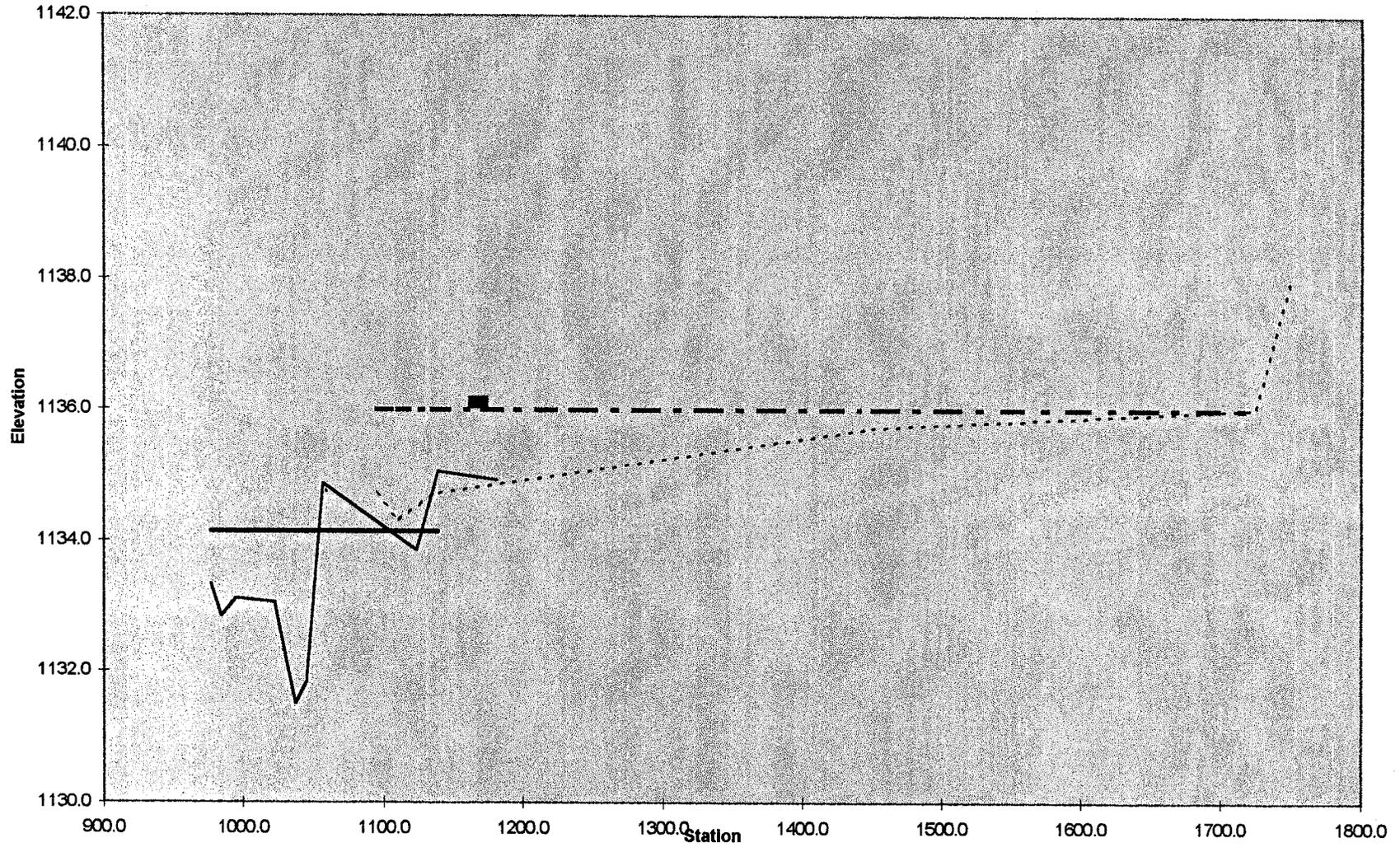


1900 ft North of Glendale

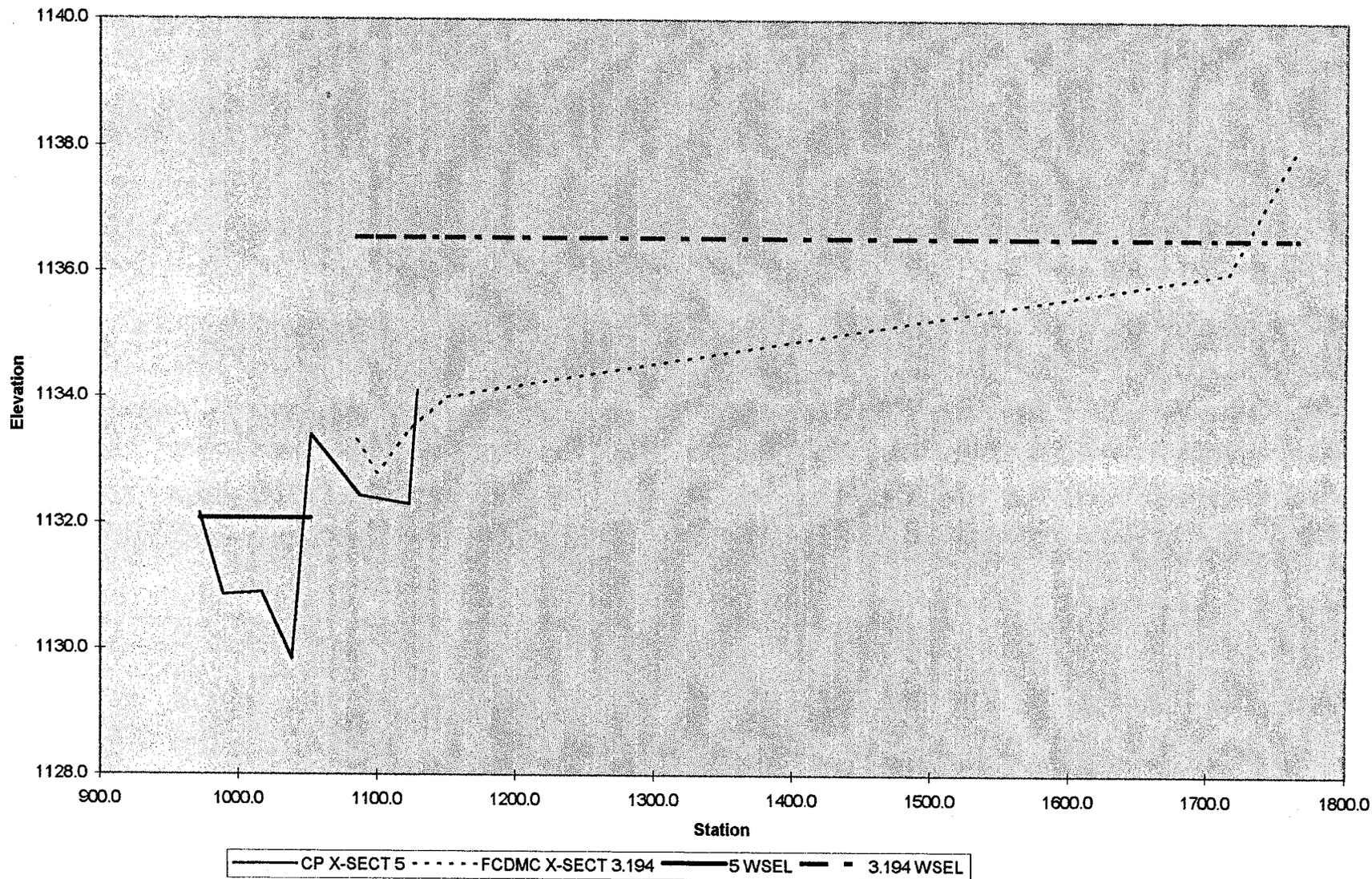


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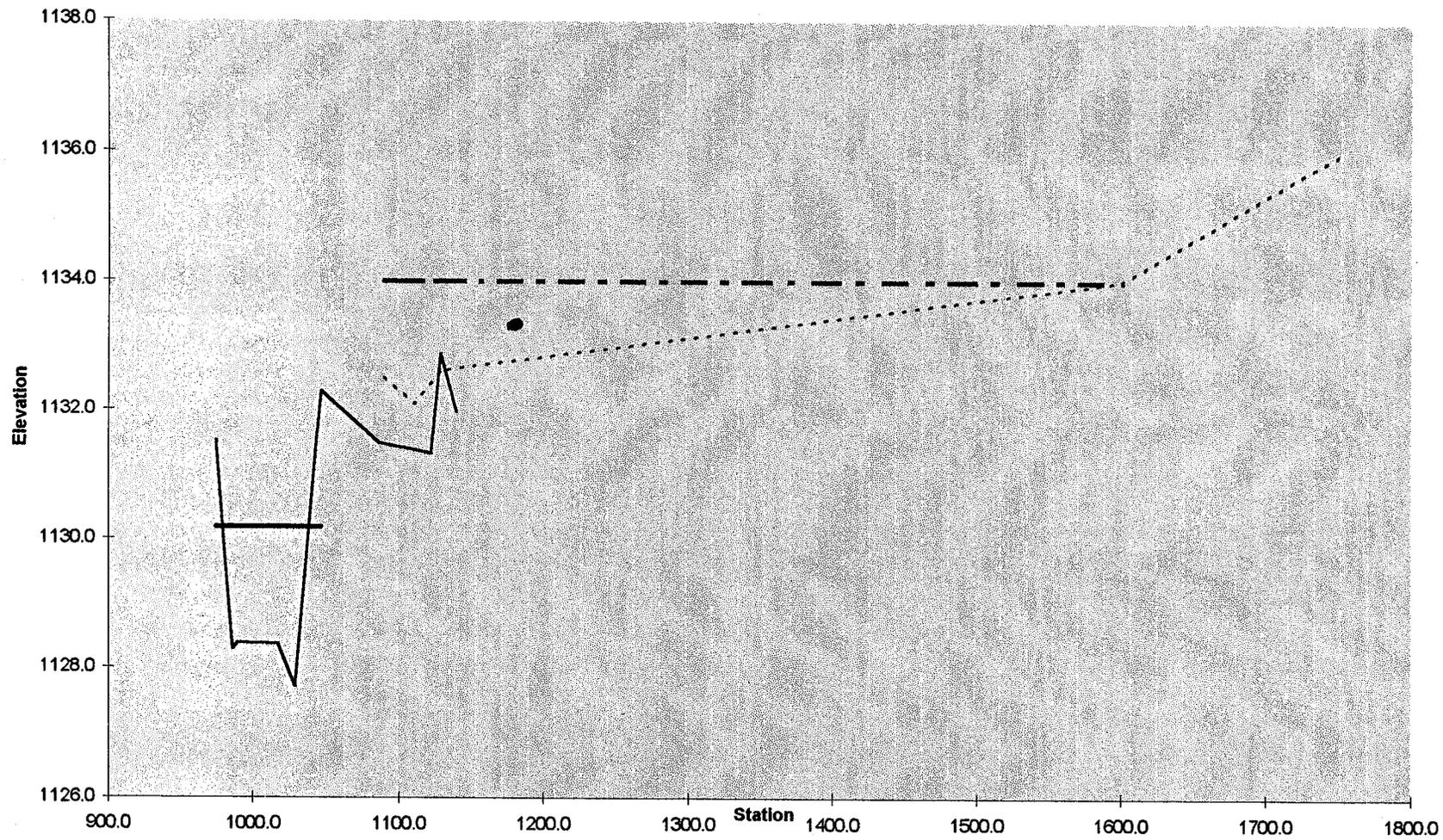
1300 ft North of Glendale



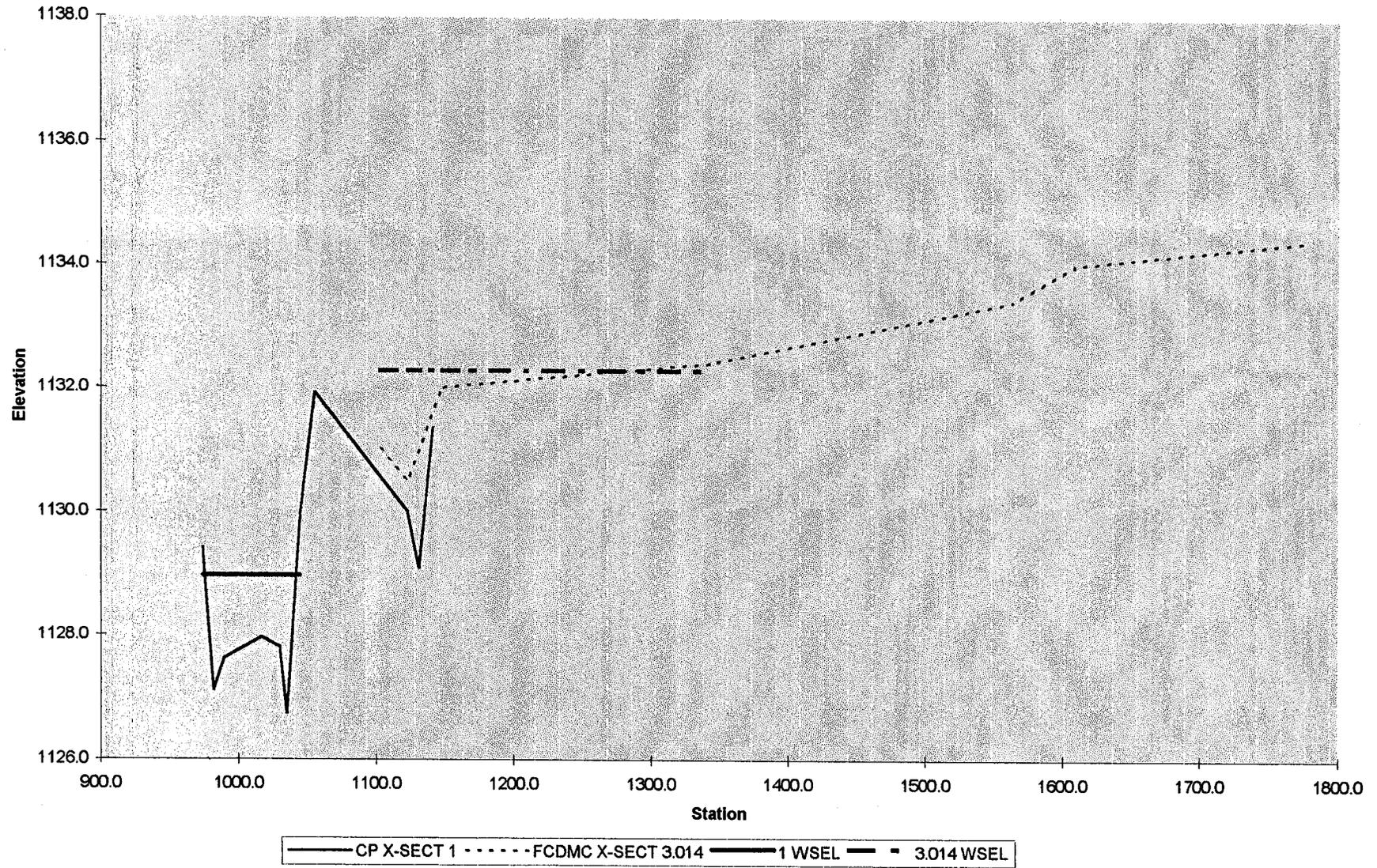
860 ft North of Glendale



400 ft North of Glendale



70 ft North of Glendale Road

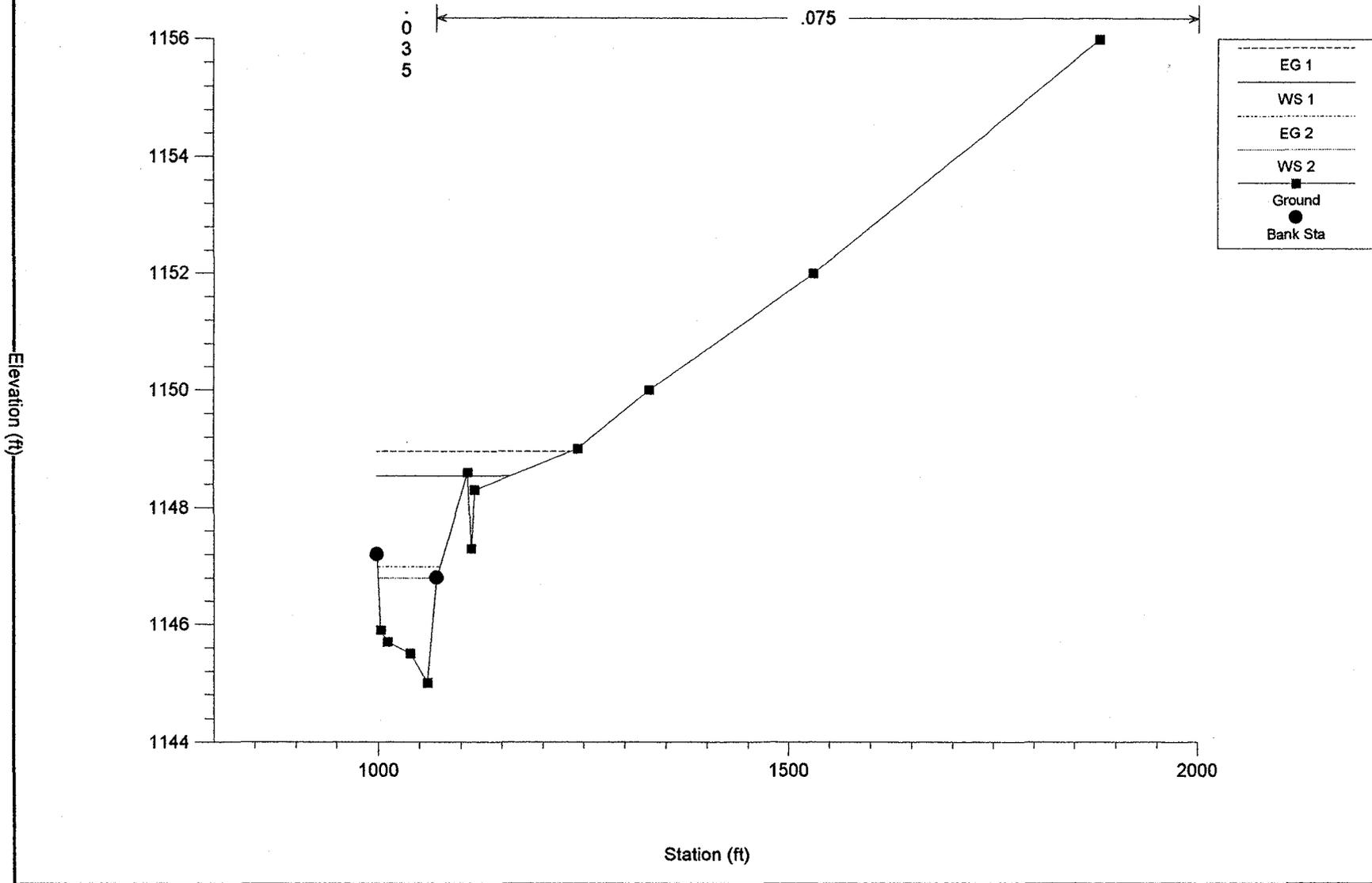


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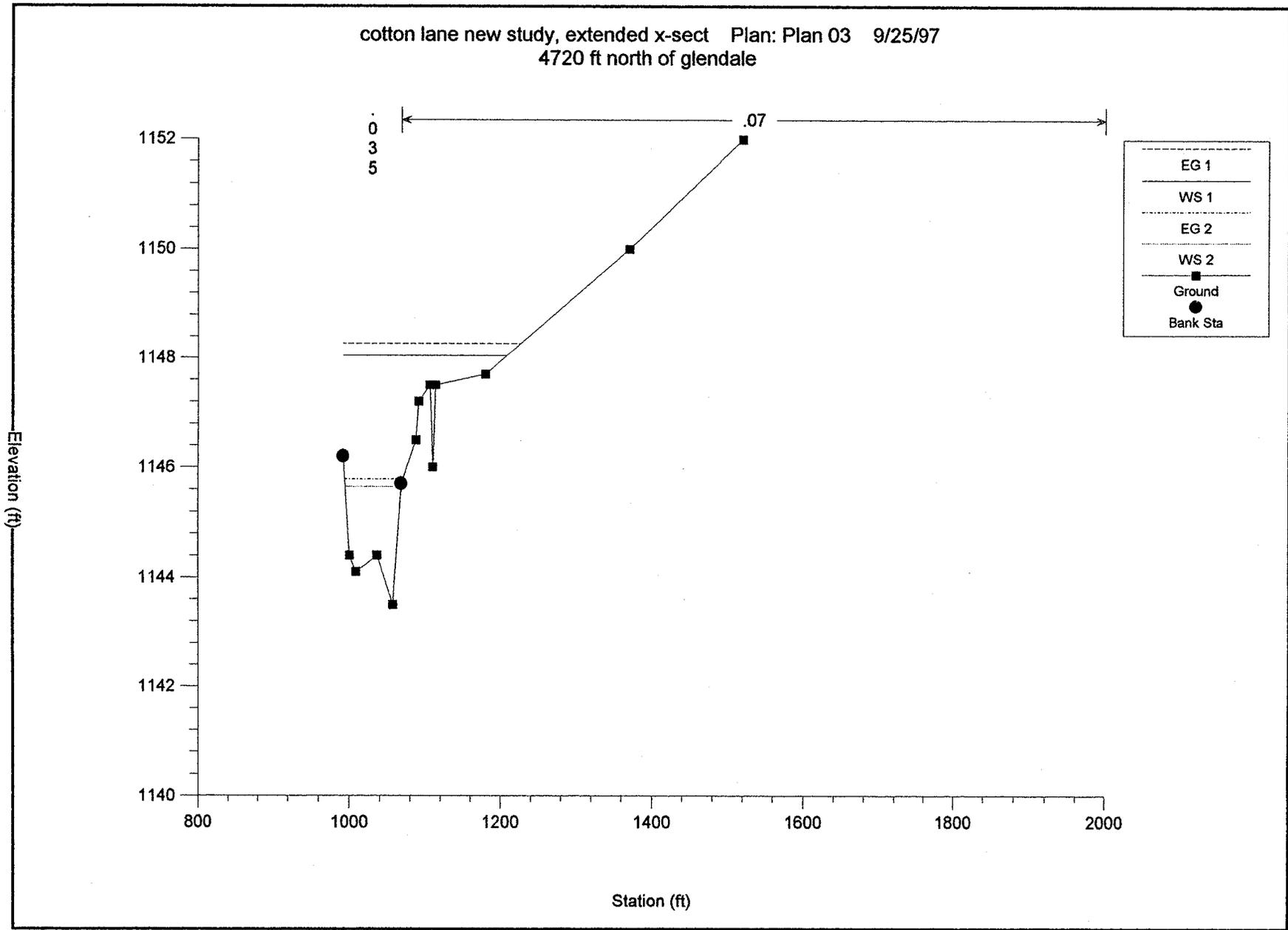
to FEMA

Exhibit 3: Current Study's HEC-2 Cross Sections

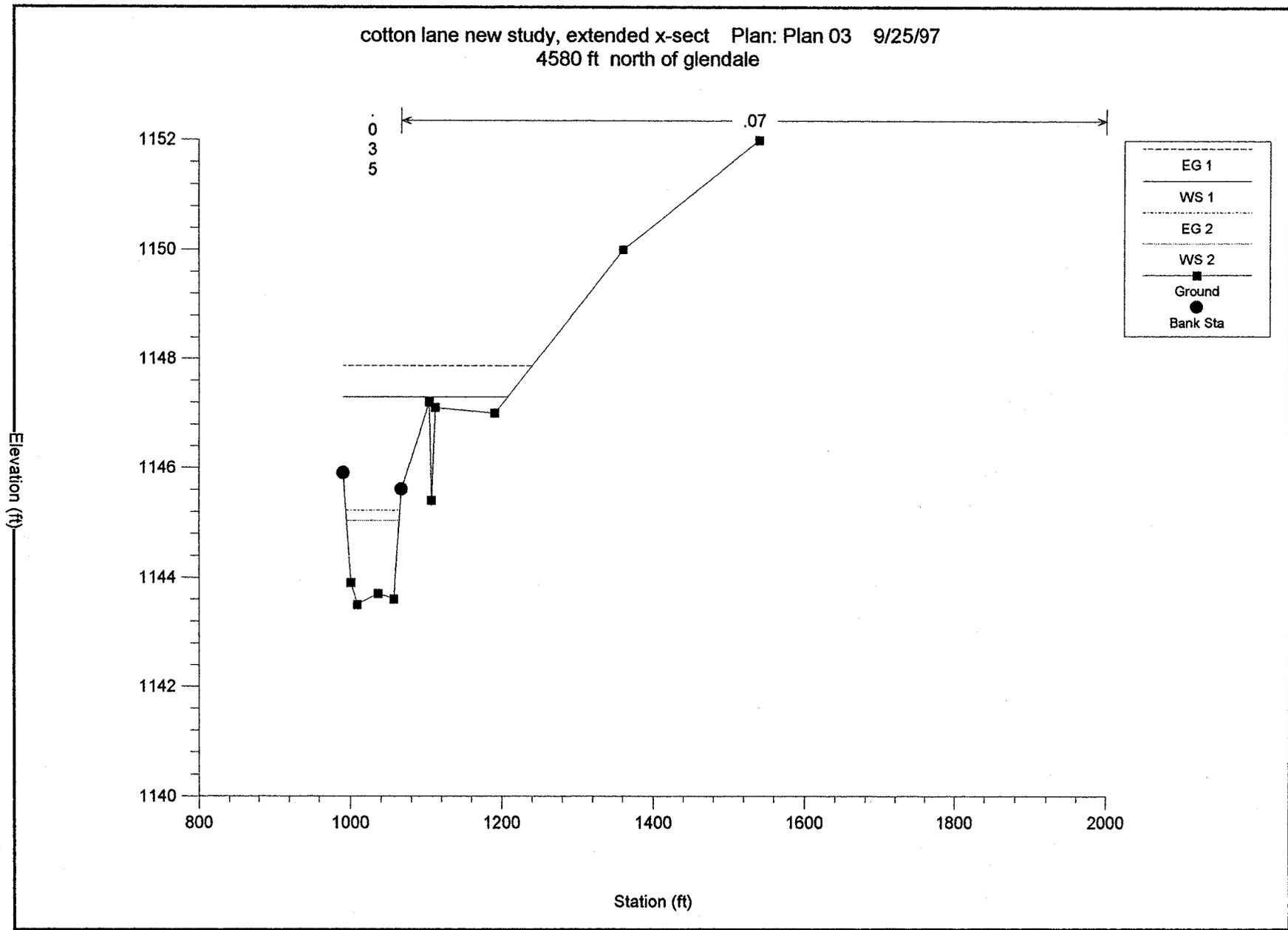
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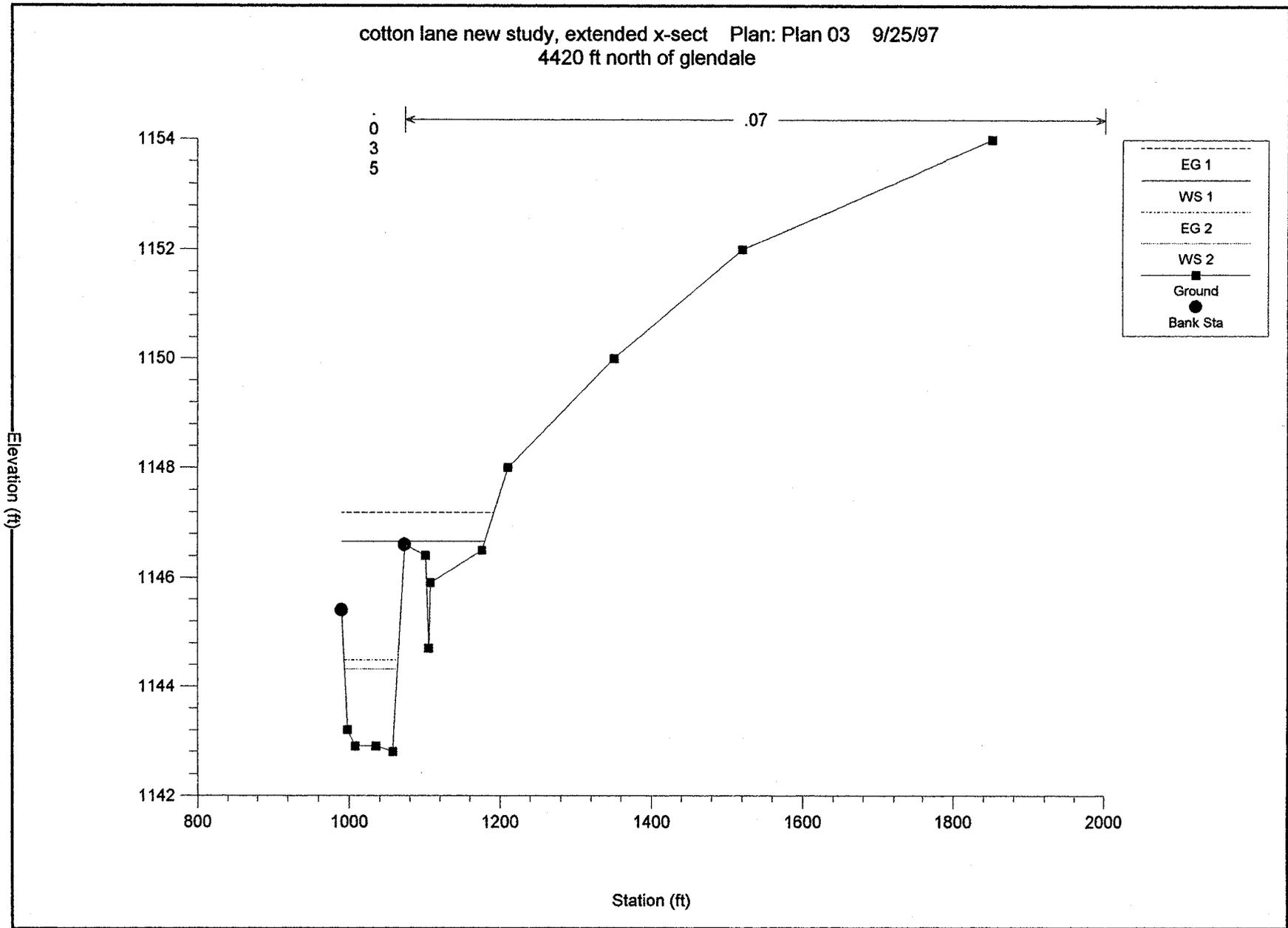
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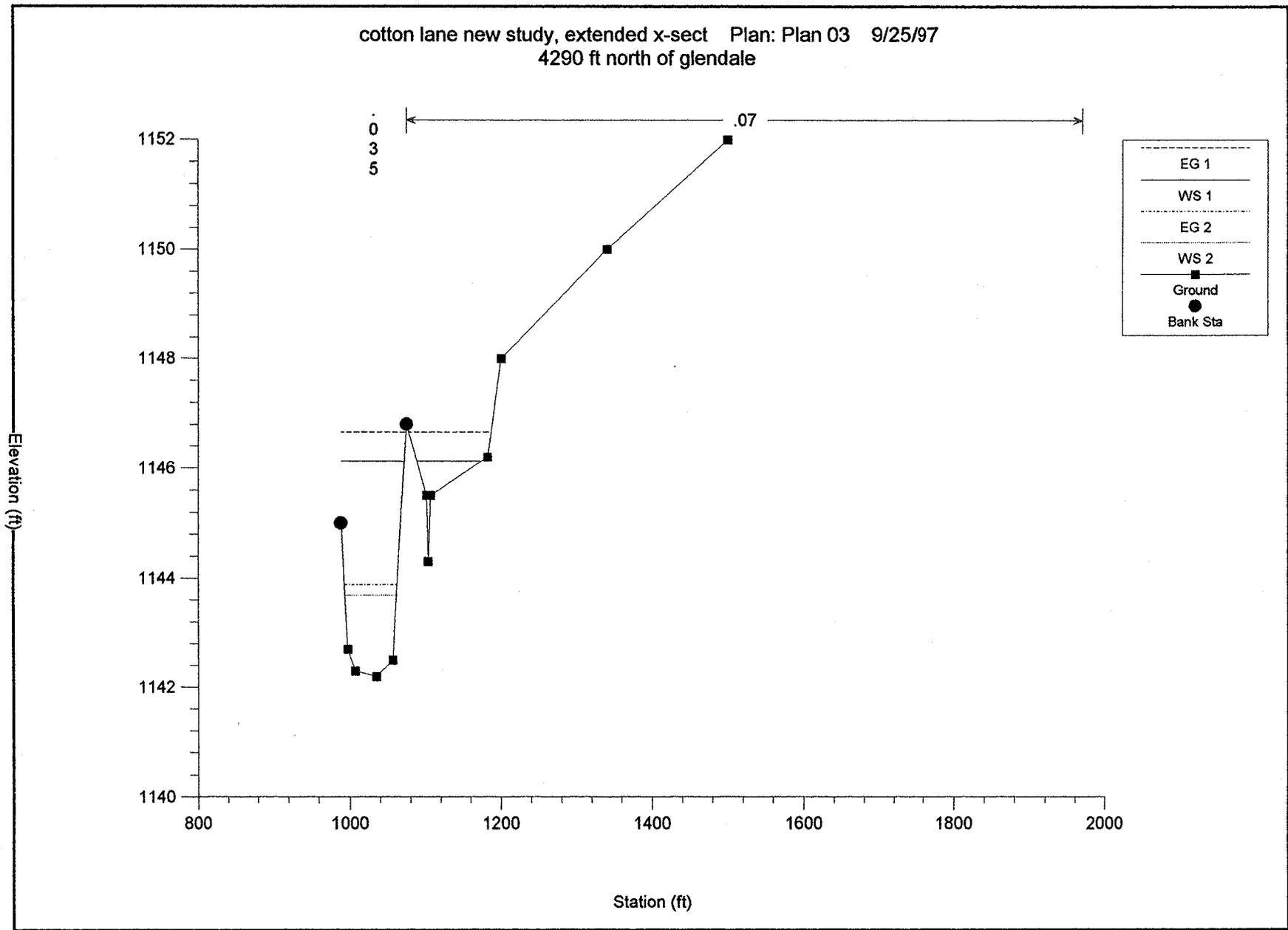
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4580 ft north of glendale



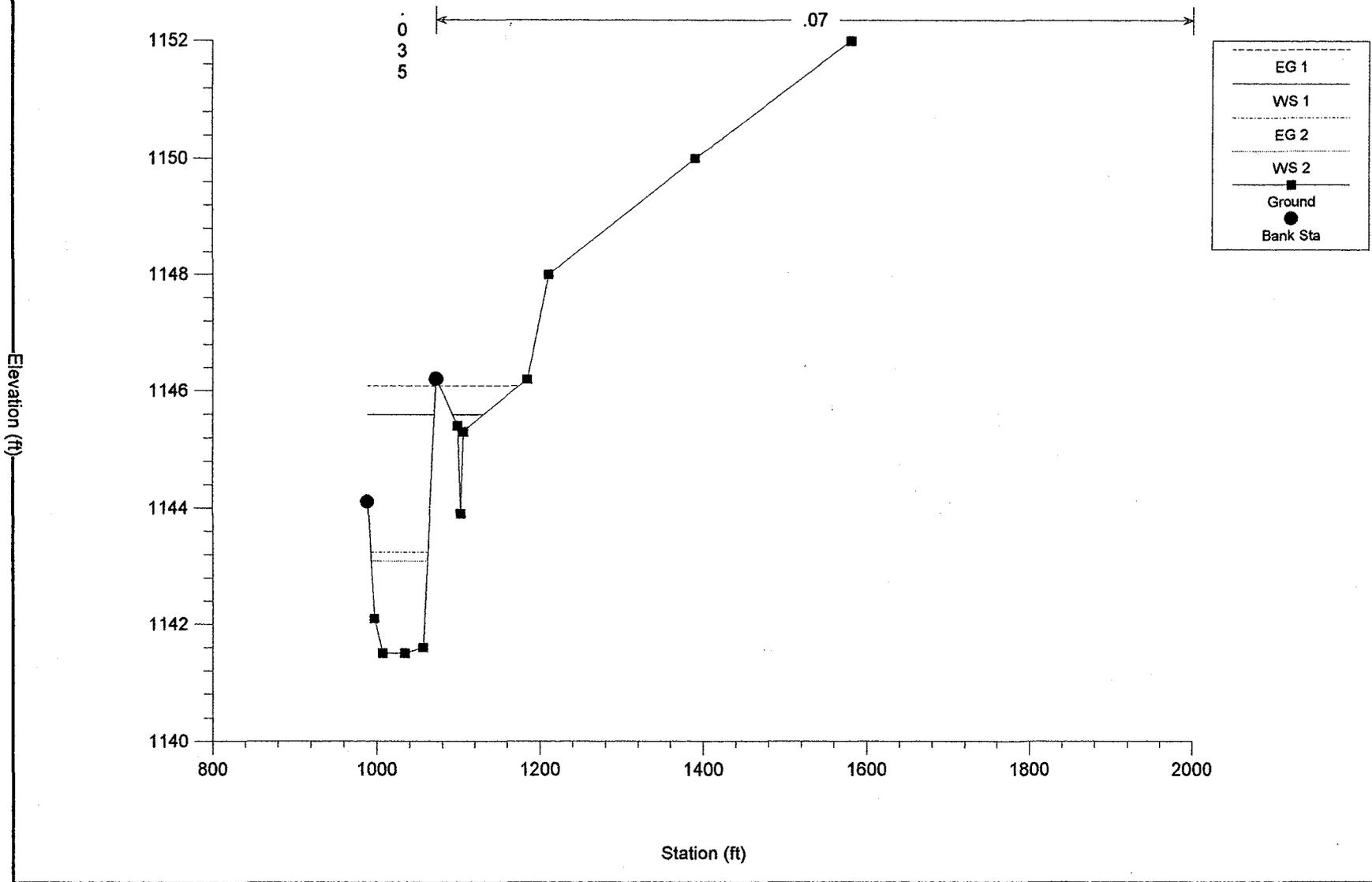
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cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
 4290 ft north of glendale

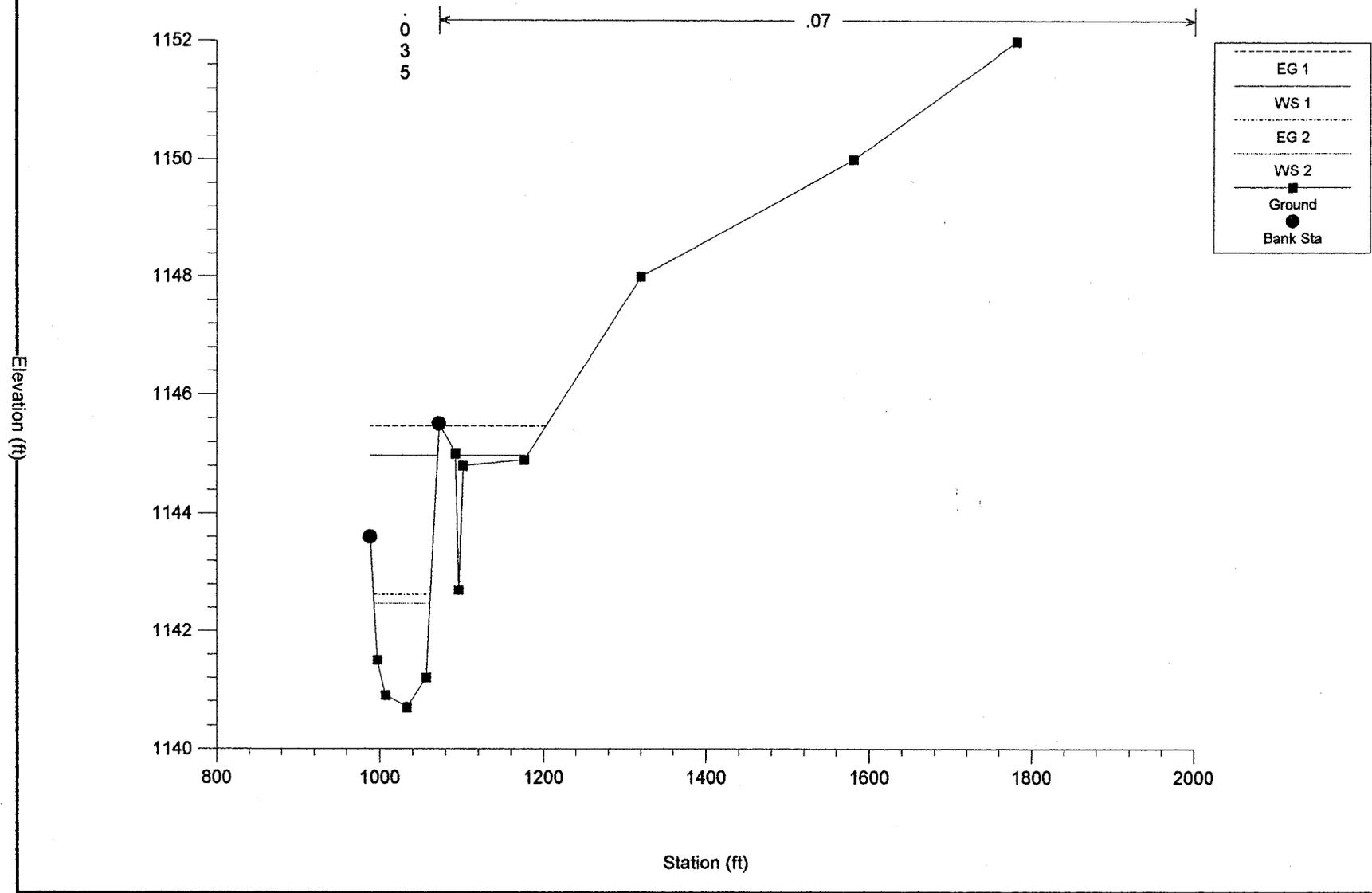


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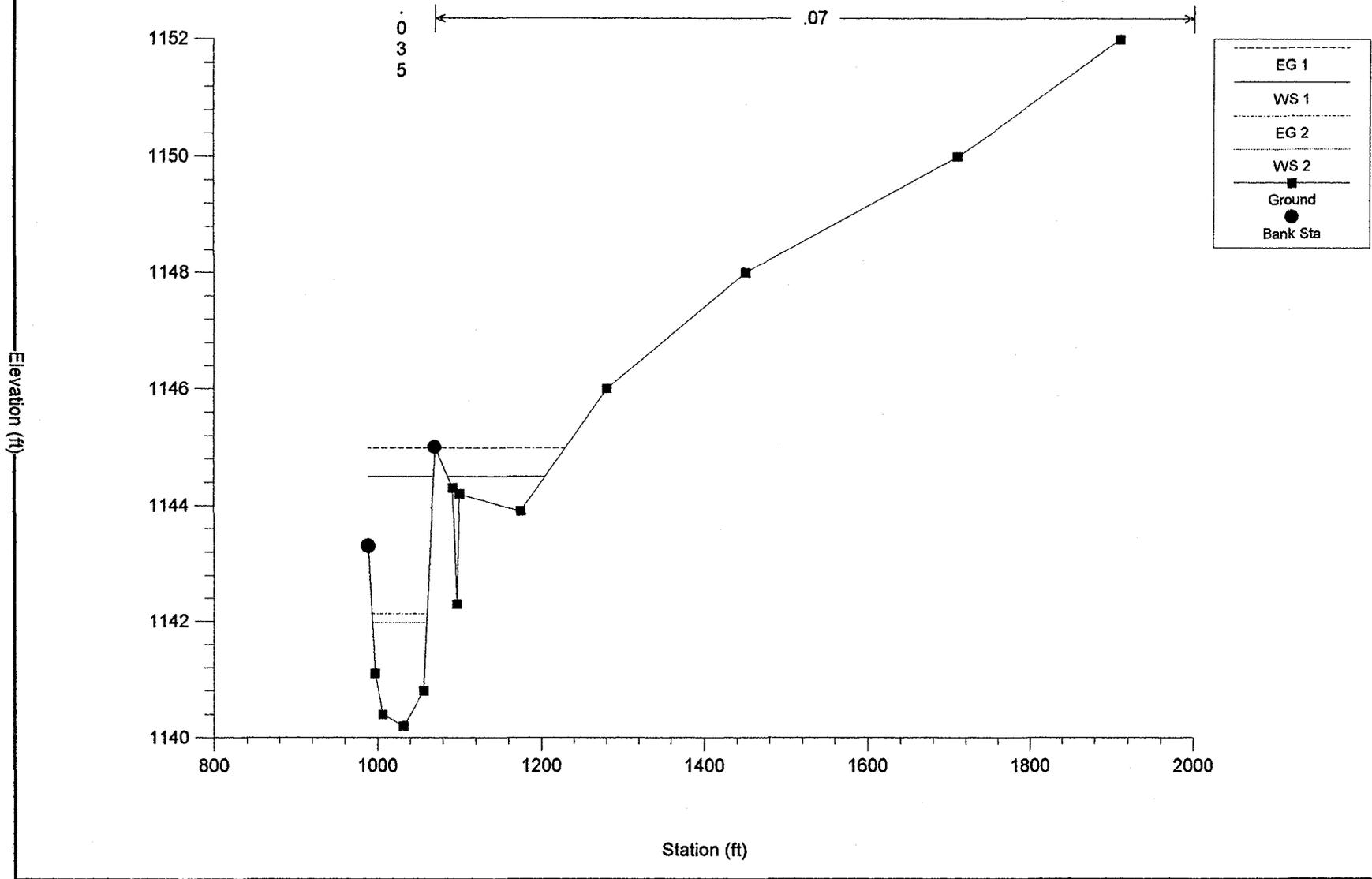


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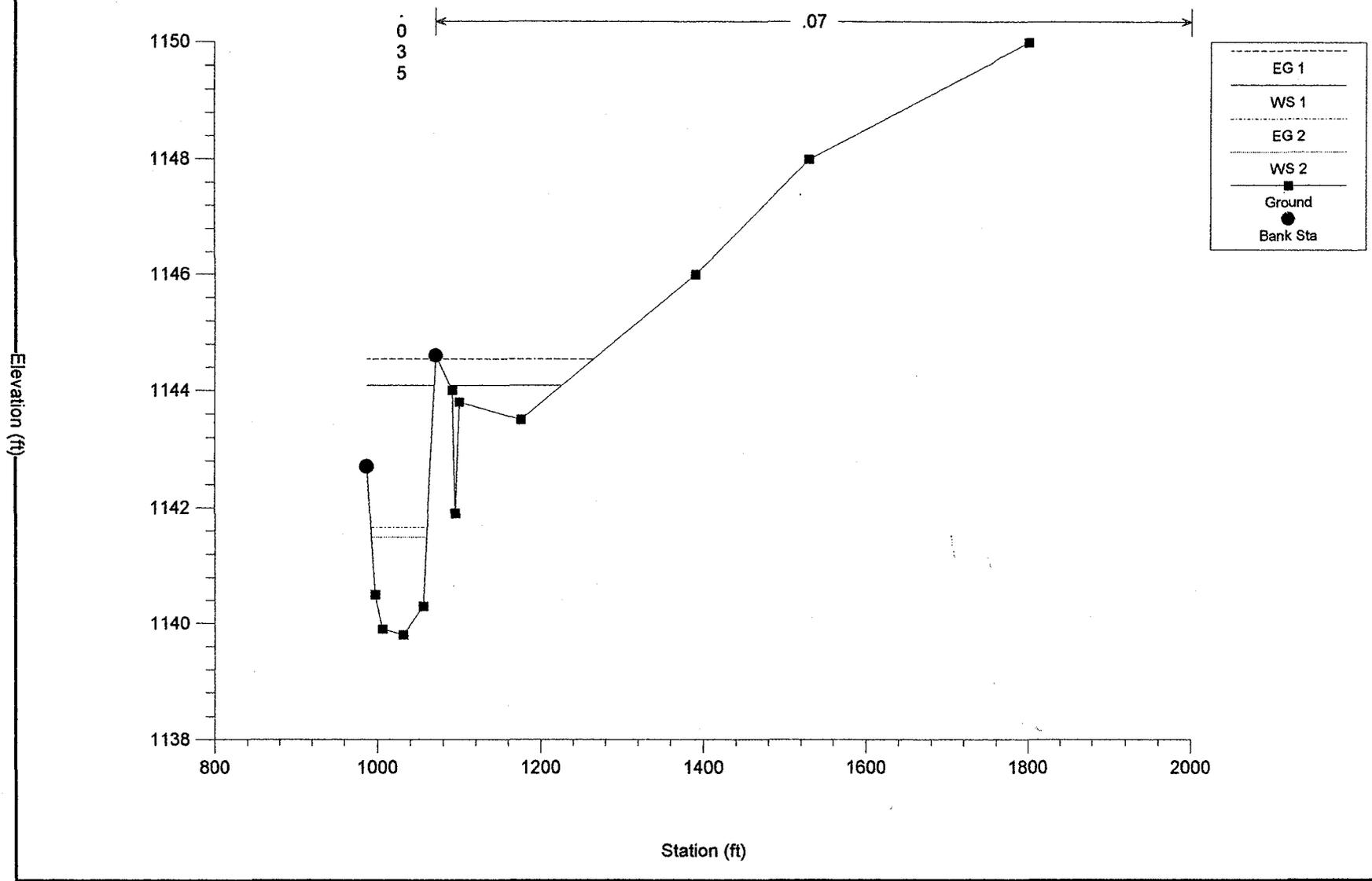
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3960 ft north of glendale



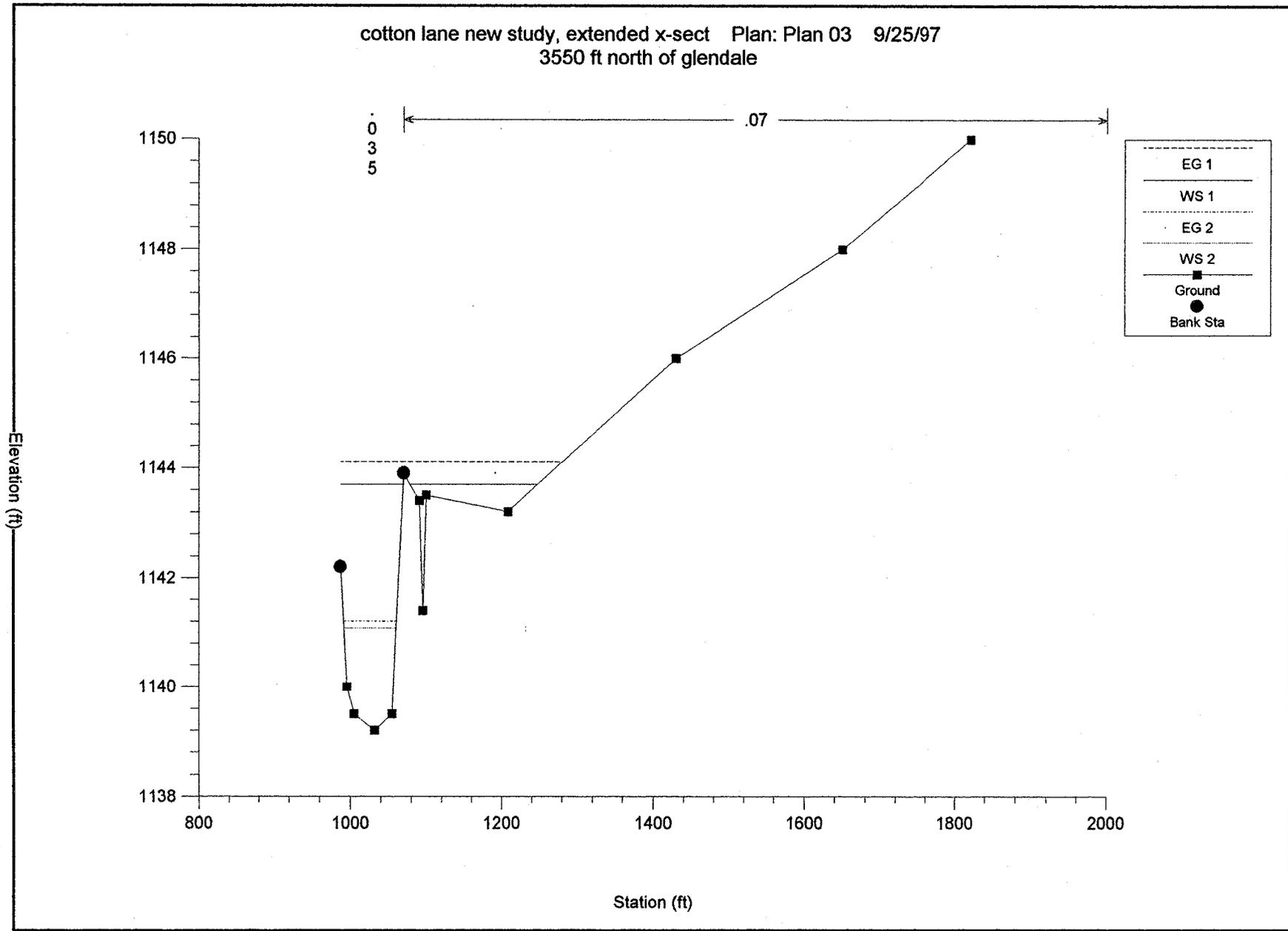
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3820 ft north of glendale



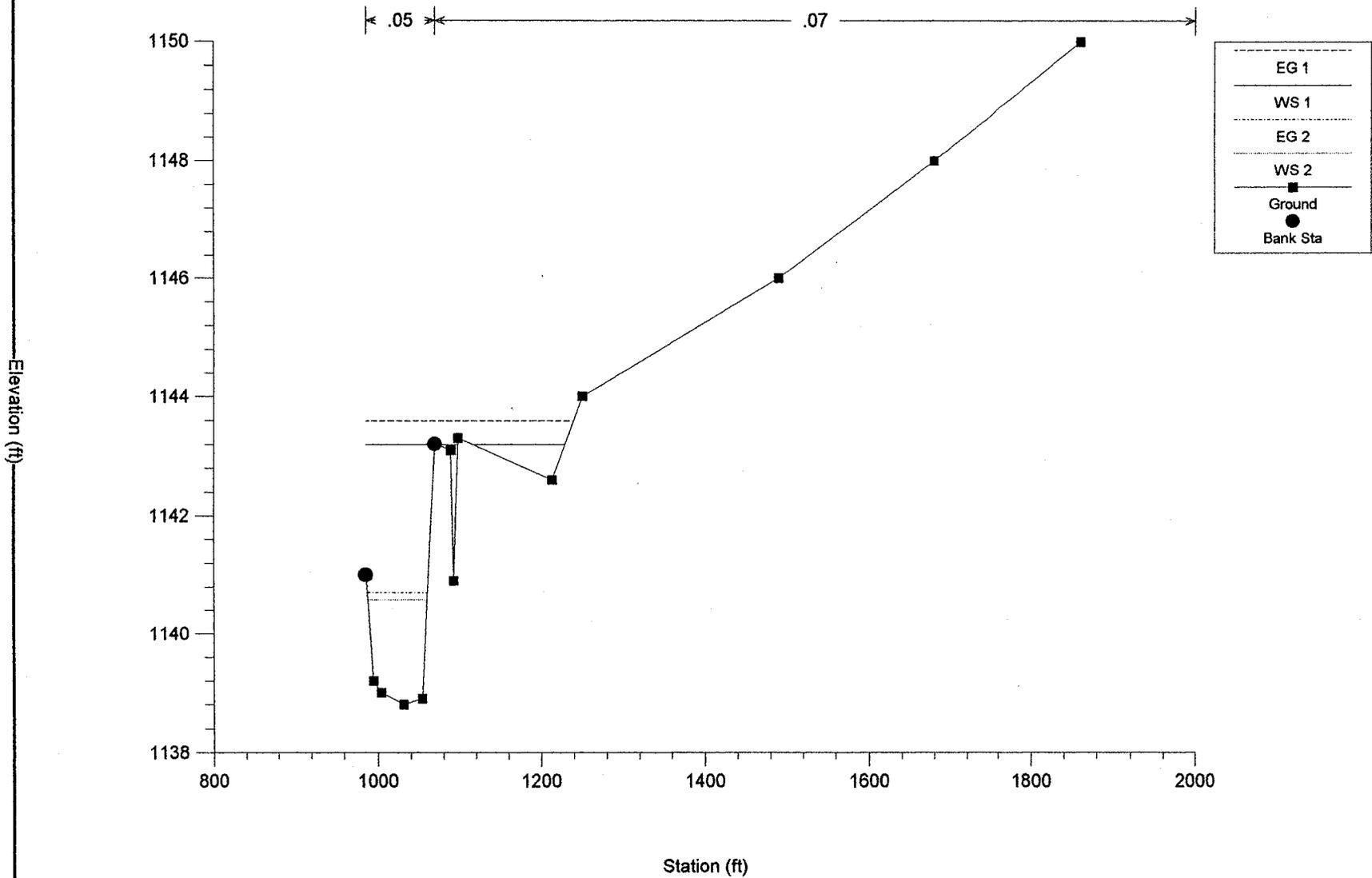
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3690 ft north of glendale



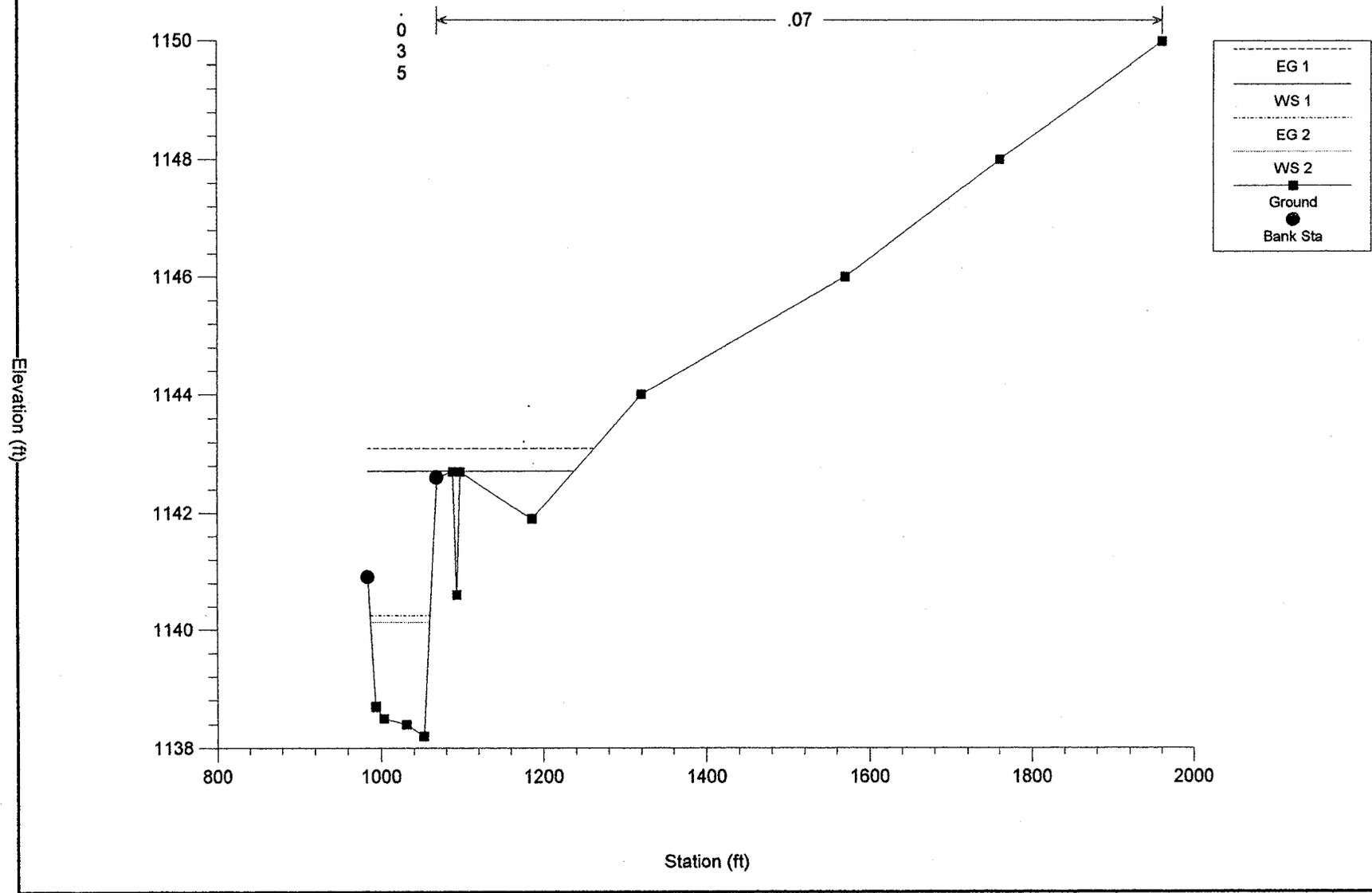
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3550 ft north of glendale



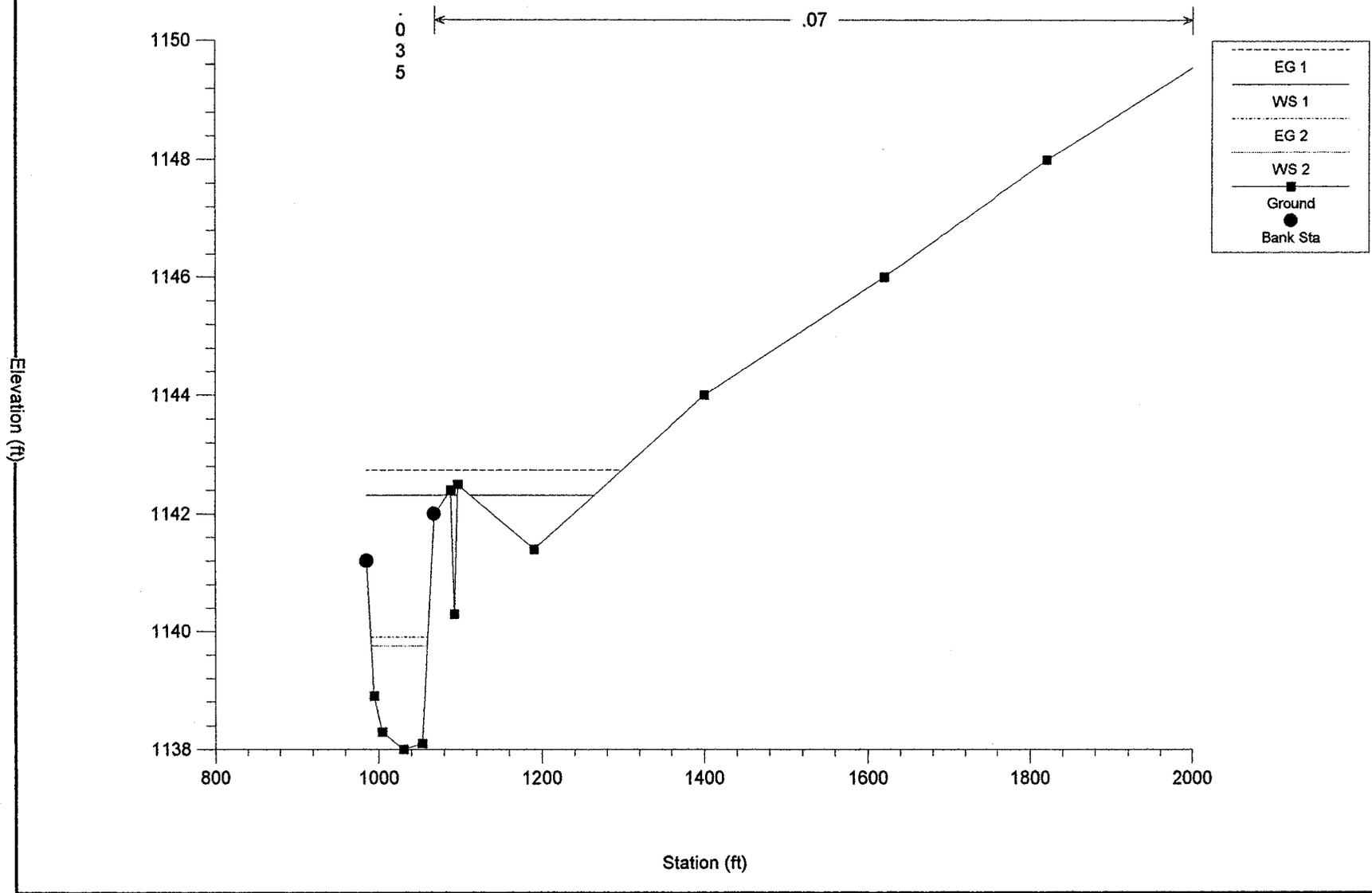
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3410 ft north of glendale



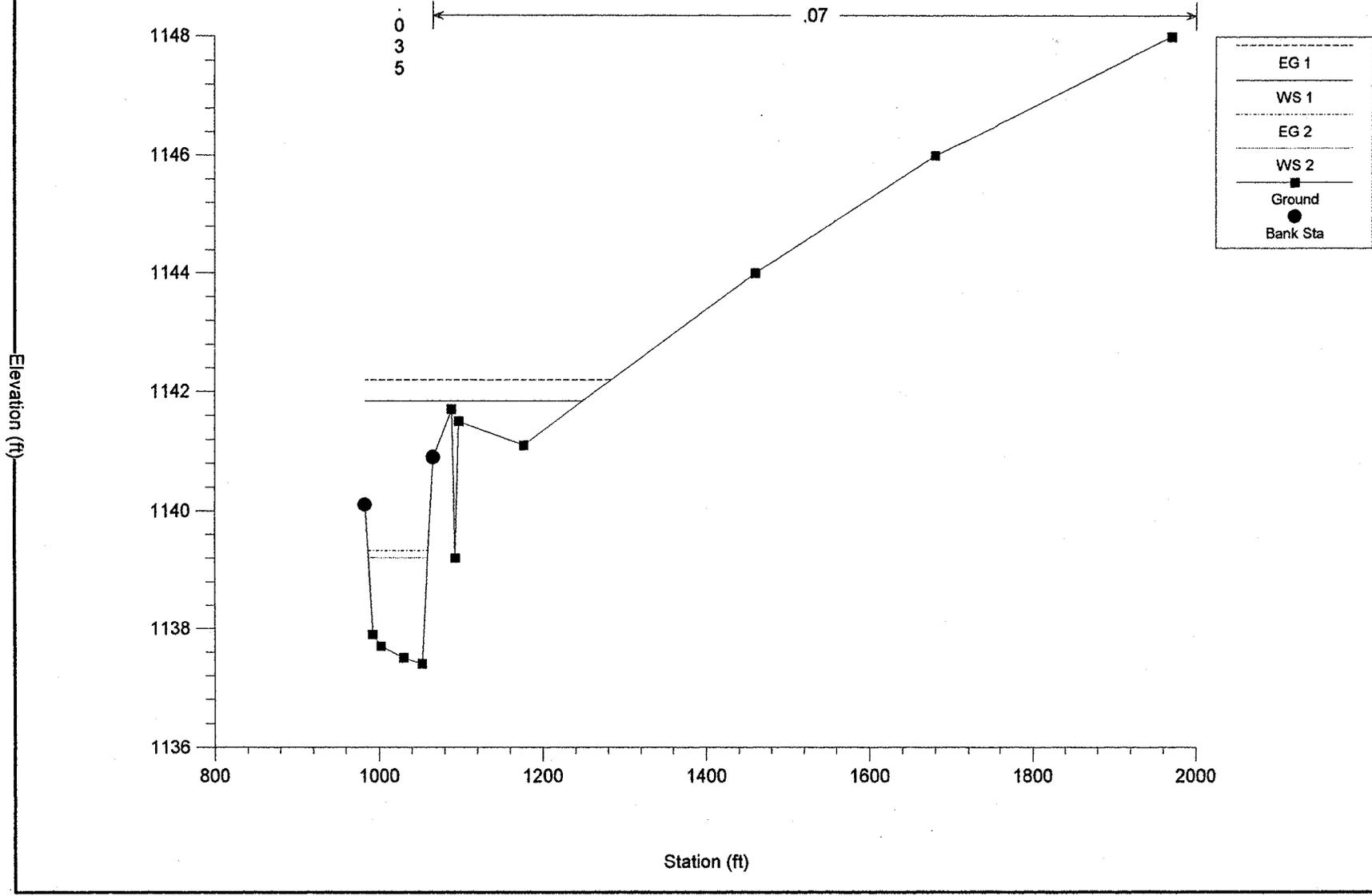
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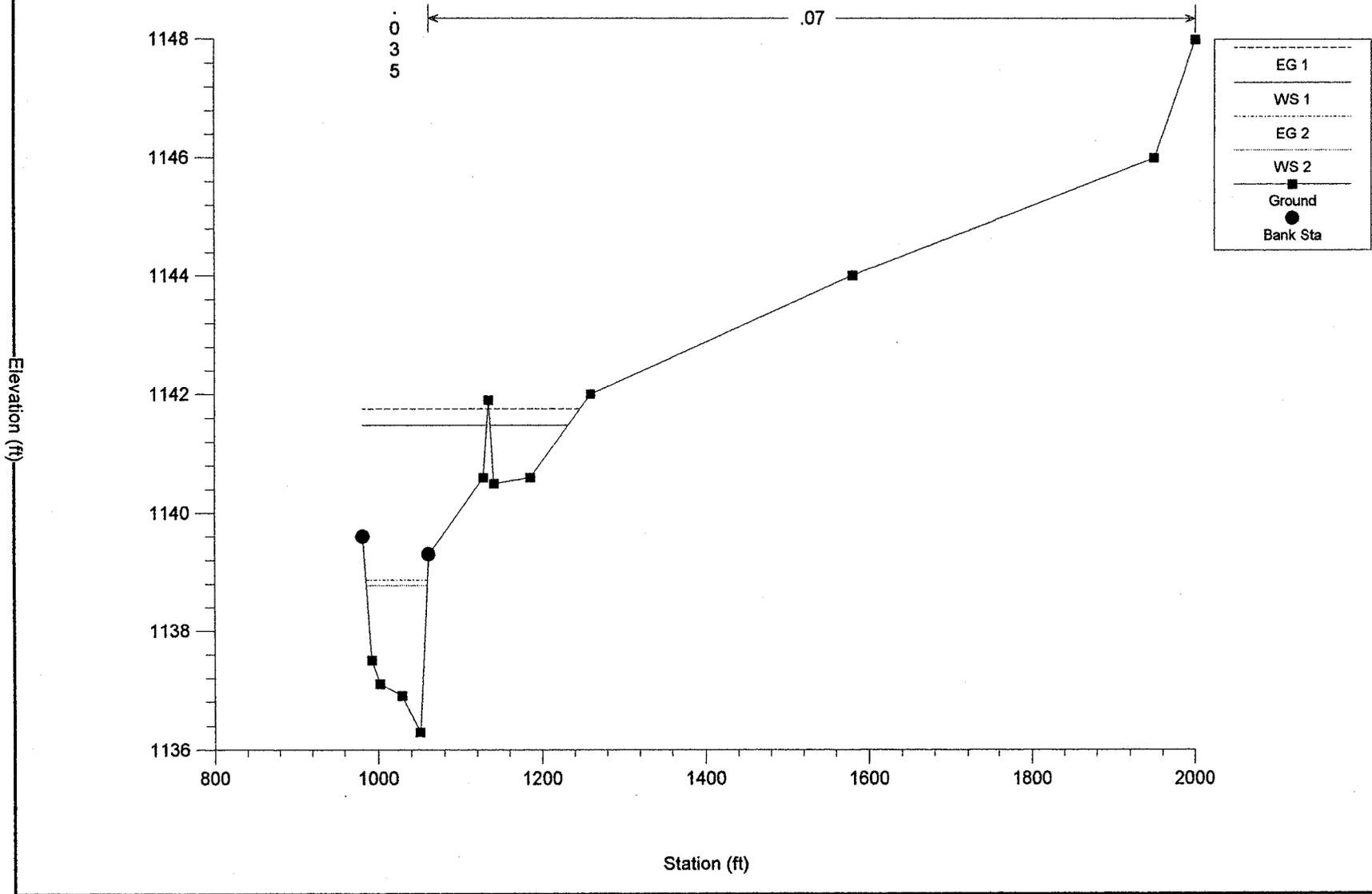
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3140 ft north of glendale



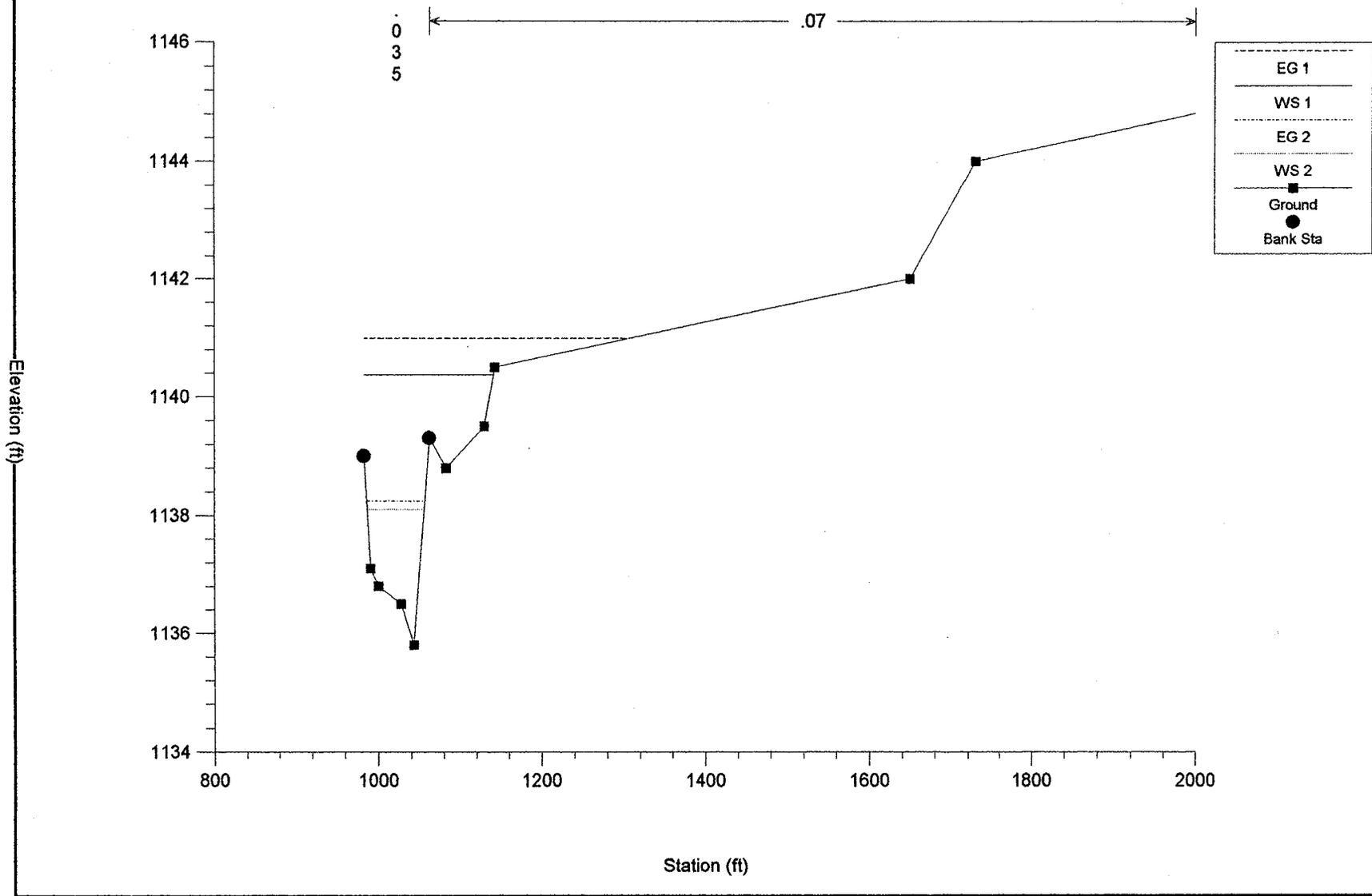
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 2940 ft north of glendale



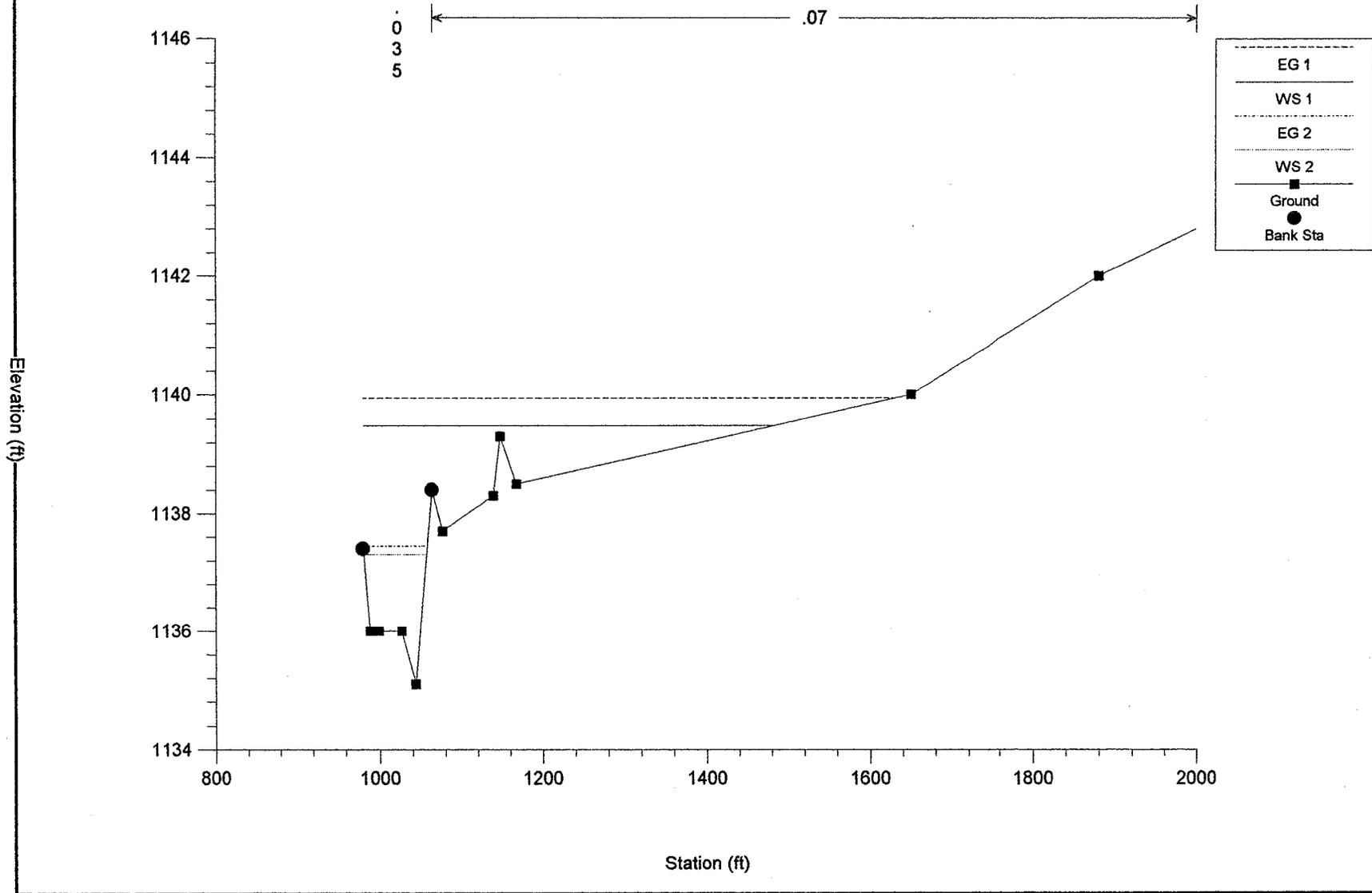
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2720 ft north of glendale



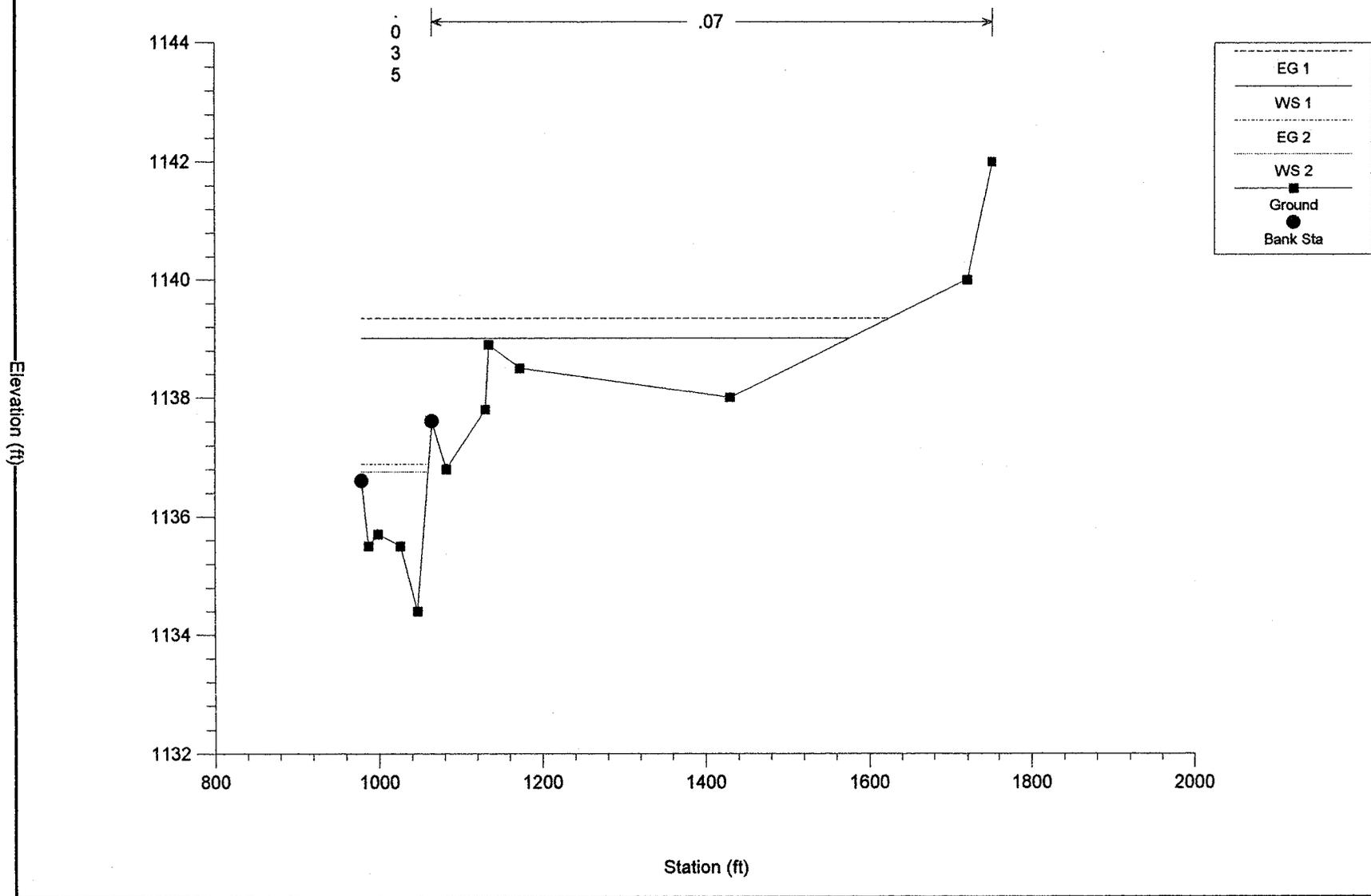
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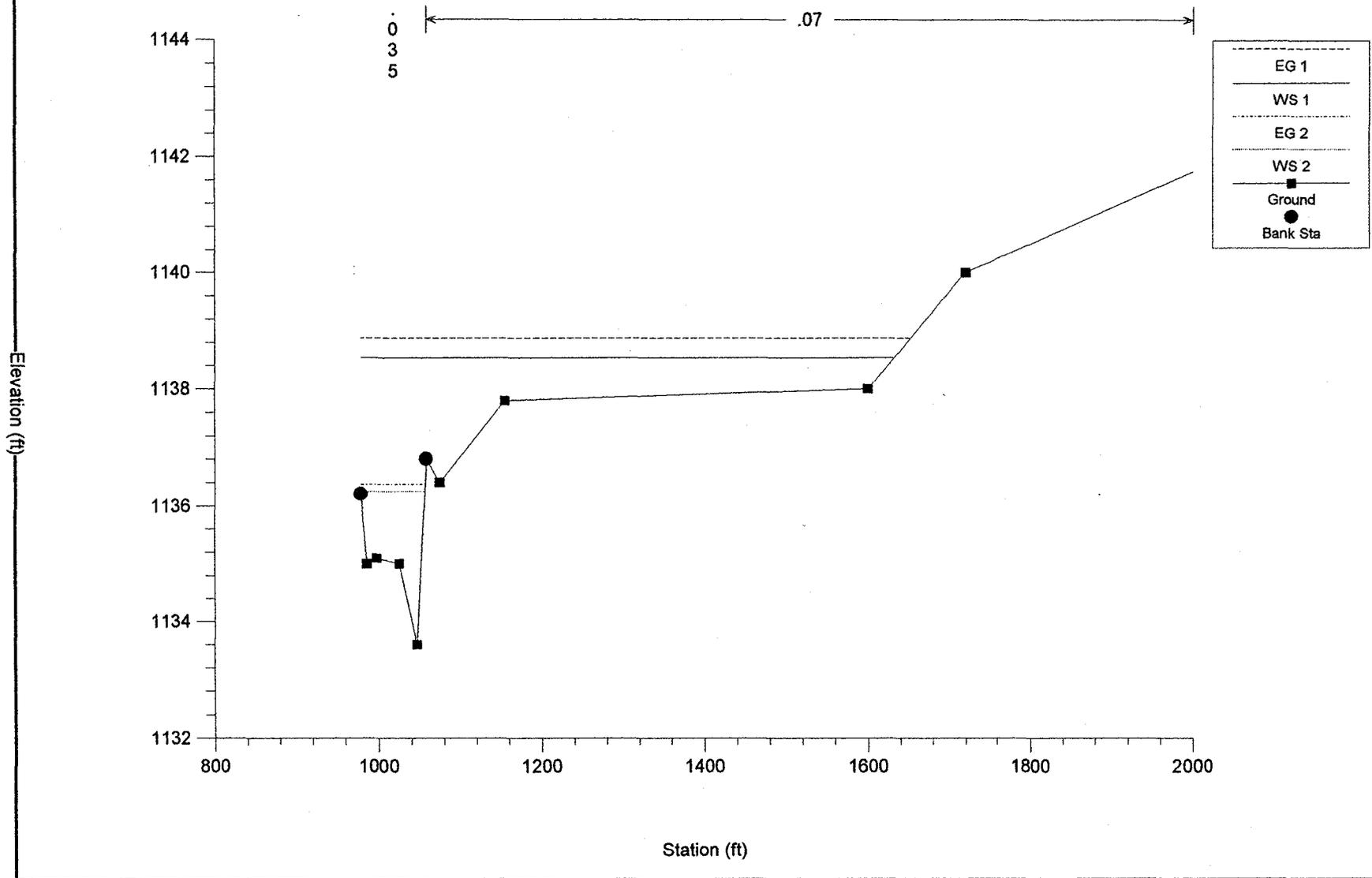
cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
 2220 ft north of glendale



cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
2060 ft north of glendale

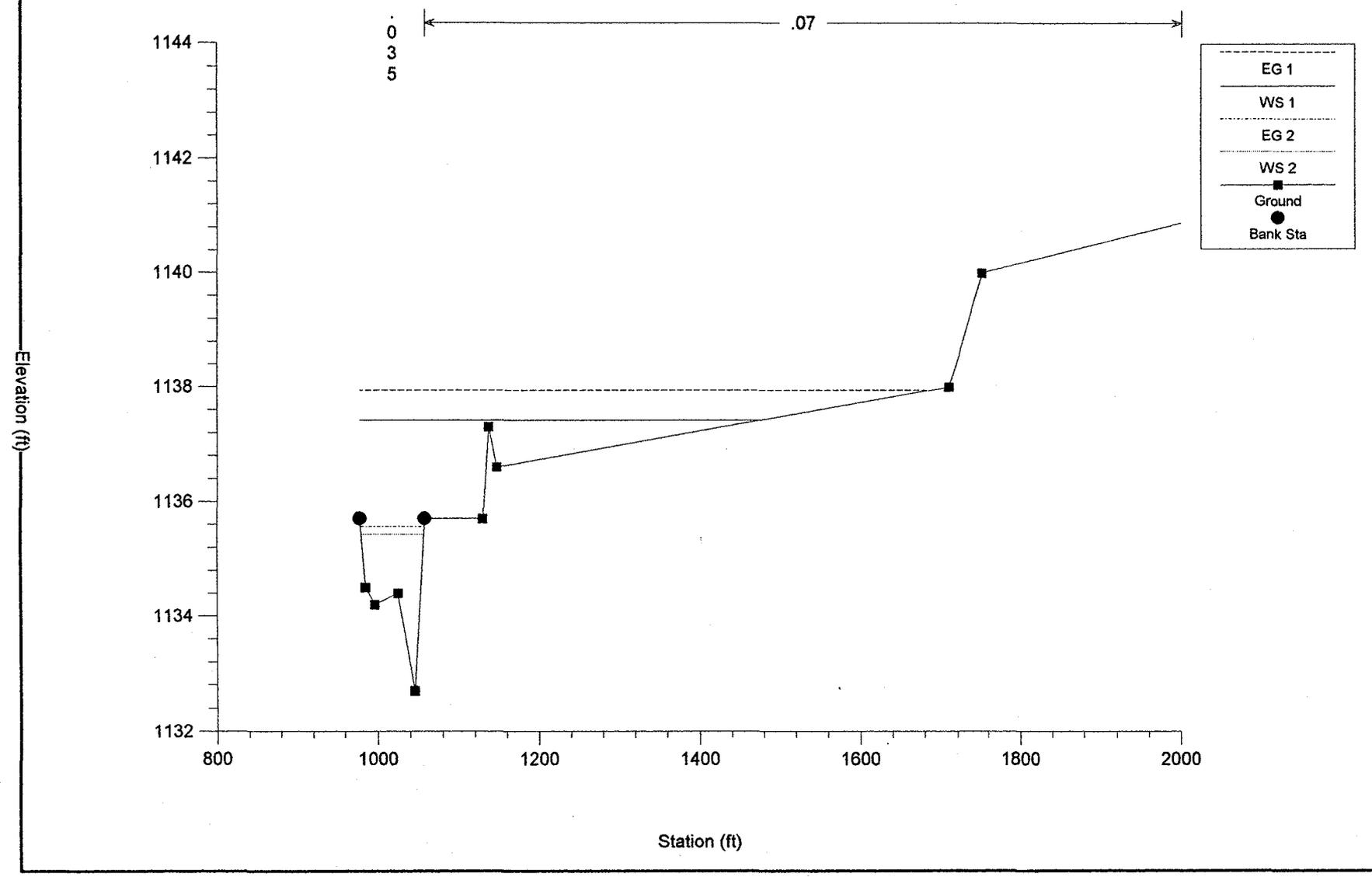


cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
1900 ft north of glendale



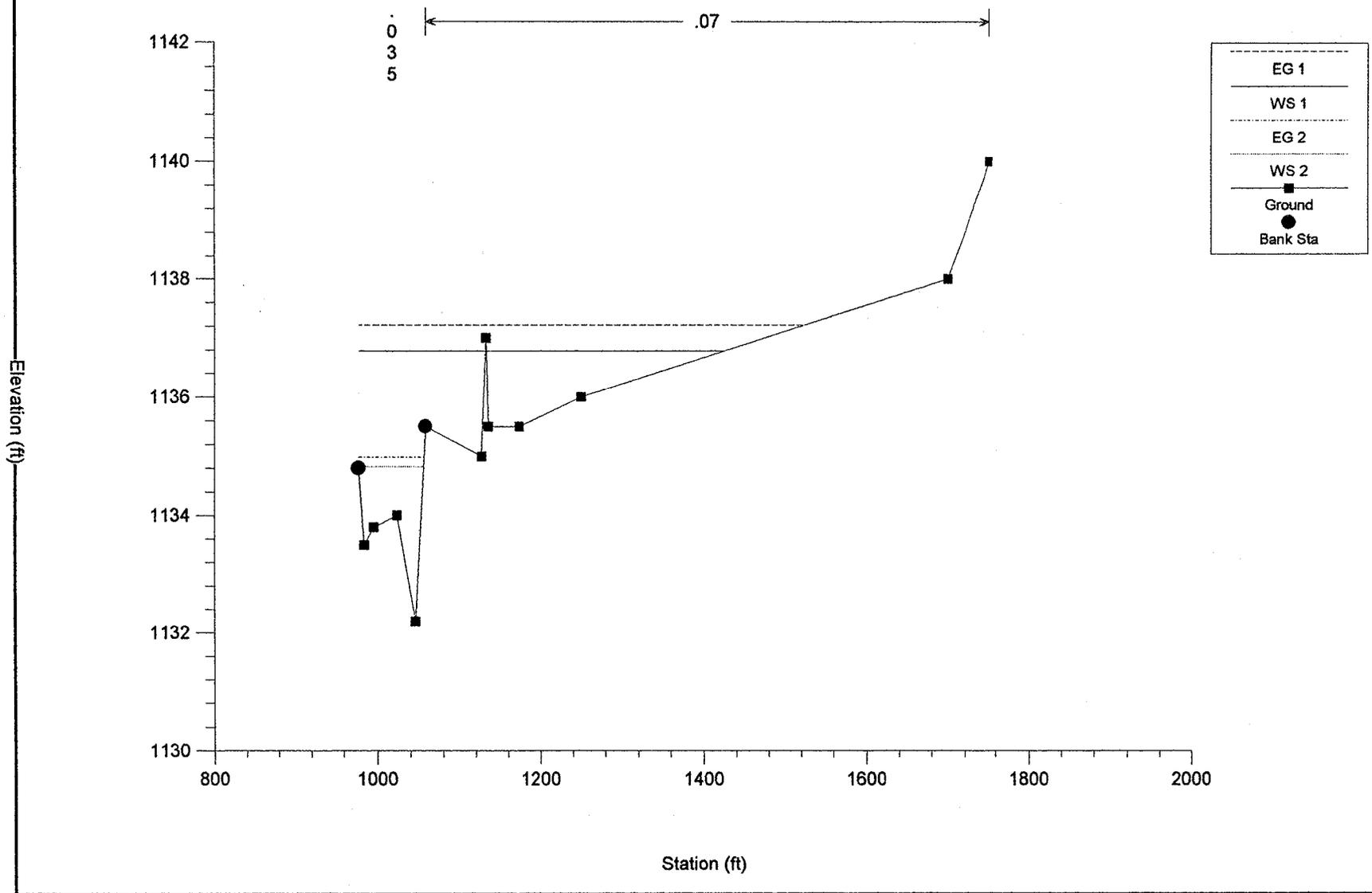
4

cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
1650 north of glendale

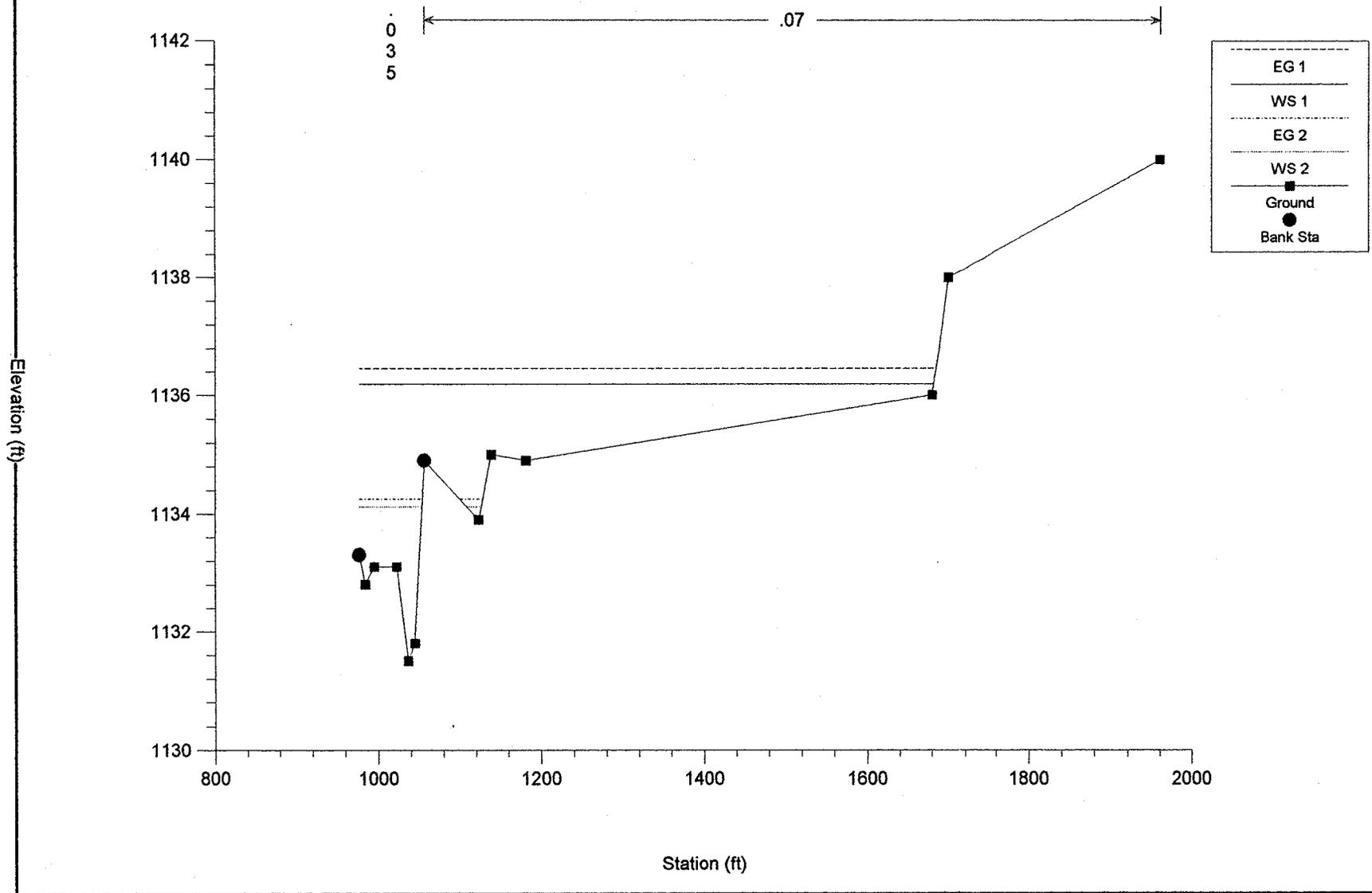


6

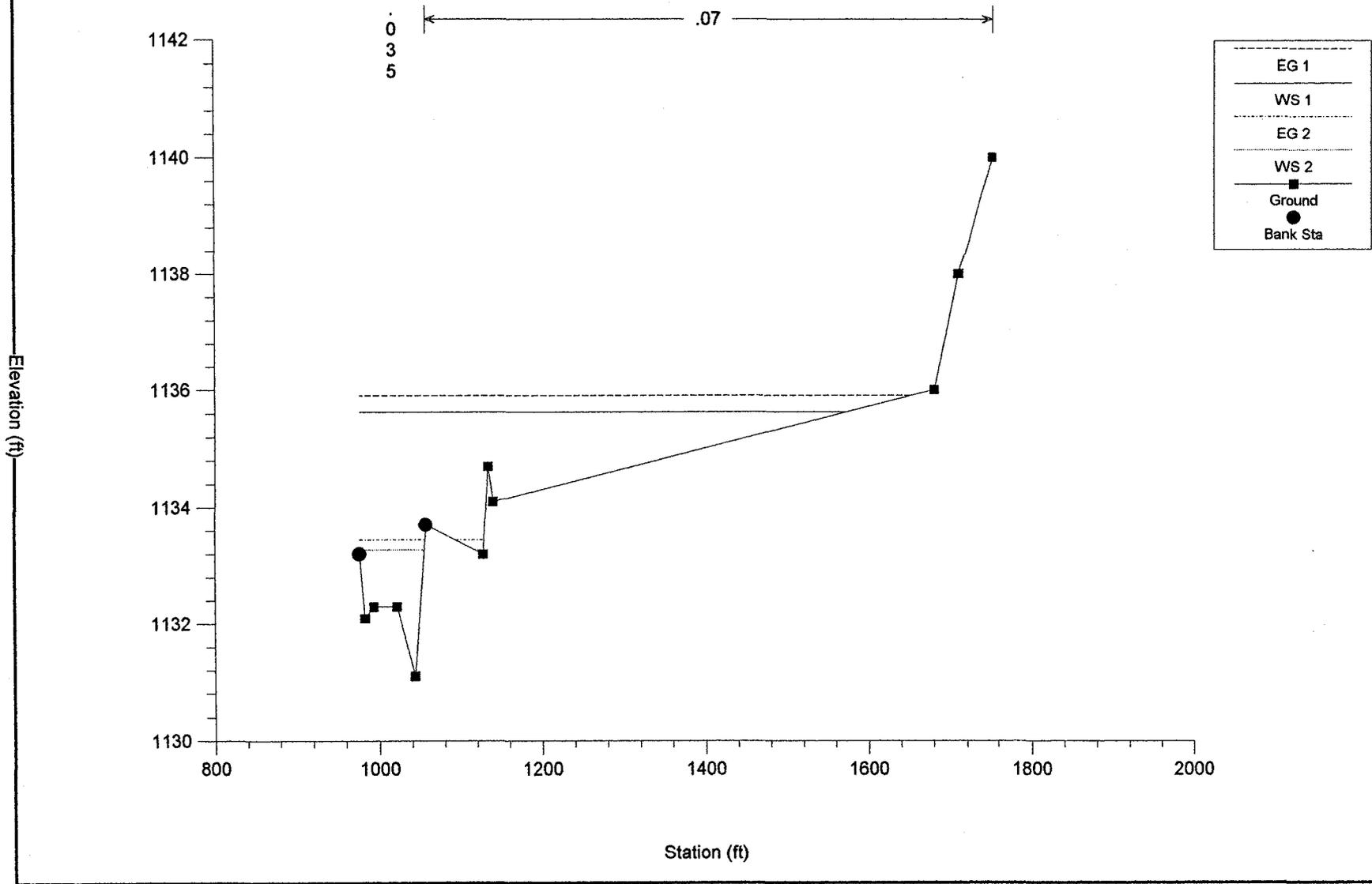
cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
1500 ft north of glendale



cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
1300 ft north of glendale

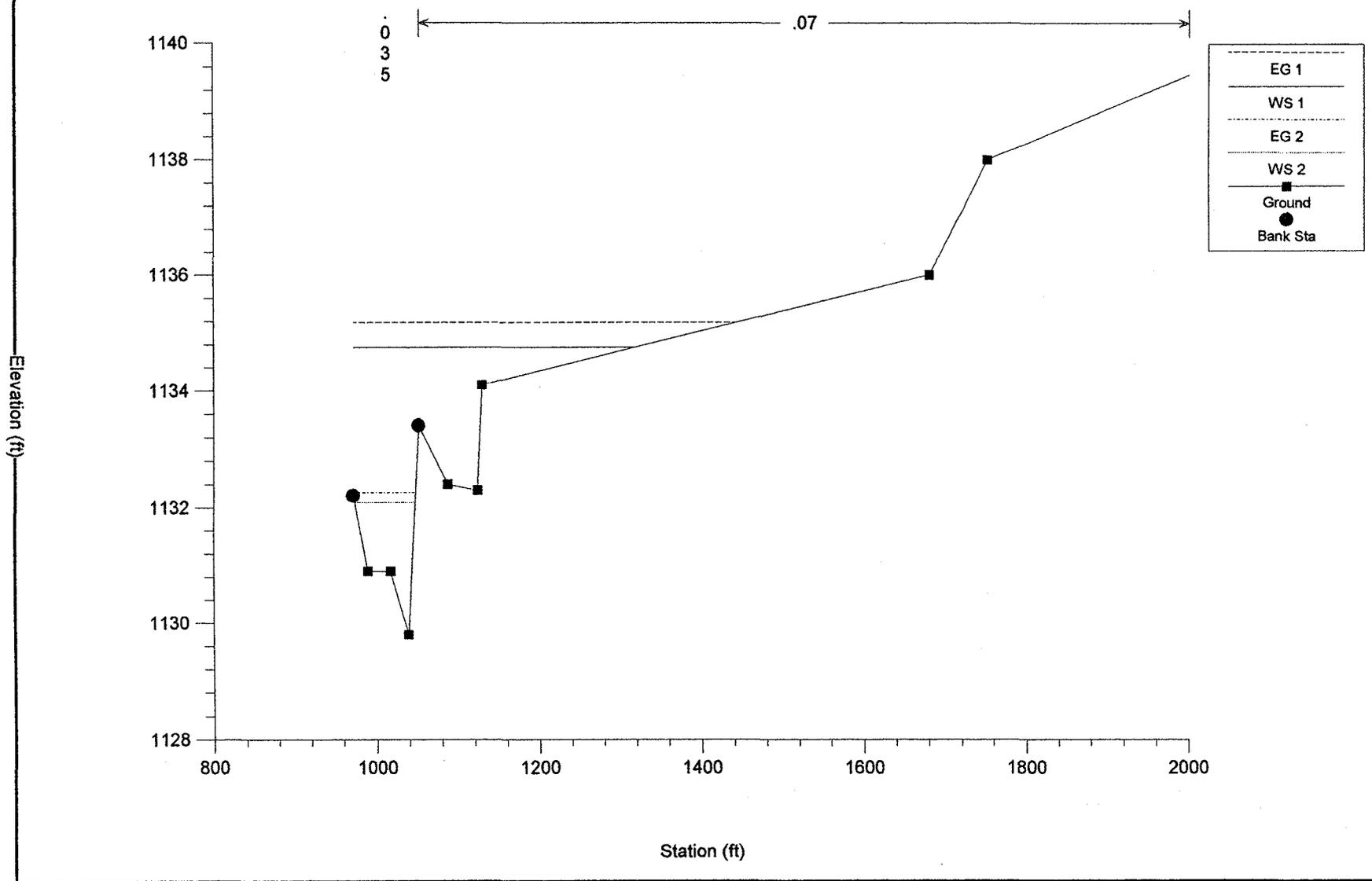


cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
1100 ft north of glendale



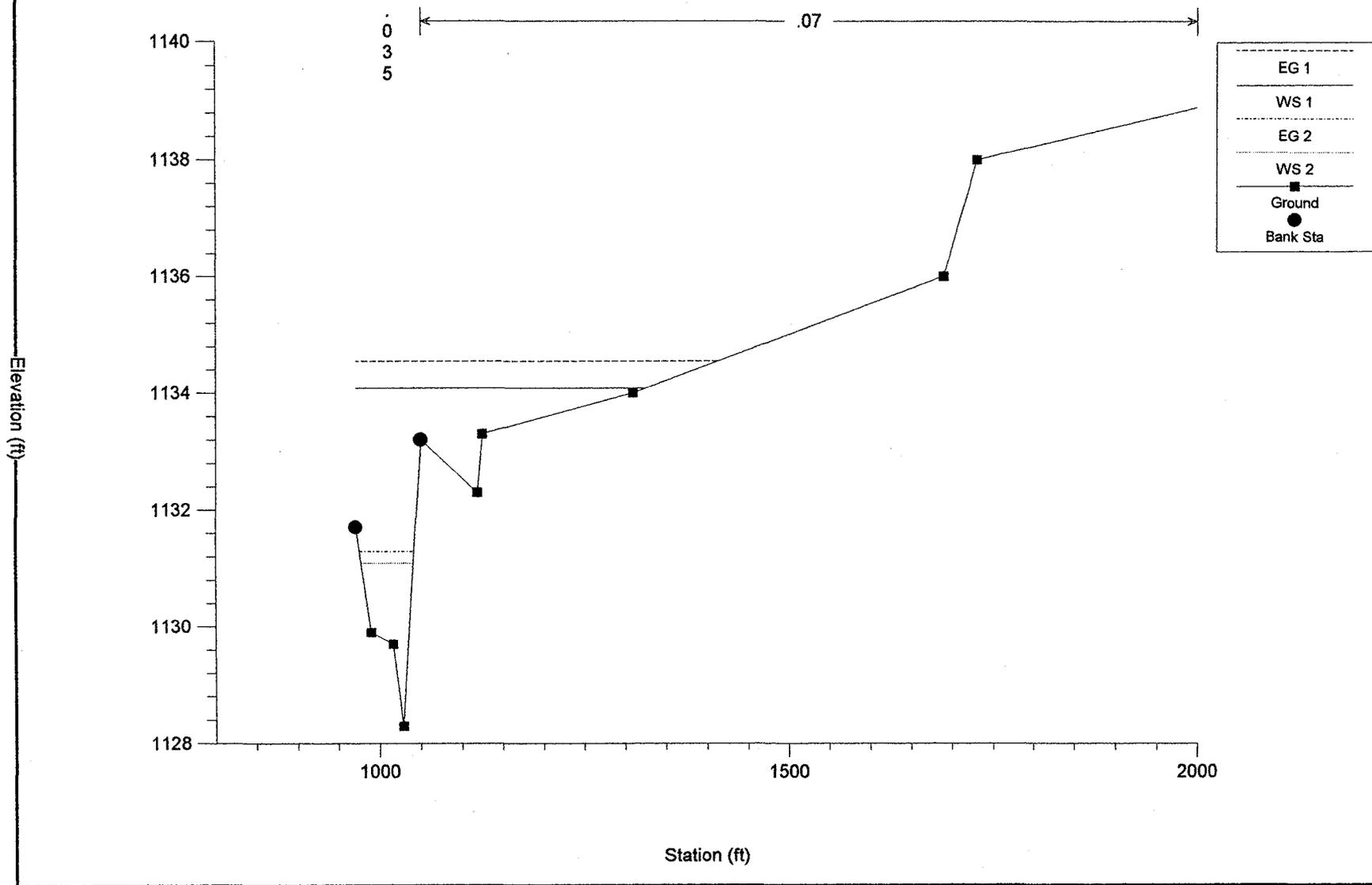
45

cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
860 ft north of glendale

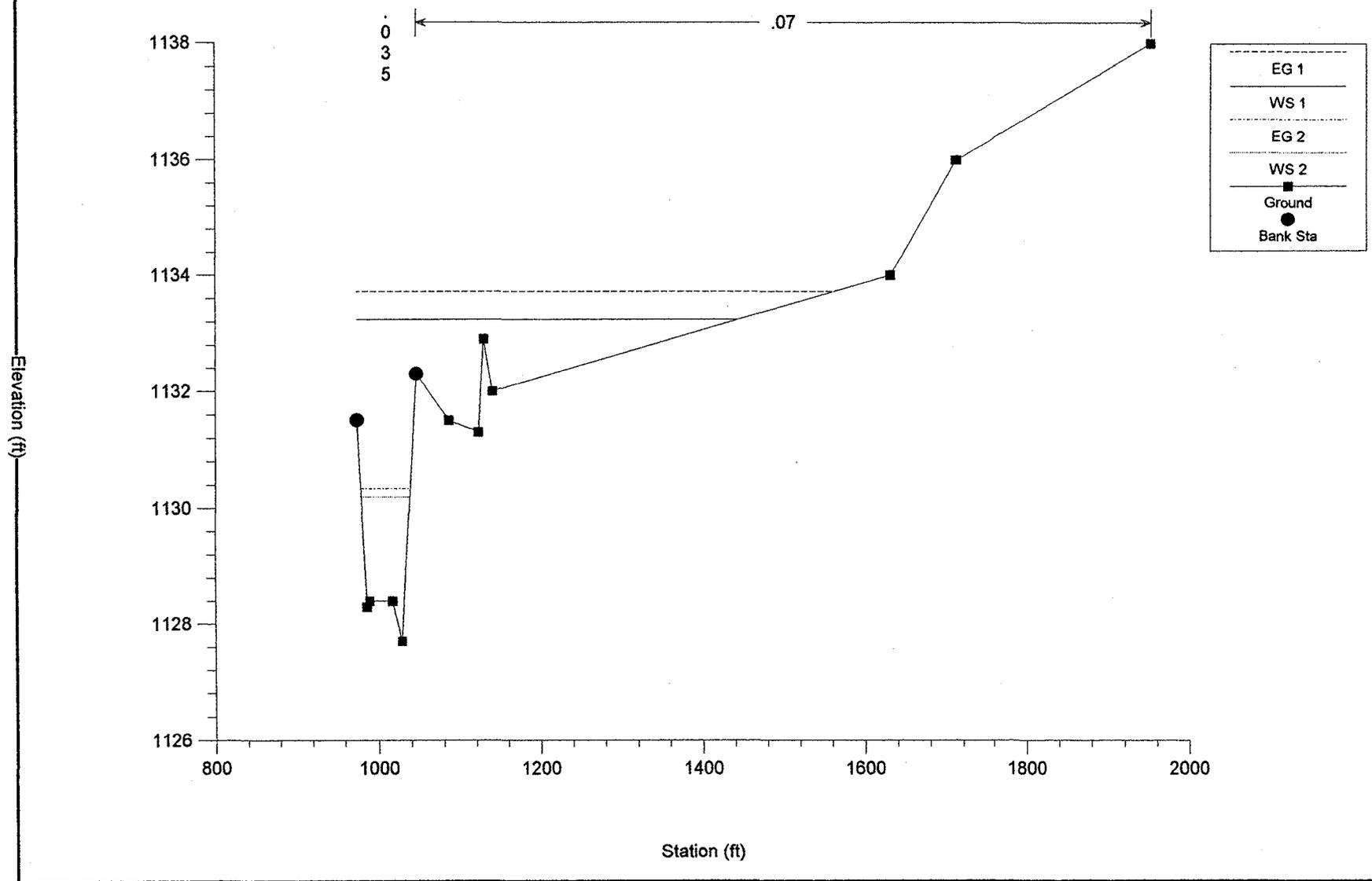


B

cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
660 ft north of glendale

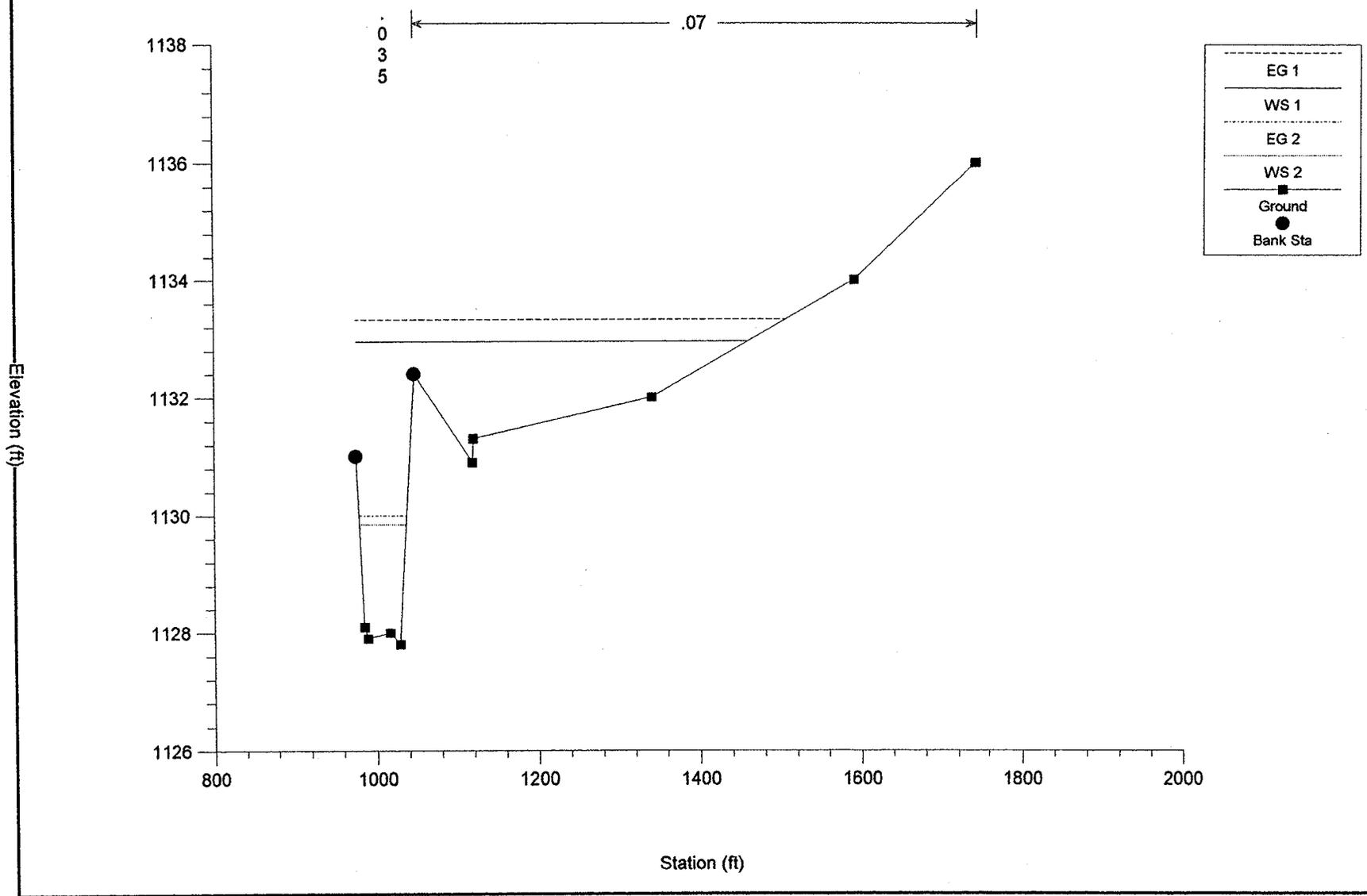


cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
400 ft north of glendale

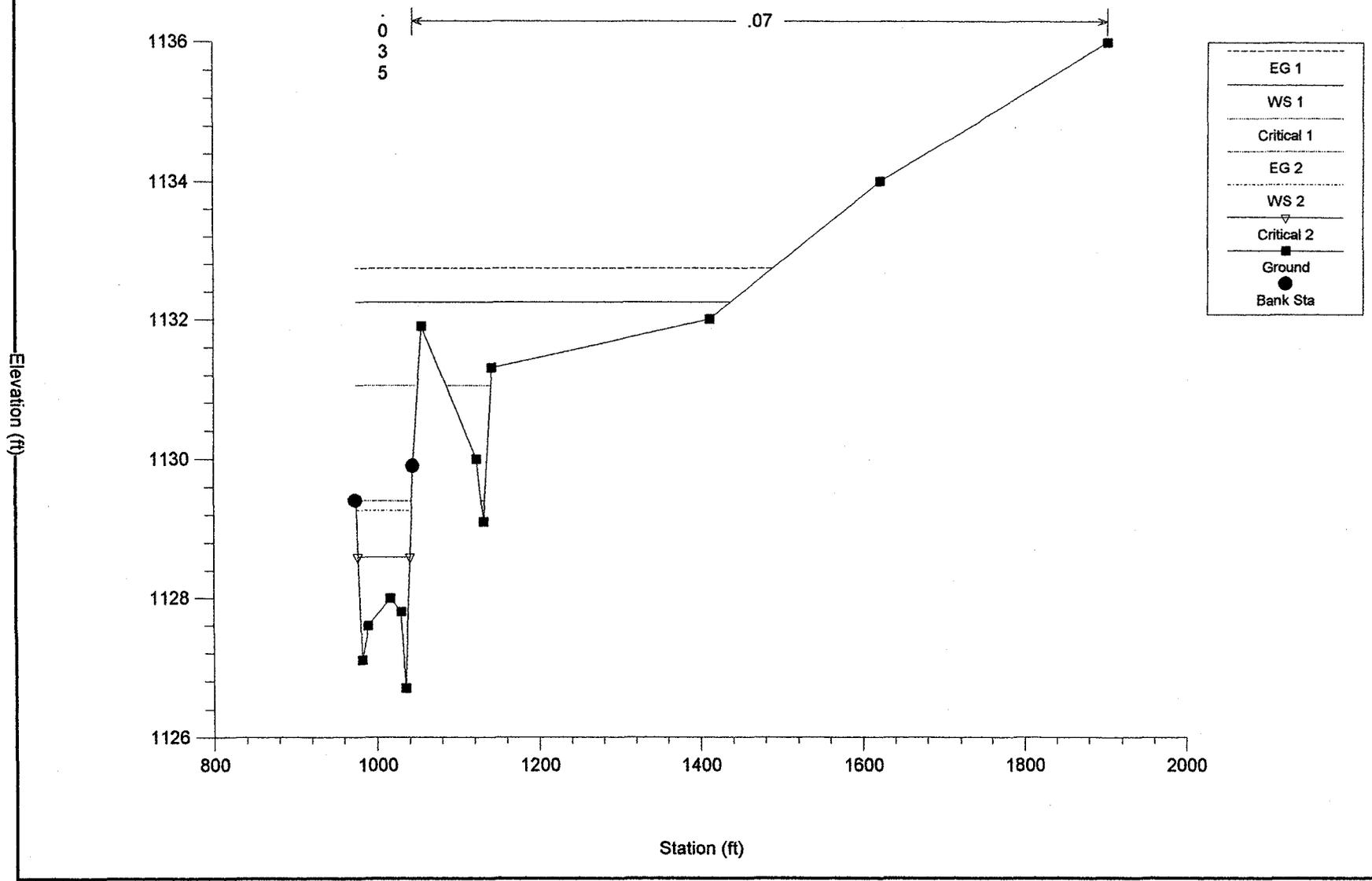


8

cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
330 ft north of glendale



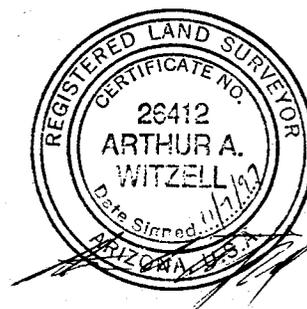
cotton lane new study, extended x-sect Plan: Plan 03 9/25/97
70 feet north of Glendale



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4,4999.988,5000.001,1129.317,CHK TO PT
5,7202.512,4852.985,1128.576,2ND CHK TO
6,6715.917,5019.182,1135.484,REBAR
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12,5001.843,4803.530,1131.337,CL GLENDAL
13,4997.459,5025.263,1128.646,CL GLENDAL
14,5061.796,5025.926,1129.420,TOP
15,5061.772,5018.352,1127.114,TOE
16,5063.893,5010.714,1127.631,EP
17,5065.008,4983.431,1127.969,EP
18,5067.411,4970.139,1127.806,TOP
19,5067.091,4964.830,1126.747,FL DITCH
20,5065.201,4955.500,1129.886,PT ON SLOP
21,5068.096,4944.745,1131.922,TOP
22,5085.979,4877.215,1130.003,EG RD DIRT
23,5088.656,4868.802,1129.096,TOE
24,5090.159,4858.607,1131.349,TOP BLDG P
25,5165.552,4846.107,1132.215,LD DOCK FF
26,5271.376,4788.972,1132.993,FF HOUSE
27,5272.280,4880.745,1131.266,TOP
28,5272.506,4881.848,1130.948,TOE
29,5275.330,4952.971,1132.435,TOP
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31,5275.066,4983.263,1128.010,EP
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34,5273.461,5024.847,1131.031,TOP
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36,5406.442,5013.966,1128.301,TOE
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40,5409.238,4953.403,1132.286,TOP
41,5412.776,4913.892,1131.477,TOE
42,5417.159,4877.520,1131.320,TOE
43,5417.050,4871.090,1132.860,TOP
44,5418.537,4859.959,1131.964,TOE
45,5455.994,4795.440,1133.564,FF HOUSE



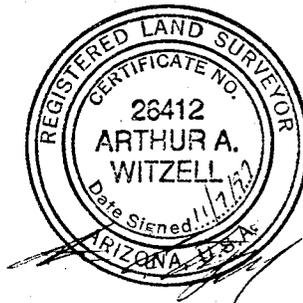
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49,5673.963,4797.214,1134.680,FF HOUSE
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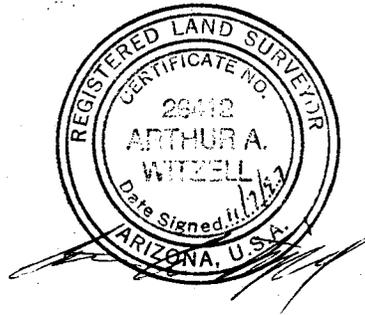
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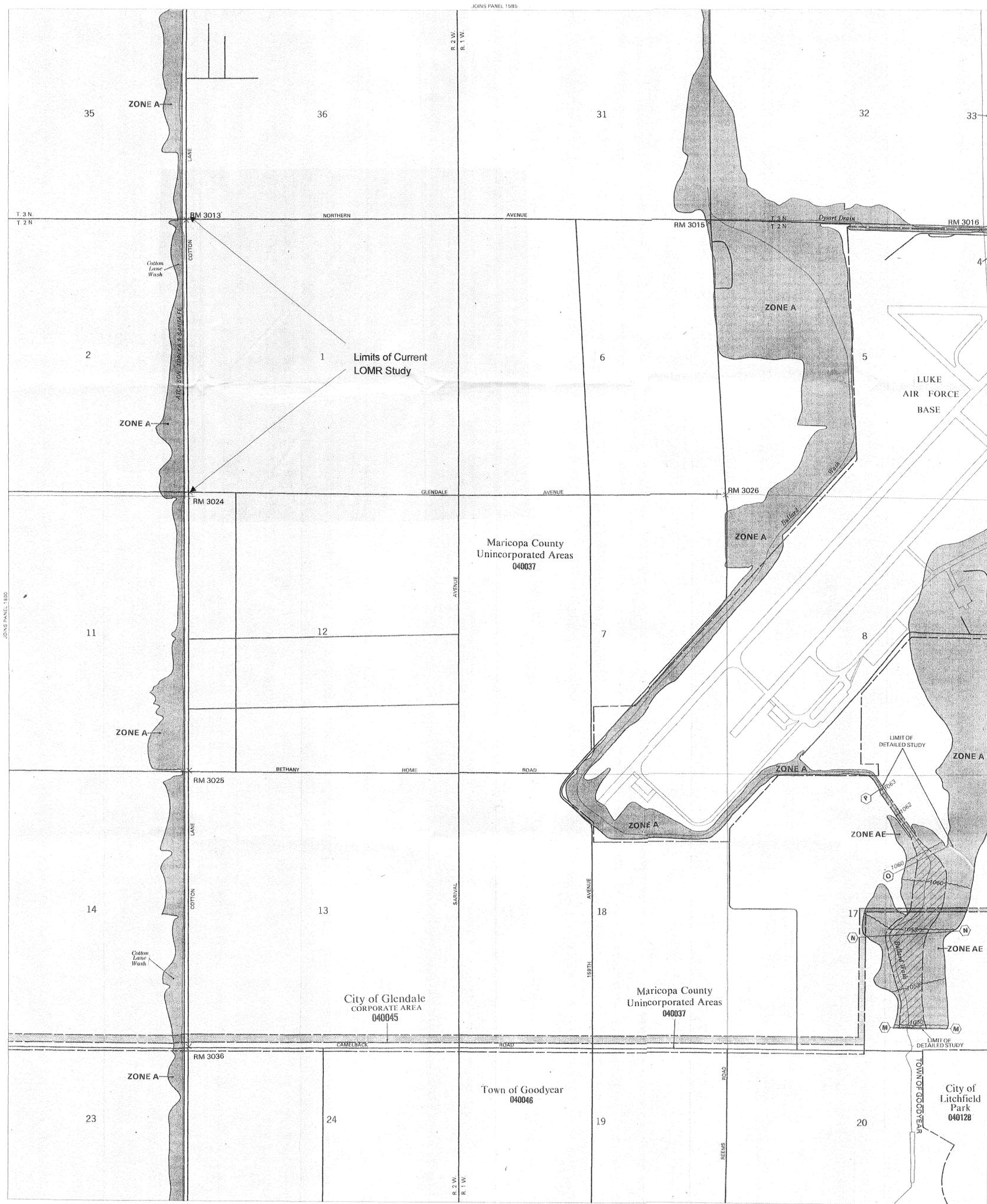


316,10308.337,4993.185,1150.236,TOE
317,10308.523,4985.077,1149.488,EP
318,10309.217,4960.453,1149.474,EP
319,10309.695,4947.518,1148.692,TOE
320,10309.120,4935.544,1151.750,TOP
321,10330.429,4880.832,1153.242,TOP
322,10331.476,4877.918,1151.995,TOE POND
323,10342.660,4796.071,1152.061,TOE POND
324,10344.747,4787.490,1154.920,TOP
325,10349.784,4688.800,1154.476,TOP
326,10349.161,4685.864,1151.722,FL TAILWTR
327,10251.157,4921.537,1152.391,EP HIGH PT
328,10223.219,4921.273,1152.295,EP HIGH PT
329,10215.967,4789.764,1151.708,EG DITCH
330,10224.873,4789.031,1151.200,EP
331,10252.207,4787.656,1151.360,EP
332,10262.548,4787.259,1150.850,TOE
333,10267.361,4787.655,1152.808,TOP
334,10284.578,4789.679,1155.063,TOP DITCH
335,10294.123,4797.797,1151.530,FL
336,10297.225,4799.599,1153.514,TOP
337,10285.821,4676.603,1154.310,TOP DITCH
338,10290.283,4675.198,1151.488,FL
339,10267.781,4673.636,1152.517,TOP
340,10262.815,4673.636,1151.578,TOE
341,10252.644,4678.499,1152.259,EP
342,10225.788,4672.324,1152.995,EP
343,10215.700,4673.361,1152.303,TOP DITCH
344,10212.661,4674.940,1150.338,FL
345,10210.304,4676.464,1152.338,TOP
346,10161.301,4669.971,1151.395,NG
347,10163.767,4556.072,1152.317,NG
348,10210.264,4554.071,1152.977,TOP
349,10212.977,4553.614,1151.014,FL
350,10215.379,4554.457,1152.948,TOP
351,10225.441,4554.248,1153.931,EP
352,10251.391,4557.170,1153.336,EP
353,10264.414,4557.823,1152.705,EP
354,10268.412,4557.818,1153.794,TOP
355,10283.985,4559.134,1155.279,TOP DITCH
356,10289.456,4556.950,1152.146,FL
357,10284.878,4451.781,1155.011,TOP DITCH
358,10289.992,4450.302,1152.548,FL
359,10266.702,4447.765,1155.000,TOP
360,10262.732,4448.339,1153.393,TOE



361,10251.576,4448.629,1153.821,EP
362,10225.430,4449.311,1154.498,EP
363,10215.497,4447.568,1153.470, TOP
364,10212.612,4447.601,1151.494,FL
365,10210.237,4447.425,1153.547, TOP
366,10163.766,4445.738,1153.044,NG
367,10321.097,4229.122,1155.712,NG
368,10318.678,4329.763,1154.957,NG
369,10295.724,4446.661,1155.032, TOP
370,10319.198,4449.851,1154.250,NG
371,10295.912,4544.796,1154.457, TOP
372,10319.891,4546.003,1153.735,NG
373,10298.413,4634.510,1154.898, TOP
374,10322.546,4634.051,1153.957,NG
375,10315.463,4679.496,1154.295, TOP DITCH





LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A** No base flood elevations determined.
- ZONE AE** Base flood elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponds); base flood elevations determined.
- ZONE AD** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of shallow fan flooding, velocities also determined.
- ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
- ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X** Areas determined to be outside 500-year flood plain.
- ZONE D** Areas in which flood hazards are undetermined.

— Flood Boundary
 - - - Floodway Boundary
 - - - Zone D Boundary
 - - - Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

— Base Flood Elevation Line; Elevation in Feet
 (D) — Cross Section Line
 (E1 987) — Base Flood Elevation in Feet Where Elevation Within Zone*
 RM7x — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program, and does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Areas of special flood hazard (100-year flood) include Zones A, A1, 30, AE, AH, AD, A99, V, VE, 30 AND VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were compiled at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Coastal base flood elevations apply only landward of the shoreline.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of the map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY
 Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:
 APRIL 15, 1988

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
 SEPTEMBER 4, 1991

Map revised SEPTEMBER 30, 1995 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to add and update roads and road names, to reflect updated topographic information, to incorporate previously issued letter of map revision, and to incorporate previously issued letter of map amendment.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET
 1000 0 1000

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM 3013	1,149.86	Maricopa County Highway Department leas cap in handhole, Cotton Lane and Northern Avenue, southeast corner Section 35, Township 3 North, Range 2 West
RM 3015	1,103.11	Brass cap on handhole, Reeves Road and Northern Avenue, southeast corner Section 31, Township 3 North, Range 1 West
RM 3016	1,095.12	Brass cap in handhole, Bullard Avenue and Northern Avenue, southeast corner Section 12, Township 3 North, Range 1 West
RM 3024	1,128.64	Maricopa County Highway Department leas cap in handhole, Cotton Lane and Glendale Avenue, southeast corner Section 2, Township 2 North, Range 2 West
RM 3025	1,104.82	Maricopa County Highway Department leas cap in handhole, Cotton Lane and Bethany Home Road, southeast corner Section 11, Township 2 North, Range 2 West
RM 3026	1,081.96	Bolt on top of tree of discharge pipes 20 feet north of pump at the northeast corner of intersection of Reeves Road and Glendale Avenue, near southeast corner Section 6, Township 2 North, Range 1 West
RM 3036	1,083.57	Maricopa County Highway Department leas cap in handhole, Cotton Lane and Carefree Road, southeast corner Section 14, Township 2 North, Range 2 West

NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY UNINCORPORATED AREAS	040037	1595	F
GLENDALE, CITY OF	040045	1596	F
GOODYEAR, TOWN OF	040046	1596	F
LITCHFIELD PARK, CITY OF	040128	1595	F

MAP NUMBER 04013C1595 F

MAP REVISED: SEPTEMBER 30, 1995

Federal Emergency Management Agency