

L.O.M.R. Packet for

Roosevelt Irrigation District Canal Overchute

Avondale, Arizona

by Flood Control District of Maricopa County

February 2001

LOMR PACKET FOR
RID CANAL OVERCHUTE PROJECT, AVONDALE, ARIZONA

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BY: Flood Control District of Maricopa

CONTACT: Mike Duncan (602) 506-4732 email: mwd@mail.maricopa.gov

SECTION 1

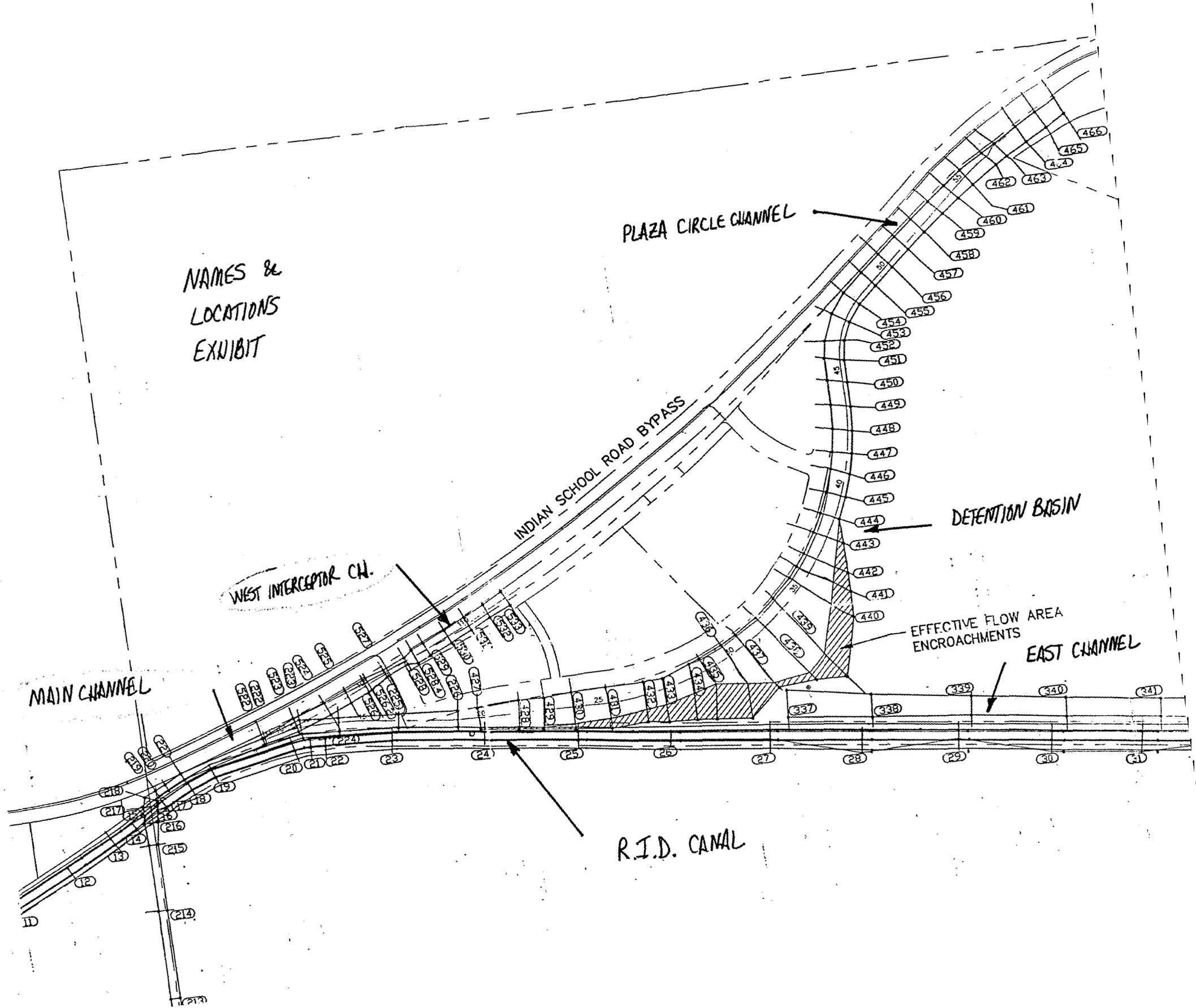
INTRODUCTION

To relieve stormwater ponding behind the Roosevelt Irrigation District (RID) Canal, west of Dysart Road and south of Indian School Road, in Avondale, Arizona, an overchute over the canal (actually the canal flow goes under the "overchute" through a sag-pipe-box-culvert) was constructed. The Overchute Project was done in two phases and included a detention basin and three channels. In addition, an owner-developer (of the land east of the detention basin and north of the canal) constructed a channel parallel to the canal.

The names and locations of the channels are shown in the exhibit which follows this sheet. The channel that was constructed by the owner-developer is called East Channel in this LOMR packet.

The Overchute Project has affected two Zone AH ponding floodplains. It has reduced the floodplain area between Dysart Road and the Old Litchfield Road alignment, and has intercepted the flow to and eliminated the ponding area floodplain that is between the Old Litchfield Road alignment and New Litchfield Road. These floodplains are shown in Section 8 of this LOMR packet.

NAMES &
LOCATIONS
EXHIBIT



SECTION 2

FEMA FORMS

These forms are included in this section:

MT-2 Form 1 -- Requester/Official

MT-2 Form 2 -- Engineer Stamps

MT-2 Form 3 -- Hydrology

MT-2 Form 4 -- Riverine Hydraulic

MT-2 Form 6 -- Channelization

MT-2 Form 7 -- Bridge/Culvert

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.

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.

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

- CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60,65 & 72).
- LOMR A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations. LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65.)
- Other Describe:

2. OVERVIEW

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

- Physical Change Improved Methodology/Data Floodway Revision
- Other Describe:

Note: A photograph is not required, but is very helpful during review.

2. Flooding Source: CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS

3. Project Name/Identifier: Roosevelt Irrigation District Canal Overchute, Phases 1 and 2

4. FEMA zone designations affected: AH
 (example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301	Katy, City	TX	480301	0005D	02/08/83
480287	Harris County	TX	48201C	0220G	09/28/90
040038	Avondale, City	AZ	04013C	2080G	09/30/95
040046	Goodyear, City	AZ	04013C	2080G	09/30/95

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

<u>Types of Flooding</u>		<u>Structures</u>	
<input type="checkbox"/> Riverine	<input checked="" type="checkbox"/> Channelization	<input checked="" type="checkbox"/> Channelization	<input type="checkbox"/> Levee/Floodwall
<input type="checkbox"/> Coastal	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Bridge/Culvert
<input type="checkbox"/> Alluvial fan	<input type="checkbox"/> Bridge/Culvert	<input type="checkbox"/> Bridge/Culvert	<input type="checkbox"/> Dam
<input checked="" type="checkbox"/> Shallow Flooding (e.g. Zones AO and AH)	<input type="checkbox"/> Dam	<input type="checkbox"/> Dam	<input type="checkbox"/> Fill
<input type="checkbox"/> Lakes	<input type="checkbox"/> Fill	<input type="checkbox"/> Fill	<input type="checkbox"/> Other (describe)
<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)	

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1. 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.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0.000 feet? Yes No N/A
3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? Yes No

If the answer to either items is Yes, please attach 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.

5. MAINTENANCE RESPONSIBILITY

The community is willing to assume responsibility for performing overseeing compliance with the maintenance and operation plans of the RID Canal Overchute, which is maintained by the Flood Control District of Maricopa County.
 (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.

Operation and maintenance plans are attached. Yes No N/A

6. REVIEW FEE

The review fee for the appropriate request category has been included. Yes Fee amount: \$
 OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is 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; thus the project is fee exempt.
 Yes

Please see Instructions for Fee Amounts

7. SIGNATURE

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

Michael Duncan

Signature of Revision Requester

Michael Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Flood Control District of Maricopa County
 Company Name

Telephone No.: 602-506-4732

Date: 2-12-01

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

Harvey H. Krauss

Signature of Community Official

HARVEY H. KRAUSS, Community Development Director
 Printed Name and Title of Community Official

City of Goodyear
 Community Name

Telephone No.: 623-932-3005

Date: 2/5/01

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sect 65.2

Michael Duncan 2-12-01

Signature

Michael W. Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Regist. No. 24124 Expires (Date) 09/30/2002 State AZ

Type of License/Expertise: Professional Civil Engineer

Check which forms have been included with this request

Form Name and (Number)	Required if
<input checked="" type="checkbox"/> Hydrologic (3)	new or revised discharges
<input checked="" type="checkbox"/> Hydraulic (4)	new or revised water-surface elevations
<input checked="" type="checkbox"/> Mapping (5)	floodplain/floodway changes
<input checked="" type="checkbox"/> Channelization (6)	channel is modified
<input checked="" type="checkbox"/> Bridge/Culvert (7)	addition/revision of bridge/culvert
<input type="checkbox"/> Levee/Floodwall (8)	addition/revision of levee/floodwall
<input type="checkbox"/> Coastal (9)	new or revised coastal elevations
<input type="checkbox"/> Coastal Structures (10)	addition/revision of coastal structure
<input type="checkbox"/> Dam (11)	addition/revision of dam
<input type="checkbox"/> Alluvial Fan (12)	structures proposed on alluvial fan

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 structural engineering
[example: water resources (hydrology, hydraulics, sediment transport, interior drainage)* structural, geotechnical, land surveying.]
3. I have 26 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:
OVERCHUTE STRUCTURE, CHANNEL WALLS OVERCHUTE WING WALLS
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 PROJECT HAS NOT BEEN CONSTRUCTED AT THIS TIME

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: RAYMOND D. TROYER
(please print or type)

Title: STRUCTURAL ENGINEER / VICE PRESIDENT
(please print or type)

Registration No. 12991 Expiration Date: 9/30/98

State ARIZONA

Type of License STRUCTURAL

Raymond D. Troyer
Signature

June 18, 1987
Date



Seal
(Optional)

*Specify Subdiscipline

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

PUBLIC BURDEN DISCLOSURE NOTICE

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1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Geotechnical & Materials Engineering.
[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:
Analysis of materials used to support box culvert
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 Construction HAS NOT STARTED YET

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: David P. Hayes, P.E.
(please print or type)

Title: Executive Vice President
(please print or type)

Registration No. 22719 Expiration Date: 3/31/2000

State Arizona

Type of License Professional Engineer

David P. Hayes
Signature

6/14/97
Date



Seal (Optional)

*Specify Subdiscipline

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

PUBLIC BURDEN DISCLOSURE NOTICE

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1. This certification is in accordance with 44 CFR Ch. I, Section 65.2
2. I am licensed with an expertise in Hydraulic and Hydrologic Design
[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:
Design report, construction plans, and Technical specifications
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 Phase 1 of project in construction and phase 2 is pending.

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: Gary G. Brady P.E.

(please print or type)

Title: Project Engineer

(please print or type)

Registration No. 18668

Expiration Date: January 1998

State Arizona

Type of License Professional Engineer (Civil)

Gary G. Brady
Signature

6/27/97
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 3.67 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.

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Note: Fill out one form for each flooding source studied

Community Name: City of Avondale and City of Goodyear

Flooding Source: There is no stream. But the study area is near Litchfield Park/Roosevelt Irrigation District Canal in White Tanks area.

Project Name/Identifier: Roosevelt Irrigation District Canal Overchute at Litchfield Road

1. REASON FOR NEW HYDROLOGIC ANALYSIS

- No existing analysis Improved data Changed physical condition of watershed
 Alternative methodology Proposed Conditions (CLOMR) Other

For the reason stated above, please attach a detailed explanation. If a computer program/model was used in revising the hydrologic analysis, please provide a diskette with the input files for the same flood recurrence intervals contained in the FIS for that stream; and at least for the 1% annual chance (base) flood where no detailed study exists.

Explanation provided: Yes No Diskettes provided: Yes No

2. METHODOLOGY FOR NEW ANALYSIS

Indicate Method	Required Data	Data Included
<input type="checkbox"/> Statistical Analysis of Gage Records	Form 3 - Attachment A	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Regional Regression Equations	Form 3 - Attachment C	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input checked="" type="checkbox"/> Precipitation/Runoff Model	Form 3 - Attachment D	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Other	Back-up computations and supporting data	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

3. APPROVAL OF ANALYSIS

The hydrologic analysis has already been approved by a local, state, or Federal Agency. Yes No Not Required

If Yes, attach evidence of approval. Approval attached. If No, attach explanation. Explanation attached.

4. COMPARISON OF BASE FLOOD DISCHARGES

Location:	Drainage Area (SqMi)	FIS(cfs)	Revised (cfs)
<u>CP255 in FIS(CP255A in the revised study)</u>	<u>1.84 (0.60)</u>	<u>1512</u>	<u>1160</u>
<u>CP271A in FIS(CP271A in the revised study)</u>	<u>0.59 (0.93)</u>	<u>284</u>	<u>481</u>
<u>CP271 in FIS(CP271 in the revised study)</u>	<u>2.57 (1.99)</u>	<u>1104</u>	<u>1746</u>

Note: When revised discharges are not significantly different than the FIS discharges, FEMA may require a confidence limits analysis (see attachment B) at a later date to complete the review.

If only a portion of a detailed study area was revised please attach an explanation describing the transition from the proposed discharges to the effective discharges. Explanation Included Explanation Not Required

5. HISTORICAL FLOODING INFORMATION

If historical data are available for the flooding source please provide: Location, peak discharges/water-surface elevations and dates, and source of information. Data Attached Data Not Available

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

ATTACHMENT A: STATISTICAL ANALYSIS OF GAGE RECORDS

Gaging Station:

Gage Location (latitude and longitude):

		FIS:		Revised:	
1.	Number of years of data				
	Systematic				
	Historical				
2.	Homogeneous data	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3.	Data adjustments	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4.	Number of high outliers				
	Low outliers				
	Zero events				
5.	Generalized skew				
6.	Station skew				
7.	Adopted skew				
8.	Probability distribution used (justify if log-Pearson III was not used)				
9.	Transfer equations to ungaged sites			<input type="checkbox"/> Yes	<input type="checkbox"/> No
	If Yes, specify method				
10.	Expected probability*			<input type="checkbox"/> Yes	<input type="checkbox"/> No
11.	Comparison of results with other analyses			<input type="checkbox"/> Yes	<input type="checkbox"/> No
	If Yes, describe comparison				
12.	Attach analysis including plot of flood-frequency curve. Analysis Attached?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data are not available, indicate by N/A.

ATTACHMENT B: CONFIDENCE LIMITS EVALUATION

Stream:

Select one location for Confidence Limits Evaluation (*describe location*):

1.	Discharges for selected location: Exceedence Probability	FIS:	Revised:
	10% (10-year)	_____ cfs	_____ cfs
	2% (50-year)	_____ cfs	_____ cfs
	1% (100-year)	_____ cfs	_____ cfs
	0.2% (500-year)	_____ cfs	_____ cfs

2. 1% Annual Chance (Base) Flood Confidence Intervals

90% Confidence Interval:	5% limit _____ cfs
	95% limit _____ cfs
50% Confidence Interval:	25% limit _____ cfs
	75% limit _____ cfs

3. If the discharge of the base flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the base flood elevation change by 1.0 foot or more? Yes No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

4. Confidence Limits Analysis Attached? Yes No

ATTACHMENT C: REGIONAL REGRESSION EQUATIONS

Bibliographical Reference:

(Attach a copy of title page, table of contents, and pertinent pages including equations.)

- 2. Gaged or ungaged stream:
- 3. Hydrologic region(s):
Attach backup map.
- 4. Provide parameters, values, and source of data used to define parameters.

- | | FIS: | | Revised: | |
|--------------------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| 5. Urbanized conditions calculations | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 6. Percent of watershed urbanization | | | | |
| Is the watershed controlled? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 8. Comparison with other analyses | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

If the answer to 5, 7, or 8 is Yes, explain methodology below. If data are not available, indicate with N/A.

Comments

- 9. **Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.**
Computation and Supporting Maps provided? Yes No

ATTACHMENT D: PRECIPITATION/RUNOFF MODEL

	FIS:	Revised:
Method or model used:	<u>HEC-1</u>	<u>HEC-1</u>
Version:	<u>June 1, 1988 version</u>	<u>June 1, 1988 version</u>
Date:		<u>May 1997</u>
2. Source of rainfall depth:	<u>NOAA Atlas 2</u>	<u>NOAA Atlas 2</u>
3. Source of rainfall distribution:	<u>SCS Type II</u>	<u>SCS Type II</u>
4. Rainfall duration:	<u>24-hr</u>	<u>24-hr</u>
5. Areal adjustment to precipitation (%):	<u>NOAA Atlas 2</u>	<u>NOAA Atlas 2</u>
6. Maximum overland flow length	<u>~ 3 mi</u>	<u>~3 mi (in LOMR study area)</u>
7. Hydrograph development method:	<u>S-graph</u>	<u>S-graph</u>
8. Loss rate method:	<u>Green-Ampt</u>	<u>Green-Ampt</u>
Source of soils information:	<u>SCS</u>	<u>SCS</u>
Source of land use information:	<u>Flood Control Dist Maricopa Co</u>	<u>Flood Control Dist Maricopa Co</u>
9. Channel routing method:	<u>Normal Depth</u>	<u>Normal Depth</u>
10. Reservoir routing:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
11. Baseflow considerations: If Yes, explain below how baseflow was determined:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
12. Snowmelt considerations:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
13. Model calibration: If Yes, explain below how calibration was performed	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14. Future land use condition: If Yes, explain why below	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15. Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.		
Information and Maps provided?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

NOTE: FEMA policy is to base flooding on existing conditions.

ATTACHED EXPLANATIONS

For FEMA MT-2 Form 3 -- Section 1 -- Reason for New Hydrologic Analysis

The effective FIS is revised to reflect the physical changes including four new channels and the increased capacity for the detention basin. In addition, this is a more detailed study reflecting the most recent changes in the watershed. These changes include (1) subbasin 271 in FIS is divided into 2711 and 2712 due to Indian School Bypass channel; (2) subbasin 255 is divided into 255A, 6&7 due to MCDOT channel along Dysart Rd; and (3) CP270 is moved to Litchfield Rd from Litchfield Rd Bypass due to overchute.

For FEMA MT-2 Form 3 -- Section 4 -- Comparison of Base Flood Discharges

The differences in discharges are because the revised study is a more detailed study than the effective FIS. Please see Reason for New Hydrologic Analysis (above) and the Hydrology Report.

PUBLIC BURDEN DISCLOSURE NOTICE

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Note: Fill out one form for each flooding source studied

Community Name: Avondale, City

Flooding Source: CP 270, CP 2711, CP 255A, & CP 271A of White Tanks ADMS

Project Name/Identifier: Roosevelt Irrigation District Canal Overchute Phases 1 and 2

1. REACH TO BE REVISED

Describe the limits of the revision OR submit a copy of the FIRM with the revision area clearly highlighted.
Copy of FIRM(s) attached depicting area of the revision (highlighted, or circled)? Yes

Downstream Limit:

Upstream Limit:

2. MODELS SUBMITTED

Requirements: for areas which have detailed flooding:

Full input and output listings along with files on diskette for each of the models listed below (items 1-4) and a summary of the source of input parameters used in the models must be provided. The summary must include a description of any changes made from model to model (e.g., Duplicate Effective model to Corrected Effective model). At a minimum, the Duplicate Effective (item 1) and the Revised or Post-Project Conditions (item 4) models must be submitted. See instructions for directions on when other models may be required.

for areas which do not have detailed flooding:

Only the 100-year (Base) flood profile is required. A hydraulic model is not required for areas which do not have detailed flooding; however, BFEs may not be added to the revised FIRM. If a hydraulic model is developed for the area, items 3 and 4 described below must be submitted.

hydraulic models are not developed, hydraulic analyses (including all calculations) for existing or pre-project conditions and revised or post-project conditions must be submitted.

1. Duplicate Effective Model Natural File Name _____ Floodway File Name _____

Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models (10-, 50-, 100-, and 500-year multi-profile runs and the floodway run) must be obtained and then reproduced on the requester's equipment to produce the Duplicate Effective model. This is required to assure that the effective models input data has been transferred correctly to the requester's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

2. Corrected Effective Model Natural File Name _____ Floodway File Name _____

The Corrected Effective model is the model that corrects any errors that occur in the Duplicate Effective model, adds any additional cross sections to the Duplicate Effective model, or incorporates more detailed topographic information than that used in the currently effective model. The Corrected Effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

3. Existing or Pre-Project Conditions Model Natural File Name _____ Floodway File Name _____

The Duplicate Effective model or Corrective Effective model is modified to produce the Existing or Pre-Project Conditions model to reflect any modifications that have occurred within the floodplain since the date of the Effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the Corrected Effective model or Duplicate Effective model.

4. Revised or Post-Project Conditions Model Natural File Name _____ Floodway File Name _____

The Existing or Pre-Project Conditions model (or Duplicate Effective model or Corrected Effective model, as appropriate) is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for the proposed project this model must reflect proposed conditions.

5. Other – Please attach a sheet describing all other models submitted along with the file names. Natural Floodway

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

3. STARTING WATER-SURFACE ELEVATIONS

Explain how they were determined.

Explanation Attached?

Yes

No

NOTE: If the effective study is an approximate study, the slope/area method is recommended.
For detailed analysis studies, using a known water-surface elevation is recommended.

4. RESULTS (from the model used to revise the 100-year water surface elevations)

If the results indicate any of the following, attach an explanation - to this form, or to the hydraulic model printout- as to the reasonableness of the situation.

- Supercritical depth
- Critical Depth
- Drawdowns
- Negative Floodway Surcharges
- Floodway Surcharges Greater Than Maximum Allowed by Community/State
- Water surface elevations higher than the end points of cross sections.
- Floodway discharge is different than the Natural 100-year (base) flood discharge.
- Project causes 100-year floodplain or floodway elevations to increase (state if increases are located off the requester's property)

Explanation attached with Form

Explanation provided on attached printout

If Hydraulic model used is HEC-2, has it been checked with FEMA'S CHECK-2 computer program? Yes No
(see instructions for information on how to obtain CHECK-2)

5. REVISED FIRM/FBFM AND FLOOD PROFILES

1. Profile Transition

- a. 100-Year Water-Surface Elevations - indicate the difference in water surface elevations where the project 100-year elevations tie into the existing 100-year water surface elevations at each end of the project.

Downstream End _____ within _____ (feet)
Cross-Section #

Upstream End _____ within _____ (feet)
Cross-Section #

- b. Floodway Elevations - indicate the difference in water surface elevations where the project floodway elevations tie into the existing floodway water surface elevations at each end of the project.

Downstream End _____ within _____ (feet)
Cross-Section #

Upstream End _____ within _____ (feet)
Cross-Section #

- c. Floodway widths - indicate the difference in floodway widths where the project floodway widths tie into the existing floodway width at each end of the project.

Downstream End _____ within _____ (feet)
Cross-Section #

Upstream End _____ within _____ (feet)
Cross-Section #

2. Profile Checklist (check box if information has been provided on profile)

The following information (unless in parentheses) must be included at the same scale as the existing profiles for this project:

- Stream Name
- Community Name
- Corporate Limits labeled
- Study limits labeled
- Confluences labeled
- Channel Stationing
- Streambed profiled
- Cross Sections labeled
- Horizontal/Vertical Scales indicated
- 100-year elevs profiled*
- Road Crossings
- Labeled
- Low Chord Elevations
- Top of Road Elevations

*All recurrence intervals in the effective study must also be profiled.

Floodway Data Table

Attach a Floodway Data Table for each cross section listed in the published Floodway Data table in the FIS report.

Floodway Data Table Attached Yes Not Required

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.75 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.

Community Name: Flood Control District of Maricopa County
Flooding Source: CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS
Project Name/Identifier: Rid Overchute Project

1. EXTENT OF CHANNELIZATION

Downstream limit: Proposed Overchute Struct at Rid Canal
Upstream limit: CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS

2. CHANNEL DESCRIPTION

1. Describe the inlet to the channel Either A) Concrete Apron Transition, B) Grouted Riprap Transition, or C) Existing Grass Lined channel. See attached design plans phase 1 SHT 5 and phase 2 SHTS 7, 13, & 14.
2. Briefly describe the shape of the channel (*both cross sectional and planimetric configuration*) and its lining (*channel bottom and sides*) Either rectangular lined, trapezoidal conc lined, trapezoidal grass lined, or trap grass lined with grav. mulch sideslopes. See attached design plans Ph1 SHT 13 and Ph 2 SHT 10.
3. Describe the outlet from the channel Rid Overchute Structure - see SHTS 6 & 7 of phase 1 design plans.
4. The channelization includes:
 - Levees (*Attach Levee Form*)
 - Drop structures
 - Superelevated sections
 - Transitions in cross sectional geometry
 - Debris basin/detention basin
 - Energy dissipater
 - Other _____
5. Attach the following:
 - a. Certified engineering drawings showing channel alignment and locations of inlet, outlet, and items checked in item 4
 - b. Typical cross sections and profiles of channel banks and invert

3. HYDRAULIC CONSIDERATIONS

1. What is the 100-year discharge? See attached cfs
2. Do the cross sections in the hydraulic model match the typical cross sections in the plans? Yes No
3. Are the channel banks higher than the 100-year flood elevations everywhere? Yes No
4. Are the channel banks higher than the 100-year flood energy grade lines everywhere? .. Yes No
5. Is the land on both sides of the channel above the adjacent 100-year flood elevation at all points along the channel? Yes No
6. What is the range of freeboard? See attached feet
7. What is the range of the 100-year flood velocities? See attached ft/sec
8. What is the lining type? (both bottom and sides) See attached

Explain how the channel lining prevents erosion and maintains channel stability (*attach documentation*)
High veloc. Reaches are lined with conc or grouted riprap, lower veloc. Reaches
grass or grass/grav mulch lined.

9. What is the design elevation in the channel based on?

- Subcritical flow
- Critical flow
- Supercritical flow
- Energy grade line

Is 100-year flood profile based on the above type of flow? Yes No

If no, explain: _____

10. Is there the potential for a hydraulic jump at the following locations?

- Inlet to channel Yes No
- Outlet of channel Yes No
- At Drop Structures Yes No
- At Transitions Yes No

Other locations. Explain: _____

If the answer to any of the above is yes, please explain how the hydraulic jump is controlled and the effects of the hydraulic jump on the stability of the channel.

Explain: HYD Jump during low flow conditions may occur at CP-2711 and CP-255A
Higher flow conditions will submerge jump. Proposed inlets include grouted
riprap extended VP sideslopes perpendicular to inlet flow in order to dissipate
energy while protecting against erosion.

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport (including scour and deposition) can affect the 100-year water surface elevations and/or the capacity of the channel? Yes No

B. Based on the conditions of the watershed and stream bed, is there a potential for sediment transport (including scour and deposition) to affect the 100-year water surface elevations and/or the capacity of the channel? Yes No

Sediment trap provided - see phase 2 design plans, SHTS 5 & 6.

2. If the answer to either 1A or 1B is yes:

A. What is the estimated sediment (bed) load?

1.0 ac-ft cfs (attach gradation curve)

Explain method used to estimate load Sediment yield methods Modified Universal soil loss equation, Renard method etc.

B. Is the 100-year flood velocity anywhere within the channel less than the 100-year flood velocity of the inlet? *At detention basins* Yes No

C. Will sediment accumulate anywhere within the channel? Yes No

D. Will deposition or scour occur at or near the inlet? Yes No

E. Will deposition or scour occur at or near the outlet? Yes No

Attach documentation showing affects on the Hydrologic and Hydraulic analyses

Flood Control District of Maricopa County (FCDMC)
 RID Overchute Project
Channel Hydraulic Properties Table Summary
 Stantech Project No. 28900014
 July 1997

CHANNEL REACH	REACH LENGTH (ft)	100-YEAR DISCHARGE (cfs)	FREEBOARD MIN. (ft)	FREEBOARD MAX (ft)	VELOCITY MIN (ft/s)	VELOCITY MIN MAX (ft/s)	LINING TYPE	COMMENTS
Palm Valley Golf Course to Overchute	5000	1456	0	1.5	3.03	8.5	Earth	Downstream of affected floodplain area - not part of project improvements
Rectangular Concrete Channel	750	1317	3.75	4.50	7.50	8.00	Concrete	
Basin Outlet Channel	820	1084	0.14	0.20	4.60	6.90	Concrete	
West Interceptor Channel	1200	1200	0.10	0.95	2.00	2.50	Grass Lined	
Plaza Circle Channel	2000	1160	1.50	4.50	2.60	4.70	Grass Lined	
Detention Basins	1800	1084	0.50	3.50	N/A	N/A	Grass Lined	Sediment Trap Included

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 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.

Community Name: Flood Control District of Maricopa County

Flooding Source: CP 270, CP 2711, CP 255A, & CP 271A of white tanks ADM.

Project Name/Identifier: Rid Overchute Project

1. IDENTIFIER

1. Name of roadway, railroad, etc.: Paladin Road

2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier): _____

Cross section nos 527 and 528 of West interceptor drainage channel

3. This revision reflects (check one of the following):

- New bridge/culvert not modeled in the FIS
- Modified bridge/culvert previously modeled in the FIS
- New analysis of bridge/culvert previously modeled in the FIS

(Explain why new analysis was performed) _____

2. BACKGROUND

Provide the following information about the structure:

1. Dimension, material, and shape (e.g. two 10 x 5 feet reinforced concrete box culvert; three 30-foot span bridge with 2 rows of two 3-foot diameter circular piers; 40-foot wide ogee shape spillway) _____

Three 6x7 reinforced concrete box culvert

2. Entrance geometry of culvert/type of bridge opening (e.g. 30° - 75° wing walls with square top edge, sloping embankments and vertical abutments) _____

45-degree wingwalls with chamfered closed edges and sloping embankments tapered from wingwalls.

3. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8) _____

HY8 and HEC-2 with special culvert routine.

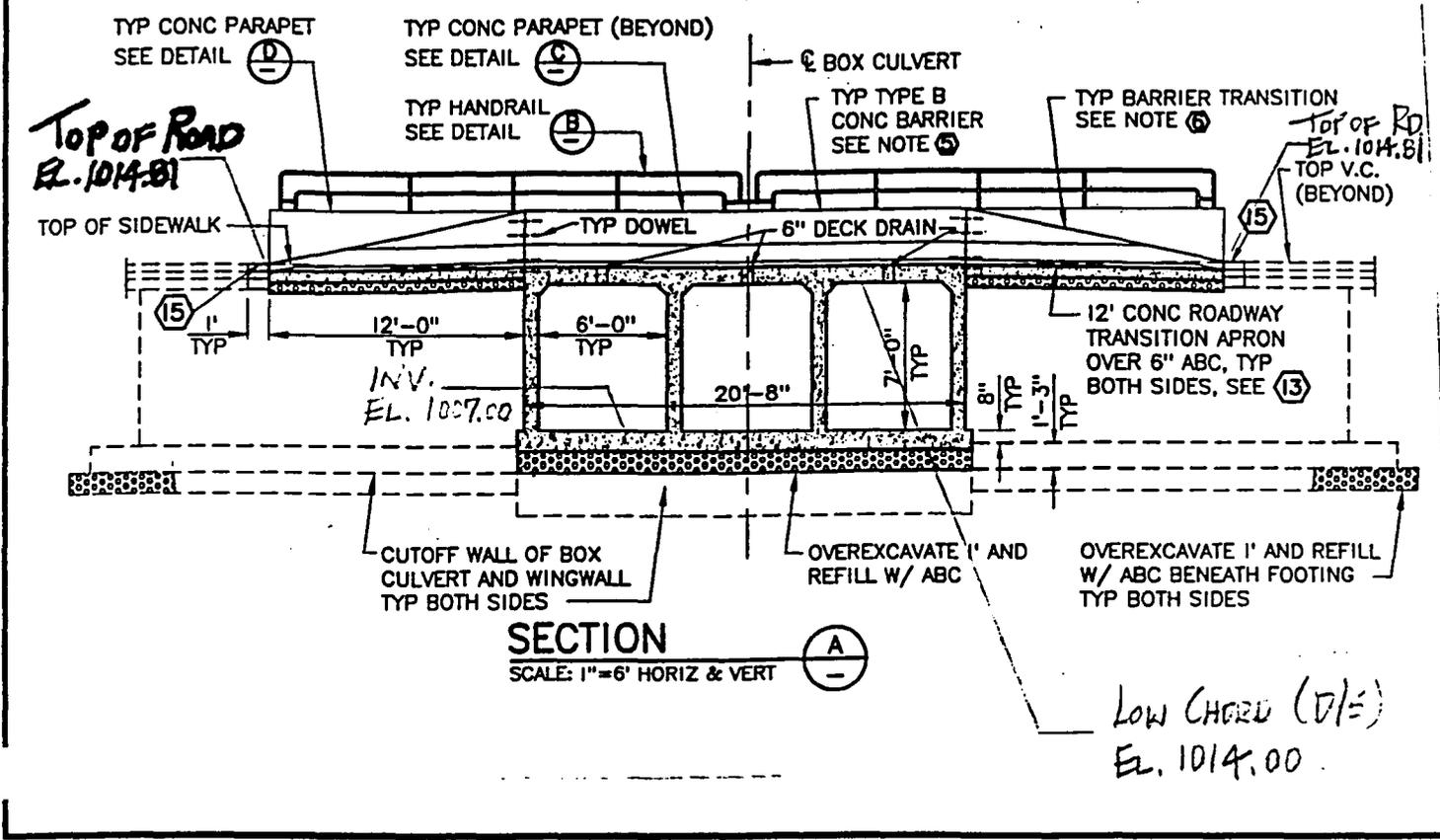
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). (Attach justification)

Note: If any items do not apply to submitted hydraulic analysis, indicate by N/A

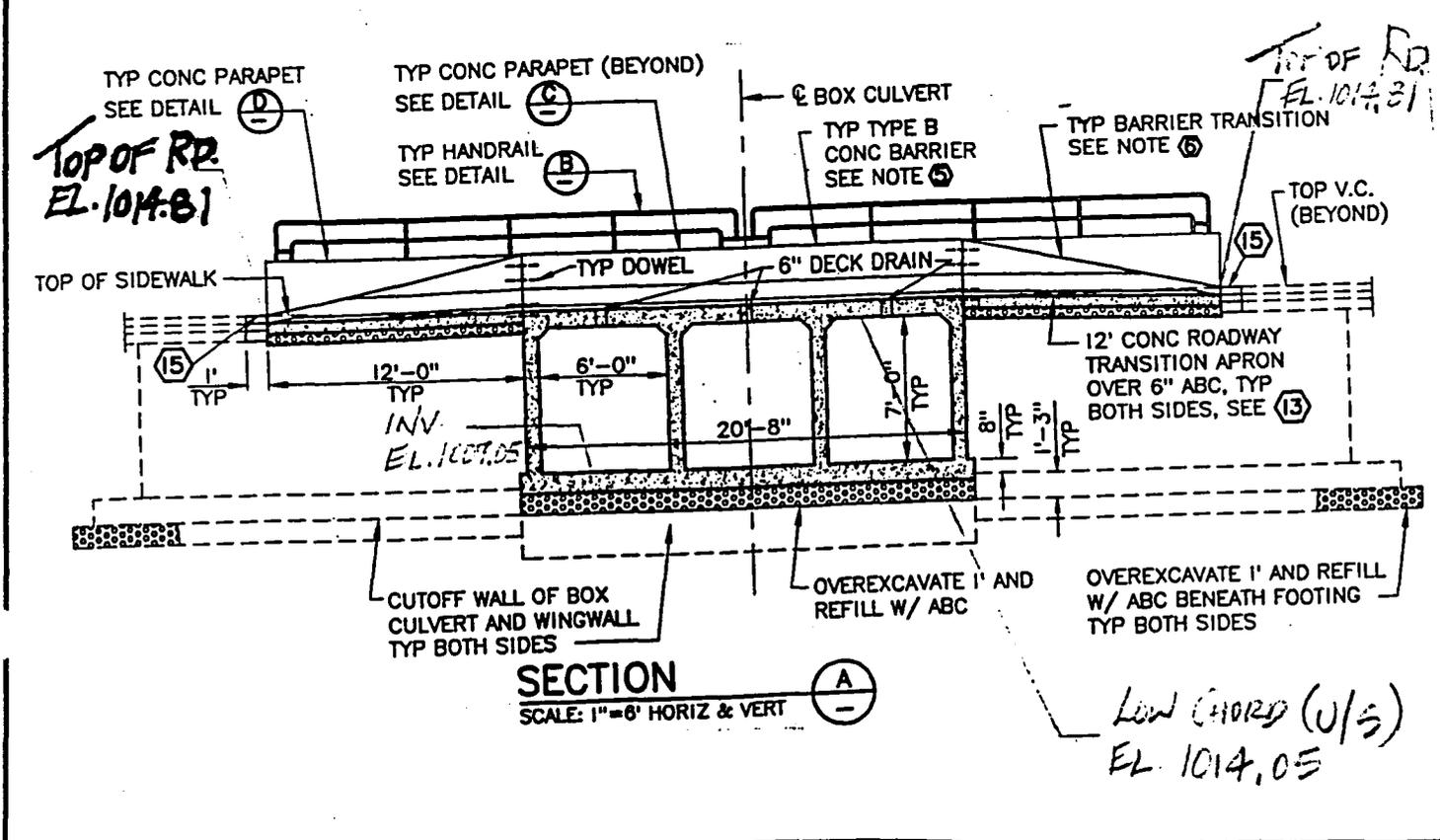
*** One form per new/revised bridge/culvert**

3. ANALYSIS

Sketch the downstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, minimum top of road elevation, and ineffective flow widths.



Sketch the upstream face of the structure together with the road profile. Show, at a minimum, the maximum low chord elevation, invert elevation, and minimum top of road elevation.



3. ANALYSIS (Cont'd)

Elevations Above Which Flow is Effective for Overbanks

	Left Overbank	Right Overbank
Upstream face	<u>1013.00</u>	<u>1013.00</u>
Downstream face	<u>1013.00</u>	<u>1013.00</u>

Minimum Top of Road Elevation

	Left Overbank	Right Overbank
Upstream face	<u>1014.88</u>	<u>1014.88</u>
Downstream face	<u>1014.83</u>	<u>1014.83</u>

100-Year Elevations

	Water Surface Elevations	Energy Gradient Elevations
Upstream face	<u>1012.64</u>	<u>1012.75</u>
Downstream face	<u>1012.37</u>	<u>1012.49</u>

Discharge

	Low Flow	Pressure Flow	Weir Flow	Total Flow
Amount of flow through/over the structure (s) (cfs)	<u> </u>	<u>384</u>	<u>0</u>	<u>384</u>

The maximum depth of flow over the roadway/railroad (ft.) 0
 Weir length (ft.) N/A

Top Widths

	Total Floodplain Width	Total Effective Flow Width	Floodway Width
Upstream face	<u>31.2</u>	<u>31.2</u>	<u>31.2</u>
Downstream face	<u>30.7</u>	<u>30.7</u>	<u>30.7</u>

3. ANALYSIS (Cont'd)

Loss Coefficients

Entrance loss coefficient	0.40
Manning's "n" value assigned to the structure(s)	0.012
Friction loss coefficient through structure (s)	0.012
Other loss coefficients (e.g., bend manhole, etc.)	N/A
Total loss coefficient	0.012
Weir coefficient	2.50
Pier coefficient	N/A
Contraction loss coefficient	0.40
Expansion loss coefficient	0.70

4. SEDIMENT TRANSPORT CONSIDERATIONS

1. A. Is there any indication from historical records that sediment transport (*including scour and deposition*) can affect the 100-year water surface elevations? Yes No
- B. Based on the conditions (*such as geomorphology, vegetative cover and development of the watershed and stream bed, and bank conditions*), is there a potential for debris and sediment transport (*including scour and deposition*) to affect the 100-year water surface elevations and/or conveyance capacity through the bridge/culvert? Yes No

2. If the answer to either 1A or 1B is yes:

A. What is the estimated sediment (*bed material*) load?
_____ cfs (*attach gradation curve*)

Explain method used to estimate the sediment transport and the depth of scour and/or deposition _____

B. Will sediment accumulate anywhere through the bridge/culvert? Yes No

If yes, explain the impact on the conveyance capacity through the bridge/culvert? _____

5. FLOODWAY ANALYSIS

Explain method of bridge encroachment.

(floodway run) _____

5. FLOODWAY ANALYSIS (Cont'd)

Comments (*explain any unusual situations*):

Attach analysis.

SECTION 3

MAPPING AND AS-BUILT PLANS

3.1 Map of City Limits

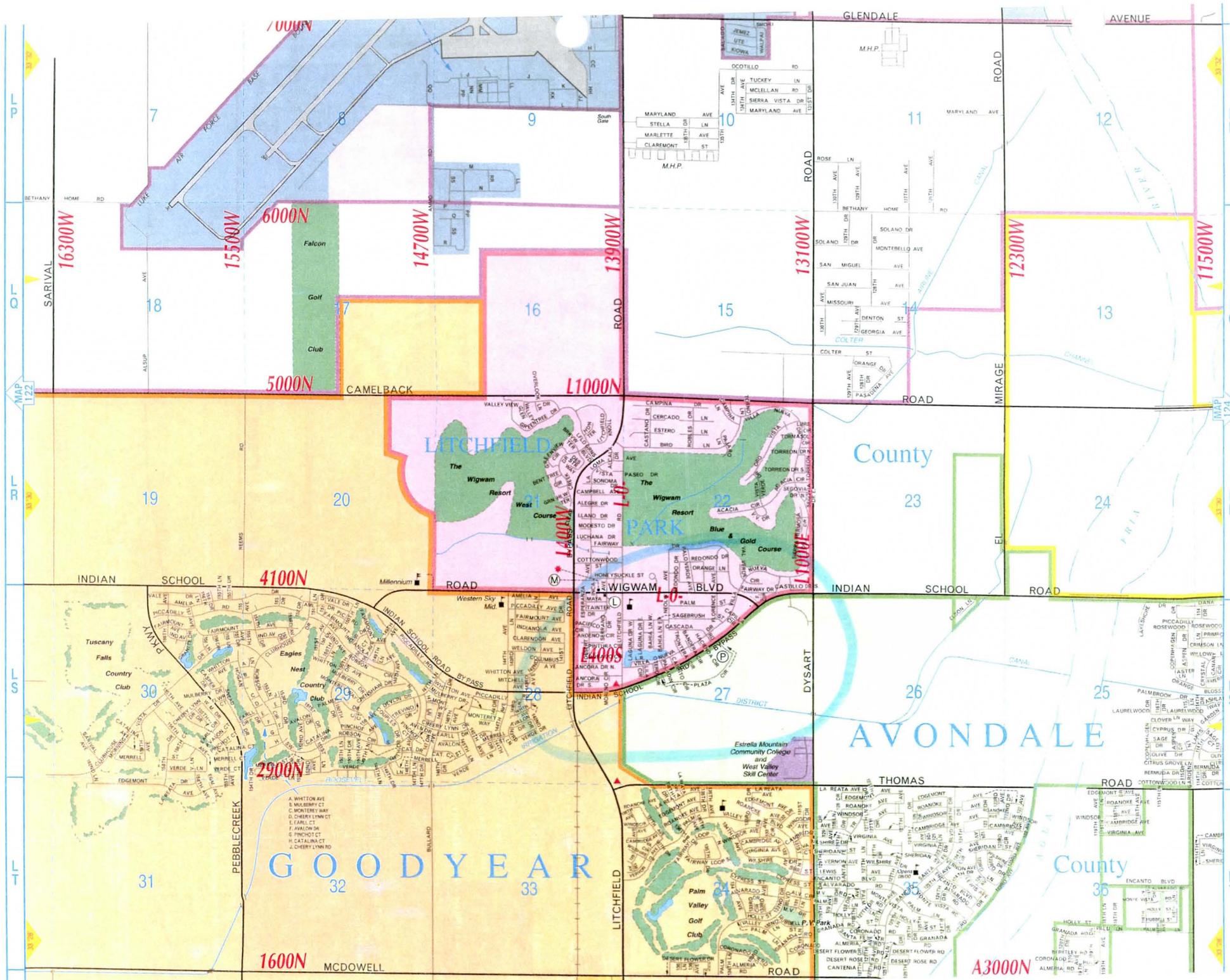
A map to show the related city limits of Avondale, Goodyear, and Litchfield Park follows this sheet.

3.2 Topography for Upstream and Downstream of Project

A roll of blueprints, included within this LOMR packet, contains the topography that was used for the hydraulic model for the East Channel and for the downstream end of the Main Channel model.

3.3 As-built Plans

A roll of certified as-built plans for both phases of the RID Overchute Project is included within this LOMR packet.



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a
f
u

MAP 122

MAP 124

MAP 126

MAP 128

MAP 130

MAP 132

MAP 134

MAP 136

GLENDALE

AVENUE

16300W

15500W

6000N

14700W

13900W

13100W

12300W

11500W

5000N

L1000N

4100N

2900N

1600N

CAMELBACK

INDIAN SCHOOL ROAD

PEBBLECREEK

MCDOWELL

ALSUP AVE

HOME RD

ROSE LN

VALLEY VIEW DR

WIGWAM BLVD

INDIAN SCHOOL RD BYPASS

INDIAN SCHOOL RD

INDIAN SCHOOL RD

INDIAN SCHOOL RD

LITCHFIELD

WIGWAM

WIGWAM

WIGWAM

WIGWAM

WIGWAM

ROSE LN

WIGWAM

WIGWAM

WIGWAM

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SECTION 4

HYDROLOGY

The hydrology for this project is covered in Section 3 of the RID Overchute Project Design Report, which is included within this LOMR packet. The complete Hydrology Report is included as Appendix C of the same Design Report.

SECTION 5

HYDRAULICS

5.1 Overview and Boundary Conditions

- A. The Main Channel and East Channel are modeled using HEC-RAS. The West Interceptor Channel and Plaza Circle Channel are modeled using HEC-2 with utilization of the CI (Channel Improvement) feature of HEC-2.
- B. Downstream of the **Main Channel**, there is a somewhat small, unimproved channel. (This channel has a proposed improvement that is covered by a CLOMR packet by The WLB Group that was mailed with this LOMR packet.) The Main Channel hydraulic model of this LOMR packet does not depend on the future downstream improvements being in place. A conservative boundary condition for the Main Channel model was obtained by taking two cross-sections, just downstream of the Overchute, from the topography by Keogh Engineering (blueprint roll). In this area the overbank-ground-surface slopes at 0.2 % to the south. The energy grade slope was conservatively estimated at 0.1 % (one half of the ground slope), and was used as the boundary condition for the downstream end of the Main Channel model.
- C. The **West Interceptor Channel** flows into and joins the Main Channel at Main Channel Model Sta. 10.8. Interpolation of the computed water surface elevations of the Main Channel yielded a starting water surface elevation of 1010.51 ft. for the West Interceptor Channel model.
- D. **Plaza Circle Channel** and **East Channel** Boundary Conditions: The reservoir characteristics of the detention basin are modeled by the HEC-1 model of the Hydrology Report, which has yielded a maximum water surface elevation of 1012.34 ft. However, the upstream end of the Main Channel model has an Energy Grade of 1012.90 ft. with a velocity of 1.67 fps. A conservative approach was taken by assuming the velocity at the detention basin to be zero, and then the water surface of the detention basin would be 1012.90 ft. This elevation was then used as the starting water surface elevation for both the Plaza Circle Channel and East Channel models.

5.2 These **Main Channel Model** ("RID Canal Overchute") items follow

SUMMARY TABLE

PROFILE PLOT

CROSS-SECTION PLOTS

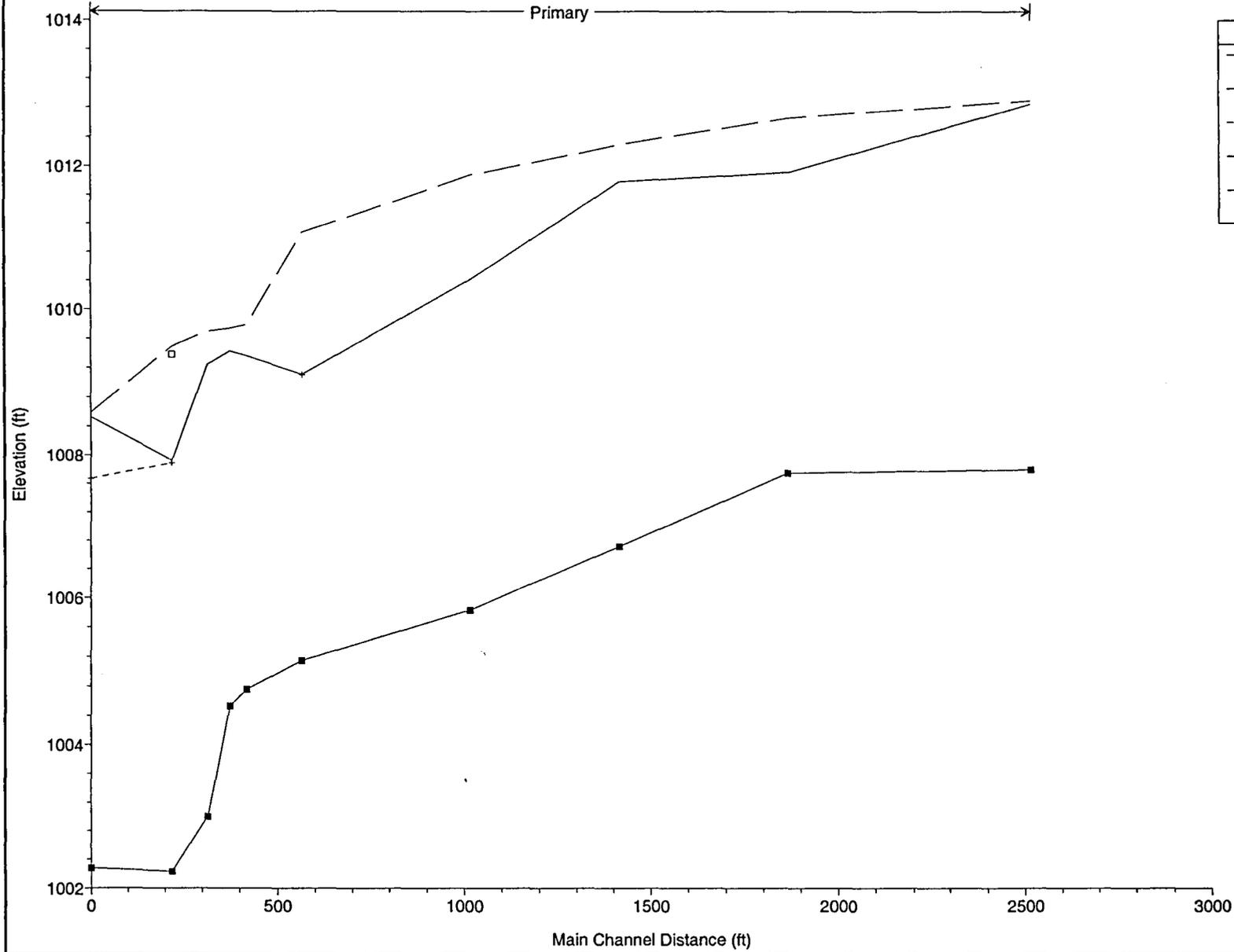
CHECK-RAS REPORT

HEC-RAS Plan: Run 003 River: Main Channel Reach: Primary

Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Primary	25.5	1084.00	1007.80	1012.85		1012.90	0.000116	1.67	650.92	153.68	0.14
Primary	19	1084.00	1007.75	1011.91		1012.66	0.000937	6.93	156.34	55.07	0.73
Primary	14.5	1084.00	1006.72	1011.78		1012.29	0.000494	5.70	190.04	55.05	0.54
Primary	10.5	1323.00	1005.83	1010.41		1011.87	0.001354	9.70	136.34	30.01	0.80
Primary	6	1323.00	1005.15	1009.11	1009.11	1011.07	0.002111	11.24	117.71	30.01	1.00
Primary	4.5	1456.00	1004.76	1009.36		1009.79	0.000451	5.28	275.90	60.01	0.43
Primary	4.1	1456.00	1004.53	1009.43		1009.74	0.000314	4.48	325.21	77.56	0.39
Primary	3.5	1456.00	1003.00	1009.25		1009.70	0.000425	5.41	269.00	59.92	0.45
Primary	2.5	1456.00	1002.23	1007.92	1007.88	1009.49	0.006255	10.04	145.07	44.88	0.98
Primary	0.3	1456.00	1002.28	1008.52	1007.67	1008.59	0.001000	2.02	719.30	642.25	0.34

MAIN
CHANNEL

RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

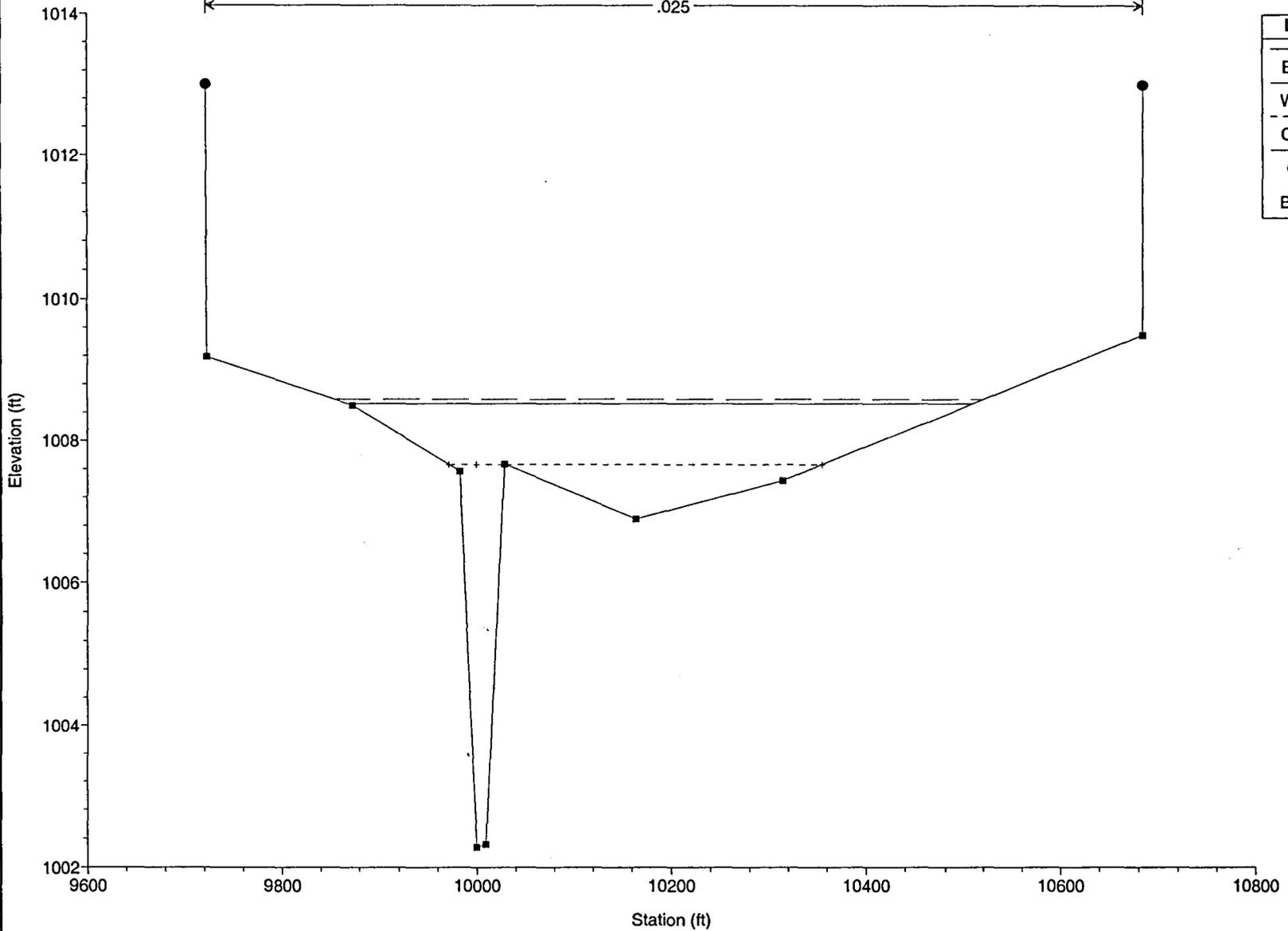


Legend	
EG PF 1	(Solid line)
WS PF 1	(Dashed line)
Crit PF 1	(Dotted line)
Ground	(Line with square markers)
Left Levee	(Line with square markers)

RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

downstream end of model, unimproved cha

.025

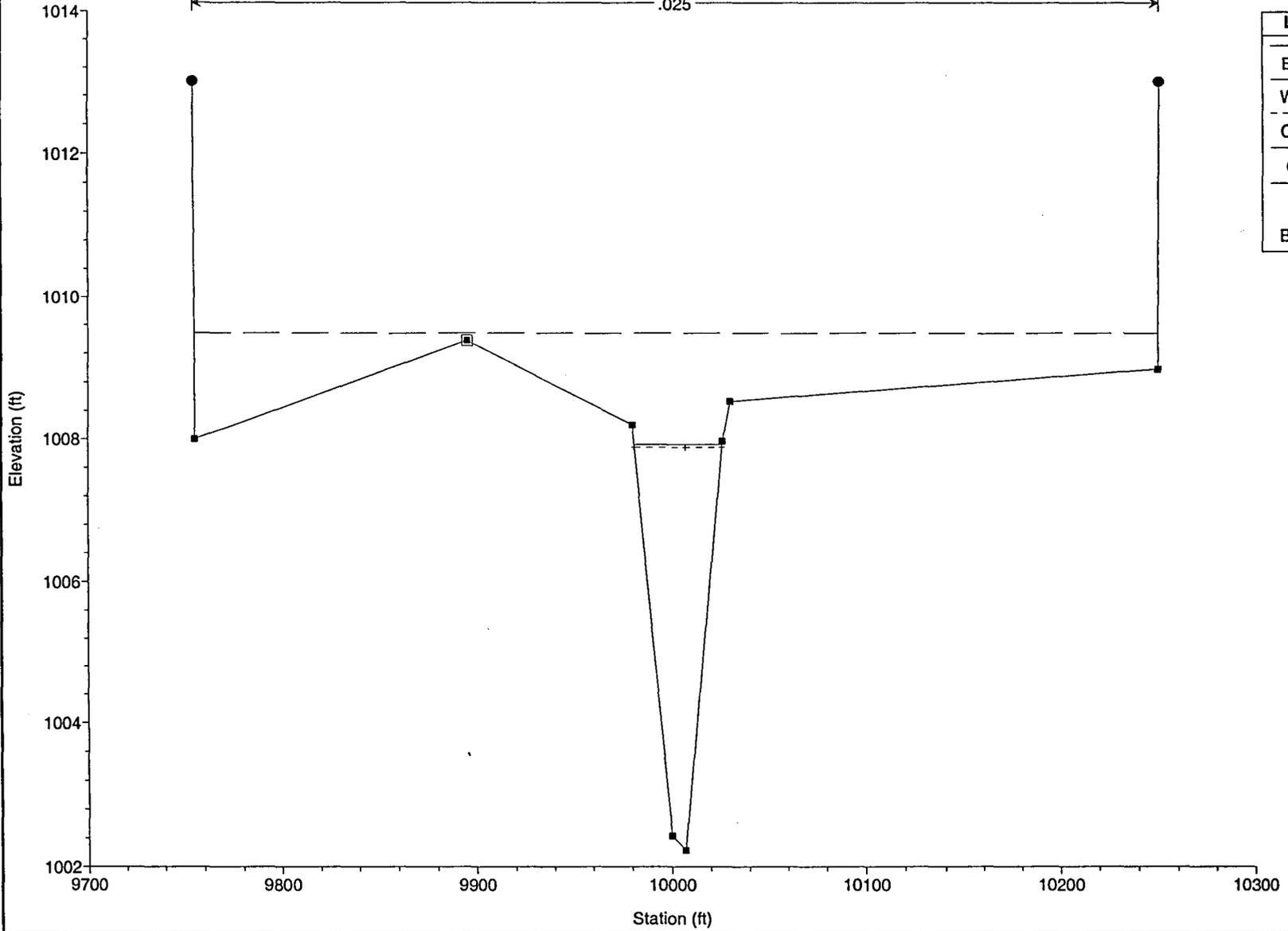


Legend	
EG PF 1	—●—
WS PF 1	- - - + - - -
Crit PF 1
Ground	—■—
Bank Sta	●

RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 2.5 -- unimproved channel

.025

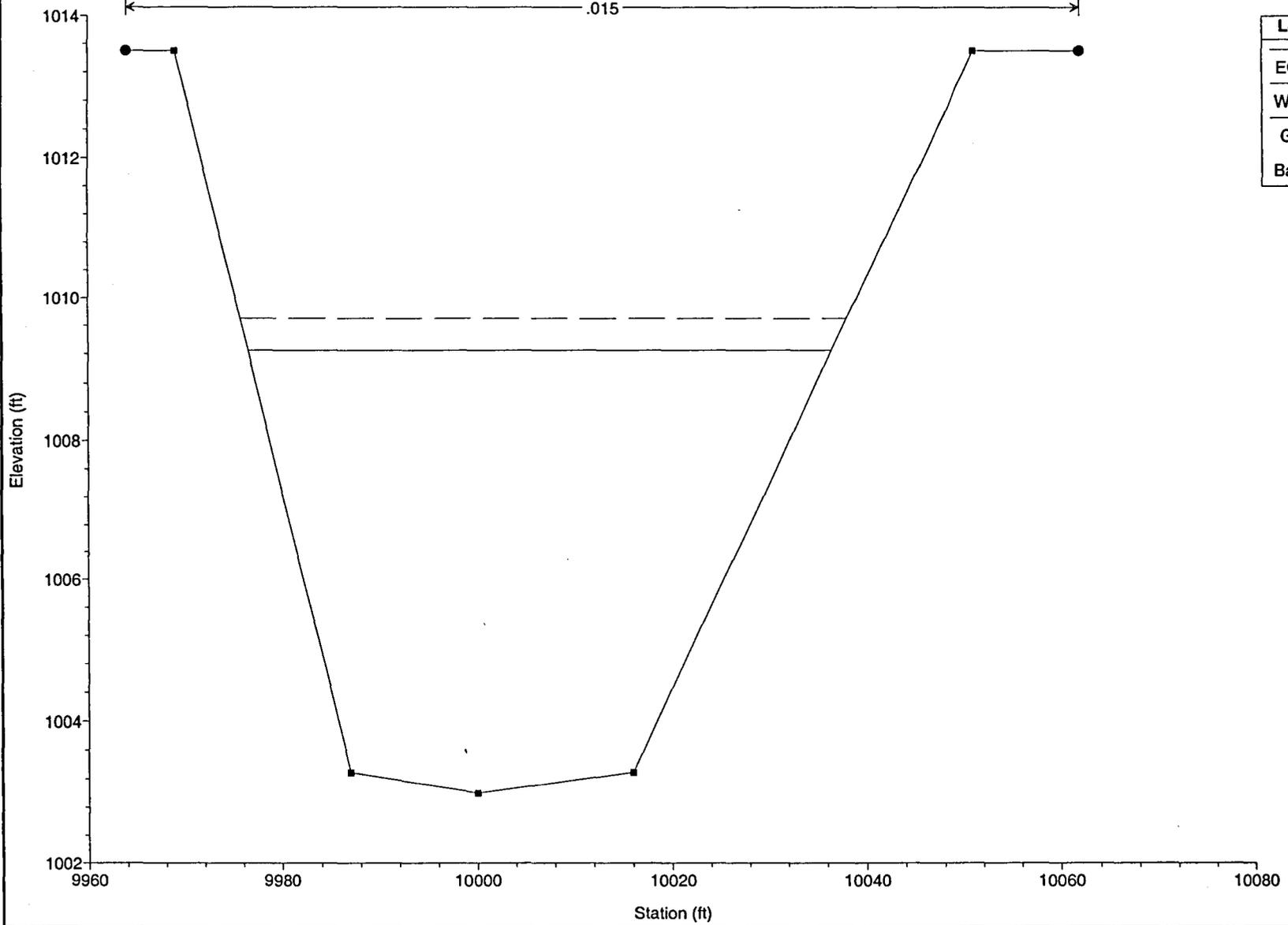


Legend	
EG PF 1	—
WS PF 1	- - -
Crit PF 1	- - -
Ground	—
Levee	□
Bank Sta	●

RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 3.5 -- transition

.015



Legend	
EG PF 1	—
WS PF 1	—
Ground	■
Bank Sta	●

RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 4.1 -- 45 ft south of canal c/l

.015

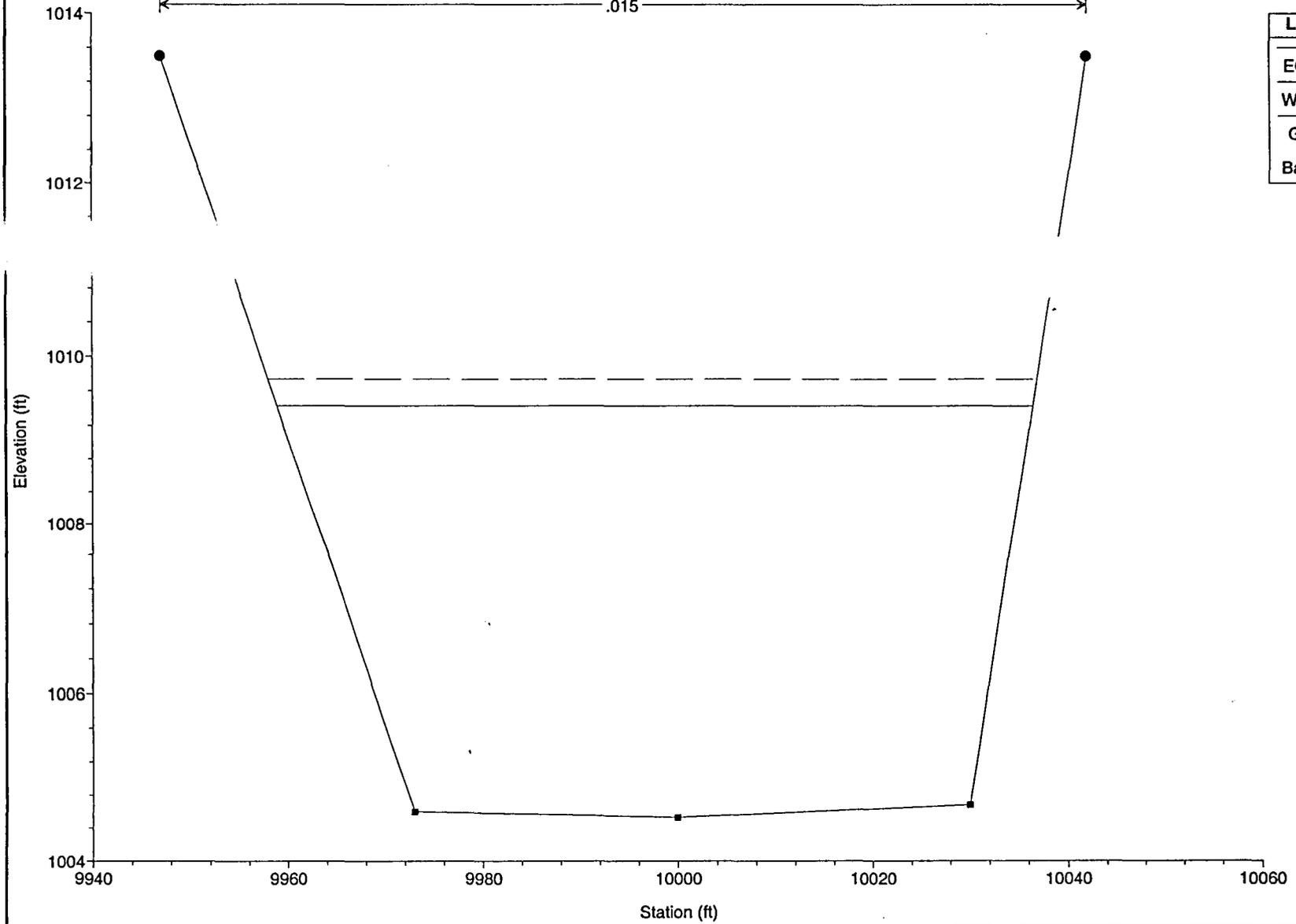
Legend

EG PF 1

WS PF 1

Ground

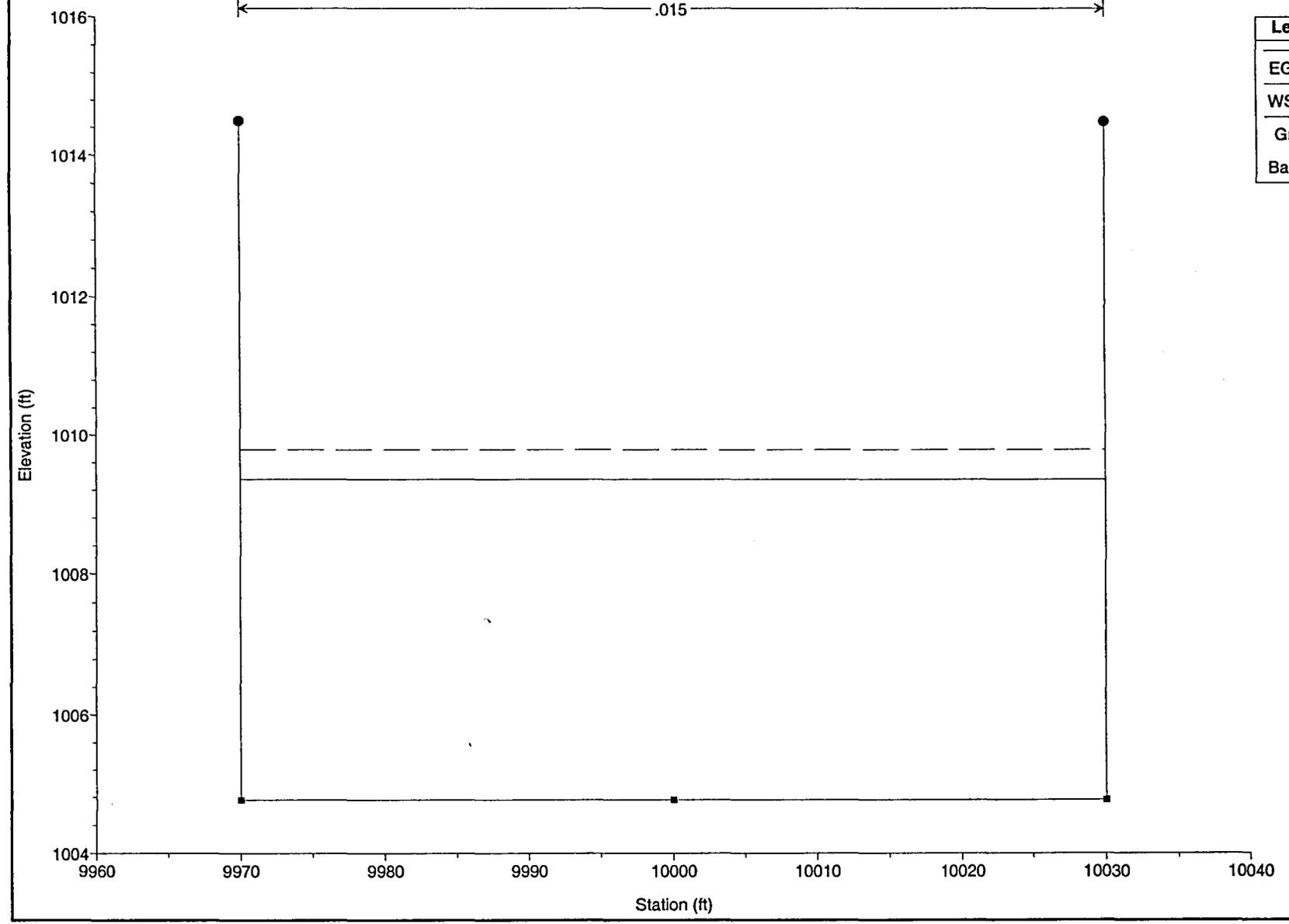
Bank Sta



RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 4.5 -- at canal c/1

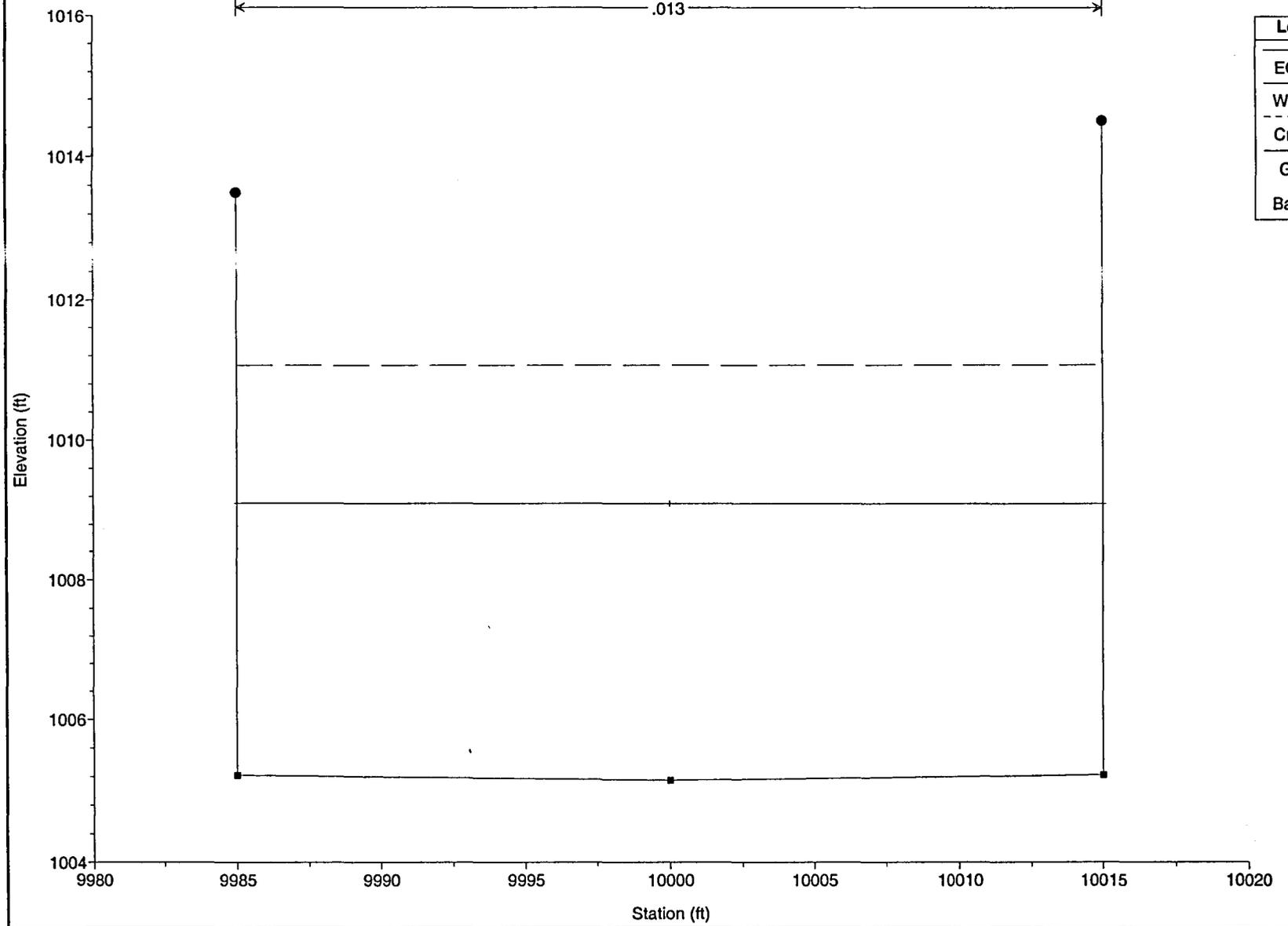
.015



Legend	
EG PF 1	—
WS PF 1	- - -
Ground	—
Bank Sta	●

RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

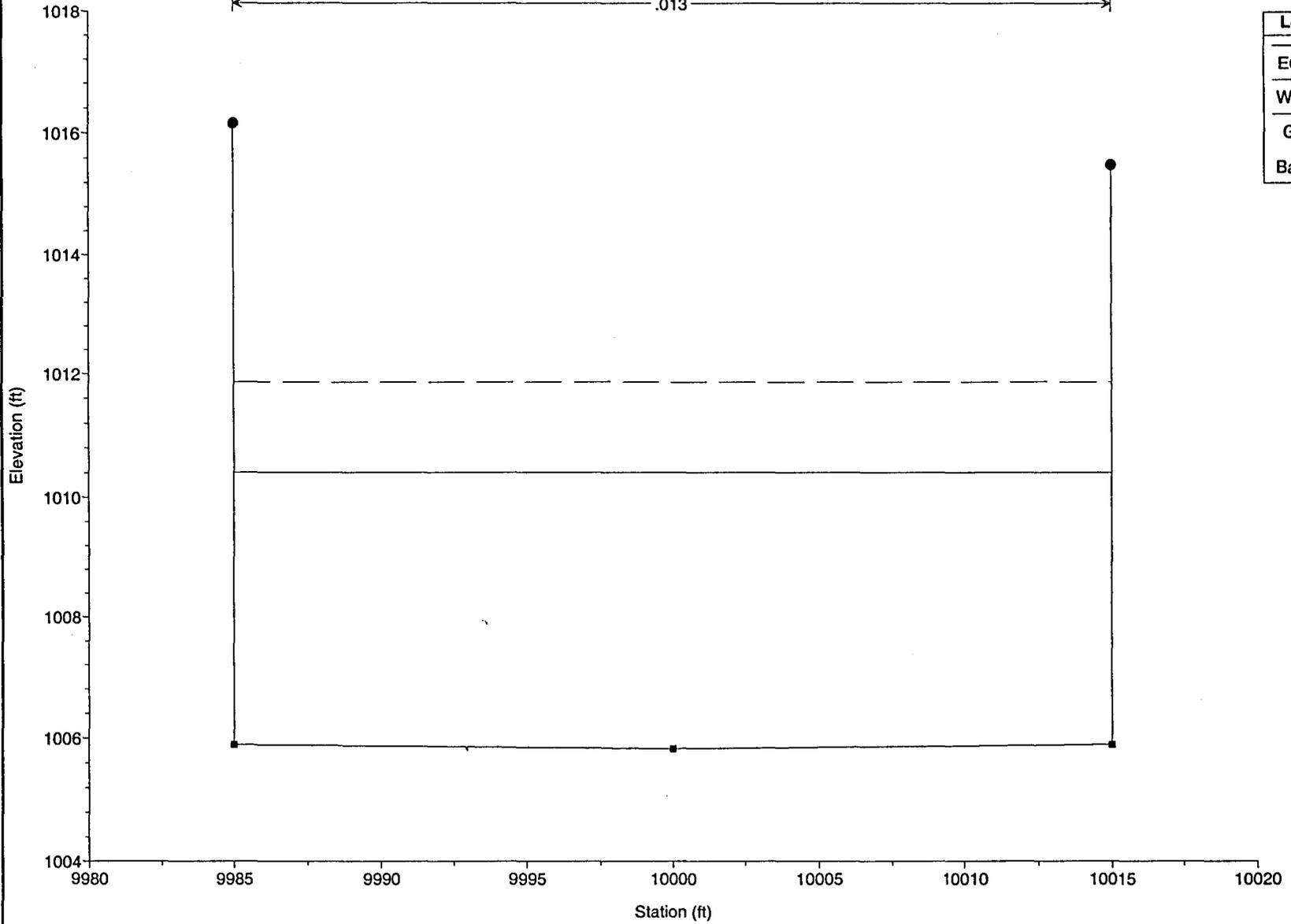
Section 6 -- lower part of 30 ft wide re



RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 10.5 -- upper part of 30 ft wide

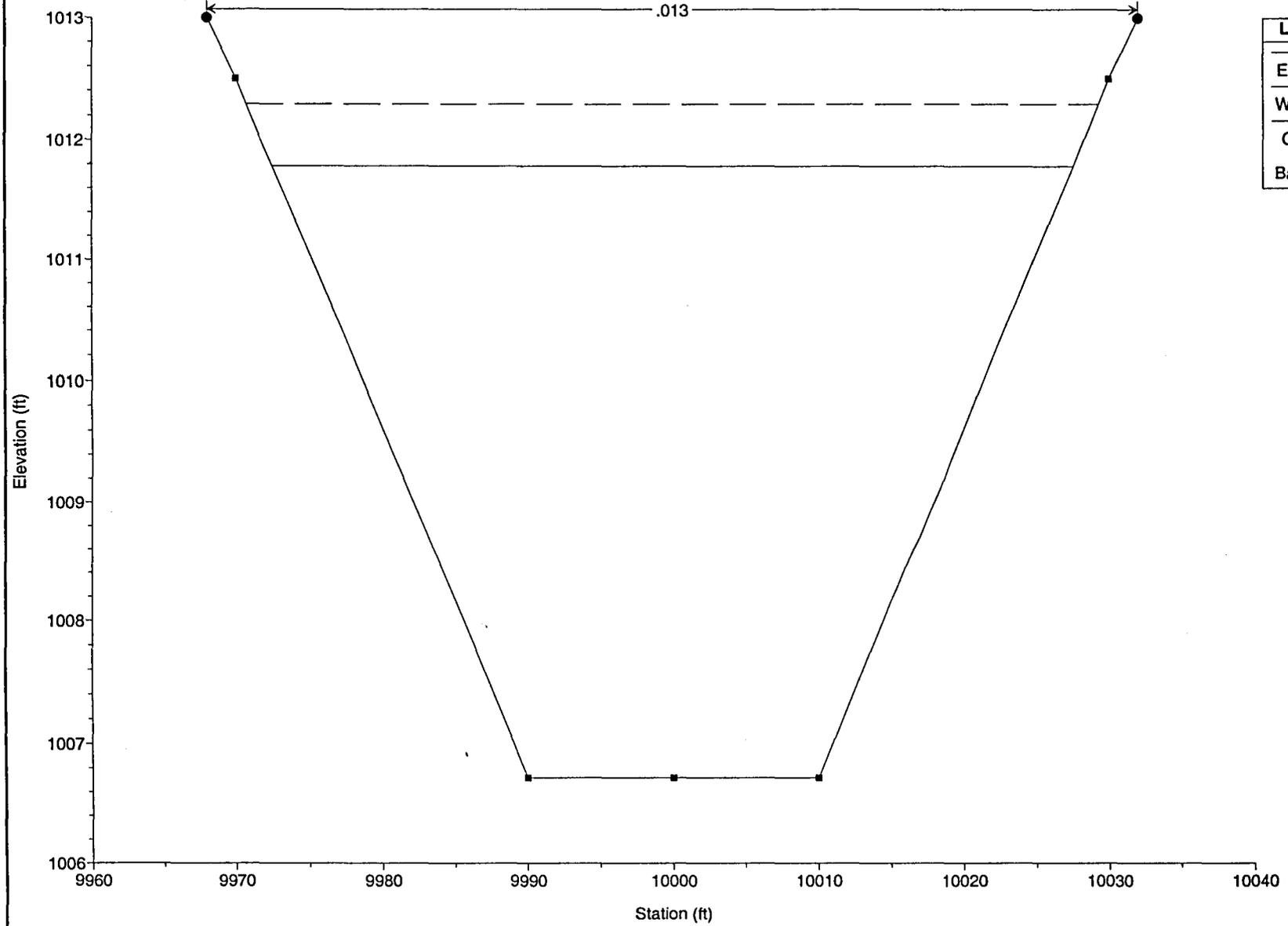
.013



Legend	
EG PF 1	—
WS PF 1	- - -
Ground	—
Bank Sta	●

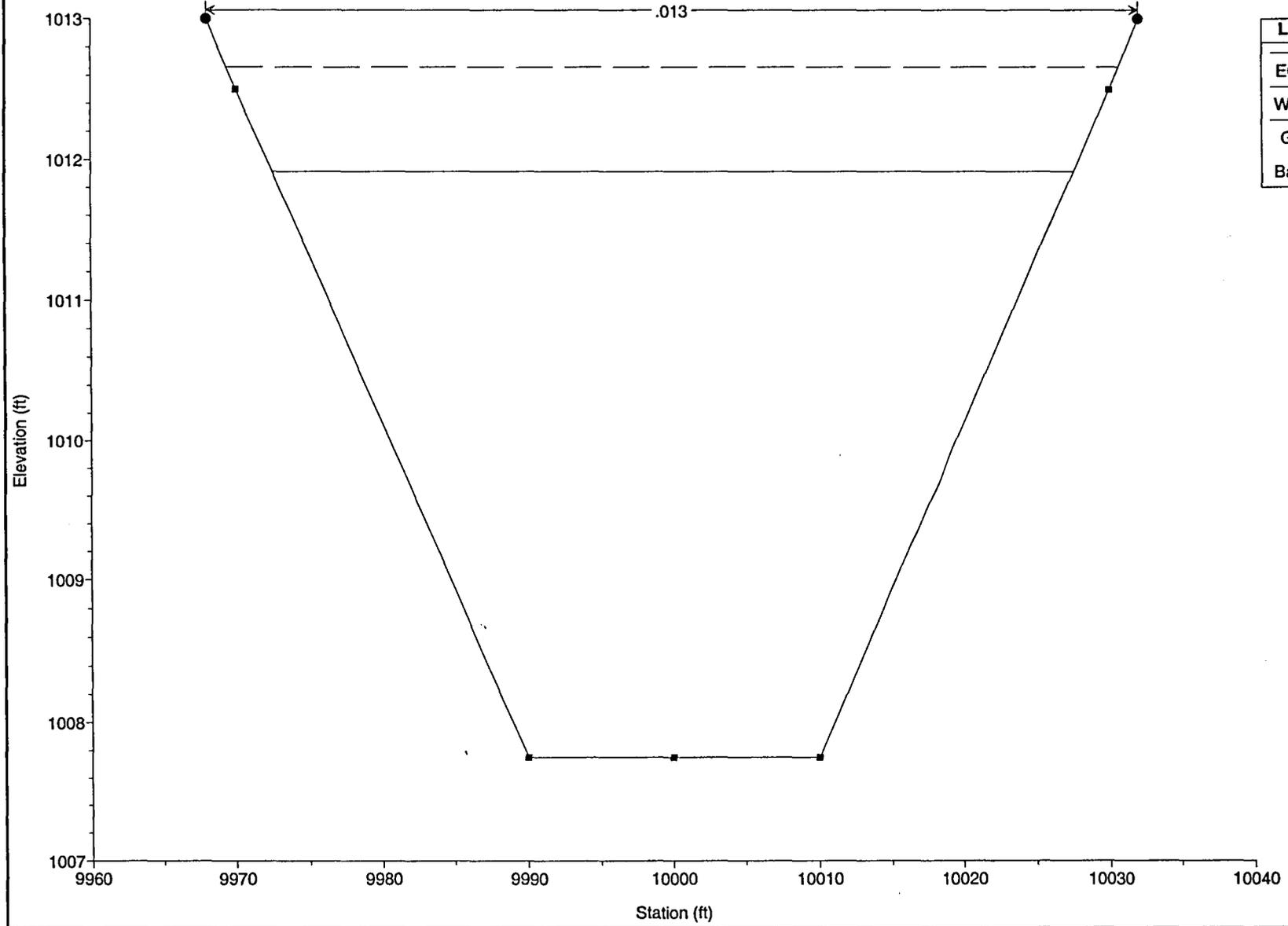
RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 14.5 -- lined trapezoidal channe



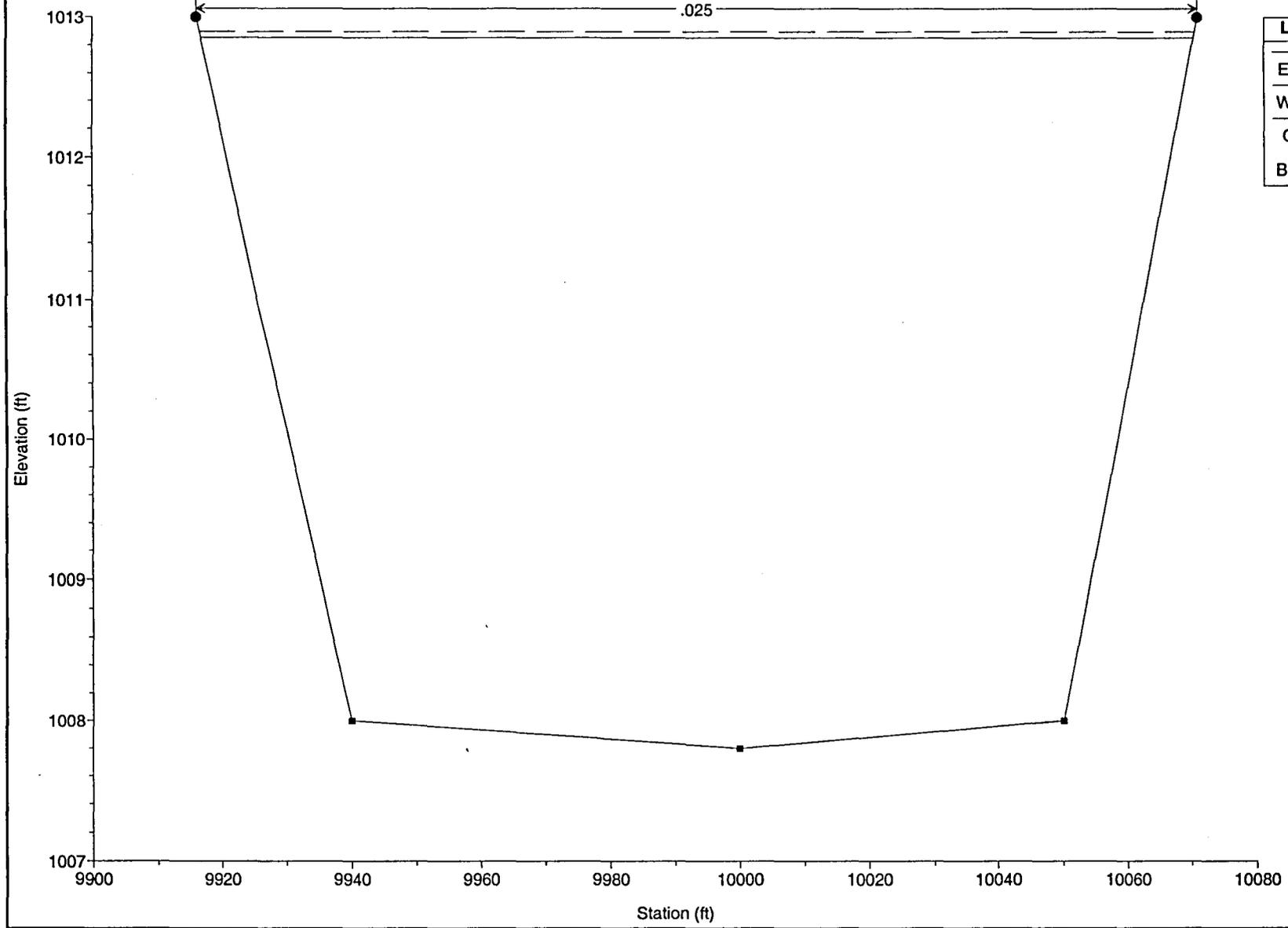
RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 19 -- lined trapezoidal channel



RID Canal Overchute -- LOMR RAS Model RID Canal Overchute -- Run 003 11/20/00

Section 25.5 -- unlined trapezoidal chan



CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.prj
 Plan File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.p08
 Geometry File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.g03
 Flow File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.f03
 Report File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.nt
 Selected profiles: PF 1
 Date: 11/27/00
 Time: 5:18:22 PM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP

Main Channel, Primary						
25.5		-----	0.025	0.025	0.1	0.3
		-----	0.025	-----		
19		-----	0.013	0.013	0.1	0.3
		-----	0.013	-----		
14.5		-----	0.013	0.013	0.1	0.3
		-----	0.013	-----		
10.5		-----	0.013	0.013	0.1	0.3
		-----	0.013	-----		
6		-----	0.013	0.013	0.1	0.3
		-----	0.013	-----		
4.5		-----	0.015	0.015	0.1	0.3
		-----	0.015	-----		
4.1		-----	0.015	0.015	0.1	0.3
		-----	0.015	-----		
3.5		-----	0.015	0.015	0.1	0.3
		-----	0.015	-----		
2.5		-----	0.025	0.025	0.1	0.3
		-----	0.025	-----		
.3		-----	0.025	0.025	0.1	0.3
		-----	0.025	-----		

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.013 0.013	0.025 0.025
Right Overbank n Value:	0.013	0.025
Channel n Value:	0.013	0.025
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: 25.5
 NT RC 01 Right overbank n value is less than 0.035
 The n value for overbank is usually larger than 0.035.
 The n value should be reevaluated.

BECAUSE IMPROVED CHANNEL

RS: 25.5
 NT RC 03 Channel n value is equal to or less than 0.025
 The n value of the channel is usually larger than 0.025.
 The n value should be reevaluated if it is not representing a
 concrete lined channel.

RS: 19
 NT RC 01 Right overbank n value is less than 0.035
 The n value for overbank is usually larger than 0.035

T. value should be reevaluated.

RS: 19
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: 14.5
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger then 0.035.
The n value should be reevaluated.

RS: 14.5
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: 10.5
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger then 0.035.
The n value should be reevaluated.

RS: 10.5
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: 6
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger then 0.035.
The n value should be reevaluated.

RS: 6
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: 4.5
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger then 0.035.
The n value should be reevaluated.

RS: 4.5
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: 4.1
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger then 0.035.
The n value should be reevaluated.

RS: 4.1
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated it if is not representing a
concrete lined channel.

RS: 3.5
NT RC 01 Right overbank n value is less than 0.035

T₁ value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 3.5

NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

RS: 2.5

NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 2.5

NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

TRANSITION LOSS COEFFICIENT CHECK

ROUGHNESS COEFFICIENT AT STRUCTURES

---END---

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.prj
 Plan File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.p08
 Geometry File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.g03
 Flow File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.f03
 Report File: C:\RIDCO LOMR\Final Run Lower Model\RIDCO_LOMR.xs
 Selected profiles: PF 1
 Date: 11/27/00
 Time: 5:17:37 PM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code

Main Channel, Primary						
25.5	650	650	650	153.68	1084	
19	450	450	450	55.07	1084	
14.5	400	400	400	55.05	1084	
10.5	450	450	450	30.01	1323	
6	147	147	147	30.01	1323	C
4.5	45	45	45	60.01	1456	
4.1	60	60	60	77.56	1456	
3.5	95	95	95	59.92	1456	
2.5	220	220	220	44.88	1456	
0.3	0	0	0	642.25	1456	

 B=blocked obstruction XS SC 05
 C=critical depth XS SC 03
 D=divided flow XS SC 01
 E=cross section extended XS SC 02
 K=known water-surface XS SC 04

DISTANCE CHECK

 SPACING CHECK

RS: 25.5
 XS SP 01 Diff. HV = 0.71 ; Kratio = 0.35 ; Depth Ratio = 0.82
 TopWdthAct ratio = 0.36 ; Length Chl Up / 500 = 1.30
 Change in HV > 0.5
 K ratio < 0.7 or K ratio > 1.4
 Depth ratio < 0.9 or Depth ratio > 1.1
 TopWdthAct ratio < 0.5 or TopWdthAct ratio > 2.0
 and Length Chnl up / 500 > 1.1
 additional cross sections may need to be added between
 river station up and river station dn.

INEFFECTIVE FLOW CHECK

 RS: 2.5
 XS IF 01 Left Levee option is used at this river station
 Please investigate whether the NFIP requirements
 for levees are met.

LOCATION CHECK

BOUNDARY CONDITION CHECK

XS BC 02 The name of the stream is Main Channel, Primary
Normal S = .001 is specified as the downstream boundary
for profile PF 1

---END---

5.3 These **West Interceptor Model** (model name: **Ridjob5**) items follow

INPUT LISTING

OUTPUT LISTING

CHECK-2 REPORT

Ridjob5

T1 1202101
T2 RID-OVERCHUTE
T3 METAJOB 5-WEST INTERCEPTOR CHANNEL FROM CP-2711
T4 THIS UNLINED EXCAVATED DRAINAGE CHANNEL MODELS THE WEST INTERCEPTOR
T4 CHANNEL TO BE CONSTRUCTED AS PART OF PHASE 2 OF THE RID OVERCHUTE
T4 PROJECT. THE CHANNEL IS APPROXIMATELY 1/4 MILE LONG, PARALLELS ISRB,
T4 AND CROSSES PALADIN ROAD WITH A BOX CULVERT. THE INLET TO THE CHANNEL
T4 IS CP-2711
T4 STARTING W.S. EL. IS INTERPOLATED FROM HEC-RAS MODEL OF 11-20-00 FOR
T4 RID CANAL OVERCHUTE FOR PHASE 1 STA. 10+79.77, 1010.51 FT.

J1	0	2						384	1010.51	
J2	-1		-1							-6
J3	120	150								
NC	0.035	0.035	0.014	0.1	0.3					
X1	522	10	7	37.02						
CI	22	1005.87	0.014	0	0	30	0.01			
X3	10									
GR	1015.6	0	1015.6	7	1015.6	7.01	1015.6	22.01	1005.87	22.02
GR	1015.6	22.03	1015.6	37.01	1015.6	37.02	1012.5	118.47	1012.5	120.49
NC	0.035	0.035	0.035	0.1	0.3					
X1	523	7	8.02	68.82	273	273	273			
CI	-1	1006.4	0.035	4	4	30	0.01			
X3	10									
* x5	1	1012.28								
GR	1013	0	1013	8.02	1012	50.43	1012	52.84	1012.5	68.82
GR	1012.5	103.02	1013	118.06						
X1	524	7	80	139.6	78	78	78			
CI	-1	1006.55		4	4	15	0.01			
X3	10									
GR	1013	0	1013	20.37	1012.5	80	1012	83.7	1012	100.13
GR	1012.5	139.6	1012.5	179.2						
X1	525	5	66	124.4	103.32	103.32	103.32			
CI	-1	1006.7	0.035	4	4	12	0.01			
X3	10									
GR	1012	0	1012	22.09	1012.5	66	1012.5	124.4	1012.5	143.53
X1	526	6	127	185	90.55	90.55	90.55			
CI	-1	1006.85	0.035	4	4	12	0.01			
X3	10									
GR	1012	0	1012	37.61	1012	45.31	1012.6	127	1012.6	185
GR	1012.6	207.7								
NC				0.4	0.7					
X1	526.2	6	130	187.76	15.29	15.29	15.29			
CI	-1	1006.88	0.035	4	4	12	0.01			
X3	10									
GR	1012	0	1012	29.77	1012	37.2	1012.6	130	1012.6	187.76
GR	1012.6	209.97								
X1	527	7	39	73	86.25	86.25	86.25			
CI	-1	1007	0.014	1	1	20	0.01			
X3	10									
GR	1014	0	1014	39	1014	53.55	1014	67.68	1014	73
GR	1014	94.97	1014	115.95						
SC	3.012	0.4	2.5	60	7	6	100	8.1	1007.05	1007
X1	528	4	32.05	65.95	103.52	103.52	103.52			
CI	-1	1007.05	0.014	1	1	20	0.01			

WEST
INTERCEPTOR
CHANNEL

Ridjob5

X2		2		1014.8						
X3	10									
GR	1013	0	1014	32.05	1014	65.95	1014	120.45		
NC				0.1	0.3					
X1	528.4	5	160	227.12	40.91	40.91	40.91			
CI	-1	1007.11	0.035	4	4	12	0.01			
X3	10			160	1018	227.12	1018			
GR	1012	0	1014	160	1014	227.12	1014	235.15	1014	276.47
X1	529	4	1	66.4	58.18	58.18	58.18			
CI	-1	1007.2		4	4	12	0.01			
X3	10									
GR	1013	0	1014	1	1014	66.4	1014	113.69		
X1	530	4	34	99.2	102.64	102.64	102.64			
CI	-1	1007.35		4	4	12	0.01			
X3	10									
GR	1013	0	1014	34	1014	99.2	1014	141.95		
X1	531	4	55	119	98.79	98.79	98.79			
CI	-1	1007.5	0.035	4	4	12	0.01			
X3	10									
GR	1013	0	1014	55	1014	119	1014	164.38		
X1	532	4	103.2	166	99.01	99.01	99.01			
CI	-1	1007.65	0.035	4	4	12	0.01			
X3	10									
GR	1013	0	1014	103.2	1014	166	1014	179.79		
X1	533	4	124.3	193.9	95.98	95.98	95.98			
CI	-1	1007.8	0.035	4	4	12	0.01			
X3	10									
GR	1013.7	0	1015	124.3	1015	193.9	1015	207.54		
EJ										

ER

Ridjob5

```

1*****
* HEC-2 WATER SURFACE PROFILES *
* *
* Version 4.6.2; May 1991 *
* *
* RUN DATE 20NOV00 TIME 12:07:01 *
*****

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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
*****

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X X XXXXXXX XXXXX XXXXX
X X X X X X
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X X XXXXXXX XXXXX XXXXXXX

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20NOV00 12:07:01

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PAGE 1

THIS RUN EXECUTED 20NOV00 12:07:01

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*****
HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991
*****

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T1 1202101
T2 RID-OVERCHUTE
T3 METAJOB 5-WEST INTERCEPTOR CHANNEL FROM CP-2711
T4 THIS UNLINED EXCAVATED DRAINAGE CHANNEL MODELS THE WEST INTERCEPTOR
T4 CHANNEL TO BE CONSTRUCTED AS PART OF PHASE 2 OF THE RID OVERCHUTE
T4 PROJECT. THE CHANNEL IS APPROXIMATELY 1/4 MILE LONG, PARALLELS ISRB,
T4 AND CROSSES PALADIN ROAD WITH A BOX CULVERT. THE INLET TO THE CHANNEL
T4 IS CP-2711
T4 STARTING W.S. EL. IS INTERPOLATED FROM HEC-RAS MODEL OF 11-20-00 FOR
T4 RID CANAL OVERCHUTE FOR PHASE 1 STA. 10+79.77, 1010.51 FT.

```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2						384	1010.51	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1		-1					-6		

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

	120	150								
NC	0.035	0.035	0.014	0.1	0.3					
X1	522	10	7	37.02						
CI	22	1005.87	0.014	0	0	30	0.01			
X3	10									
GR	1015.6	0	1015.6	7	1015.6	7.01	1015.6	22.01	1005.87	22.02
GR	1015.6	22.03	1015.6	37.01	1015.6	37.02	1012.5	118.47	1012.5	120.49
NC	0.035	0.035	0.035	0.1	0.3					
X1	523	7	8.02	68.82	273	273	273			
CI	-1	1006.4	0.035	4	4	30	0.01			
X3	10									
x5	1	1012.28								
GR	1013	0	1013	8.02	1012	50.43	1012	52.84	1012.5	68.82
GR	1012.5	103.02	1013	118.06						
X1	524	7	80	139.6	78	78	78			
CI	-1	1006.55		4	4	15	0.01			
X3	10									
GR	1013	0	1013	20.37	1012.5	80	1012	83.7	1012	100.13
GR	1012.5	139.6	1012.5	179.2						
1	20NOV00	12:07:01								
									PAGE	2
X1	525	5	66	124.4	103.32	103.32	103.32			
CI	-1	1006.7	0.035	4	4	12	0.01			
X3	10									
GR	1012	0	1012	22.09	1012.5	66	1012.5	124.4	1012.5	143.53
X1	526	6	127	185	90.55	90.55	90.55			
CI	-1	1006.85	0.035	4	4	12	0.01			
X3	10									
GR	1012	0	1012	37.61	1012	45.31	1012.6	127	1012.6	185
GR	1012.6	207.7								
NC				0.4	0.7					
X1	526.2	6	130	187.76	15.29	15.29	15.29			
CI	-1	1006.88	0.035	4	4	12	0.01			
X3	10									
GR	1012	0	1012	29.77	1012	37.2	1012.6	130	1012.6	187.76
GR	1012.6	209.97								
X1	527	7	39	73	86.25	86.25	86.25			
CI	-1	1007	0.014	1	1	20	0.01			
X3	10									
GR	1014	0	1014	39	1014	53.55	1014	67.68	1014	73
GR	1014	94.97	1014	115.95						

Ridjob5										
SC	3.012	0.4	2.5	60	7	6	100	8.1	1007.05	1007
X1	528	4	32.05	65.95	103.52	103.52	103.52			
CI	-1	1007.05	0.014	1	1	20	0.01			
X2			2		1014.8					
X3	10									
GR	1013	0	1014	32.05	1014	65.95	1014	120.45		
NC			0.1		0.3					
X1	528.4	5	160	227.12	40.91	40.91	40.91			
CI	-1	1007.11	0.035	4	4	12	0.01			
X3	10		160	1018	227.12	1018	1018			
GR	1012	0	1014	160	1014	227.12	1014	235.15	1014	276.47
X1	529	4	1	66.4	58.18	58.18	58.18			
CI	-1	1007.2		4	4	12	0.01			
X3	10									
GR	1013	0	1014	1	1014	66.4	1014	113.69		
X1	530	4	34	99.2	102.64	102.64	102.64			
CI	-1	1007.35		4	4	12	0.01			
X3	10									
GR	1013	0	1014	34	1014	99.2	1014	141.95		
X1	531	4	55	119	98.79	98.79	98.79			
CI	-1	1007.5	0.035	4	4	12	0.01			
X3	10									
GR	1013	0	1014	55	1014	119	1014	164.38		

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PAGE 3

X1	532	4	103.2	166	99.01	99.01	99.01			
CI	-1	1007.65	0.035	4	4	12	0.01			
X3	10									
GR	1013	0	1014	103.2	1014	166	1014	179.79		
X1	533	4	124.3	193.9	95.98	95.98	95.98			
CI	-1	1007.8	0.035	4	4	12	0.01			
X3	10									
GR	1013.7	0	1015	124.3	1015	193.9	1015	207.54		

1
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PAGE 4

SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK	ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK	ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*PROF 1

0

CCHV= .100 CEHV= .300
 *SECNO 522.000
 CHIMP CLSTA= 22.00 CELCH= 1005.87 BW= 30.00 STCHL= 7.00 STCHR= 37.02
 EXCAVATION DATA
 AEX= 291.8SQ-FT VEXR= .0K*CU-YD VEXT= .0K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1015.60 ELREA= 1015.60

522.000	4.64	1010.51	.00	1010.51	1010.63	.12	.00	.00	1015.60
384.0	.0	384.0	.0	.0	139.2	.0	.0	.0	1015.60
.00	.00	2.76	.00	.000	.014	.000	.000	1005.87	7.00
.000125	0.	0.	0.	0	0	0	.00	30.00	37.00

CCHV= .100 CEHV= .300
 *SECNO 523.000
 CHIMP CLSTA= 38.42 CELCH= 1006.40 BW= 30.00 STCHL= .00 STCHR= 77.82
 EXCAVATION DATA
 AEX= 330.5SQ-FT VEXR= 3.1K*CU-YD VEXT= 3.1K*CU-YD

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .52

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1012.26 ELREA= 1012.50

523.000	4.24	1010.64	.00	.00	1010.69	.06	.06	.01	1012.26
384.0	.0	384.0	.0	.0	198.8	.0	1.1	.3	1012.50
.04	.00	1.93	.00	.000	.035	.000	.000	1006.40	6.48
.000465	273.	273.	273.	2	0	0	.00	63.88	70.36

*SECNO 524.000
 CHIMP CLSTA= 109.80 CELCH= 1006.55 BW= 15.00 STCHL= 78.45 STCHR= 141.10
 EXCAVATION DATA
 AEX= 211.9SQ-FT VEXR= .8K*CU-YD VEXT= 3.9K*CU-YD

1

20NOV00 12:07:01

SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .58

Ridjob5

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1012.51 ELREA= 1012.50

524.000	4.09	1010.64	.00	.00	1010.78	.14	.06	.02	1012.51
384.0	.0	384.0	.0	.0	128.1	.0	1.4	.4	1012.50
.05	.00	3.00	.00	.000	.035	.000	.000	1006.55	85.95
.001373	78.	78.	78.	2	0	0	.00	47.69	133.65

*SECNO 525.000

CHIMP CLSTA= 95.20 CELCH= 1006.70 BW= 12.00 STCHL= 66.00 STCHR= 124.40

EXCAVATION DATA

AEX= 204.2SQ-FT VEXR= .8K*CU-YD VEXT= 4.7K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1012.50 ELREA= 1012.50

525.000	4.07	1010.77	.00	.00	1010.95	.17	.16	.01	1012.50
384.0	.0	384.0	.0	.0	115.3	.0	1.6	.5	1012.50
.06	.00	3.33	.00	.000	.035	.000	.000	1006.70	72.90
.001786	103.	103.	103.	2	0	0	.00	44.60	117.50

*SECNO 526.000

CHIMP CLSTA= 156.00 CELCH= 1006.85 BW= 12.00 STCHL= 127.00 STCHR= 185.00

EXCAVATION DATA

AEX= 201.2SQ-FT VEXR= .7K*CU-YD VEXT= 5.4K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1012.60 ELREA= 1012.60

526.000	4.09	1010.94	.00	.00	1011.11	.17	.16	.00	1012.60
384.0	.0	384.0	.0	.0	115.4	.0	1.9	.6	1012.60
.06	.00	3.33	.00	.000	.035	.000	.000	1006.85	133.69
.001782	91.	91.	91.	1	0	0	.00	44.62	178.31

CCHV= .400 CEHV= .700

*SECNO 526.200

CHIMP CLSTA= 158.88 CELCH= 1006.88 BW= 12.00 STCHL= 130.00 STCHR= 187.76

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

EXCAVATION DATA

AEX= 199.5SQ-FT VEXR= .1K*CU-YD VEXT= 5.5K*CU-YD

Ridjob5

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1012.60 ELREA= 1012.60

526.200	4.08	1010.96	.00	.00	1011.14	.17	.03	.00	1012.60
384.0	.0	384.0	.0	.0	115.7	.0	1.9	.6	1012.60
.06	.00	3.32	.00	.000	.035	.000	.000	1006.88	136.54
.001769	15.	15.	15.	0	0	0	.00	44.67	181.22

*SECNO 527.000
 CHIMP CLSTA= 56.00 CELCH= 1007.00 BW= 20.00 STCHL= 39.00 STCHR= 73.00
 EXCAVATION DATA
 AEX= 189.0SQ-FT VEXR= .6K*CU-YD VEXT= 6.1K*CU-YD

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.35

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1014.00 ELREA= 1014.00

527.000	4.00	1011.00	.00	.00	1011.24	.25	.05	.05	1014.00
384.0	.0	384.0	.0	.0	95.9	.0	2.1	.7	1014.00
.07	.00	4.00	.00	.000	.014	.000	.000	1007.00	42.00
.000320	86.	86.	86.	2	0	0	.00	27.99	70.00

SPECIAL CULVERT

SC	CUNO	CUNV	ENTLC	COFQ	RDLEN	RISE	SPAN	CULVLN	CHRT	SCL	ELCHU	ELCHD
	3	.012	.40	2.50	60.00	7.00	6.00	100.00	8	1	1007.05	1007.00

CHART 8 - BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
 SCALE 1 - WINGWALLS FLARED 30 TO 75 DEGREES

*SECNO 528.000
 CHIMP CLSTA= 49.00 CELCH= 1007.05 BW= 20.00 STCHL= 32.05 STCHR= 65.95
 EXCAVATION DATA
 AEX= 187.3SQ-FT VEXR= .7K*CU-YD VEXT= 6.9K*CU-YD

1

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL CULVERT OUTLET CONTROL
 EGIC = 1010.885 EGOC = 1011.700 PCWSE= 1010.996 ELTRD= 1014.800

SPECIAL CULVERT

Ridjob5

EGIC 1010.88 EGO 1011.70 H4 .46 QWEIR 0. QCULV 384. VCH 3.522 ACULV 126.0 ELTRD 1014.80 WEIRLN 0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1014.00 ELREA= 1014.00

528.000	4.46	1011.51	.00	.00	1011.70	.19	.46	.00	1014.00
384.0	.0	384.0	.0	.0	109.0	.0	2.4	.8	1014.00
.08	.00	3.52	.00	.000	.014	.000	.000	1007.05	34.54
.000220	104.	104.	104.	2	0	0	.00	28.92	63.46

CCHV= .100 CEHV= .300
 *SECNO 528.400
 CHIMP CLSTA= 193.56 CELCH= 1007.11 BW= 12.00 STCHL= 160.00 STCHR= 227.12
 EXCAVATION DATA
 AEX= 272.6SQ-FT VEXR= .3K*CU-YD VEXT= 7.2K*CU-YD

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .43

3470 ENCROACHMENT STATIONS= 160.0 227.1 TYPE= 1 TARGET= 67.120
 ELENCL= 1018.00 ELENCR= 1018.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1014.00 ELREA= 1018.00

528.400	4.49	1011.60	.00	.00	1011.72	.13	.02	.01	1014.00
384.0	.0	384.0	.0	.0	134.4	.0	2.5	.8	1018.00
.08	.00	2.86	.00	.000	.035	.000	.000	1007.11	169.61
.001179	41.	41.	41.	2	0	0	.00	47.90	217.51

*SECNO 529.000
 CHIMP CLSTA= 33.70 CELCH= 1007.20 BW= 12.00 STCHL= .90 STCHR= 66.90

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

EXCAVATION DATA
 AEX= 266.5SQ-FT VEXR= .6K*CU-YD VEXT= 7.8K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1013.90 ELREA= 1014.00

529.000	4.47	1011.67	.00	.00	1011.79	.13	.07	.00	1013.90
---------	------	---------	-----	-----	---------	-----	-----	-----	---------

						Ridjob5				
384.0	.0	384.0	.0	.0	133.4	.0	2.7	.9	1014.00	
.09	.00	2.88	.00	.000	.035	.000	.000	1007.20	9.84	
.001205	58.	58.	58.	2	0	0	.00	47.72	57.56	

*SECNO 530.000
 CHIMP CLSTA= 66.60 CELCH= 1007.35 BW= 12.00 STCHL= 34.00 STCHR= 99.20
 EXCAVATION DATA
 AEX= 256.7SQ-FT VEXR= 1.0K*CU-YD VEXT= 8.8K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1014.00 ELREA= 1014.00

530.000	4.44	1011.79	.00	.00	1011.92	.13	.13	.00	1014.00
384.0	.0	384.0	.0	.0	132.0	.0	3.0	1.0	1014.00
.10	.00	2.91	.00	.000	.035	.000	.000	1007.35	42.85
.001238	103.	103.	103.	0	0	0	.00	47.50	90.35

*SECNO 531.000
 CHIMP CLSTA= 87.00 CELCH= 1007.50 BW= 12.00 STCHL= 55.00 STCHR= 119.00
 EXCAVATION DATA
 AEX= 247.0SQ-FT VEXR= .9K*CU-YD VEXT= 9.7K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1014.00 ELREA= 1014.00

531.000	4.41	1011.91	.00	.00	1012.05	.13	.12	.00	1014.00
384.0	.0	384.0	.0	.0	130.7	.0	3.3	1.1	1014.00
.11	.00	2.94	.00	.000	.035	.000	.000	1007.50	63.36
.001272	99.	99.	99.	0	0	0	.00	47.28	110.64

*SECNO 532.000
 CHIMP CLSTA= 134.60 CELCH= 1007.65 BW= 12.00 STCHL= 103.20 STCHR= 166.00

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK	ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK	ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

EXCAVATION DATA
 AEX= 237.5SQ-FT VEXR= .9K*CU-YD VEXT= 10.6K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1014.00 ELREA= 1014.00

532.000	4.39	1012.04	.00	.00	1012.17	.14	.13	.00	1014.00
384.0	.0	384.0	.0	.0	129.6	.0	3.6	1.2	1014.00
.12	.00	2.96	.00	.000	.035	.000	.000	1007.65	111.06

Ridjob5

.001303 99. 99. 99. 0 0 0 .00 47.08 158.14

*SECNO 533.000

CHIMP CLSTA= 159.10 CELCH= 1007.80 BW= 12.00 STCHL= 124.30 STCHR= 193.90

EXCAVATION DATA

AEX= 293.8SQ-FT VEXR= .9K*CU-YD VEXT= 11.5K*CU-YD

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 1015.00 ELREA= 1015.00

533.000	4.36	1012.16	.00	.00	1012.30	.14	.13	.00	1015.00
384.0	.0	384.0	.0	.0	128.4	.0	3.9	1.3	1015.00
.13	.00	2.99	.00	.000	.035	.000	.000	1007.80	135.66
.001335	96.	96.	96.	0	0	0	.00	46.88	182.54

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THIS RUN EXECUTED 20NOV00 12:07:01

 HEC-2 WATER SURFACE PROFILES
 Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

METAJOB 5-WEST INTERCEPT

SUMMARY PRINTOUT TABLE 120

SECNO	CWSEL	EG	VCH	10*KS	DEPTH	TOPWID	CLSTA	BW	STCHL	XLBEL	STCHR	RBEL
522.000	1010.51	1010.63	2.76	1.25	4.64	30.00	22.00	30.00	7.00	1015.60	37.02	1015.60
* 523.000	1010.64	1010.69	1.93	4.65	4.24	63.88	38.42	30.00	.00	1012.26	77.82	1012.50
* 524.000	1010.64	1010.78	3.00	13.73	4.09	47.69	109.80	15.00	78.45	1012.51	141.10	1012.50
525.000	1010.77	1010.95	3.33	17.86	4.07	44.60	95.20	12.00	66.00	1012.50	124.40	1012.50
526.000	1010.94	1011.11	3.33	17.82	4.09	44.62	156.00	12.00	127.00	1012.60	185.00	1012.60
526.200	1010.96	1011.14	3.32	17.69	4.08	44.67	158.88	12.00	130.00	1012.60	187.76	1012.60
* 527.000	1011.00	1011.24	4.00	3.20	4.00	27.99	56.00	20.00	39.00	1014.00	73.00	1014.00

Ridjob5

	528.000	1011.51	1011.70	3.52	2.20	4.46	28.92	49.00	20.00	32.05	1014.00	65.95	1014.00
*	528.400	1011.60	1011.72	2.86	11.79	4.49	47.90	193.56	12.00	160.00	1014.00	227.12	1018.00
	529.000	1011.67	1011.79	2.88	12.05	4.47	47.72	33.70	12.00	.90	1013.90	66.90	1014.00
	530.000	1011.79	1011.92	2.91	12.38	4.44	47.50	66.60	12.00	34.00	1014.00	99.20	1014.00
	531.000	1011.91	1012.05	2.94	12.72	4.41	47.28	87.00	12.00	55.00	1014.00	119.00	1014.00
	532.000	1012.04	1012.17	2.96	13.03	4.39	47.08	134.60	12.00	103.20	1014.00	166.00	1014.00
	533.000	1012.16	1012.30	2.99	13.35	4.36	46.88	159.10	12.00	124.30	1015.00	193.90	1015.00

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METAJOB 5-WEST INTERCEPT

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	522.000	.00	.00	.00	1005.87	384.00	1010.51	.00	1010.63	1.25	2.76	139.20	343.45
*	523.000	273.00	.00	.00	1006.40	384.00	1010.64	.00	1010.69	4.65	1.93	198.83	178.02
*	524.000	78.00	.00	.00	1006.55	384.00	1010.64	.00	1010.78	13.73	3.00	128.09	103.63
	525.000	103.32	.00	.00	1006.70	384.00	1010.77	.00	1010.95	17.86	3.33	115.31	90.87
	526.000	90.55	.00	.00	1006.85	384.00	1010.94	.00	1011.11	17.82	3.33	115.41	90.98
	526.200	15.29	.00	.00	1006.88	384.00	1010.96	.00	1011.14	17.69	3.32	115.72	91.30
*	527.000	86.25	.00	.00	1007.00	384.00	1011.00	.00	1011.24	3.20	4.00	95.89	214.67
	528.000	103.52	1014.80	.00	1007.05	384.00	1011.51	.00	1011.70	2.20	3.52	109.04	258.83
*	528.400	40.91	.00	.00	1007.11	384.00	1011.60	.00	1011.72	11.79	2.86	134.42	111.83
	529.000	58.18	.00	.00	1007.20	384.00	1011.67	.00	1011.79	12.05	2.88	133.35	110.63
	530.000	102.64	.00	.00	1007.35	384.00	1011.79	.00	1011.92	12.38	2.91	132.04	109.16
	531.000	98.79	.00	.00	1007.50	384.00	1011.91	.00	1012.05	12.72	2.94	130.70	107.67
	532.000	99.01	.00	.00	1007.65	384.00	1012.04	.00	1012.17	13.03	2.96	129.55	106.39
	533.000	95.98	.00	.00	1007.80	384.00	1012.16	.00	1012.30	13.35	2.99	128.38	105.09

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METAJOB 5-WEST INTERCEPT

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	522.000	384.00	1010.51	.00	.00	.00	30.00	.00
*	523.000	384.00	1010.64	.00	.13	.00	63.88	273.00
*	524.000	384.00	1010.64	.00	.00	.00	47.69	78.00
	525.000	384.00	1010.77	.00	.14	.00	44.60	103.32
	526.000	384.00	1010.94	.00	.16	.00	44.62	90.55
	526.200	384.00	1010.96	.00	.03	.00	44.67	15.29
*	527.000	384.00	1011.00	.00	.03	.00	27.99	86.25
	528.000	384.00	1011.51	.00	.51	.00	28.92	103.52
*	528.400	384.00	1011.60	.00	.09	.00	47.90	40.91
	529.000	384.00	1011.67	.00	.07	.00	47.72	58.18
	530.000	384.00	1011.79	.00	.12	.00	47.50	102.64
	531.000	384.00	1011.91	.00	.12	.00	47.28	98.79
	532.000	384.00	1012.04	.00	.13	.00	47.08	99.01
	533.000	384.00	1012.16	.00	.12	.00	46.88	95.98

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 523.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 524.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 527.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

Ridjob5
WARNING SECNO= 528.400 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CHECK-2 Program: NT Module
Manning's n Value and Transition Loss Coefficient Review

Report File = C:\RIDHEC2\RIDJOB5.NT2
Date: 11/27/2000
Time: 1:34:18 PM

ECNO	XNL	XNR	XNCH	CCHV	CEHV	Structure
522	0.035	0.035	0.014	0.1	0.3	
523	0.035	0.035	0.035	0.1	0.3	
524	0.035	0.035	0.035	0.1	0.3	
525	0.035	0.035	0.035	0.1	0.3	
526	0.035	0.035	0.035	0.1	0.3	
526.2	0.035	0.035	0.035	0.4	0.7	
527	0.035	0.035	0.035	0.4	0.7	
528	0.035	0.035	0.035	0.4	0.7	SC+X2
528.4	0.035	0.035	0.035	0.1	0.3	
529	0.035	0.035	0.035	0.1	0.3	
530	0.035	0.035	0.035	0.1	0.3	
531	0.035	0.035	0.035	0.1	0.3	
532	0.035	0.035	0.035	0.1	0.3	
533	0.035	0.035	0.035	0.1	0.3	

-----Summary of Statistics-----

	Minimum	Maximum
Left Overbank N Value:	0.035	0.035
Right Overbank N Value:	0.035	0.035
Channel N Value:	0.014	0.035
Contraction Coefficient:	0.1	0.4
Expansion Coefficient:	0.3	0.7

-----Roughness Coefficient Check-----

SECNO: 522
NT RC 01 Left overbank n value is less than 0.04

SECNO: 522
NT RC 03 Right overbank n value is less than 0.04

SECNO: 522
NT RC 05 Channel n value is less than 0.025

SECNO: 523
NT RC 01 Left overbank n value is less than 0.04

SECNO: 523
NT RC 03 Right overbank n value is less than 0.04

SECNO: 524
NT RC 01 Left overbank n value is less than 0.04

SECNO: 524
NT RC 03 Right overbank n value is less than 0.04

SECNO: 525
NT RC 01 Left overbank n value is less than 0.04

SECNO: 525
NT RC 03 Right overbank n value is less than 0.04

SECNO: 526
NT RC 01 Left overbank n value is less than 0.04

SECNO: 526
NT RC 03 Right overbank n value is less than 0.04

SECNO: 526.2
NT RC 01 Left overbank n value is less than 0.04

SECNO: 526.2

T RC 03 Right overbank n value is less than 0.04

ECNO: 527

T RC 01 Left overbank n value is less than 0.04

ECNO: 527

T RC 03 Right overbank n value is less than 0.04

ECNO: 528

T RC 01 Left overbank n value is less than 0.04

ECNO: 528

T RC 03 Right overbank n value is less than 0.04

SECNO: 528.4

NT RC 01 Left overbank n value is less than 0.04

SECNO: 528.4

NT RC 03 Right overbank n value is less than 0.04

SECNO: 529

NT RC 01 Left overbank n value is less than 0.04

SECNO: 529

NT RC 03 Right overbank n value is less than 0.04

SECNO: 530

NT RC 01 Left overbank n value is less than 0.04

SECNO: 530

NT RC 03 Right overbank n value is less than 0.04

SECNO: 531

NT RC 01 Left overbank n value is less than 0.04

SECNO: 531

NT RC 03 Right overbank n value is less than 0.04

SECNO: 532

NT RC 01 Left overbank n value is less than 0.04

SECNO: 532

NT RC 03 Right overbank n value is less than 0.04

SECNO: 533

NT RC 01 Left overbank n value is less than 0.04

SECNO: 533

NT RC 03 Right overbank n value is less than 0.04

-----NC and NH records Check-----

-----Transition Coefficient check-----

SECNO: 527

NT TL 02 This is section 2 of special culvert routine. Contraction and expansion loss coefficients are 0.4 and 0.7 respectively. They should be equal to 0.3 and 0.5.

SECNO: 528

NT TL 02 This is section 3 of special culvert routine. Contraction and expansion loss coefficients are 0.4 and 0.7 respectively. They should be equal to 0.3 and 0.5.

SECNO: 528.4

NT TL 02 This is section 4 of special culvert routine. Contraction and expansion loss coefficients are 0.1 and 0.3 respectively. They should be equal to 0.3 and 0.5.

SECNO: 526.2

NT TL 03 Contraction loss coefficient of 0.4 and expansion loss coefficient of 0.7 was used. However this cross section is not at a structure. Contraction loss coefficient of .1 and expansion loss coefficient of .3 should be used.

-----Roughness Coefficient Check at Structures-----

-----Special Notes and Messages check-----

--End Program---

CHECK-2 Program, XSEC Module
 Cross Section Location and Alignment Review

Report File = C:\RIDHEC2\RIDJOB5.XS2
 Date: 11/27/2000
 Time: 1:34:36 PM

ECNO	Xlob	Xrob	Xlch	CHWID	Topwid	Structure Flow Type
522	0.00	0.00	0.00	30.02	30.00	
523	273.00	273.00	273.00	77.82	63.88	
524	78.00	78.00	78.00	62.65	47.69	
525	103.32	103.32	103.32	58.40	44.60	
526	90.55	90.55	90.55	58.00	44.62	
526.2	15.29	15.29	15.29	57.76	44.67	
527	86.25	86.25	86.25	34.00	27.99	
528	103.52	103.52	103.52	33.90	28.92	SC+X2
528.4	40.91	40.91	40.91	67.12	47.90	
529	58.18	58.18	58.18	66.00	47.72	
530	102.64	102.64	102.64	65.20	47.50	
531	98.79	98.79	98.79	64.00	47.28	
532	99.01	99.01	99.01	62.80	47.08	
533	95.98	95.98	95.98	69.60	46.88	

IS IF 04 D = divided flow
 IS IF 05 E = extended cross section
 IS IF 06 C = critical depth
 IS IF 07 S = X5 record

-----Distance Check-----

----Channel Width Check----

SECNO: 523

IS CW 02 Channel width changes by a factor of two when compared to the
 the downstream cross section.

----Spacing Check----

----Ineffective Flow Area----

----Location Check----

----Discharge Check----

XS DC 02 Constant discharge used for the entire profile.

----Starting WSEL Check----

XS SW 02 Known water-surface elevation of 1010.51 is specified on the first J1 record.

---End Program---

5.4 These **Plaza Circle Channel Model** (model name: **Ridjob4**) items follow

INPUT LISTING

OUTPUT LISTING

CHECK-2 REPORT

T1	1202101									
T2	RID OVERCHUTE PROJECT									
T3	METAJOB NO. 4 - PLAZA CIRCLE CHANNEL FROM CP-255									
T4	THIS UNLINED EXCAVATED CHANNEL EXTENDS FROM CP-255 WEST ALONG INDIAN									
T4	SCHOOL ROAD BYPASS, AROUND PLAZA CIRCLE TO INLET OF THE DETENTION BASINS									
T4	STARTING W.S. OF 1012.90 FROM E.G. OF RAS MODEL OF 11-20-00 FOR DOWNSTREAM									
T4	OF BASIN									
J1	0	2				1071	1012.90			
J2	-1		-1				-6			
J3	120	150								
NC	0.035	0.035	0.035	0.1	0.3					
QT	1	1120								
X1	447	12	65.76	147.76	0	0	0			
CI	-1	1009.67		4	4	-42	.01			
GR1017.1		0	1017.28	65.76	1017.31	82.07	1017.29	86.1	1017.03	127.6
GR1016.9		147.76	1016.78	168	1016.34	168.57	1016.69	193.2	1016.41	215.14
GR1016.4		215.42	1016.96	215.94						
X1	448	8	76.88	159.46	98.77	98.03	98.38			
CI	-1	1009.83		4	4	-42	.01			
GR1017.3		0	1017.58	76.88	1017.63	91.02	1017.64	96.91	1017.68	139.77
GR1017.7		159.46	1017.73	189.37	1017.77	276.06				
X1	449	8	103.91	191.36	107.06	105.73	106.69			
CI	-1	1009.99		4	4	-42	.01			
GR1017.6		0	1017.93	61.86	1018	103.91	1018.03	124.19	1018.07	161.44
GR 1018		171.35	1018.07	191.36	1018.07	254.59				
X1	450	8	115.77	200.37	105.00	106.8	105.40			
CI	-1	1010.15		4	4	-42	.01			
GR1018.2		0	1018.57	85.08	1018.53	115.77	1018.49	136.24	1018.44	179.45
GR1018.4		183.85	1018.4	200.37	1018.4	246				
X1	451	8	142.5	226.14	96	96.62	96.30			
CI	-1	1010.29		4	4	-42	.01			
GR1017.6		0	1018.49	77.59	1018.77	142.5	1018.85	162.8	1018.9	175.67
GR 1019		205.8	1019.14	226.14	1019.29	264.11				
X1	452	10	116.06	198.38	74.14	84.90	80.18			
CI	-1	1010.41		4	4	-42	.01			
GR 1018		0	1019.31	65.77	1019.34	116.06	1019.35	136.46	1019.36	158.91
GR1019.3		178.46	1019.3	198.38	1019.52	234.3	1019.67	254.01	1019.87	281.71
X1	453	10	145	227	83.76	122.98	103.98			
CI	-1	1010.57		4	4	-42	.01			
GR1017.7		0	1019.12	114.82	1019.43	145	1019.45	165	1019.64	205.14
GR1019.6		207	1019.1	227	1019.08	229.87	1019	240.29	1019.97	302.79
QT	1	1141								
X1	454	11	112.58	194.8	89.25	104.87	96.71			
CI	-1	1010.71		4	4	-42	.01			
GR1019.2		0	1019.34	101.77	1019.41	112.58	1019.55	132.73	1019.71	157.11
GR1018.3		174.72	1017.93	181.7	1017.98	194.8	1017.99	206.99	1018	209.62
GR1018.2		270.61								
X1	455	11	173.65	255.61	103.62	113.18	107.98			
CI	-1	1010.87		4	4	-42	.01			
GR1017.8		0	1018.29	103.54	1018.28	173.65	1018.27	194.08	1018.26	202.37
GR1018.3		236.03	1018.29	240.05	1018.97	255.61	1019.51	267.78	1020	274.13
GR1020.4		329.3								
X1	456	17	183.7	265.54	105.45	107.35	106.08			
CI	-1	1011.03		4	4	-42	.01			

PLAZA
CIRCLE
CHANNEL

Ridjob4

GR1017.9	0	1018.35	97.02	1018.5	183.7	1018.7	187.49	1018.7	187.49
GR1018.4	187.49	1018	203.71	1017.69	245.75	1017.68	247.81	1017.67	247.81
GR1017.6	247.81	1017.68	247.81	1017.68	247.81	1018.19	265.54	1018.39	276.08
GR 1020	363.28	1020.63	375.36						
X1 457	12	153.85	235.85	102.31	101.32	102.24			
CI -1	1011.19		4	4	-42	.01			
GR 1018	0	1018.28	74.59	1018.47	153.85	1018.62	170.82	1018.8	173.85
GR1018.8	215.85	1018.81	218.73	1018.8	235.85	1019.34	242.84	1020	296.51
GR1019.7	298.61	1020.86	310.44						
QT 1	1160								
X1 458	12	158.32	240.32	103.9	103.37	103.9			
CI -1	1011.34		4	4	-42	.01			
GR1018.2	0	1018.44	97.24	1018.71	158.32	1018.79	176.67	1018.74	178.32
GR 1018	220.32	1017.89	222.85	1018.65	240.32	1019.56	248.7	1020	301.34
GR 1020	313.51	1020.91	316.54						
X1 459	14	114.35	196.35	114.01	107.54	110.77			
CI -1	1011.51		4	4	-42	.01			
GR1018.4	0	1018.78	77.72	1018.8	114.35	1018.81	134.35	1018.88	150.88
GR 1019	155.07	1017.96	165.05	1018.11	176.35	1018.17	180.52	1019.08	196.35
GR1019.5	204.85	1020	258.97	1019.91	269.68	1020.6	276.77		
X1 460	14	131.13	213.13	95.76	94.02	94.98			
CI -1	1011.65		4	4	-42	.01			
GR1018.5	0	1018.91	96.52	1019.12	131.13	1019.22	151.13	1019.36	166.01
GR1017.4	184.74	1017.48	193.13	1017.51	195.39	1018.84	212.24	1018.84	213.13
GR1019.7	288.5	1020	295.43	1020.17	300.12	1020	300.2		
X1 461	12	188.21	270.21	84.97	94.29	90.78			
CI -1	1011.77		4	4	-42	.01			
GR1018.8	0	1018.82	64.35	1018.9	147.98	1018.82	188.21	1018.8	208.21
GR1018.8	227.55	1017.15	245.47	1017.07	250.21	1016.93	258.28	1017.28	270.21
GR1017.6	281.75	1019.96	364.79						
X1 462	10	63.36	145.36	124.25	128.25	124.75			
CI -1	1011.97		4	4	-42	.01			
GR1019.1	0	1019.25	63.36	1019.4	83.36	1019.53	105.23	1017.1	125.36
GR 1017	126.83	1017.02	139.04	1017.1	145.36	1019.59	159.84	1020.26	246.95
X1 463	14	117.03	199.03	61.62	65.37	63.34			
CI -1	1012.07		4	4	-42	.01			
GR1021.8	0	1019.82	94.56	1018.7	100.42	1018.81	117.03	1018.87	122.62
GR1018.9	137.03	1018.96	146.99	1019.39	162.12	1017.25	179.03	1017.16	182.55
GR1017.4	191.82	1017.4	199.03	1019.33	207.54	1020.31	303.85		
X1 464	16	125	207.57	105.99	116.52	110.7			
CI -1	1012.23		4	4	-42	.01			
GR1019.4	0	1019.26	105.79	1018.8	107.1	1019	125	1019.1	132.31
GR1018.9	144.69	1018.76	153.6	1019.26	154.18	1019.27	166.5	1017.3	183.48
GR1017.3	187.34	1017.33	200.59	1018.11	207.57	1019.08	216.31	1020.67	264.22
GR1020.6	311.09								
X1 465	10	121.81	184.03	103.85	105.91	104.13			
CI 155	1012.39		4	4	-12	.01			
GR1019.4	0	1018.96	97.21	1019.29	121.81	1019.44	142.03	1019.44	144.6
GR1019.3	154.86	1018	168.62	1018.12	184.03	1020.53	275.38	1020.9	304.38
EJ									
ER									

Ridjob4

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1*****
* HEC-2 WATER SURFACE PROFILES *
* * *
* Version 4.6.2; May 1991 *
* * *
* RUN DATE 27NOV00 TIME 14:44:03 *
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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
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PAGE 1

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HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991
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T1 1202101
T2 RID OVERCHUTE PROJECT
T3 METAJOB NO. 4 - PLAZA CIRCLE CHANNEL FROM CP-255
T4 THIS UNLINED EXCAVATED CHANNEL EXTENDS FROM CP-255 WEST ALONG INDIAN
T4 SCHOOL ROAD BYPASS, AROUND PLAZA CIRCLE TO INLET OF THE DETENTION BASINS
T4 STARTING W.S. OF 1012.90 FROM E.G. OF RAS MODEL OF 11-20-00 FOR DOWNSTRE
T4 OF BASIN

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J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2						1071	1012.90	
J2	NPROF	IPLLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	-1		-1					-6		

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

Ridjob4

	120	150								
NC	0.035	0.035	0.035	0.1	0.3					
QT	1	1120								
X1	447	12	65.76	147.76	0	0	0			
CI	-1	1009.67		4	4	-42	.01			
GR	1017.1	0	1017.28	65.76	1017.31	82.07	1017.29	86.1	1017.03	127.6
GR	1016.9	147.76	1016.78	168	1016.34	168.57	1016.69	193.2	1016.41	215.14
GR	1016.4	215.42	1016.96	215.94						
X1	448	8	76.88	159.46	98.77	98.03	98.38			
CI	-1	1009.83		4	4	-42	.01			
GR	1017.3	0	1017.58	76.88	1017.63	91.02	1017.64	96.91	1017.68	139.77
GR	1017.7	159.46	1017.73	189.37	1017.77	276.06				
X1	449	8	103.91	191.36	107.06	105.73	106.69			
CI	-1	1009.99		4	4	-42	.01			
GR	1017.6	0	1017.93	61.86	1018	103.91	1018.03	124.19	1018.07	161.44
GR	1018	171.35	1018.07	191.36	1018.07	254.59				
X1	450	8	115.77	200.37	105.00	106.8	105.40			
CI	-1	1010.15		4	4	-42	.01			
GR	1018.2	0	1018.57	85.08	1018.53	115.77	1018.49	136.24	1018.44	179.45
GR	1018.4	183.85	1018.4	200.37	1018.4	246				

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X1	451	8	142.5	226.14	96	96.62	96.30			
CI	-1	1010.29		4	4	-42	.01			
GR	1017.6	0	1018.49	77.59	1018.77	142.5	1018.85	162.8	1018.9	175.67
GR	1019	205.8	1019.14	226.14	1019.29	264.11				
X1	452	10	116.06	198.38	74.14	84.90	80.18			
CI	-1	1010.41		4	4	-42	.01			
GR	1018	0	1019.31	65.77	1019.34	116.06	1019.35	136.46	1019.36	158.91
GR	1019.3	178.46	1019.3	198.38	1019.52	234.3	1019.67	254.01	1019.87	281.71
X1	453	10	145	227	83.76	122.98	103.98			
CI	-1	1010.57		4	4	-42	.01			
GR	1017.7	0	1019.12	114.82	1019.43	145	1019.45	165	1019.64	205.14
GR	1019.6	207	1019.1	227	1019.08	229.87	1019	240.29	1019.97	302.79
QT	1	1141								
X1	454	11	112.58	194.8	89.25	104.87	96.71			
CI	-1	1010.71		4	4	-42	.01			
GR	1019.2	0	1019.34	101.77	1019.41	112.58	1019.55	132.73	1019.71	157.11
GR	1018.3	174.72	1017.93	181.7	1017.98	194.8	1017.99	206.99	1018	209.62
GR	1018.2	270.61								
X1	455	11	173.65	255.61	103.62	113.18	107.98			
CI	-1	1010.87		4	4	-42	.01			
GR	1017.8	0	1018.29	103.54	1018.28	173.65	1018.27	194.08	1018.26	202.37

GR	1018.3	236.03	1018.29	240.05	1018.97	Ridjob4 255.61	1019.51	267.78	1020	274.13
GR	1020.4	329.3								
X1	456	17	183.7	265.54	105.45	107.35	106.08			
CI	-1	1011.03		4	4	-42	.01			
GR	1017.9	0	1018.35	97.02	1018.5	183.7	1018.7	187.49	1018.7	187.49
GR	1018.4	187.49	1018	203.71	1017.69	245.75	1017.68	247.81	1017.67	247.81
GR	1017.6	247.81	1017.68	247.81	1017.68	247.81	1018.19	265.54	1018.39	276.08
GR	1020	363.28	1020.63	375.36						
X1	457	12	153.85	235.85	102.31	101.32	102.24			
CI	-1	1011.19		4	4	-42	.01			
GR	1018	0	1018.28	74.59	1018.47	153.85	1018.62	170.82	1018.8	173.85
GR	1018.8	215.85	1018.81	218.73	1018.8	235.85	1019.34	242.84	1020	296.51
GR	1019.7	298.61	1020.86	310.44						
QT	1	1160								
X1	458	12	158.32	240.32	103.9	103.37	103.9			
CI	-1	1011.34		4	4	-42	.01			
GR	1018.2	0	1018.44	97.24	1018.71	158.32	1018.79	176.67	1018.74	178.32
GR	1018	220.32	1017.89	222.85	1018.65	240.32	1019.56	248.7	1020	301.34
GR	1020	313.51	1020.91	316.54						

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X1	459	14	114.35	196.35	114.01	107.54	110.77			
CI	-1	1011.51		4	4	-42	.01			
GR	1018.4	0	1018.78	77.72	1018.8	114.35	1018.81	134.35	1018.88	150.88
GR	1019	155.07	1017.96	165.05	1018.11	176.35	1018.17	180.52	1019.08	196.35
GR	1019.5	204.85	1020	258.97	1019.91	269.68	1020.6	276.77		
X1	460	14	131.13	213.13	95.76	94.02	94.98			
CI	-1	1011.65		4	4	-42	.01			
GR	1018.5	0	1018.91	96.52	1019.12	131.13	1019.22	151.13	1019.36	166.01
GR	1017.4	184.74	1017.48	193.13	1017.51	195.39	1018.84	212.24	1018.84	213.13
GR	1019.7	288.5	1020	295.43	1020.17	300.12	1020	300.2		
X1	461	12	188.21	270.21	84.97	94.29	90.78			
CI	-1	1011.77		4	4	-42	.01			
GR	1018.8	0	1018.82	64.35	1018.9	147.98	1018.82	188.21	1018.8	208.21
GR	1018.8	227.55	1017.15	245.47	1017.07	250.21	1016.93	258.28	1017.28	270.21
GR	1017.6	281.75	1019.96	364.79						
X1	462	10	63.36	145.36	124.25	128.25	124.75			
CI	-1	1011.97		4	4	-42	.01			
GR	1019.1	0	1019.25	63.36	1019.4	83.36	1019.53	105.23	1017.1	125.36
GR	1017	126.83	1017.02	139.04	1017.1	145.36	1019.59	159.84	1020.26	246.95
X1	463	14	117.03	199.03	61.62	65.37	63.34			
CI	-1	1012.07		4	4	-42	.01			
GR	1021.8	0	1019.82	94.56	1018.7	100.42	1018.81	117.03	1018.87	122.62
GR	1018.9	137.03	1018.96	146.99	1019.39	162.12	1017.25	179.03	1017.16	182.55

GR	1017.4	191.82	1017.4	199.03	1019.33	Ridjob4 207.54	1020.31	303.85		
X1	464	16	125	207.57	105.99	116.52	110.7			
CI	-1	1012.23		4	4	-42	.01			
GR	1019.4	0	1019.26	105.79	1018.8	107.1	1019	125	1019.1	132.31
GR	1018.9	144.69	1018.76	153.6	1019.26	154.18	1019.27	166.5	1017.3	183.48
GR	1017.3	187.34	1017.33	200.59	1018.11	207.57	1019.08	216.31	1020.67	264.22
GR	1020.6	311.09								
X1	465	10	121.81	184.03	103.85	105.91	104.13			
CI	155	1012.39		4	4	-12	.01			
GR	1019.4	0	1018.96	97.21	1019.29	121.81	1019.44	142.03	1019.44	144.6
GR	1019.3	154.86	1018	168.62	1018.12	184.03	1020.53	275.38	1020.9	304.38

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PAGE 4

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1
0

CCHV= .100 CEHV= .300
*SECNO 447.000
CHIMP CLSTA= 106.76 CELCH= 1009.67 BW= 42.00 STCHL= 55.43 STCHR= 156.47
EXCAVATION DATA
AEX= 536.2SQ-FT VEXR= .0K*CU-YD VEXT= .0K*CU-YD

447.000	3.23	1012.90	.00	1012.90	1013.52	.62	.00	.00	1017.25
1120.0	.0	1120.0	.0	.0	177.4	.0	.0	.0	1016.85
.00	.00	6.31	.00	.000	.035	.000	.000	1009.67	72.84
.006234	0.	0.	0.	0	0	0	.00	67.84	140.68

*SECNO 448.000
CHIMP CLSTA= 118.17 CELCH= 1009.83 BW= 42.00 STCHL= 66.32 STCHR= 170.69
EXCAVATION DATA
AEX= 573.2SQ-FT VEXR= 2.0K*CU-YD VEXT= 2.0K*CU-YD

448.000	3.74	1013.57	.00	.00	1014.00	.43	.46	.02	1017.54
1120.0	.0	1120.0	.0	.0	213.1	.0	.4	.2	1017.71
.01	.00	5.26	.00	.000	.035	.000	.000	1009.83	82.21
.003662	99.	98.	98.	2	0	0	.00	71.93	154.13

*SECNO 449.000
CHIMP CLSTA= 147.64 CELCH= 1009.99 BW= 42.00 STCHL= 94.66 STCHR= 200.96
EXCAVATION DATA
AEX= 596.9SQ-FT VEXR= 2.3K*CU-YD VEXT= 4.3K*CU-YD

Ridjob4

449.000	4.00	1013.99	.00	.00	1014.35	.36	.34	.01	1017.98
1120.0	.0	1120.0	.0	.0	232.0	.0	1.0	.3	1018.07
.01	.00	4.83	.00	.000	.035	.000	.000	1009.99	110.64
.002869	107.	107.	106.	2	0	0	.00	74.00	184.63

*SECNO 450.000
 CHIMP CLSTA= 158.07 CELCH= 1010.15 BW= 42.00 STCHL= 103.49 STCHR= 212.07
 EXCAVATION DATA
 AEX= 625.6SQ-FT VEXR= 2.4K*CU-YD VEXT= 6.7K*CU-YD

450.000	4.16	1014.31	.00	.00	1014.64	.33	.28	.00	1018.55
1120.0	.0	1120.0	.0	.0	243.8	.0	1.6	.5	1018.40
.02	.00	4.59	.00	.000	.035	.000	.000	1010.15	120.44
.002487	105.	105.	107.	2	0	0	.00	75.26	195.70

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK	ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK	ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*SECNO 451.000
 CHIMP CLSTA= 184.32 CELCH= 1010.29 BW= 42.00 STCHL= 129.62 STCHR= 240.95
 EXCAVATION DATA
 AEX= 662.7SQ-FT VEXR= 2.3K*CU-YD VEXT= 9.0K*CU-YD

451.000	4.27	1014.56	.00	.00	1014.87	.30	.23	.00	1018.71
1120.0	.0	1120.0	.0	.0	252.7	.0	2.1	.7	1019.20
.02	.00	4.43	.00	.000	.035	.000	.000	1010.29	146.22
.002244	96.	96.	97.	0	0	0	.00	76.21	222.42

*SECNO 452.000
 CHIMP CLSTA= 157.22 CELCH= 1010.41 BW= 42.00 STCHL= 100.54 STCHR= 214.17
 EXCAVATION DATA
 AEX= 693.5SQ-FT VEXR= 2.0K*CU-YD VEXT= 11.0K*CU-YD

452.000	4.34	1014.75	.00	.00	1015.04	.29	.18	.00	1019.33
1120.0	.0	1120.0	.0	.0	257.5	.0	2.6	.8	1019.40
.03	.00	4.35	.00	.000	.035	.000	.000	1010.41	118.86
.002126	74.	80.	85.	0	0	0	.00	76.71	195.58

*SECNO 453.000
 CHIMP CLSTA= 186.00 CELCH= 1010.57 BW= 42.00 STCHL= 130.17 STCHR= 240.75
 EXCAVATION DATA
 AEX= 682.9SQ-FT VEXR= 2.7K*CU-YD VEXT= 13.7K*CU-YD

Ridjob4

453.000	4.41	1014.98	.00	.00	1015.26	.28	.21	.00	1019.28
1120.0	.0	1120.0	.0	.0	262.6	.0	3.2	1.0	1019.01
.04	.00	4.27	.00	.000	.035	.000	.000	1010.57	147.38
.002012	84.	104.	123.	0	0	0	.00	77.23	224.62

*SECNO 454.000
 CHIMP CLSTA= 153.69 CELCH= 1010.71 BW= 42.00 STCHL= 98.19 STCHR= 203.80
 EXCAVATION DATA
 AEX= 622.2SQ-FT VEXR= 2.3K*CU-YD VEXT= 16.0K*CU-YD

454.000	4.46	1015.17	.00	.00	1015.45	.28	.19	.00	1019.34
1141.0	.0	1141.0	.0	.0	267.3	.0	3.8	1.2	1017.99
.04	.00	4.27	.00	.000	.035	.000	.000	1010.71	114.83
.001983	89.	97.	105.	0	0	0	.00	77.72	192.55

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK	ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK	ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*SECNO 455.000
 CHIMP CLSTA= 214.63 CELCH= 1010.87 BW= 42.00 STCHL= 163.98 STCHR= 271.27
 EXCAVATION DATA
 AEX= 548.1SQ-FT VEXR= 2.3K*CU-YD VEXT= 18.4K*CU-YD

455.000	4.52	1015.39	.00	.00	1015.66	.28	.21	.00	1018.28
1141.0	.0	1141.0	.0	.0	271.1	.0	4.5	1.4	1019.78
.05	.00	4.21	.00	.000	.035	.000	.000	1010.87	175.57
.001905	104.	108.	113.	0	0	0	.00	78.11	253.69

*SECNO 456.000
 CHIMP CLSTA= 224.62 CELCH= 1011.03 BW= 42.00 STCHL= 173.81 STCHR= 274.98
 EXCAVATION DATA
 AEX= 491.0SQ-FT VEXR= 2.0K*CU-YD VEXT= 20.4K*CU-YD

456.000	4.56	1015.59	.00	.00	1015.86	.27	.20	.00	1018.48
1141.0	.0	1141.0	.0	.0	274.9	.0	5.1	1.6	1018.37
.06	.00	4.15	.00	.000	.035	.000	.000	1011.03	185.37
.001831	105.	106.	107.	0	0	0	.00	78.51	263.87

*SECNO 457.000
 CHIMP CLSTA= 194.85 CELCH= 1011.19 BW= 42.00 STCHL= 144.82 STCHR= 248.74
 EXCAVATION DATA
 AEX= 548.0SQ-FT VEXR= 2.0K*CU-YD VEXT= 22.4K*CU-YD

Ridjob4

457.000	4.59	1015.78	.00	.00	1016.05	.26	.18	.00	1018.45
1141.0	.0	1141.0	.0	.0	277.3	.0	5.8	1.7	1019.41
.06	.00	4.11	.00	.000	.035	.000	.000	1011.19	155.48
.001786	102.	102.	101.	0	0	0	.00	78.75	234.22

*SECNO 458.000
 CHIMP CLSTA= 199.32 CELCH= 1011.34 BW= 42.00 STCHL= 149.00 STCHR= 253.36
 EXCAVATION DATA
 AEX= 509.3SQ-FT VEXR= 2.0K*CU-YD VEXT= 24.4K*CU-YD

458.000	4.63	1015.97	.00	.00	1016.23	.27	.19	.00	1018.67
1160.0	.0	1160.0	.0	.0	280.2	.0	6.4	1.9	1019.60
.07	.00	4.14	.00	.000	.035	.000	.000	1011.34	159.80
.001792	104.	104.	103.	0	0	0	.00	79.04	238.84

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 459.000
 CHIMP CLSTA= 155.35 CELCH= 1011.51 BW= 42.00 STCHL= 105.21 STCHR= 208.44
 EXCAVATION DATA
 AEX= 508.5SQ-FT VEXR= 2.1K*CU-YD VEXT= 26.5K*CU-YD

459.000	4.66	1016.17	.00	.00	1016.43	.26	.20	.00	1018.79
1160.0	.0	1160.0	.0	.0	282.2	.0	7.1	2.1	1019.53
.08	.00	4.11	.00	.000	.035	.000	.000	1011.51	115.73
.001757	114.	111.	108.	0	0	0	.00	79.24	194.97

*SECNO 460.000
 CHIMP CLSTA= 172.13 CELCH= 1011.65 BW= 42.00 STCHL= 121.48 STCHR= 222.31
 EXCAVATION DATA
 AEX= 490.2SQ-FT VEXR= 1.8K*CU-YD VEXT= 28.2K*CU-YD

460.000	4.69	1016.34	.00	.00	1016.59	.26	.16	.00	1019.06
1160.0	.0	1160.0	.0	.0	284.6	.0	7.8	2.3	1018.94
.08	.00	4.08	.00	.000	.035	.000	.000	1011.65	132.39
.001715	96.	95.	94.	0	0	0	.00	79.48	211.87

*SECNO 461.000
 CHIMP CLSTA= 229.21 CELCH= 1011.77 BW= 42.00 STCHL= 179.94 STCHR= 272.50
 EXCAVATION DATA
 AEX= 428.2SQ-FT VEXR= 1.5K*CU-YD VEXT= 29.8K*CU-YD

Ridjob4

461.000	4.73	1016.50	.00	.00	1016.75	.25	.15	.00	1018.84
1160.0	.0	1160.0	.0	.0	287.6	.0	8.4	2.5	1017.34
.09	.00	4.03	.00	.000	.035	.000	.000	1011.77	189.32
.001664	85.	91.	94.	0	0	0	.00	79.79	269.10

*SECNO 462.000

CHIMP CLSTA= 104.36 CELCH= 1011.97 BW= 42.00 STCHL= 54.33 STCHR= 147.03

EXCAVATION DATA

AEX= 450.3SQ-FT VEXR= 2.0K*CU-YD VEXT= 31.8K*CU-YD

462.000	4.73	1016.70	.00	.00	1016.96	.25	.21	.00	1019.23
1160.0	.0	1160.0	.0	.0	288.8	.0	9.2	2.7	1017.39
.10	.00	4.02	.00	.000	.035	.000	.000	1011.97	64.41
.001644	124.	125.	128.	0	0	0	.00	79.91	144.31

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SECNO	DEPTH	CWSEL	CRISW	WSELK	EG	HV	HL	OLOSS	L-BANK	ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK	ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*SECNO 463.000

CHIMP CLSTA= 158.03 CELCH= 1012.07 BW= 42.00 STCHL= 110.25 STCHR= 208.09

EXCAVATION DATA

AEX= 430.3SQ-FT VEXR= 1.0K*CU-YD VEXT= 32.9K*CU-YD

463.000	4.74	1016.81	.00	.00	1017.06	.25	.10	.00	1018.77
1160.0	.0	1160.0	.0	.0	288.9	.0	9.6	2.8	1019.34
.10	.00	4.01	.00	.000	.035	.000	.000	1012.07	118.07
.001643	62.	63.	65.	0	0	0	.00	79.92	197.99

*SECNO 464.000

CHIMP CLSTA= 166.29 CELCH= 1012.23 BW= 42.00 STCHL= 118.50 STCHR= 213.39

EXCAVATION DATA

AEX= 416.2SQ-FT VEXR= 1.7K*CU-YD VEXT= 34.6K*CU-YD

464.000	4.76	1016.99	.00	.00	1017.24	.25	.18	.00	1018.93
1160.0	.0	1160.0	.0	.0	290.7	.0	10.3	3.0	1018.76
.11	.00	3.99	.00	.000	.035	.000	.000	1012.23	126.24
.001615	106.	111.	117.	0	0	0	.00	80.09	206.33

*SECNO 465.000

CHIMP CLSTA= 155.00 CELCH= 1012.39 BW= 12.00 STCHL= 121.42 STCHR= 184.03

EXCAVATION DATA

AEX= 245.6SQ-FT VEXR= 1.3K*CU-YD VEXT= 35.9K*CU-YD

Ridjob4

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY

3720 CRITICAL DEPTH ASSUMED

465.000	4.26	1016.65	1016.65	.00	1018.02	1.36	.37	.33	1019.28
1160.0	.0	1160.0	.0	.0	123.8	.0	10.8	3.2	1018.12
.11	.00	9.37	.00	.000	.035	.000	.000	1012.39	131.95
.013450	104.	104.	106.	4	11	0	.00	46.09	178.05

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THIS RUN EXECUTED 27NOV00 14:44:03

 HEC-2 WATER SURFACE PROFILES
 Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

METAJOB NO. 4 - PLAZA CI

SUMMARY PRINTOUT TABLE 120

SECNO	CWSEL	EG	VCH	10*KS	DEPTH	TOPWID	CLSTA	BW	STCHL	XLBEL	STCHR	RBEL
447.000	1012.90	1013.52	6.31	62.34	3.23	67.84	106.76	42.00	55.43	1017.25	156.47	1016.85
448.000	1013.57	1014.00	5.26	36.62	3.74	71.93	118.17	42.00	66.32	1017.54	170.69	1017.71
449.000	1013.99	1014.35	4.83	28.69	4.00	74.00	147.64	42.00	94.66	1017.98	200.96	1018.07
450.000	1014.31	1014.64	4.59	24.87	4.16	75.26	158.07	42.00	103.49	1018.55	212.07	1018.40
451.000	1014.56	1014.87	4.43	22.44	4.27	76.21	184.32	42.00	129.62	1018.71	240.95	1019.20
452.000	1014.75	1015.04	4.35	21.26	4.34	76.71	157.22	42.00	100.54	1019.33	214.17	1019.40
453.000	1014.98	1015.26	4.27	20.12	4.41	77.23	186.00	42.00	130.17	1019.28	240.75	1019.01
454.000	1015.17	1015.45	4.27	19.83	4.46	77.72	153.69	42.00	98.19	1019.34	203.80	1017.99
455.000	1015.39	1015.66	4.21	19.05	4.52	78.11	214.63	42.00	163.98	1018.28	271.27	1019.78
456.000	1015.59	1015.86	4.15	18.31	4.56	78.51	224.62	42.00	173.81	1018.48	274.98	1018.37

Ridjob4

457.000	1015.78	1016.05	4.11	17.86	4.59	78.75	194.85	42.00	144.82	1018.45	248.74	1019.41
458.000	1015.97	1016.23	4.14	17.92	4.63	79.04	199.32	42.00	149.00	1018.67	253.36	1019.60
459.000	1016.17	1016.43	4.11	17.57	4.66	79.24	155.35	42.00	105.21	1018.79	208.44	1019.53
460.000	1016.34	1016.59	4.08	17.15	4.69	79.48	172.13	42.00	121.48	1019.06	222.31	1018.94
461.000	1016.50	1016.75	4.03	16.64	4.73	79.79	229.21	42.00	179.94	1018.84	272.50	1017.34
462.000	1016.70	1016.96	4.02	16.44	4.73	79.91	104.36	42.00	54.33	1019.23	147.03	1017.39
463.000	1016.81	1017.06	4.01	16.43	4.74	79.92	158.03	42.00	110.25	1018.77	208.09	1019.34

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SECNO	CWSEL	EG	VCH	10*KS	DEPTH	TOPWID	CLSTA	BW	STCHL	XLBEL	STCHR	RBEL
464.000	1016.99	1017.24	3.99	16.15	4.76	80.09	166.29	42.00	118.50	1018.93	213.39	1018.76
* 465.000	1016.65	1018.02	9.37	134.50	4.26	46.09	155.00	12.00	121.42	1019.28	184.03	1018.12

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METAJOB NO. 4 - PLAZA CI
SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRISWS	EG	10*KS	VCH	AREA	.01K
447.000	.00	.00	.00	1009.67	1120.00	1012.90	.00	1013.52	62.34	6.31	177.39	141.85
448.000	98.38	.00	.00	1009.83	1120.00	1013.57	.00	1014.00	36.62	5.26	213.11	185.08
449.000	106.69	.00	.00	1009.99	1120.00	1013.99	.00	1014.35	28.69	4.83	231.96	209.10
450.000	105.40	.00	.00	1010.15	1120.00	1014.31	.00	1014.64	24.87	4.59	243.79	224.57
451.000	96.30	.00	.00	1010.29	1120.00	1014.56	.00	1014.87	22.44	4.43	252.71	236.44
452.000	80.18	.00	.00	1010.41	1120.00	1014.75	.00	1015.04	21.26	4.35	257.54	242.92
453.000	103.98	.00	.00	1010.57	1120.00	1014.98	.00	1015.26	20.12	4.27	262.56	249.71
454.000	96.71	.00	.00	1010.71	1141.00	1015.17	.00	1015.45	19.83	4.27	267.32	256.19
455.000	107.98	.00	.00	1010.87	1141.00	1015.39	.00	1015.66	19.05	4.21	271.11	261.40

Ridjob4												
456.000	106.08	.00	.00	1011.03	1141.00	1015.59	.00	1015.86	18.31	4.15	274.94	266.68
457.000	102.24	.00	.00	1011.19	1141.00	1015.78	.00	1016.05	17.86	4.11	277.32	269.98
458.000	103.90	.00	.00	1011.34	1160.00	1015.97	.00	1016.23	17.92	4.14	280.24	274.03
459.000	110.77	.00	.00	1011.51	1160.00	1016.17	.00	1016.43	17.57	4.11	282.16	276.70
460.000	94.98	.00	.00	1011.65	1160.00	1016.34	.00	1016.59	17.15	4.08	284.61	280.12
461.000	90.78	.00	.00	1011.77	1160.00	1016.50	.00	1016.75	16.64	4.03	287.60	284.33
462.000	124.75	.00	.00	1011.97	1160.00	1016.70	.00	1016.96	16.44	4.02	288.84	286.07
463.000	63.34	.00	.00	1012.07	1160.00	1016.81	.00	1017.06	16.43	4.01	288.94	286.20
464.000	110.70	.00	.00	1012.23	1160.00	1016.99	.00	1017.24	16.15	3.99	290.69	288.67
* 465.000	104.13	.00	.00	1012.39	1160.00	1016.65	1016.65	1018.02	134.50	9.37	123.78	100.02

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METAJOB NO. 4 - PLAZA CI

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
447.000	1120.00	1012.90	.00	.00	.00	67.84	.00
448.000	1120.00	1013.57	.00	.67	.00	71.93	98.38
449.000	1120.00	1013.99	.00	.42	.00	74.00	106.69
450.000	1120.00	1014.31	.00	.32	.00	75.26	105.40
451.000	1120.00	1014.56	.00	.25	.00	76.21	96.30
452.000	1120.00	1014.75	.00	.19	.00	76.71	80.18
453.000	1120.00	1014.98	.00	.23	.00	77.23	103.98
454.000	1141.00	1015.17	.00	.19	.00	77.72	96.71
455.000	1141.00	1015.39	.00	.22	.00	78.11	107.98
456.000	1141.00	1015.59	.00	.21	.00	78.51	106.08
457.000	1141.00	1015.78	.00	.19	.00	78.75	102.24
458.000	1160.00	1015.97	.00	.18	.00	79.04	103.90

Ridjob4

459.000	1160.00	1016.17	.00	.20	.00	79.24	110.77
460.000	1160.00	1016.34	.00	.17	.00	79.48	94.98
461.000	1160.00	1016.50	.00	.16	.00	79.79	90.78
462.000	1160.00	1016.70	.00	.21	.00	79.91	124.75
463.000	1160.00	1016.81	.00	.10	.00	79.92	63.34
464.000	1160.00	1016.99	.00	.18	.00	80.09	110.70
* 465.000	1160.00	1016.65	.00	-.34	.00	46.09	104.13

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SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 465.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
 CAUTION SECNO= 465.000 PROFILE= 1 MINIMUM SPECIFIC ENERGY

CHECK-2 Program: NT Module
Manning's n Value and Transition Loss Coefficient Review

Report File = C:\RIDHEC2P\RIDJOB4.NT2
Date: 11/27/2000
Time: 2:45:30 PM

ECNO	XNL	XNR	XNCH	CCHV	CEHV	Structure
447	0.035	0.035	0.035	0.1	0.3	
448	0.035	0.035	0.035	0.1	0.3	
449	0.035	0.035	0.035	0.1	0.3	
450	0.035	0.035	0.035	0.1	0.3	
451	0.035	0.035	0.035	0.1	0.3	
452	0.035	0.035	0.035	0.1	0.3	
453	0.035	0.035	0.035	0.1	0.3	
454	0.035	0.035	0.035	0.1	0.3	
455	0.035	0.035	0.035	0.1	0.3	
456	0.035	0.035	0.035	0.1	0.3	
457	0.035	0.035	0.035	0.1	0.3	
458	0.035	0.035	0.035	0.1	0.3	
459	0.035	0.035	0.035	0.1	0.3	
460	0.035	0.035	0.035	0.1	0.3	
461	0.035	0.035	0.035	0.1	0.3	
462	0.035	0.035	0.035	0.1	0.3	
463	0.035	0.035	0.035	0.1	0.3	
464	0.035	0.035	0.035	0.1	0.3	
465	0.035	0.035	0.035	0.1	0.3	

-----Summary of Statistics-----

	Minimum	Maximum
Left Overbank N Value:	0.035	0.035
Right Overbank N Value:	0.035	0.035
Channel N Value:	0.035	0.035
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

-----Roughness Coefficient Check-----

SECNO: 447
NT RC 01 Left overbank n value is less than 0.04

SECNO: 447
NT RC 03 Right overbank n value is less than 0.04

SECNO: 448
NT RC 01 Left overbank n value is less than 0.04

SECNO: 448
NT RC 03 Right overbank n value is less than 0.04

SECNO: 449
NT RC 01 Left overbank n value is less than 0.04

SECNO: 449
NT RC 03 Right overbank n value is less than 0.04

SECNO: 450
NT RC 01 Left overbank n value is less than 0.04

SECNO: 450
NT RC 03 Right overbank n value is less than 0.04

SECNO: 451
NT RC 01 Left overbank n value is less than 0.04

SECNO: 451
NT RC 03 Right overbank n value is less than 0.04

SECNO: 452
NT RC 01 Left overbank n value is less than 0.04

ECNO: 452
T RC 03 Right overbank n value is less than 0.04

ECNO: 453
T RC 01 Left overbank n value is less than 0.04

ECNO: 453
T RC 03 Right overbank n value is less than 0.04

ECNO: 454
T RC 01 Left overbank n value is less than 0.04

ECNO: 454
T RC 03 Right overbank n value is less than 0.04

ECNO: 455
T RC 01 Left overbank n value is less than 0.04

ECNO: 455
T RC 03 Right overbank n value is less than 0.04

ECNO: 456
T RC 01 Left overbank n value is less than 0.04

ECNO: 456
T RC 03 Right overbank n value is less than 0.04

ECNO: 457
T RC 01 Left overbank n value is less than 0.04

ECNO: 457
T RC 03 Right overbank n value is less than 0.04

ECNO: 458
T RC 01 Left overbank n value is less than 0.04

ECNO: 458
T RC 03 Right overbank n value is less than 0.04

ECNO: 459
T RC 01 Left overbank n value is less than 0.04

ECNO: 459
T RC 03 Right overbank n value is less than 0.04

ECNO: 460
T RC 01 Left overbank n value is less than 0.04

ECNO: 460
T RC 03 Right overbank n value is less than 0.04

ECNO: 461
T RC 01 Left overbank n value is less than 0.04

ECNO: 461
T RC 03 Right overbank n value is less than 0.04

ECNO: 462
T RC 01 Left overbank n value is less than 0.04

ECNO: 462
T RC 03 Right overbank n value is less than 0.04

ECNO: 463
T RC 01 Left overbank n value is less than 0.04

ECNO: 463
T RC 03 Right overbank n value is less than 0.04

ECNO: 464
T RC 01 Left overbank n value is less than 0.04

ECNO: 464
T RC 03 Right overbank n value is less than 0.04

ECNO: 465

T RC 01 Left overbank n value is less than 0.04

ECNO: 465

T RC 03 Right overbank n value is less than 0.04

-----NC and NH records Check-----

-----Transition Coefficient check-----

-----Roughness Coefficient Check at Structures-----

-----Special Notes and Messages check-----

---End Program---

CHECK-2 Program, XSEC Module
 Cross Section Location and Alignment Review

Report File = C:\RIDHEC2P\RIDJOB4.XS2
 Date: 11/27/2000
 Time: 2:45:34 PM

ECNO	Xlob	Xrob	Xlch	CHWID	Topwid	Structure Flow Type
447	0.00	0.00	0.00	101.04	67.84	
448	98.77	98.03	98.38	104.37	71.93	
449	107.06	105.73	106.69	106.30	74.00	
450	105.00	106.80	105.40	108.58	75.26	
451	96.00	96.62	96.30	111.33	76.21	
452	74.14	84.90	80.18	113.63	76.71	
453	83.76	122.98	103.98	110.58	77.23	
454	89.25	104.87	96.71	105.61	77.72	
455	103.62	113.18	107.98	107.29	78.11	
456	105.45	107.35	106.08	101.17	78.51	
457	102.31	101.32	102.24	103.92	78.75	
458	103.90	103.37	103.90	104.36	79.04	
459	114.01	107.54	110.77	103.23	79.24	
460	95.76	94.02	94.98	100.83	79.48	
461	84.97	94.29	90.78	92.56	79.79	
462	124.25	128.25	124.75	92.70	79.91	
463	61.62	65.37	63.34	97.84	79.92	
464	105.99	116.52	110.70	94.89	80.09	
465	103.85	105.91	104.13	62.61	46.09	C

IS IF 04 D = divided flow
 IS IF 05 E = extended cross section
 IS IF 06 C = critical depth
 IS IF 07 S = X5 record

-----Distance Check-----

-----Channel Width Check-----

-----Spacing Check-----

-----Ineffective Flow Area-----

-----Location Check-----

-----Discharge Check-----

SECNO: 454

XS DC 01 Discharge decreases in the downstream direction.

SECNO: 458

XS DC 01 Discharge decreases in the downstream direction.

-----Starting WSEL Check-----

XS SW 02 Known water-surface elevation of 1012.9 is specified on the first J1 record.

---End Program---

5.5 These **East Channel Model** ("Channel Along RID Canal") items follow

SUMMARY TABLE

PROFILE PLOT

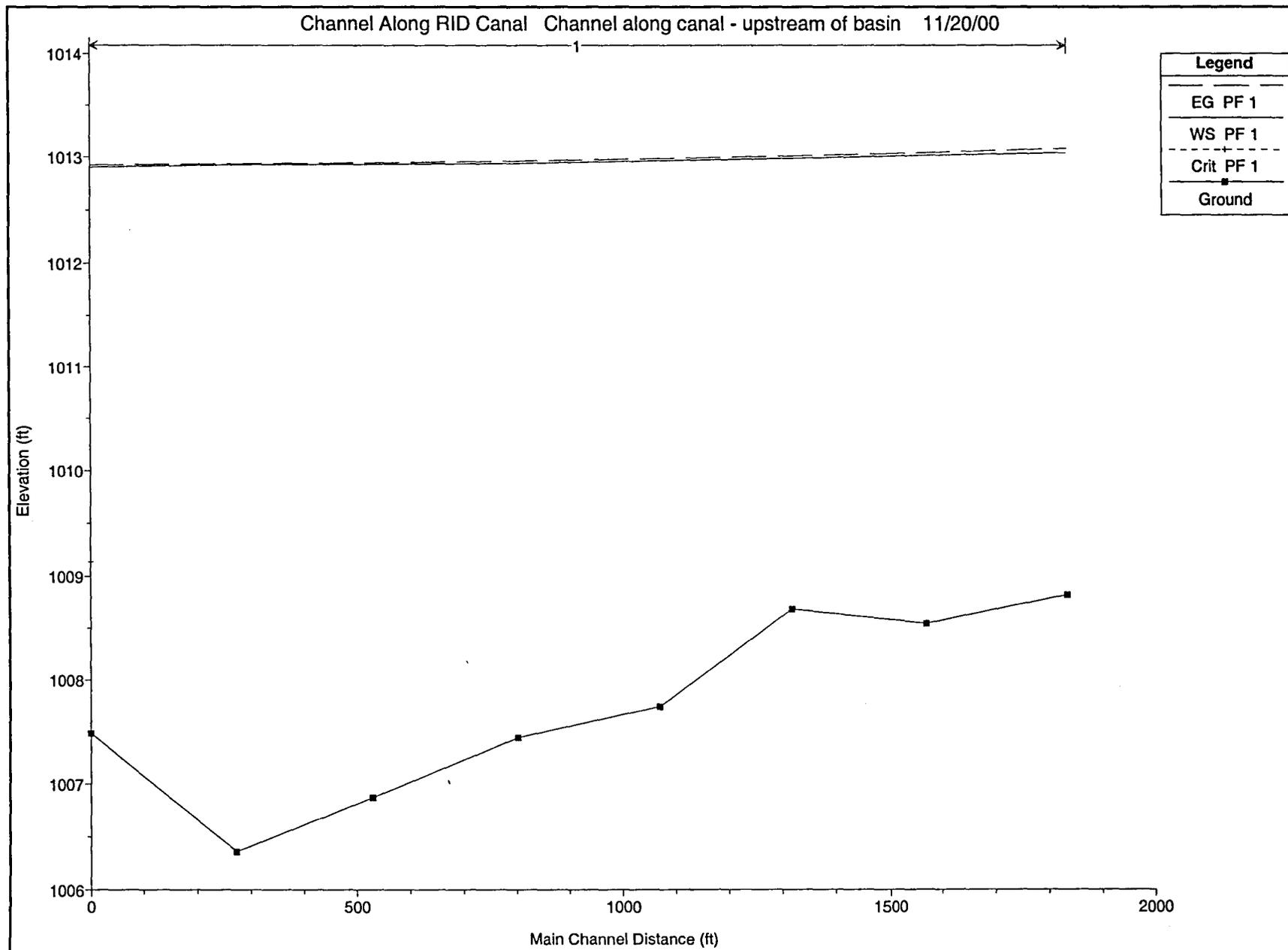
CROSS-SECTION PLOTS

CHECK-RAS REPORT

HEC-RAS Plan: Run 005 River: Channel_at_RID Reach: 1

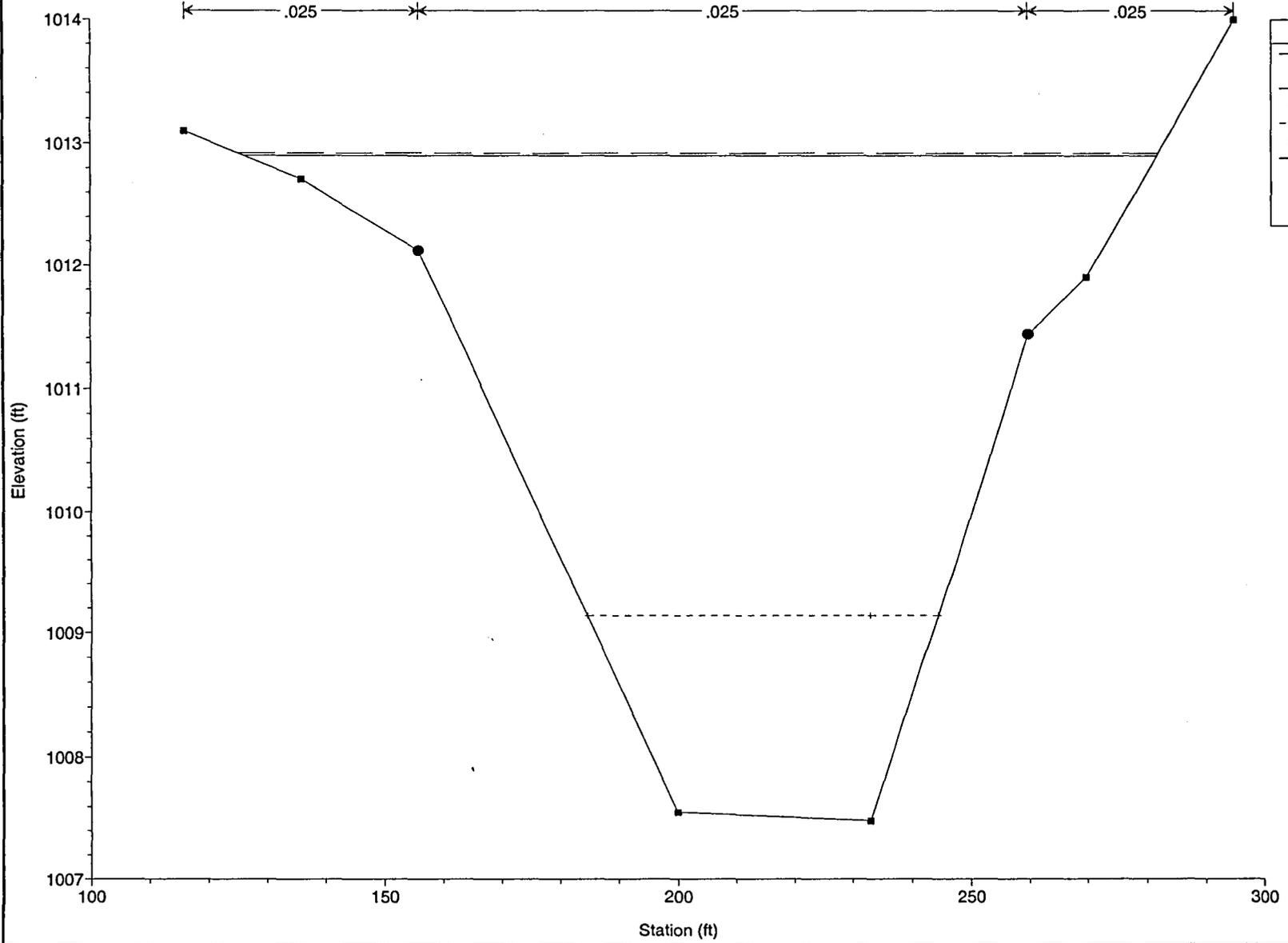
Reach	River Sta	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1.35	481.00	1008.82	1013.04		1013.08	0.000197	1.72	289.09	170.12	0.18
1	1.30	481.00	1008.54	1013.01		1013.04	0.000120	1.41	491.71	514.26	0.14
1	1.25	481.00	1008.68	1012.98		1013.01	0.000120	1.40	534.96	605.54	0.14
1	1.20	481.00	1007.74	1012.96		1012.98	0.000081	1.22	569.85	602.03	0.12
1	1.15	481.00	1007.44	1012.94		1012.96	0.000082	1.28	470.28	411.30	0.12
1	1.10	481.00	1006.87	1012.93		1012.94	0.000038	0.98	665.60	541.19	0.08
1	1.05	481.00	1006.36	1012.92		1012.93	0.000026	0.83	744.25	527.80	0.07
1	1.00	481.00	1007.48	1012.90	1009.14	1012.92	0.000063	1.16	434.51	155.65	0.10

EAST
CHANNEL



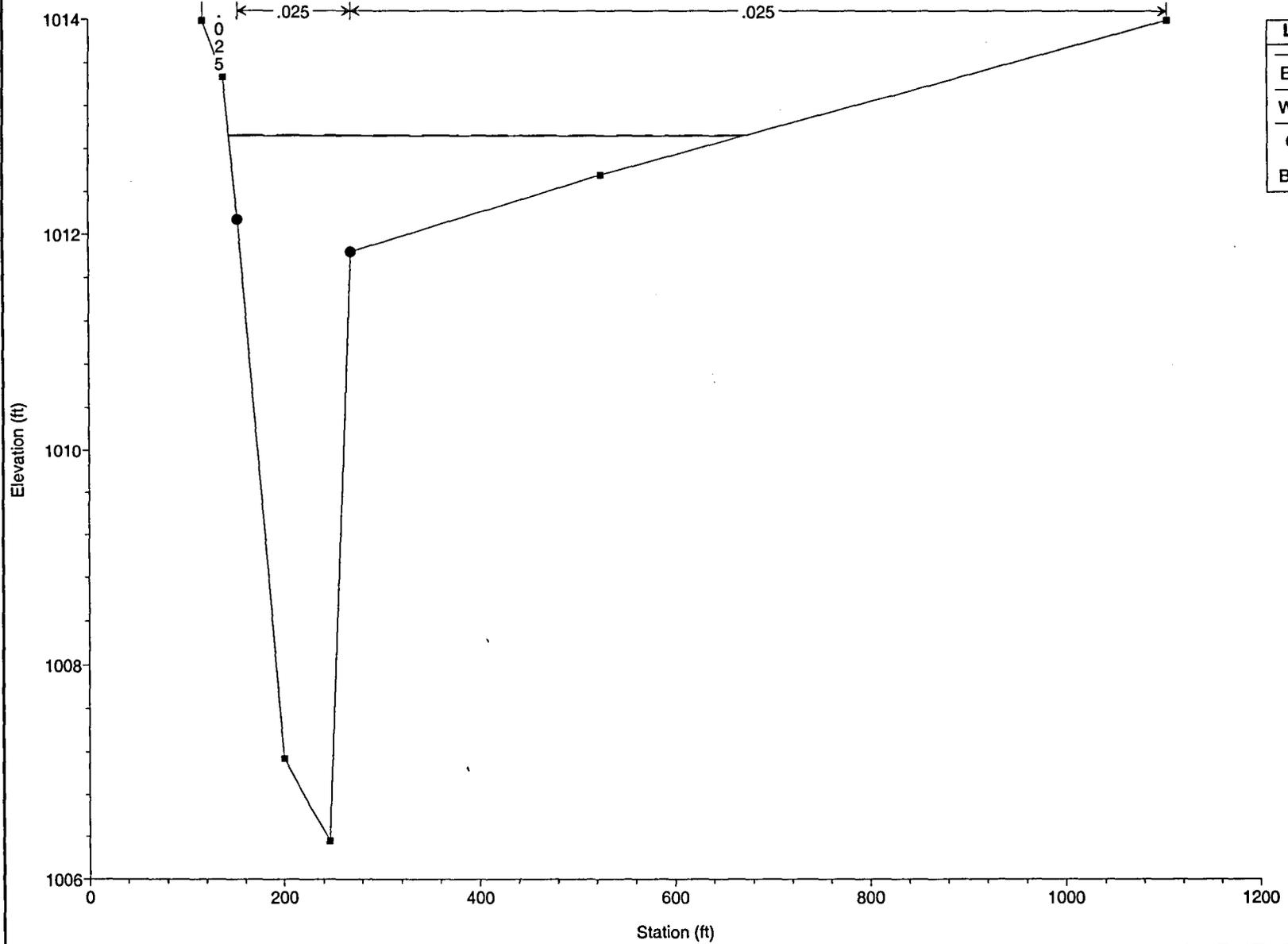
Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

West end of channel AND SE corner of tri



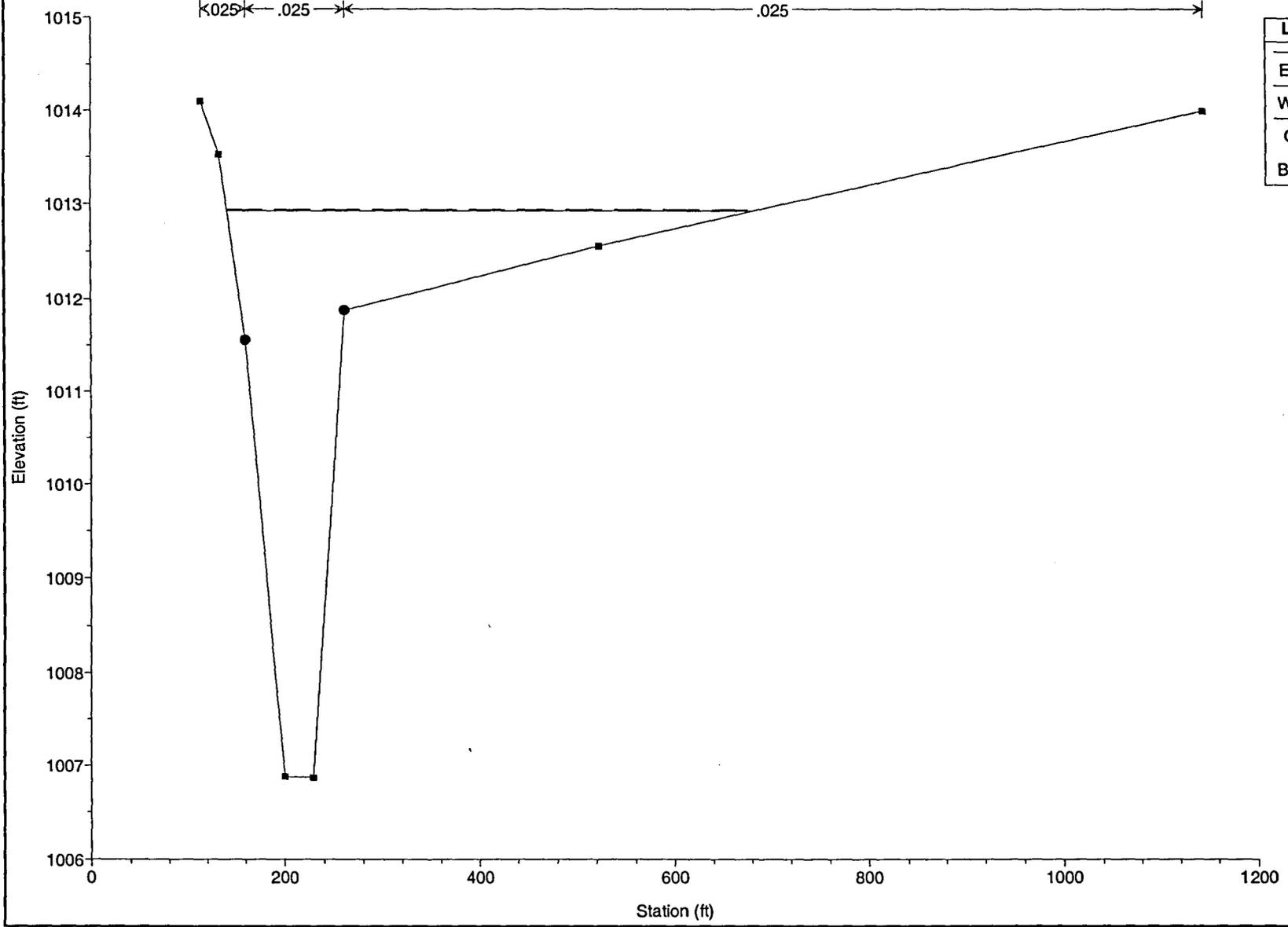
Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

Riv Sta 1.05



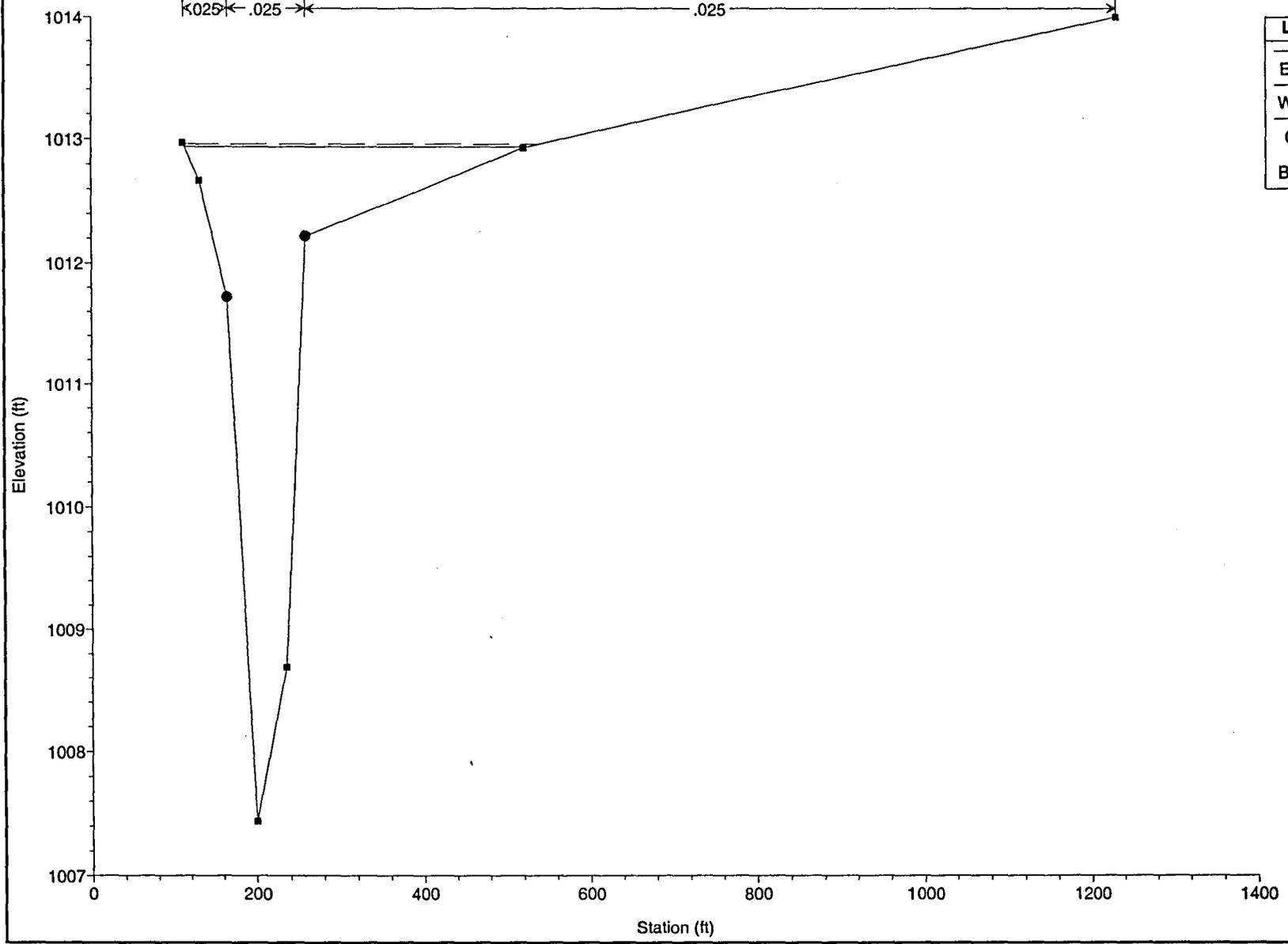
Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

Riv Sta 1.10



Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

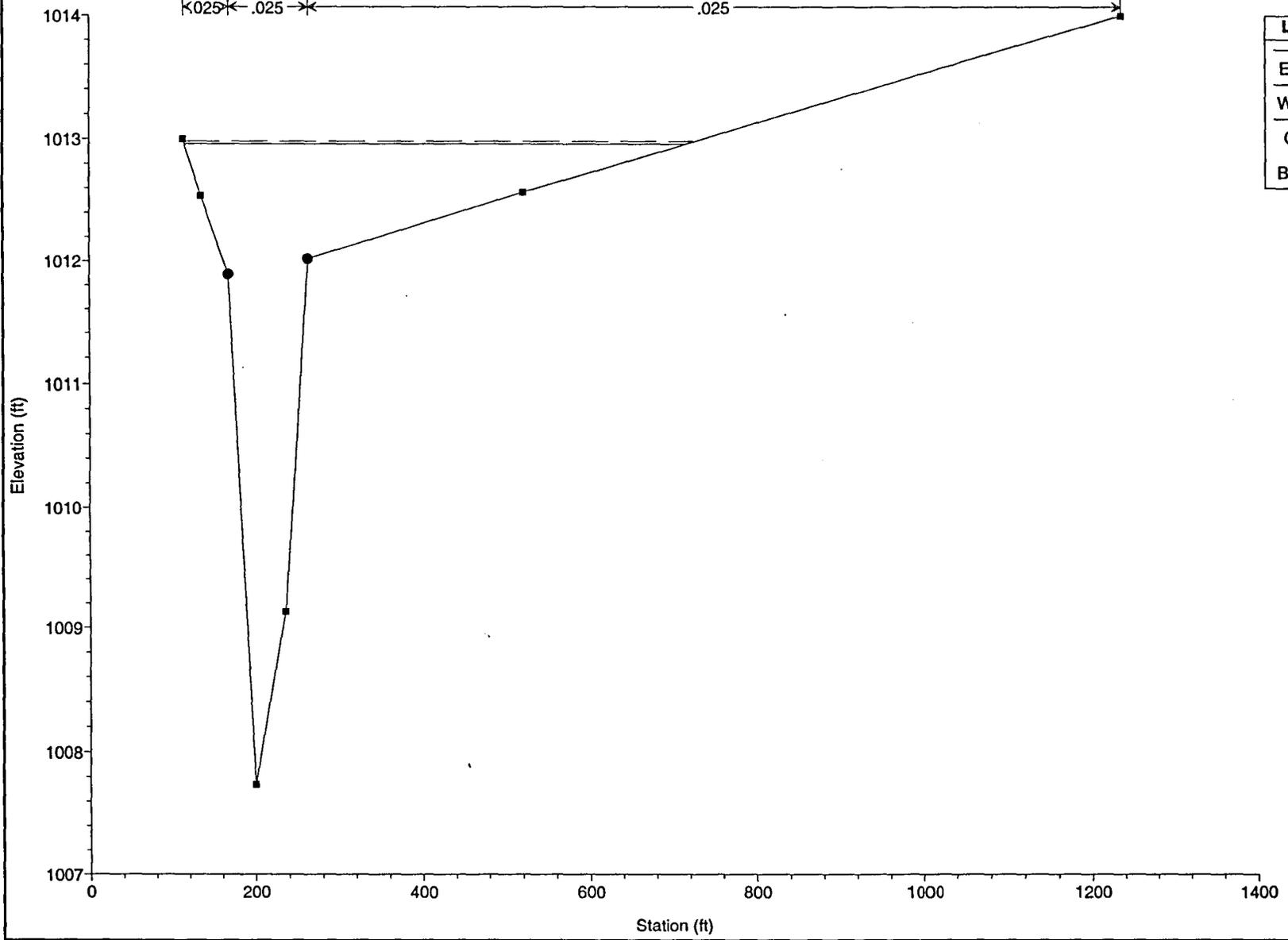
Riv Sta 1.15



Legend	
---	EG PF 1
—■—	WS PF 1
—●—	Ground
—	Bank Sta

Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

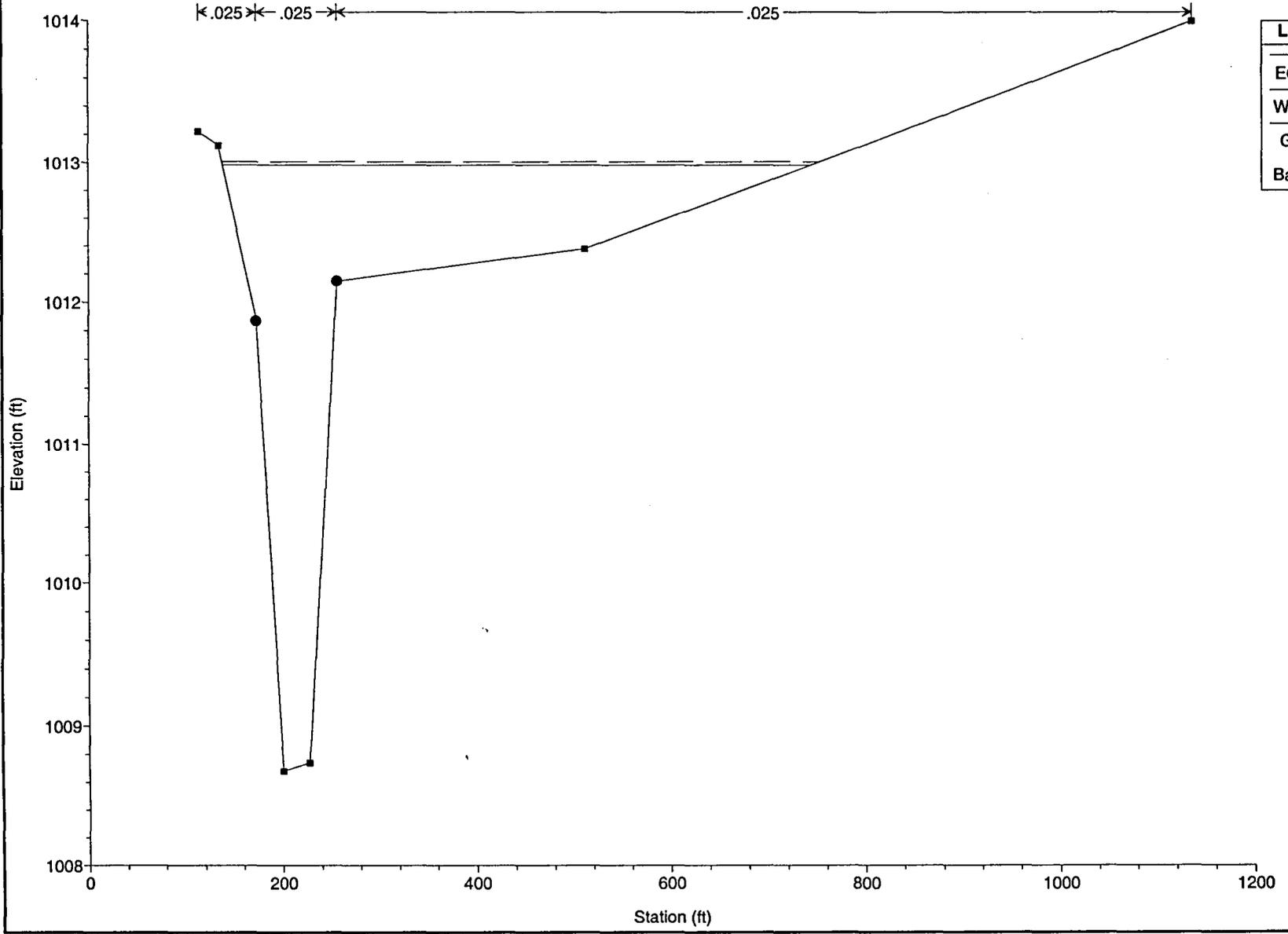
Riv Sta 1.20



Legend	
---	EG PF 1
—	WS PF 1
■	Ground
●	Bank Sta

Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

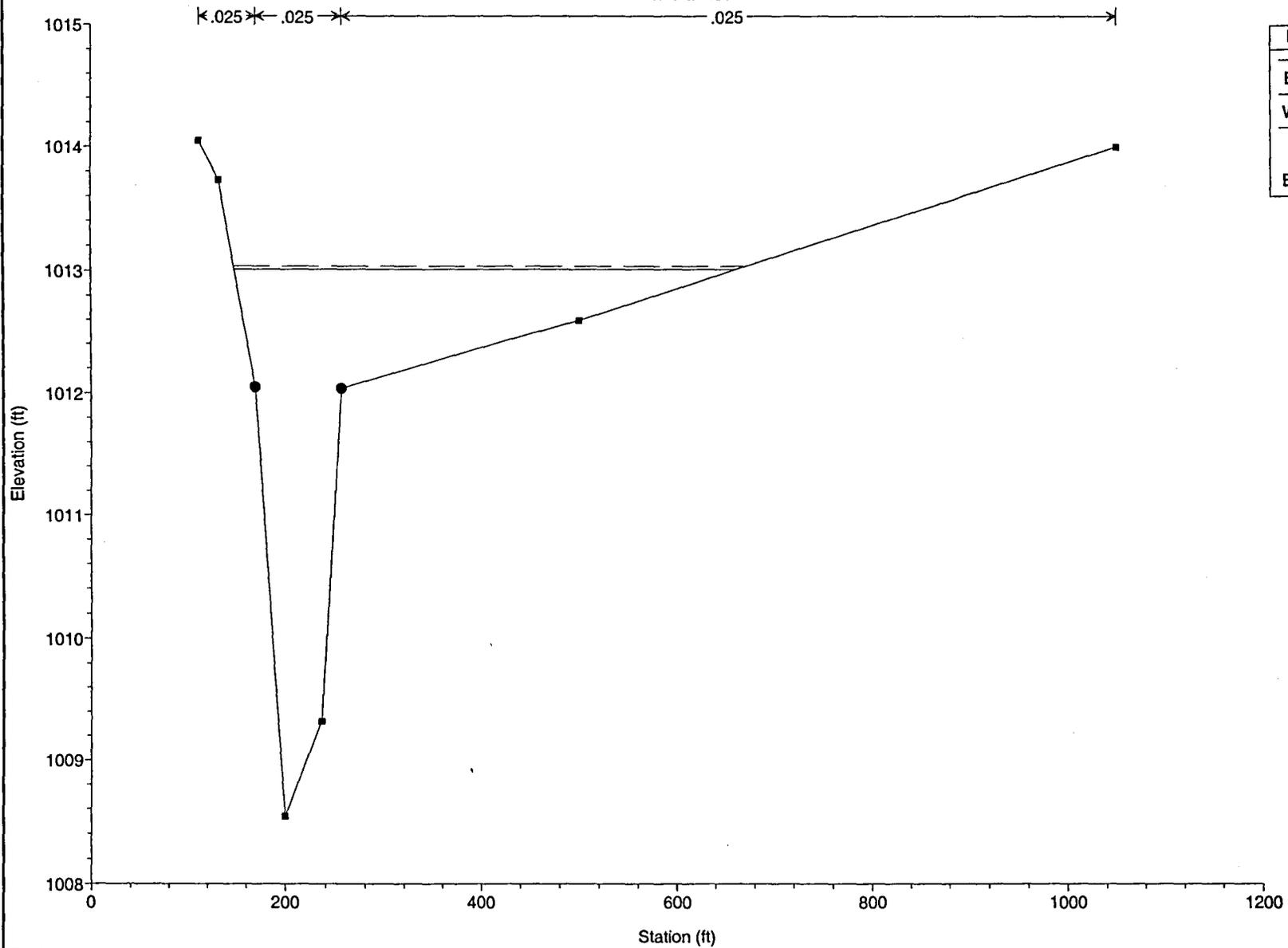
Riv Sta 1.25



Legend	
EG PF 1	---
WS PF 1	—■—
Ground	—●—
Bank Sta	—●—

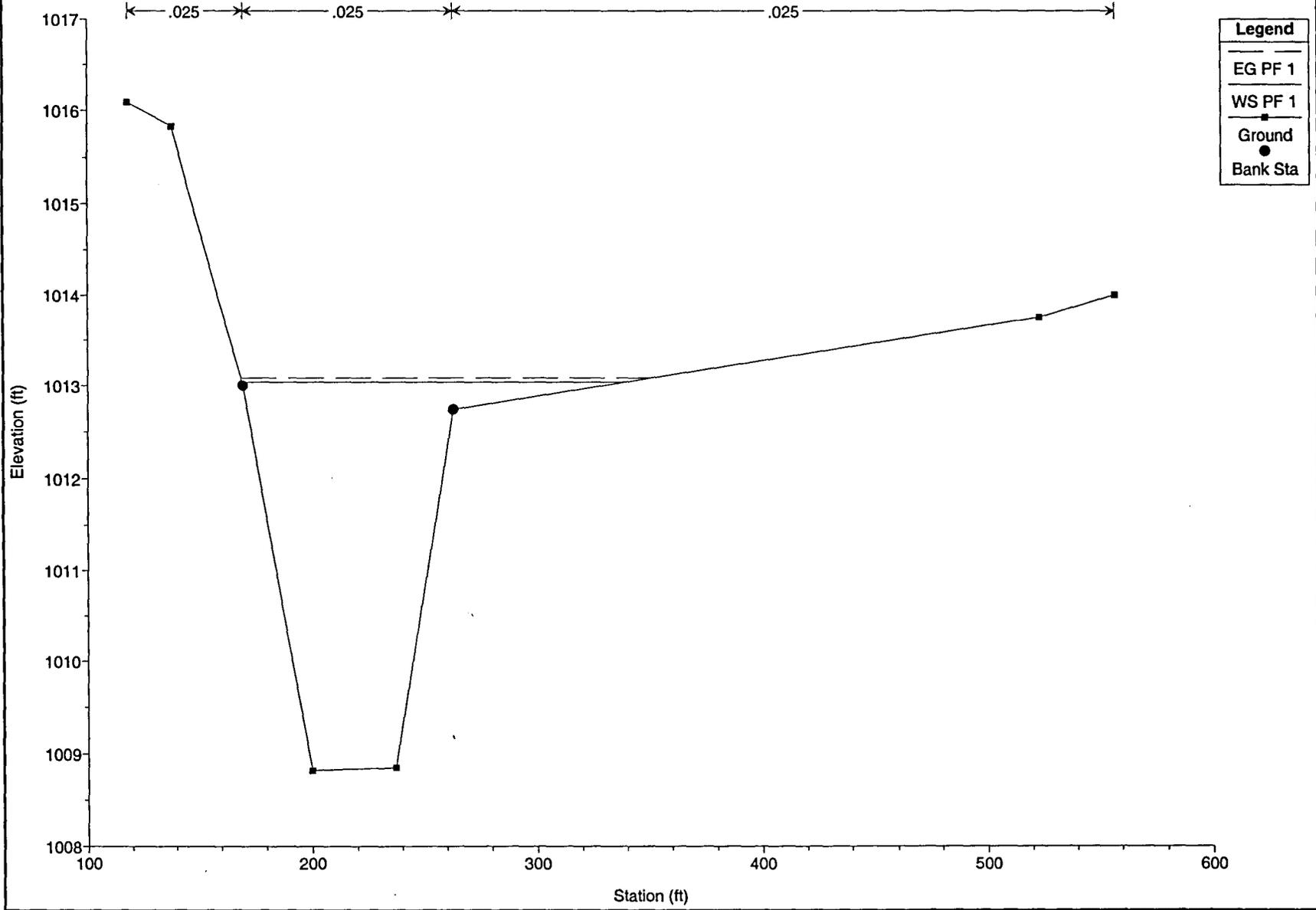
Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

Riv Sta 1.30



Channel Along RID Canal Channel along canal - upstream of basin 11/20/00

Riv Sta 1.35 approx 380 ft west of Dysar



CHECK-RAS Program: NT Check
Manning's n Value and Transition Loss Coefficient Review

Project File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.prj
 Plan File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.p05
 Geometry File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.g01
 Flow File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.f04
 Report File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.nt
 Selected profiles: PF 1
 Date: 11/27/00
 Time: 5:34:42 PM

SECNO	STRUCTURE	NLOB	NCHL	NROB	CNTR	EXP

Channel_at_RID,1						
1.35		0.025	0.025	0.025	0.1	0.3
1.3		0.025	0.025	0.025	0.1	0.3
1.25		0.025	0.025	0.025	0.1	0.3
1.2		0.025	0.025	0.025	0.1	0.3
1.15		0.025	0.025	0.025	0.1	0.3
1.1		0.025	0.025	0.025	0.1	0.3
1.05		0.025	0.025	0.025	0.1	0.3
1		0.025	0.025	0.025	0.1	0.3

---Summary of Statistics---

	Minimum	Maximum
Left Overbank n Value:	0.025	0.025
Right Overbank n Value:	0.025	0.025
Channel n Value:	0.025	0.025
Contraction Coefficient:	0.1	0.1
Expansion Coefficient:	0.3	0.3

ROUGHNESS COEFFICIENT CHECK

RS: 1.35
 NT RC 01 Left overbank n value is less than 0.035
 The n value for overbank is usually larger then 0.035.
 The n value should be reevaluated.

RS: 1.35
 NT RC 01 Right overbank n value is less than 0.035
 The n value for overbank is usually larger then 0.035.
 The n value should be reevaluated.

RS: 1.35
 NT RC 03 Channel n value is equal to or less than 0.025
 The n value of the channel is usually larger than 0.025.
 The n value should be reevaluated it if is not representing a
 concrete lined channel.

RS: 1.3
 NT RC 01 Left overbank n value is less than 0.035
 The n value for overbank is usually larger then 0.035.
 The n value should be reevaluated.

RS: 1.3
 NT RC 01 Right overbank n value is less than 0.035
 The n value for overbank is usually larger then 0.035.
 The n value should be reevaluated.

*BECAUSE
IMPROVED CHANNEL*

RS: 1
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

RS: 1.25
NT RC 01 Left overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.25
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.25
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

RS: 1.2
NT RC 01 Left overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.2
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.2
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

RS: 1.15
NT RC 01 Left overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.15
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.15
NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

RS: 1.1
NT RC 01 Left overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.1
NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

NT RC 03 C1 ≥ 1 n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

RS: 1.05

NT RC 01 Left overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.05

NT RC 01 Right overbank n value is less than 0.035
The n value for overbank is usually larger than 0.035.
The n value should be reevaluated.

RS: 1.05

NT RC 03 Channel n value is equal to or less than 0.025
The n value of the channel is usually larger than 0.025.
The n value should be reevaluated if it is not representing a
concrete lined channel.

TRANSITION LOSS COEFFICIENT CHECK

ROUGHNESS COEFFICIENT AT STRUCTURES

---END---

CHECK-RAS Program, XS Check
Cross Section Location and Alignment Review

Project File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.prj
Plan File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.p05
Geometry File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.g01
Flow File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.f04
Report File: C:\RIDCO LOMR\final run upstream along canal\ChanAlonRIDc.xls
Selected profiles: PF 1
Date: 11/27/00
Time: 5:34:59 PM

SECNO	Len Lob	Len Chl	Len Rob	TopWdthAct	Q Total	Flow Code

Channel_at_RID,1						
1.35	265	265	265	170.12	481	
1.3	252	252	252	514.26	481	
1.25	248	248	248	605.54	481	
1.2	268	268	268	602.03	481	
1.15	272	272	272	411.3	481	
1.1	257	257	257	541.19	481	
1.05	273	273	273	527.8	481	
1	0	0	0	155.65	481	

B=blocked obstruction XS SC 05
C=critical depth XS SC 03
D=divided flow XS SC 01
E=cross section extended XS SC 02
K=known water-surface XS SC 04

DISTANCE CHECK

SPACING CHECK

INEFFECTIVE FLOW CHECK

DISCHARGE CHECK

XS DC 02 Constant discharge used for the Channel_at_RID,1

LOCATION CHECK

BOUNDARY CONDITION CHECK

XS BC 02 The name of the stream is Channel_at_RID,1
Known WS = 1012.9 is specified as the downstream boundary
for profile PF 1

---END---

SECTION 6

EROSION AND SEDIMENT TRANSPORT

The Sediment Analysis for this project is contained in Appendix D of the RID Overchute Project Design Report.

SECTION 7

FLOOD CONTROL STRUCTURE MAINTENANCE PLAN

The maintenance plan, for and by the Flood Control District of Maricopa County, for Phases 1 and 2 of the RID Overchute follows this sheet.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
Construction and Maintenance Division
Operation and Maintenance Procedure
RID Overchute Phase I & II

Inspections:

1. Quarterly Operational Inspections:
 - a. List any discrepancies.
 - b. Review for action required.
 - c. Schedule necessary repairs.

2. Annual Maintenance Inspection:
 - a. List all needed maintenance and repairs.
 - b. Assign work orders for the noted repairs.

3. Formal Annual Inspection:
 - a. Inspect project to insure all maintenance and repairs are completed satisfactorily.
 - b. Complete annual inspection reports for file.

4. Major Storm Event:
 - a. Inspect project during or after a major storm event.
 - b. List any problems.
 - c. Record high flows.

5. Citizen Complaints/Inquiries:
 - a. Investigate area of complaint.
 - b. Respond to citizen within 48 hours.
 - c. Take action if in-house/refer to proper agency, if not.

O & M Responsibilities:

- All concrete and rip rap flood control structures and associated metal work (repair/refurbish and debris removal).
- Erosion repairs/concrete repairs
- Sediment and debris removal from flows through channels
- Fencing and access gates
- Maintenance and access roads
- Project signs
- Weed abatement
- Safety hazards
- Rodent control
- Vandalism

Note: Existing IGA's with the City of Avondale, Goodyear, Litchfield Park and Suncor, Inc., define shared maintenance responsibilities for the above.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
Operations and Maintenance Division

Standard Maintenance Procedures
Prepared for the RID Overchute

SUBJECT: Maintenance of Channels, Basins and Structures

PURPOSE: To insure the integrity of the project is preserved and will function as designed.

PROCEDURE A:

1. Vegetation
Remove or destroy woody vegetation within the flow area of the channel/basin, collection ditches, or side inlet basins. Also remove trash or other objects that will impede flows in these areas. If grasses are established, maintain the height to six inches.
2. Sediment Deposits
Remove deposits of loose material to obtain designed grades and cross sections. Loose deposited materials shall not be used within the channel/basin unless tested to meet the earthfill criteria in the construction specifications.
3. Erosion
Make repairs of eroded areas by replacing lost material with compacted earth, or other suitable erosion resistant material, in accordance with the original construction specifications.

PROCEDURE B: Rodent Control

1. Gophers can damage the structure by burrowing deep holes with more than one outlet. These can be identified by fresh mounds of soil.
1. Ground squirrels can also damage structures even with insignificant numbers and must be treated.
2. A licensed pesticide applicator shall apply the appropriate pesticide and the MSDS shall be with the licensed applicator.
3. After rodent activity has been controlled, holes are to be filled and compacted.

PROCEDURE C: Graffiti Removal

1. Graffiti needs to be removed as soon as possible to discourage repeated application.

SECTION 8

EXISTING FLOOD INSURANCE RATE MAP

The area affected by this LOMR is noted on the portion of the FIRM that follows.

[Panel No. 04013 2080G Sept. 30, 1995
with LOMRs dated Aug. 5, 1997 Aug. 19, 1999 & Feb. 23, 2000]

B

C

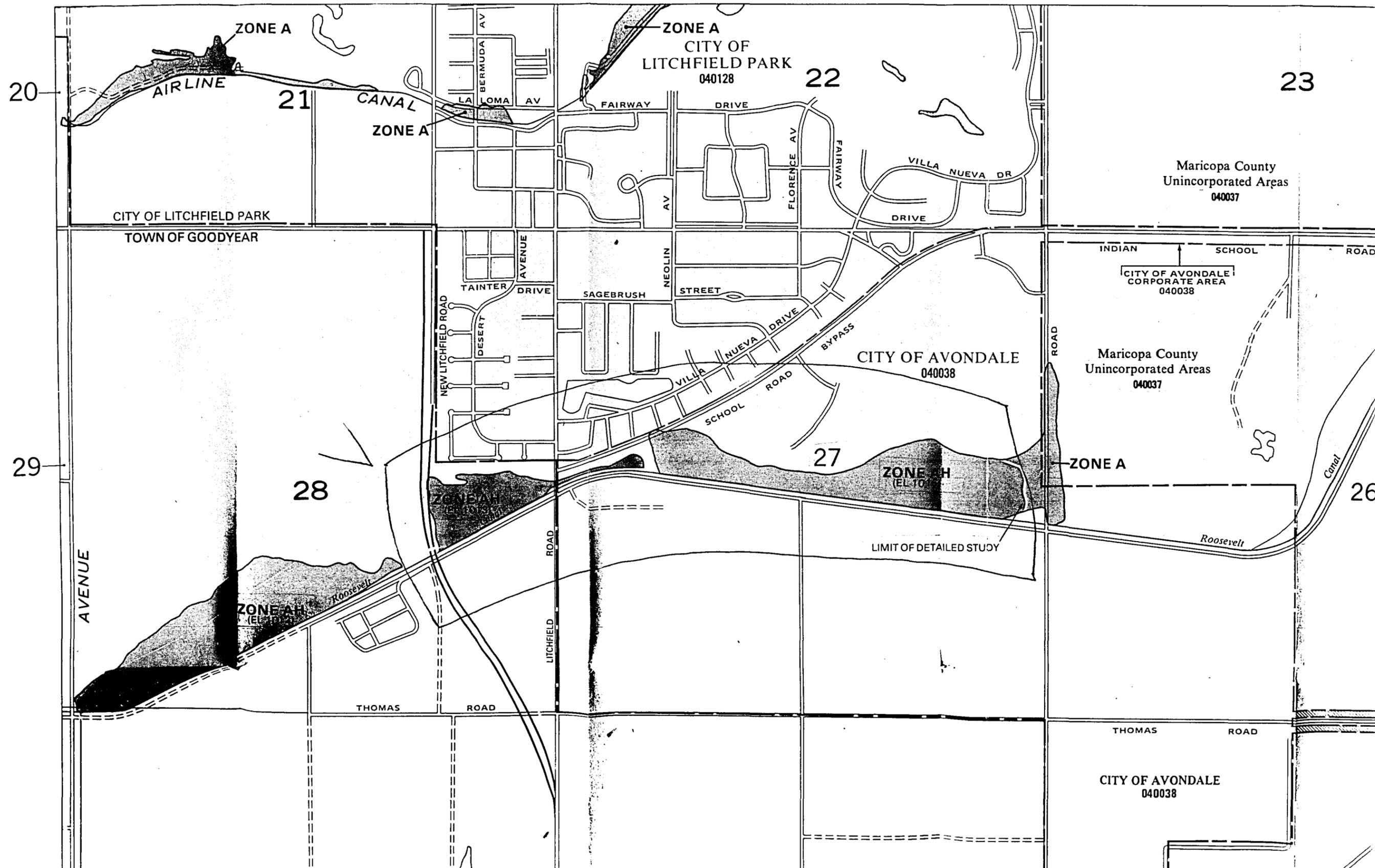
D

E

FIRM PANEL 2080

JOINS PANEL 1615

AREA OF INFLUENCE OF THIS LOMR



20

21

22

23

29

28

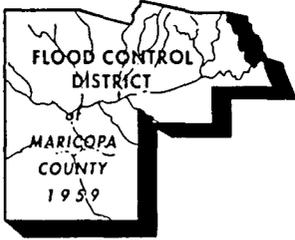
27

26

SECTION 9

REVISED FLOODPLAIN EXHIBIT

" RID CANAL OVERCHUTE LOMR EXHIBIT " follows this sheet.



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

May 15, 2001

Monther S. Madanat, Director
Technical Services Division
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria VA 22304-6425

REFERENCE: Case No. 01-09-497P
City of Avondale and City of Goodyear, AZ
Community Nos.: 040038 and 040046

316-ACK.FRQ

LOMR for Roosevelt Irrigation District Canal Overchute

Dear Mr. Madanat:

In response to your letter of March 27, 2001, the following items are enclosed, to allow you to begin a detailed review of my LOMR request:

- 1) FEMA form MT-2 Form 1 signed by the City of Avondale's City Engineer.
- 2) An engineer's certification letter that certifies that the work map represents as-built conditions.
- 3) A completed Riverine / Coastal Mapping MT-2 Form 5.

The check for \$ 6,000 has been submitted separately. If you have any questions, please call me at 602-506-4732, or email me at mwd@mail.maricopa.gov.

Sincerely,

Michael Duncan, P.E.
Engineering Division

Enclosures

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.

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.

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

- CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60,65 & 72).
- LOMR A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations. LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65.)
- Other Describe:

2. OVERVIEW

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

- Physical Change
- Improved Methodology/Data
- Floodway Revision

Other Describe:

Note: A photograph is not required, but is very helpful during review.

2. Flooding Source: CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS

3. Project Name/Identifier: Roosevelt Irrigation District Canal Overchute, Phases 1 and 2

4. FEMA zone designations affected: AH
 (example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	Katy, City Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
040038	Avondale, City	AZ	04013C	2080G	09/30/95
040046	Goodyear, City	AZ	04013C	2080G	09/30/95

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

Types of Flooding		Structures	
<input type="checkbox"/> Riverine	<input checked="" type="checkbox"/> Channelization	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Bridge/Culvert
<input type="checkbox"/> Coastal	<input type="checkbox"/> Dam	<input type="checkbox"/> Fill	<input type="checkbox"/> Other (describe)
<input type="checkbox"/> Alluvial fan			
<input checked="" type="checkbox"/> Shallow Flooding (e.g. Zones AO and AH)			
<input type="checkbox"/> Lakes			
<input type="checkbox"/> Other (describe)			

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1. 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.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0.000 feet? Yes No N/A
3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? Yes No

If the answer to either items is Yes, please attach 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.

5. MAINTENANCE RESPONSIBILITY

The community is willing to assume responsibility for performing overseeing compliance with the maintenance and operation plans of the RID Canal Overchute, which is maintained by the Flood Control District of Maricopa County.
 (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.

Operation and maintenance plans are attached. Yes No N/A

6. REVIEW FEE

The review fee for the appropriate request category has been included. Yes Fee amount: \$

OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is 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; thus the project is fee exempt.

Yes

Please see Instructions for Fee Amounts

7. SIGNATURE

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

Michael W. Duncan

Signature of Revision Requester

Michael Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Flood Control District of Maricopa County
 Company Name

Telephone No.: 602-506-4732

Date: 4-25-01

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

David W. Fitzhugh

Signature of Community Official

David W. Fitzhugh, P.E., City Engineer
 Printed Name and Title of Community Official

City of Avondale
 Community Name

Telephone No.: 623-932-1909

Date: 5-14-01

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sect 65.2

Signature

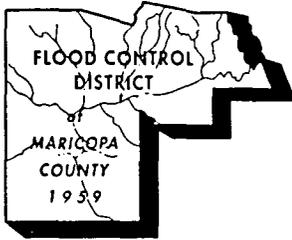
Michael W. Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Registr. No. 24124 Expires (Date) 09/30/2002 State AZ

Type of License/Expertise: Professional Civil Engineer

Check which forms have been included with this request

Form Name and (Number)	Required if
<input checked="" type="checkbox"/> Hydrologic (3)	new or revised discharges
<input checked="" type="checkbox"/> Hydraulic (4)	new or revised water-surface elevations
<input checked="" type="checkbox"/> Mapping (5)	floodplain/floodway changes
<input checked="" type="checkbox"/> Channelization (6)	channel is modified
<input checked="" type="checkbox"/> Bridge/Culvert (7)	addition/revision of bridge/culvert
<input type="checkbox"/> Levee/Floodwall (8)	addition/revision of levee/floodwall
<input type="checkbox"/> Coastal (9)	new or revised coastal elevations
<input type="checkbox"/> Coastal Structures (10)	addition/revision of coastal structure
<input type="checkbox"/> Dam (11)	addition/revision of dam
<input type="checkbox"/> Alluvial Fan (12)	structures proposed on alluvial fan



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

April 10, 2001

Monther S. Madanat, Director
Technical Services Division
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, VA 22304-6425

REFERENCE: Case No.: 01-09-497P
Identifier: Roosevelt Irrigation District Canal Overchute

Dear Monther:

In February, I submitted a LOMR application packet, for modifying the floodplain to reflect conditions after the construction of the R.I.D. Canal Overchute Project. The LOMR application packet includes a map of the revised floodplain.

I hereby certify that my floodplain map, entitled "RID CANAL OVERCHUTE LOMR EXHIBIT," and dated 22 Nov 00, represents as-built conditions.

Sincerely,

Michael W. Duncan

Michael W. Duncan,
Arizona P.E. Registration No. 24124,
with expiration date of 09/30/2002



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; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

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.

Note: Fill out one form for each flooding source studied

Community Name: City of Avondale and City of Goodyear

Flooding Source: There is no stream. CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS

Project Name/Identifier: Roosevelt Irrigation District Canal Overchute, Phases 1 and 2

This is a Manual Digital submission. *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 as possible.*

1. MAPPING CHANGES

1. A topographic workmap must be submitted showing the following information (check N/A when not applicable):

- | | | | |
|--|---|--|---|
| a. Revised approximate 100-year floodplain boundaries (Zone A) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| b. Revised detailed 100- and 500-year floodplain boundaries. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| c. Revised floodway boundaries | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| d. Location and alignment of all cross sections with stationing control indicated. | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| e. Stream alignments, road alignments and dam alignments. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| f. Current community boundaries. | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| g. Effective 100- year floodplain and floodway boundaries from FIRM/FBFM reduced or enlarged to the scale of the topographic workmap | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| h. Tie-ins between the effective and revised 100-, 500-year and floodway boundaries..... | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| i. The requester's property boundaries and community easements | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" 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 type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| l. Vertical datum (example: NGVD, NAVD) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| m. Coastal zone designations tie into adjacent areas not being revised | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| n. Location and alignment of all coastal transects used to revise the coastal analyze..... | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| o. V-zone has been delineated to extend landward to the heel of the primary frontal dune | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |

If any items are marked No or N/A please attach an explanation.

2. What is the source and date of the updated topographic information (example: orthophoto maps, July 1985; filed survey, May 1979, beach profile, June 1987 etc.)? as-built plans, Phase 1 (July 1997), Phase 2 (May 1998)

3. What is the scale and contour interval of the following workmaps?

Effective FIS Scale 1" = 400' Contour Interval

Revision Request Scale 1" = 300' Contour Interval

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

4. Attach an annotated FIRM/FBFM at the scale of the effective FIRM/FBFM showing the revised 100- and 500-year floodplain and the floodway boundaries and how they tie into those shown on the effective FIRM/FBFM downstream and upstream of the revisions or adjacent to the area of revision for coastal studies. FIRM/FBFM attached? Yes No

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

2. EARTH FILL PLACEMENT

1. The fill is: Existing Proposed

2. Has fill been/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 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, attach certification of fill compaction (item 3c. above) by the community's NFIP permit official, a registered professional engineer, or an accredited soils engineer in accordance with Subparagraph 65.5(a)(6) of the NFIP regulations.

Fill certification attached Yes No

4. Has fill been/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 (Form 10).

FAX SHEET

TO: fax 703-960-9125
Kathryn Conley
Baker Corp phone 703-960-8800 ext 3017

FROM: Mike Duncan
Floodplain Delineation Branch
phone 602-506-4732
FAX 602-506-4601

~~~~~  
] Flood Control District of Maricopa County [ ]  
] 2801 West Durango Street [ ]  
] Phoenix, Arizona 85009 [ ]  
~~~~~

2 sheets including cover

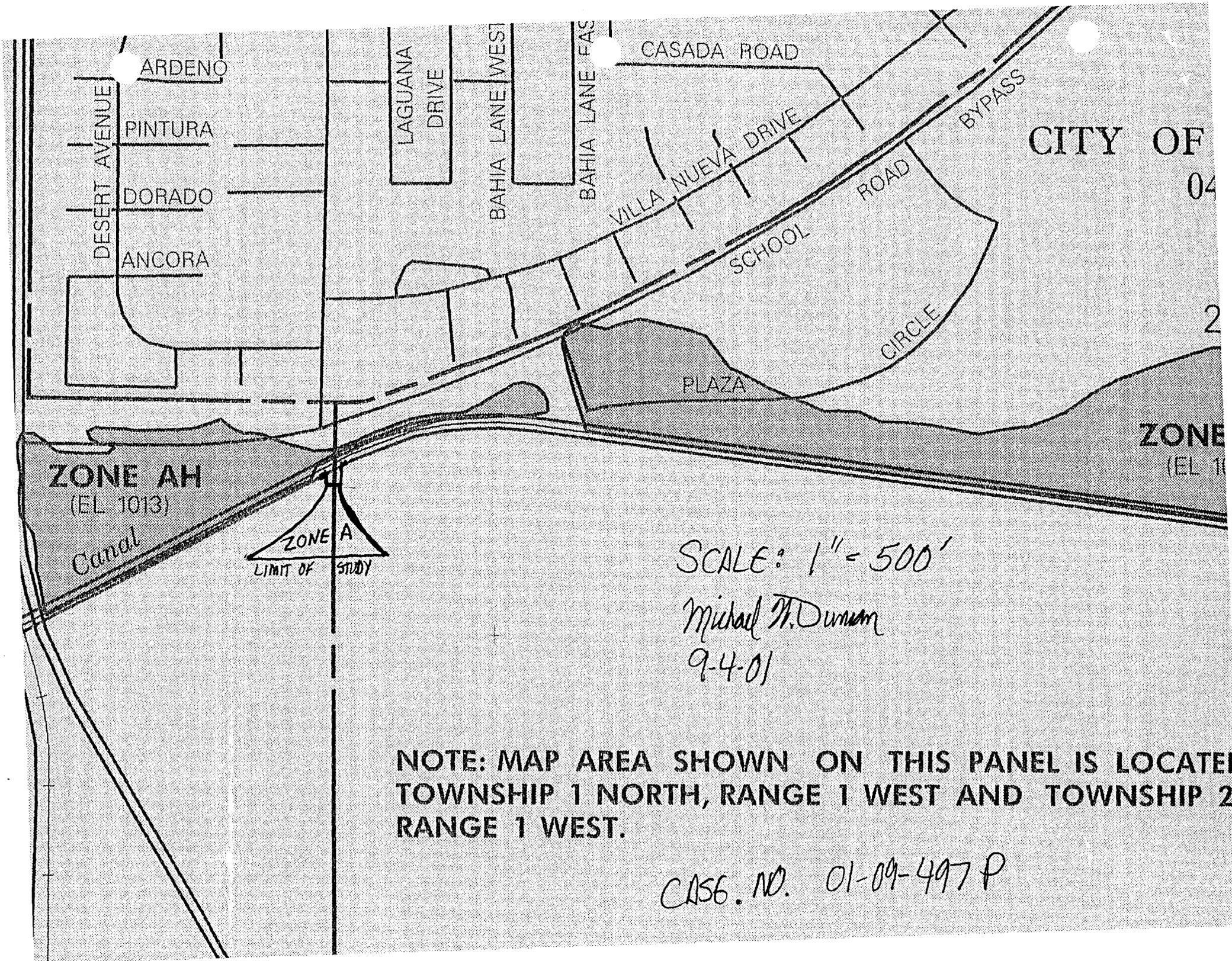
Date: 9/5/01

Project: CASE NO. 01-09-497P R.I.D. CANAL OVERCHUTE LOMR

Katey,

The enclosed sketch shows my approximation of a Zone A floodplain downstream of the overchute, based on the modeling of the LOMR packet.

I have put in a call to the developer of the Palm Valley CLOMR (downstream). I will let you know what I hear from them.



ARDENO

PINTURA

DORADO

ANCORA

DESERT AVENUE

LAGUANA DRIVE

BAHIA LANE WEST

BAHIA LANE EAST

CASADA ROAD

VILLA NUEVA DRIVE

SCHOOL ROAD

BYPASS

CITY OF

04

2

ZONE AH

(EL 1013)

Canal

ZONE A

LIMIT OF STUDY

SCALE: 1" = 500'

Michael W. Dumm

9-4-01

ZONE

(EL 1013)

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED TOWNSHIP 1 NORTH, RANGE 1 WEST AND TOWNSHIP 2 RANGE 1 WEST.

CASE NO. 01-09-497 P

A FAX TO: Kathryn Conley
fax no. 703-960-9125

Kathryn Conley, Baker Corp., phone (703) 960-8800 ext. 3017

FROM: Mike Duncan
Floodplain Delineation Branch
Phone 602-506-4732
FAX 602-506-4601
Email mwd@mail.maricopa.gov

] Flood Control District of Maricopa County []
] 2801 West Durango Street []
] Phoenix, Arizona 85009 []

8 sheets including cover

Date: ~~11-6-01~~ → 11-19-01

Project: FEMA case no. 01-09-497P
RID Canal Overchute LOMR

Katey,

I have prepared and enclosed an analysis for a Zone A floodplain downstream of the overchute structure. Hopefully, as you have discussed, this will allow you to remove the Zone AH floodplain that is west of the Overchute, north of the Canal, and east of New Litchfield Road.

If you need anything else, please let me know, and I will add it to this packet before I mail it to you.

Thank you for your help with this matter.

DOWNSTREAM ZONE A FLOODPLAIN

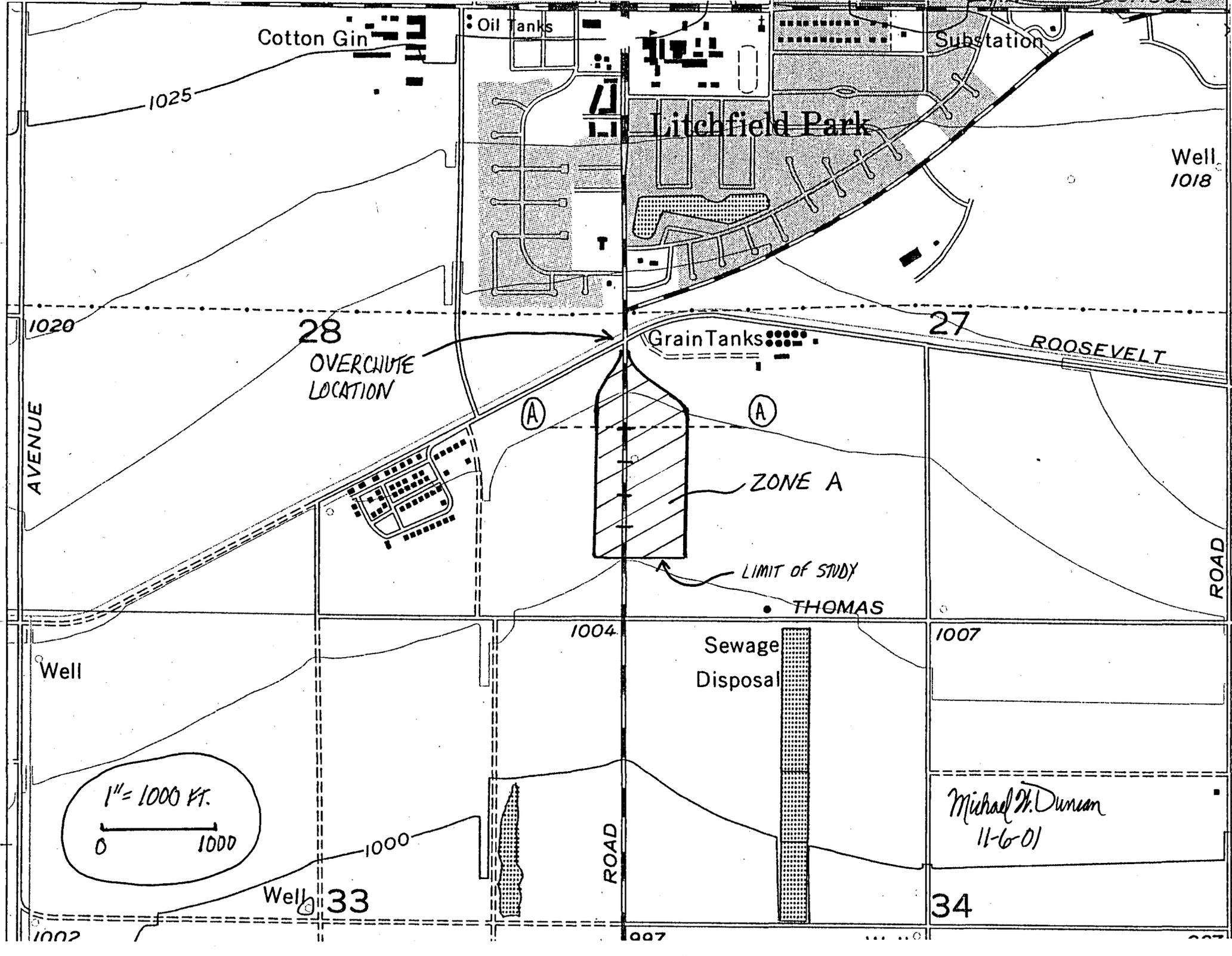
The Overchute structure for the Roosevelt Irrigation District (R.I.D.) Canal allows stormwater runoff to pass to the downhill side of the canal. Downstream of the Overchute there is an existing-undersized channel. The improvements for this channel are covered by the C.L.O.M.R. packet for Palm Valley Phase I (FEMA case no. 01-09-1200R).

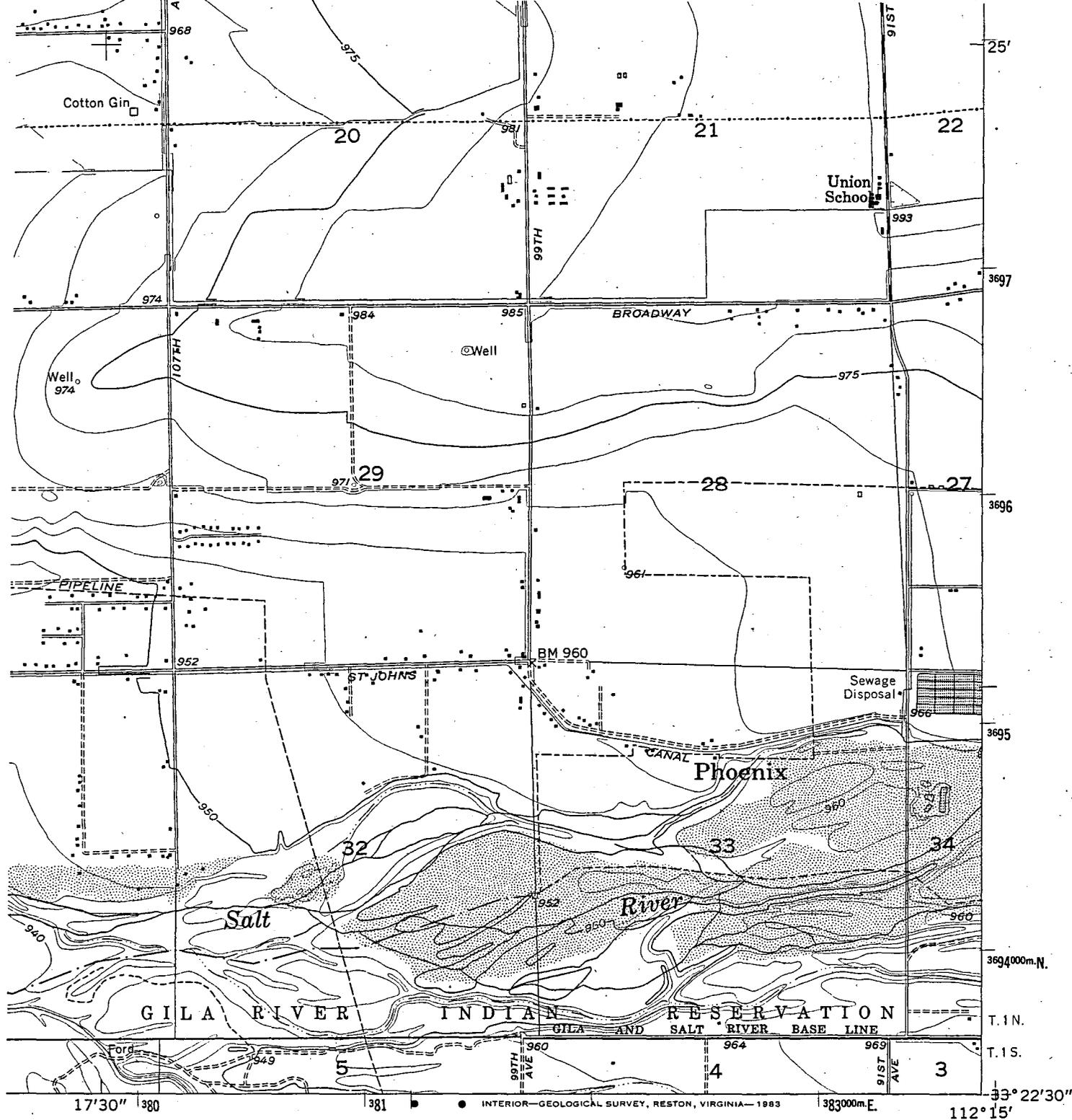
As requested by the FEMA reviewer for the R.I.D. Canal Overchute L.O.M.R., an analysis for a Zone A floodplain has been performed for the area downstream of the Overchute.

The following assumptions and references were used in the analysis for the Zone A floodplain:

1. Hydrology -- 1,456 cfs from the hydrology report of the L.O.M.R. packet;
2. One cross-section at 750 feet south of the centerlines of the canal and overchute:
 - A. Mapping for channel overbanks -- 5-foot elevation contours of the U.S.G.S. quad sheet "TOLLESON, ARIZ.," dated 1982;
 - B. Channel survey -- using hand level and steel tape.
3. Slope for normal depth analysis -- 0.0034 ft./ft., from the above referenced U.S.G.S. quad sheet







1 MILE



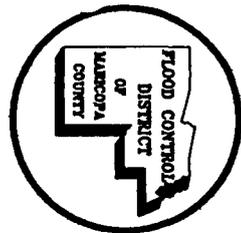
ROAD CLASSIFICATION

- | | |
|--|--|
| Primary highway, all weather, hard surface | Light-duty road, all weather, improved surface |
| Secondary highway, all weather, hard surface | Unimproved road, fair or dry weather |
- Interstate Route
 U. S. Route
 State Route

(LAVEN) 3550 / SW

TOLLESON, ARIZ.
 NE/4 AVONDALE 15' QUADRANGLE
 N3322.5—W11215/7.5

1957
 PHOTOREVISED 1982
 DMA 3550 IV NE-SERIES V898



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT

R.I.D. CANAL OVERCUT L.D.M.R.

PAGE

1 OF 4

DETAIL

XSEC. 750' SOUTH OF CANAL

COMPUTED

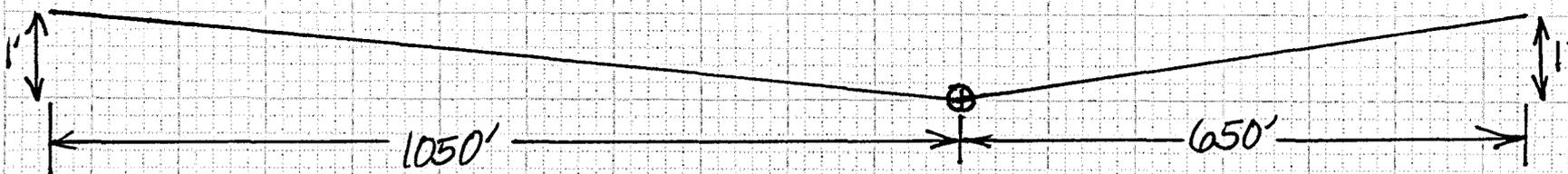
M. Dunbar

DATE 11-6-01

CHECKED BY

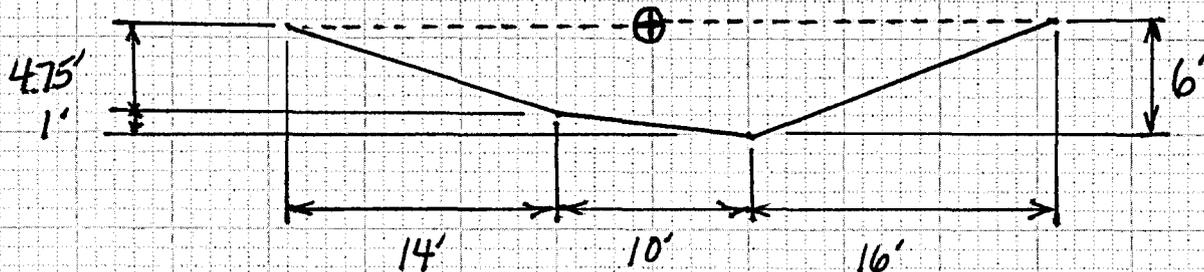
DATE

SECTION (A)-(A) LOOKING DOWNSTREAM:



(FROM U.S.G.S. QUAD SHEET)

CHANNEL CROSS-SECTION LOOKING DOWNSTREAM:



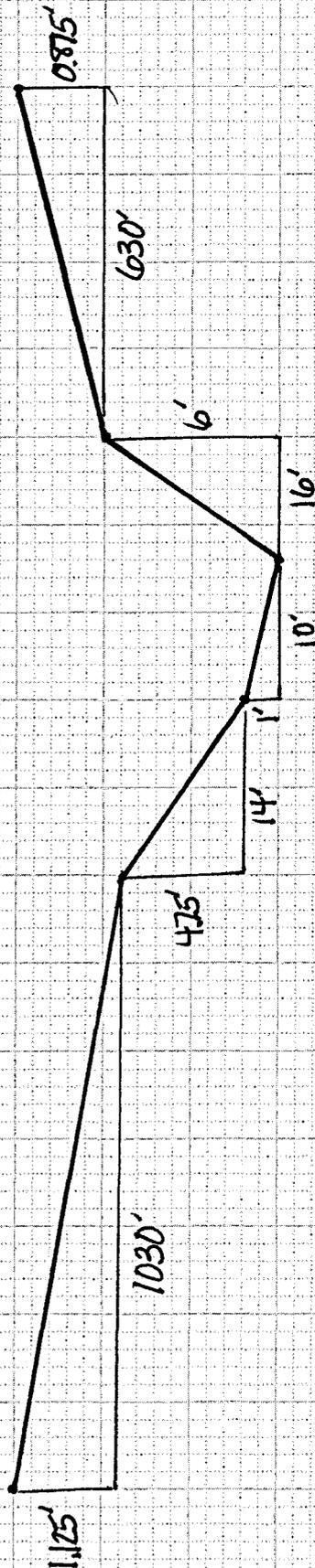
(FROM HAND LEVEL & STEEL TAPE MEASUREMENTS)

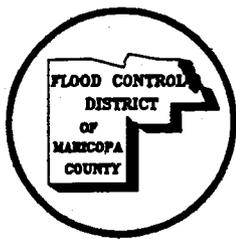


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT R.I.D. CANAL OVERCUTTE L.D.M.R. PAGE 2 OF 4
DETAIL XSEC. 750' SOUTH OF CANAL COMPUTED M. Duncan DATE 11-6-01
CHECKED BY _____ DATE _____

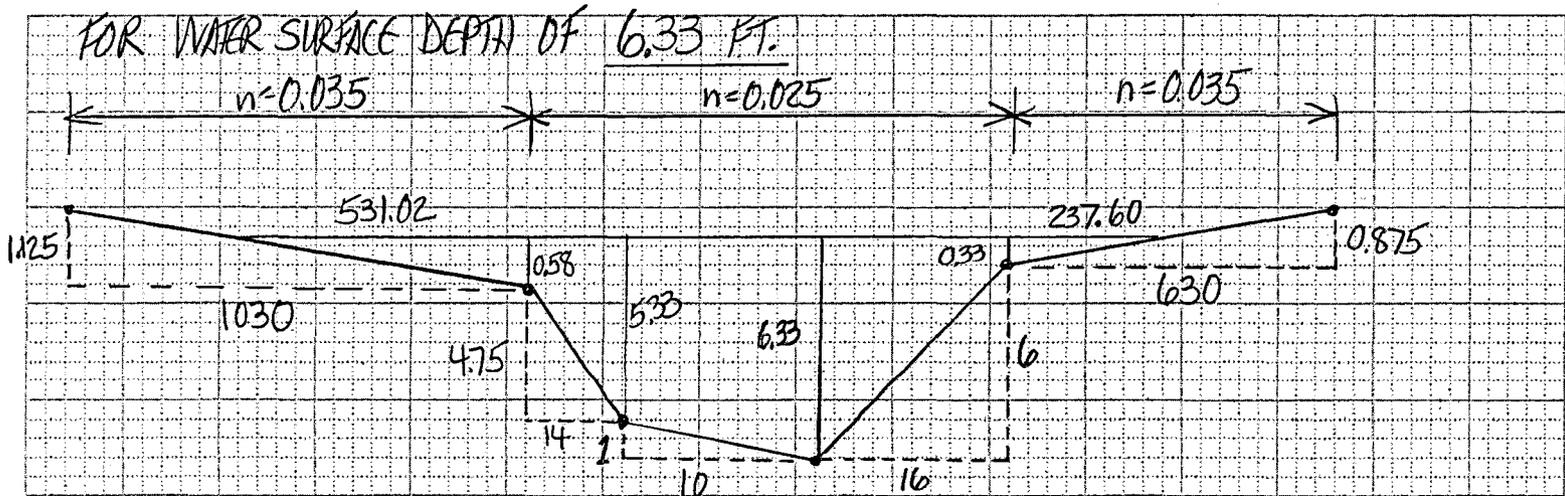
COMBINED CROSS-SECTION, LOOKING DOWNSTREAM





FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT R.I.D. CANAL OVERCUTTE L.O.M.R. PAGE 3 OF 4
 DETAIL _____ COMPUTED M. Duncan DATE 11-6-01
 CHECKED BY _____ DATE _____



$S = \text{SLOPE} = 0.0034$ (FROM U.S.G.S. QUAD SHEET)

	LEFT OVERBANK	CHANNEL	RIGHT OVERBANK
A	$\frac{1}{2}(531.02)(0.58) = 154.00 \text{ ft}^2$	$\frac{14}{2}(0.58+5.33) + \frac{10}{2}(5.33+6.33) + \frac{16}{2}(6.33+0.33) = 152.95$	$\frac{1}{2}(237.60)(0.33) = 39.20 \text{ ft}^2$
WP	531.02 ft	$14.78+10.05+17.09 = 41.92 \text{ ft}$	237.60 ft
$R = \frac{A}{WP}$	0.2900 ft	3.6486 ft	0.1650 ft
$V = \frac{1.486}{n} (R)^{\frac{2}{3}} (S)^{\frac{1}{2}}$	1.085 fps	8.214 fps	0.7447 fps
Q = VA	167.03 cfs	1256.30 cfs	29.19 cfs



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PROJECT R.I.D. CANAL OVERCROUTE L.O.M.R. PAGE 4 OF 4
DETAIL _____ COMPUTED M. Duncan DATE 11-6-01
CHECKED BY _____ DATE _____

$$\text{TOTAL } Q = 167.03 + 1256.30 + 29.19 = 1452.52 \text{ cfs}$$

(VERY CLOSE TO 1456 cfs)

$$\text{TOP WIDTH} = 531.02 + 40 + 237.60 = 808.62 \text{ ft} \approx 809 \text{ ft}$$

$$Q \text{ TO EAST} = 531 + 20 = 551 \text{ ft}$$

$$Q \text{ TO WEST} = 238 + 20 = 258 \text{ ft}$$

MODE = MEMORY TRANSMISSION

START=NOV-19 14:25

END=NOV-19 14:34

FILE NO.=928

STN NO.	COMM.	ABBR NO.	STATION NAME/TEL NO.	PAGES	DURATION
001	OK		917039609125	008/008	00:04:59

-FCD OF MARICOPA COUNTY -

***** -CUSTOMER SERU - ***** - 6025064601- *****

A FAX TO: Kathryn Conley
fax no. 703-960-9125

Kathryn Conley, Baker Corp., phone (703) 960-8800 ext. 3017

FROM: Mike Duncan
Floodplain Delineation Branch
Phone 602-506-4732
FAX 602-506-4601
Email mwd@mail.maricopa.gov

```

-----
] Flood Control District of Maricopa County [
] 2801 West Durango Street [
] Phoenix, Arizona 85009 [
-----

```

8 sheets including cover

Date: ~~11-6-01~~ -> 11-9-01

Project: FEMA case no. 01-09-497P
RID Canal Overchute LOMR

Katey,

I have prepared and enclosed an analysis for a Zone A floodplain downstream of the overchute structure. Hopefully, as you have discussed, this will allow you to remove the Zone AH floodplain that is west of the Overchute, north of the Canal, and east of New Litchfield Road.

If you need anything else, please let me know, and I will add it to this packet before I mail it to you.

Thank you for your help with this matter.

A FAX TO: Kathryn Conley
fax no. 703-960-9125

Kathryn Conley, Baker Corp., phone (703) 960-8800 ext. 3017

FROM: Mike Duncan
Floodplain Delineation Branch
Phone 602-506-4732
FAX 602-506-4601
Email mwd@mail.maricopa.gov

```

-----
] Flood Control District of Maricopa County [
] 2801 West Durango Street [
] Phoenix, Arizona 85009 [
-----

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5 sheets including cover

Date: 12-20-01

Project: FEMA case no. 01-09-497P
RID Canal Overchute LOMR

Katey,

Here are signed MT-2 Form 1's signed by officials of Cities of Avondale and Goodyear, regarding acknowledgment of my new proposed Zone A floodplain downstream of the overchute structure.

At 2. Flooding Source of the form, I have added "AND R.I.D. Canal Overchute."

At 4. FEMA zone, I have added "AND new Zone A downstream of the R.I.D. Canal Overchute."

Happy holidays to you.

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.

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.

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

- CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60,65 & 72).
- LOMR A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations. LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65.)
- Other Describe:

2. OVERVIEW

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

- Physical Change Improved Methodology/Data Floodway Revision
- Other Describe:

Note: A photograph is not required, but is very helpful during review.

2. Flooding Source: CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS; AND R.I.D. Canal Overchute

3. Project Name/Identifier: Roosevelt Irrigation District Canal Overchute, Phases 1 and 2

4. FEMA zone designations affected: AH; AND new Zone A downstream of the R.I.D. Canal Overchute
 (example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	Katy, City Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
040038	Avondale, City	AZ	04013C	2080G	09/30/95
040046	Goodyear, City	AZ	04013C	2080G	09/30/95

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

<u>Types of Flooding</u>		<u>Structures</u>	
<input type="checkbox"/> Riverine	<input checked="" type="checkbox"/> Channelization	<input checked="" type="checkbox"/> Channelization	<input type="checkbox"/> Levee/Floodwall
<input type="checkbox"/> Coastal	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Bridge/Culvert
<input type="checkbox"/> Alluvial fan	<input type="checkbox"/> Bridge/Culvert	<input type="checkbox"/> Bridge/Culvert	<input type="checkbox"/> Dam
<input checked="" type="checkbox"/> Shallow Flooding (e.g. Zones AO and AH)	<input type="checkbox"/> Dam	<input type="checkbox"/> Dam	<input type="checkbox"/> Fill
<input type="checkbox"/> Lakes	<input type="checkbox"/> Fill	<input type="checkbox"/> Fill	<input type="checkbox"/> Other (describe)
<input checked="" type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)	

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1. 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.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0.000 feet? Yes No N/A

3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? Yes No

If the answer to either items is Yes, please attach 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.

5. MAINTENANCE RESPONSIBILITY

The community is willing to assume responsibility for performing overseeing compliance with the maintenance and operation plans of the R.I.D. Canal Overchute, which is maintained by the Flood Control District of Maricopa County,
 (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.

Operation and maintenance plans are attached. Yes No N/A

6. REVIEW FEE

The review fee for the appropriate request category has been included. Yes No Fee amount: \$
 OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is 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; thus the project is fee exempt.
 Yes

Please see Instructions for Fee Amounts

7. SIGNATURE

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

Michael W. Duncan

Signature of Revision Requester

Michael Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Flood Control District of Maricopa County
 Company Name

Telephone No.: 602-506-4732

Date: 12-20-01

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

David W. Fitzhugh P.E.

Signature of Community Official

David W. Fitzhugh, P.E., City Engineer
 Printed Name and Title of Community Official

City of Avondale
 Community Name

Telephone No.: 623-932-1909

Date: 12-20-01

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sect 65.2

Michael W. Duncan 12-20-01

Signature

Michael W. Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Registr No. 24124 Expires (Date) 09/30/2002 State AZ

Type of License/Expertise: Professional Civil Engineer

Check which forms have been included with this request

Form Name and (Number)	Required if
<input checked="" type="checkbox"/> Hydrologic (3)	new or revised discharges
<input checked="" type="checkbox"/> Hydraulic (4)	new or revised water-surface elevations
<input checked="" type="checkbox"/> Mapping (5)	floodplain/floodway changes
<input checked="" type="checkbox"/> Channelization (6)	channel is modified
<input checked="" type="checkbox"/> Bridge/Culvert (7)	addition/revision of bridge/culvert
<input type="checkbox"/> Levee/Floodwall (8)	addition/revision of levee/floodwall
<input type="checkbox"/> Coastal (9)	new or revised coastal elevations
<input type="checkbox"/> Coastal Structures (10)	addition/revision of coastal structure
<input type="checkbox"/> Dam (11)	addition/revision of dam
<input type="checkbox"/> Alluvial Fan (12)	structures proposed on alluvial fan

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.

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.

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

- CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60,65 & 72).
- LOMR A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations. LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65.)
- Other Describe:

2. OVERVIEW

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

- Physical Change Improved Methodology/Data Floodway Revision
- Other Describe:

Note: A photograph is not required, but is very helpful during review.

2. Flooding Source: CP 270, CP 2711, CP 255A, and CP 271A of White Tanks ADMS; AND R.I.D. Canal Overchute

3. Project Name/Identifier: Roosevelt Irrigation District Canal Overchute, Phases 1 and 2

4. FEMA zone designations affected: AH; AND new Zone A downstream of the R.I.D. Canal Overchute
 (example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	Katy, City Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
040038	Avondale, City	AZ	04013C	2080G	09/30/95
040046	Goodyear, City	AZ	04013C	2080G	09/30/95

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

<u>Types of Flooding</u>		<u>Structures</u>	
<input type="checkbox"/> Riverine	<input checked="" type="checkbox"/> Channelization	<input checked="" type="checkbox"/> Channelization	<input type="checkbox"/> Levee/Floodwall
<input type="checkbox"/> Coastal	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Levee/Floodwall	<input type="checkbox"/> Bridge/Culvert
<input type="checkbox"/> Alluvial fan	<input type="checkbox"/> Bridge/Culvert	<input type="checkbox"/> Bridge/Culvert	<input type="checkbox"/> Dam
<input checked="" type="checkbox"/> Shallow Flooding (e.g. Zones AO and AH)	<input type="checkbox"/> Dam	<input type="checkbox"/> Dam	<input type="checkbox"/> Fill
<input type="checkbox"/> Lakes	<input type="checkbox"/> Fill	<input type="checkbox"/> Fill	<input type="checkbox"/> Other (describe)
<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)	<input type="checkbox"/> Other (describe)

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1. 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.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0.000 feet? Yes No N/A

3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? Yes No

If the answer to either items is Yes, please attach 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.

5. MAINTENANCE RESPONSIBILITY

The community is willing to assume responsibility for performing overseeing compliance with the maintenance and operation plans of the R.I.D. Canal Overchute, which is maintained by the Flood Control District of Maricopa County.
 (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.

Operation and maintenance plans are attached. Yes No N/A

6. REVIEW FEE

The review fee for the appropriate request category has been included. Yes No Fee amount: \$
 OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is 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; thus the project is fee exempt.
 Yes

Please see Instructions for Fee Amounts

7. SIGNATURE

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



Signature of Revision Requester

Michael Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Flood Control District of Maricopa County
 Company Name

Telephone No.: 602-506-4732

Date: 12-19-01

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

Printed Name and Title of Community Official

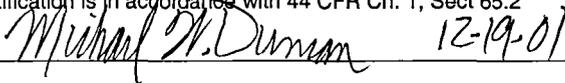
City of Goodyear
 Community Name

Telephone No.: 623-932-3065

Date: 12-19-01

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sect 65.2



Signature

Michael W. Duncan, P.E., Senior Civil Engineer
 Printed Name and Title of Revision Requester

Registr No. 24124 Expires (Date) 09/30/2002 State AZ

Type of License/Expertise: Professional Civil Engineer

Check which forms have been included with this request

Form Name and (Number)	Required if
<input checked="" type="checkbox"/> Hydrologic (3)	new or revised discharges
<input checked="" type="checkbox"/> Hydraulic (4)	new or revised water-surface elevations
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<input checked="" type="checkbox"/> Channelization (6)	channel is modified
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<input type="checkbox"/> Coastal (9)	new or revised coastal elevations
<input type="checkbox"/> Coastal Structures (10)	addition/revision of coastal structure
<input type="checkbox"/> Dam (11)	addition/revision of dam
<input type="checkbox"/> Alluvial Fan (12)	structures proposed on alluvial fan

MODE = MEMORY TRANSMISSION

START=DEC-20 15:54

END=DEC-20 15:57

FILE NO.=207

STN NO.	COMM.	ABBR NO.	STATION NAME/TEL NO.	PAGES	DURATION
001	OK		917039609125	005/005	00:02:46

-FCD OF MARICOPA COUNTY -

***** -CUSTOMER SERV - ***** 6025064601- *****

A FAX TO: Kathryn Conley
fax no. 703-960-9125

Kathryn Conley, Baker Corp., phone (703) 960-8800 ext. 3017

FROM: Mike Duncan
Floodplain Delineation Branch
Phone 602-506-4732
FAX 602-506-4601
Email mwd@mail.maricopa.gov

```

] Flood Control District of Maricopa County [
] 2801 West Durango Street [
] Phoenix, Arizona 85009 [

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5 sheets including cover

Date: 12-20-01

Project: FEMA case no. 01-09-497P
RID Canal Overchute LOMR

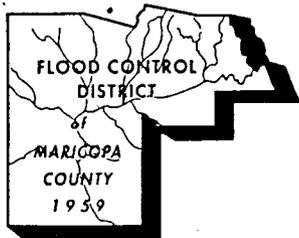
Katey,

Here are signed MT-2 Form 1's signed by officials of Cities of Avondale and Goodyear, regarding acknowledgment of my new proposed Zone A floodplain downstream of the overchute structure.

At 2. Flooding Source of the form, I have added "AND R.I.D. Canal Overchute."

At 4. FEMA zone, I have added "AND new Zone A downstream of the R.I.D. Canal Overchute."

Happy holidays to you.



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

February 9, 2001

Pernille Buch-Pedersen, Regional Manager
Baker Civil
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Dear Ms. Buch-Pedersen:

I have enclosed two separate but related items that cover two adjacent areas:

Upstream Item: LOMR packet for RID Canal Overchute Project, prepared by the Flood Control District

Downstream Item: CLOMR packet for Palm Valley Phase 1, prepared by The WLB Group

The upstream LOMR does not depend on the downstream CLOMR for any starting water surface. Cross-sections of the existing-unimproved-downstream channel were used to establish a water surface boundary condition (which is higher than that of the CLOMR) for the LOMR modeling. The downstream CLOMR does depend on the structural features and the resulting discharge of the upstream project.

	<u>RID Overchute LOMR</u>	<u>Palm Valley Ph. 1 CLOMR</u>
Flooding Sources:	Ponding behind R.I.D. Canal	R.I.D. Canal Overchute
FIRM Panel Affected:	04013C2080G	04013C2080G
Applicant:	Michael Duncan	Paul Ehrenberg, The WLB Group
Applicant phone:	(602) 506-4732	(602) 279-1016

Thanks for all your help. Please call me if you have any questions.

Sincerely,

Michael Duncan, P.E.
Engineering Division

Enclosures: For upstream LOMR: LOMR Notebook
Design Notebook
Roll of As-built Plans
For downstream CLOMR: CLOMR Notebook

Copies to: Max Yuan, P.E., Project Engineer
Hazards Study Branch, Mitigation Directorate
Federal Emergency Management Agency
500 C Street SW
Washington, D.C. 20472-0001

Harvey Krauss
Community Development Director
City of Goodyear
119 N. Litchfield Road
Goodyear, AZ 85338

Terri Miller
Community Assistance Program Coordinator
Arizona Division of Emergency Management
5636 E. McDowell Road
Phoenix, AZ 85008

Paul Ehrenberg
The WLB Group
333 E. Osborn Road, Suite 380
Phoenix, AZ 85012

Coord:

JJT

EAR

DIR



NATIONAL FLOOD INSURANCE PROGRAM
FEMA MAP COORDINATION CONTRACTOR

FLOOD CONTROL DISTRICT RECEIVED	
APR 02 '01	
TECH & SV	FINANCE
IPIO	ISLANDS
ADMIN	IC & M
REG	F & PM
<input checked="" type="checkbox"/> ENG	FILE
CONTRACTS	

March 27, 2001

Mr. Michael Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of
Maricopa County
2801 West Durango Street
Phoenix, AZ 85009-6399

IN REPLY REFER TO:
Case No.: 01-09-497P
Communities: City of Avondale and City of
Goodyear, AZ
Community Nos.: 040038 and 040046

316-ACK.FRQ

MWD

Dear Mr. Duncan:

This responds to your request dated February 9, 2001, 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:	Roosevelt Irrigation District Canal Overchute
Flooding Source:	Roosevelt Irrigation District Canal
FIRM Panel(s) Affected:	04013C2080 G

FEMA has implemented a procedure to recover costs associated with reviewing and processing requests for modifications to published flood information and maps. Effective June 1, 2000, FEMA revised that fee schedule. A copy of the notice summarizing the current fee schedule, which was published in the *Federal Register*, is enclosed for your information. In accordance with this schedule, the fee for your request is \$6,000 and must be submitted before we can continue 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 (NFIP), or credit card payment. For identification purposes, the case number referenced above must be included on the check or money order. We will not perform a detailed technical review of your request until we receive this payment.

Payment must be forwarded to one of the addresses listed below.

Using U.S. Postal Service:
Federal Emergency Management Agency
Fee-Charge System Administrator
P.O. Box 3173
Merrifield, VA 22116-3173

Using overnight service:
FEMA Fee-Charge System Administrator
c/o Dewberry & Davis, METS Division
8401 Arlington Boulevard
Fairfax, VA 22031

We have completed an inventory of the items that you submitted. The items identified below are required before we can begin a detailed review of your request.

1. Our preliminary review revealed that the City of Avondale is also affected by this revision. Please provide community acknowledgment in the form of a letter stating that the City of Avondale has reviewed the revision request and understands the effects of the revision on flooding conditions in

the community, or Application/Certification Form 1, entitled "Revision Requester and Community Official Form" (copy enclosed), signed by a community official from the City of Avondale.

2. The topographic work map entitled "RID Canal Overchute LOMR Exhibit," dated November 22, 2000, is not certified. Please submit a topographic work map that is certified by a registered professional engineer or land surveyor as representing as-built conditions, or submit a letter that states that the above-mentioned topographic work map represents as-built conditions. In addition, please submit Form 5, entitled "Riverine/Coastal Mapping Form."

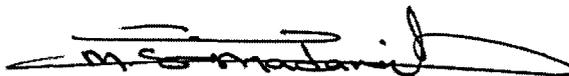
All required items are to be submitted to us at the address shown at the bottom of the first page. If all required items are not submitted within 90 days of the date of this letter, we will treat any subsequent request as an original submittal, and it will be subject to all submittal/payment procedures.

If you are unable to meet the 90-day deadline for submittal of required items, and would like FEMA to continue processing your request, you must request an extension of the deadline. This request must be submitted to us in writing and must provide (1) the reason why the data cannot be submitted within the requested timeframe, and (2) a new date for the submittal of the data. FEMA receives a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, the fees will be forfeited for any request for which neither the requested data nor a written extension request is received within 90 days.

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

If you have general questions about your request, FEMA policy, or the NFIP, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Pernille Buch-Pedersen, who may be reached at (703) 317-6224.

Sincerely,



Monther S. Madanat, Director
Technical Services Division
Michael Baker Jr., Inc.

Enclosures

cc: Mr. Harvey H. Krauss
Community Development Director
City of Goodyear

Mr. Bill Bates
Public Works Director
City of Avondale

**INSTRUCTIONS FOR COMPLETING THE
REVISION REQUESTER AND COMMUNITY OFFICIAL FORM
(FORM 1)**

This form provides the basic information regarding revision requests and must be submitted with each request. It contains much of the material needed for FEMA to assess the nature and complexity of the proposed revision. It will identify: (a) the type of response expected from FEMA; (b) those elements that will require supporting data and analyses; and (c) items needing concurrence of others. This form will also assure that the community is aware of the impacts of the request and has notified impacted property owners, if required. All items must be completed accurately. If the revision request is being submitted by an individual, firm, or other non-community official, contact should be made with appropriate community officials. NFIP regulation 44 CFR Ch. 1, Section 65.4, requires that revisions based on new technical data be submitted by the Chief Executive Officer (CEO) of the community or a designated official. Should the CEO refuse to submit such a request on behalf of another party, FEMA will agree to review it only if written evidence is provided indicating the CEO or designee has been requested to do so.

Requested Response from FEMA

1. Indicate the type of response being requested. Brief descriptions of possible responses are provided in the introduction; more detail regarding these responses and the data required to obtain each response are provided in the NFIP regulations, 44 CFR Ch. 1, and in the document entitled Appeals, Revisions and Amendments to Flood Insurance Maps: A Guide for Community Officials, (FIA 12).

Overview

1. Physical changes include watershed development, flood control structures, etc. Note that fees will be assessed for FEMA's review of proposed and "as-built" projects, as outlined in NFIP regulations 44 CFR Ch. 1, Part 72. Improved methodology may be a different technique (model) or adjustments to models used in the effective FIS. Improved data include revised as well as new data. Floodway revisions involve any shift in the FEMA-designated floodway boundaries, regardless of whether the shift is mappable.
2. Flooding source refers to a specific lake, stream, ocean, etc. This should match the flooding source name shown on the FIRM, if it has been labeled. (Examples: Lake Michigan, Duck Pond, or Big Hollow Creek).
3. Project Name/Identifier can be the name of a flood control project or other pertinent structure having an impact on the effective FIS, the name of a subdivision or area, or some other identifying phrase.
4. The Zone designation(s) affected can be obtained from the FIRM.
5. The map number, panel number, community number, and effective date can be obtained from the FIRM title block. The sample FIRM panels (Figures 1 and 2) provide a convenient source of information to fill in item 5.
6. Indicate the type(s) of flooding and structure(s) associated with the revision request.

Encroachment Information

1. If the revision request involves changes to a designated floodway and the floodway is regulated by a State agency, approval by the appropriate State agency must be obtained.

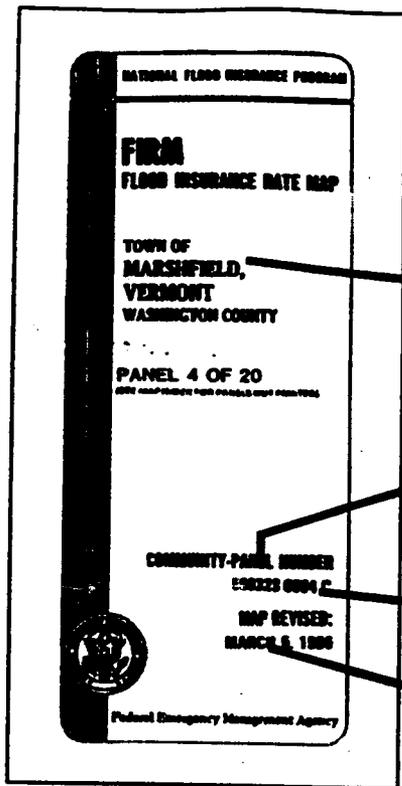


Figure 1. Sample FIRM Panel (Single Community)

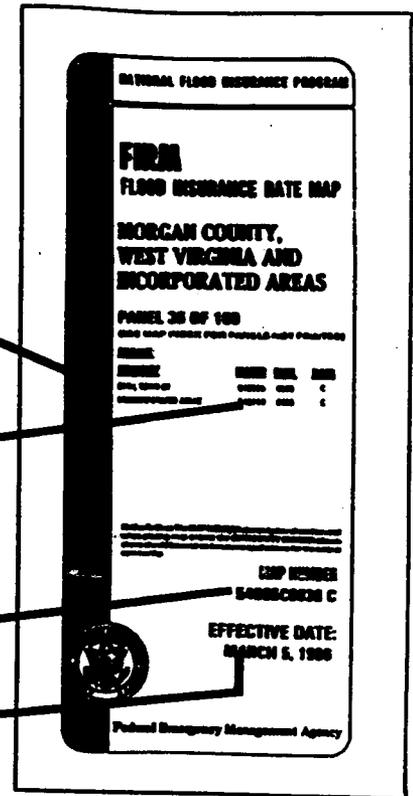


Figure 2. Sample FIRM Panel (Countywide)

2. This question applies to projects built in the floodway only. Indicate if the project built in the floodway causes any increase in the 1% annual chance flood elevation. If the project causes increases, all requirements of Section 65.12 of the NFIP regulations must be met.
3. This question applies to projects built in the floodway fringe, or the floodplain for streams where a floodway has not been established. If the project causes increases in the 1% annual chance flood elevation greater than one foot (or any other more stringent requirement set by the community), all requirements of Section 65.12 of the NFIP regulations must be met.

Maintenance Responsibility

For revisions involving flood a control structure, indicate if the community will be responsible for maintaining the structure. Attach a maintenance and operations plan.

Review Fee

Enter the fee amount associated with the request as indicated in the fee schedule provided in the introduction. Or, indicate that the revision meets the requirements for a fee exemption.

Signature

Signature and Title of Revision Requester

The person signing this certification should own the property involved in the request or have legal authority to represent a group/firm/organization or other entity in legal actions pertaining to the NFIP.

Signature and Title of Community Officials

The person signing this certification should be the CEO for the community involved in this revision request or an official legally designated by the CEO. If more than one community is affected by the change, the community official from the community that is most affected should sign the form and letters from the other affected communities should be enclosed. If the community or communities disagree with the proposed revision, a signed statement should be attached to the request explaining the reasons or bases for disagreement. The community should refer to the document entitled Appeals, Revisions, and Amendments to Flood Insurance Maps: A Guide for Community Officials, (FIA-12).

Certification by Registered Professional Engineer and/or Land Surveyor

The licensed professional engineer and/or land surveyor should have a current license in the State in which one of the impacted communities resides. While the individual signing this form is not required to have obtained the supporting data or performed the analyses, he or she must have supervised and reviewed the work.

A certification by a registered professional engineer or other party does not constitute a warranty or guarantee of performance, expressed or implied. Certification of data is a statement that the data is accurate to the best of the certifier's knowledge. Certification of analyses is a statement that the analyses have been performed correctly and in accordance with sound engineering practices. Certification of structural works is a statement that the works are designed in accordance with sound engineering practices to provide protection from the 1% annual chance flood. Certification of "as-built" conditions is a statement that the structure(s) has been built according to the plans being certified, is in place, and is fully functioning.

If the requester is a Federal agency who is responsible for the design and construction of flood control facilities, a letter stating that "the analyses submitted has been performed correctly and in accordance with sound engineering practices" may be submitted in lieu of this form. Regarding the certification of completion of flood control facilities, a letter from the Federal agency certifying its completion and the flood frequency event to which the project protects may be submitted in lieu of this form.

**FEDERAL EMERGENCY MANAGEMENT AGENCY
REVISION REQUESTER AND COMMUNITY OFFICIAL FORM**

*O.M.B. No. 3067-0148
Expires April 30, 2001*

PAPERWORK REDUCTION ACT

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. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this 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, Paperwork Reduction Project (3067-0148).

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

- CLOMR:** A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).
- LOMR:** A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations. LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65).
- Other** Describe: _____

2. OVERVIEW

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

- Physical Change Improved Methodology/Data Floodway Revision

Other Describe: _____
Note: A photograph is not required, but is very helpful during review.

2. Flooding Source: _____

3. Project Name/Identifier: _____

4. FEMA zone designation affected: _____
(example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	Katy, City Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

<u>Types of Flooding</u>	<u>Structures</u>
<input type="checkbox"/> Riverine <input type="checkbox"/> Coastal <input type="checkbox"/> Alluvial Fan <input type="checkbox"/> Shallow Flooding (e.g. Zones AO and AH) <input type="checkbox"/> Lakes <input type="checkbox"/> Other (describe)	<input type="checkbox"/> Channelization <input type="checkbox"/> Levee/Floodwall <input type="checkbox"/> Bridge/Culvert <input type="checkbox"/> Dam <input type="checkbox"/> Fill <input type="checkbox"/> Other (describe)

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1. 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.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0.000 feet? Yes No N/A

3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? Yes No

If the answer to either item is Yes, please attach 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.

5. MAINTENANCE RESPONSIBILITY

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.

Operation and maintenance plans are attached. Yes No N/A

6. REVIEW FEE

The review fee for the appropriate request category has been included. Yes Fee amount: \$ _____

OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is 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; thus the project is fee exempt.

Please see Instructions for Fee Amounts.

7. SIGNATURE

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

Signature of Revision Requester

Printed Name and Title of Revision Requester

Company Name

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

Printed Name and Title of Community Official

Community Name

Telephone No. _____ Date _____

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND /OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sec 65.2

Signature

Printed Name and Title of Revision Requestor

Register No. _____ Expires (Date) _____ State _____

Type of License/Expertise: _____

Check which form(s) have been included with this request

<u>Form Name and (Number)</u>	<u>Required if.....</u>
<input type="checkbox"/> Hydrologic (3)	new or revised discharges
<input type="checkbox"/> Hydraulic (4)	new or revised water-surface elevations
<input type="checkbox"/> Mapping (5)	floodplain/floodway changes
<input type="checkbox"/> Channelization (6)	channel is modified
<input type="checkbox"/> Bridge/Culvert (7)	addition/revision of bridge/culvert
<input type="checkbox"/> Levee/Floodwall (8)	addition/revision of levee/floodwall
<input type="checkbox"/> Coastal (9)	new or revised coastal elevations
<input type="checkbox"/> Coastal Structures (10)	addition/revision of coastal structures
<input type="checkbox"/> Dam (11)	addition/revision of dam
<input type="checkbox"/> Alluvial Fan (12)	structures proposed on alluvial fan



Federal Emergency Management Agency

Washington, D.C. 20472

FEE SCHEDULE FOR PROCESSING REQUESTS FOR MAP CHANGES

This notice contains the revised fee schedule for processing certain types of requests for changes to National Flood Insurance Program (NFIP) maps. The change in the fee schedule will allow FEMA to further reduce the expenses to the NFIP by more fully recovering the costs associated with processing conditional and final map change requests. The revised fee schedule for map changes is effective for all requests dated June 1, 2000, or later and supersedes the current fee schedule, which was established on March 1, 1999.

To develop the revised fee schedule for conditional and final map change requests, FEMA evaluated the actual costs of reviewing and processing requests for Conditional Letters of Map Amendment (CLOMAs), Conditional Letters of Map Revision – based on Fill (CLOMR-Fs), Conditional Letters of Map Revision (CLOMRs), Letters of Map Revision – based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs), and Physical Map Revisions (PMRs).

Fee Schedule for Requests for CLOMAs, CLOMR-Fs, and LOMR-Fs

Based on our review of actual cost data for Fiscal Year 1999, we are continuing to charge the following review and processing fees, which requesters must submit with all requests:

Request for single-lot/single-structure CLOMA, CLOMR-F, and LOMR-F	\$400
Request for single-lot/single-structure LOMR-F based on as-built information (CLOMR-F previously issued by us)	\$300
Request for multiple-lot/multiple-structure CLOMA	\$700
Request for multiple-lot/multiple-structure CLOMR-F and LOMR-F	\$800
Request for multiple-lot/multiple-structure LOMR-F based on as-built information (CLOMR-F previously issued)	\$700

Fee Schedule for Requests for CLOMRs

Based on our review of actual cost data for Fiscal Year 1999, we are continuing to charge the following review and processing fees, which requesters must submit with all requests unless exempted by 44 CFR 72.5:

Request based on new hydrology, bridge, culvert, channel, or combination of any of these	\$3,100
Request based on levee, berm, or other structural measure	\$4,000

Fee Schedule for Requests for LOMRs and PMRs

Based on our review of actual cost data for Fiscal Year 1999, we revised the review and processing fee for requests based on levees, berms, or other structural measures, from \$4,700 to \$6,000. Therefore, unless 44 CFR 72.5 exempts the request, requesters must submit the review and processing fees shown below with requests for LOMRs and PMRs dated June 1, 2000, or later that are not based on structural measures or alluvial fans.

Request based on bridge, culvert, channel, or combination thereof	\$4,000
Request based on levee, berm, or other structural measure	\$6,000
Request based on as-built information submitted as followup to CLOMR	\$3,400

Fees for CLOMRs, LOMRs, and PMRs Based on Structural Measures on Alluvial Fans

Based on our review of actual cost data for Fiscal Year 1999, we are continuing to charge \$5,000 as the initial fee for requests for CLOMRs and LOMRs based on structural measures on alluvial fans. We also will continue to recover the remainder of the review and processing costs by invoicing the requester before issuing a determination letter, consistent with current practice. We will continue to use the prevailing private-sector labor rate charged to us (\$50 per hour) to calculate the total reimbursable fees.

Payment Submission Requirements

Requesters must make fee payments for non-exempt requests before we render services. This payment must be in the form of a check or money order or by credit card payment. Please make all checks and money orders in U.S. funds payable to the *National Flood Insurance Program*. We will deposit all fees collected to the National Flood Insurance Fund, which is the source of funding for providing this service.



Need Information on Flood Hazard Maps?

A wealth of information is only a click away at: **www.fema.gov/mit/tsd**



Homeowners will find:

- A helpful tutorial: "How to Challenge a Flood Risk Determination"
- Answers to Frequently Asked Questions, including, "Why do I need flood insurance?" "What are the different flood hazard zone designations and what do they mean?" and "What is a base flood elevation?"



Insurance Agents and Bankers will find:

- Information on the National Flood Insurance Reform Act of 1994, which affects lenders
- Pages containing information on how to become a "Write Your Own" insurance agent
- Pages containing flood insurance rate information and a listing of map determination companies



Engineers and Surveyors will find:

- A listing of National Flood Insurance Program (NFIP) approved and test version software with links to free downloads
- Forms and fee schedules for requesting a map change or back-up study data
- A link to a listing of training courses and conferences related to emergency management



Floodplain Managers and Community Officials will find:

- The compendium of map change actions and the Guide for Community Officials
- A listing of key contacts at FEMA with direct e-mail links
- Forms necessary to initiate requests for back-up study data

All Four Constituent groups will find:

- NFIP policies and regulations
- Forms for making map change requests
- The answers to over 80 Frequently Asked Questions
- Access to a database containing the status of recent requests for map changes
- Numerous reports and guidance documents in both Adobe Acrobat .PDF and MS Word formats
- Information on Map Modernization initiatives with direct e-mail links to FEMA Task Leaders
- A subscription service providing free news on the latest developments in flood hazard mapping via e-mail
- E-mail links to Map Specialists at the FEMA Map Assistance Center (1-877-FEMA MAP)



Questions and suggestions? Contact John Magnotti at 202-646-3932, or john.magnotti@fema.gov

Want to talk to a Map Specialist about Flood Hazard Mapping?



If your home or business is located in the floodplain, you will need to purchase and maintain flood insurance. If you have a mortgage, your bank will require it.



*For all your flood hazard
map questions, call toll-free:*

1-877-FEMA MAP (1-877-336-2627)

or visit our Web Site at www.fema.gov/mit/tsd

FEMA's flood hazard maps— also called Flood Insurance Rate Maps or FIRMs— are used to determine your property's flood risk. Increasing development, severe weather events, and other activities in the floodplain will change the flood risks shown on the maps. FEMA is working hard to update and modernize all of the flood hazard maps. However, with more than 18,000 communities participating in the National Flood Insurance Program (NFIP), this will take time. Meanwhile, the FEMA Map Assistance Center (FMAC) has a staff of trained professionals ready to help

Typical flood hazard map questions we answer:



Property Owner: "My home has never flooded. Why do I need flood insurance?"



Real Estate Agent: "I think the previous owner had an exemption from flood insurance— is there a record of this exemption?"



Community Officials: "How do I request a physical revision to a flood map?"

Lenders: "How can we help our customers whose homes are located in a flood zone?"

Other important National Flood Insurance Program toll-free numbers:

- To purchase flood hazard maps for a nominal fee... 1-800-358-9616
- For general flood insurance information... 1-800-427-4661
- To order any current FEMA publication... 1-800-480-2520
- For lender questions on flood policy coverage and rates... 1-800-611-6125
- For agent questions on policy coverage and rates... 1-800-720-1093





**NATIONAL FLOOD INSURANCE PROGRAM
FEMA MAP COORDINATION CONTRACTOR**

May 25, 2001

Mr. Michael Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of
Maricopa County
2801 West Durango Street
Phoenix, AZ 85009-6399

IN REPLY REFER TO:
Case No.: 01-09-497P
Communities: Cities of Avondale and
Goodyear, AZ
Community Nos.: 040038 and 040046
316-ACK.FRQ

FLOOD CONTROL DISTRICT RECEIVED	
MAY 29 '01	
ICH & GW	FINANCE
IPD	LANDS
ADMIN	IO & W
REG	P & PM
LENG	FILE
CONTRACTS	
ROUTING	

Dear Mr. Duncan:

This responds to your letter dated May 15, 2001, concerning a February 9, 2001, 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:	Roosevelt Irrigation District Canal Overchute
Flooding Source:	Roosevelt Irrigation District Canal
FIRM Panel(s) Affected:	04013C2080 G

We have completed an inventory of the items that you submitted. We have received the data and the review and processing fee (\$6,000) required to begin a detailed technical review of your request. If additional data are required, we will inform you within 60 days of the date of this letter.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Pernille Buch-Pedersen, who may be reached at (703) 317-6224.

Sincerely,

Monther S. Madanat, Director
Technical Services Division
Michael Baker Jr., Inc.

cc: Mr. Harvey H. Krauss
Community Development Director
City of Goodyear

Mr. David W. Fitzhugh, P.E.
City Engineer
City of Avondale



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- To order any current FEMA publication... **1-800-480-2520**
- For lender questions on flood policy coverage and rates... **1-800-611-6125**
- For agent questions on policy coverage and rates... **1-800-720-1093**



Michael Duncan - FCDX

From: Michael Duncan - FCDX
Sent: Tuesday, October 30, 2001 11:21 AM
To: 'KCONLEY@mbakercorp.com'
Subject: What is Status of case 01-09-497P Revision

Back on 9-5-01 I faxed you a copy of a sketch of a downstream Zone A for the area downstream of the RID Canal Overchute. Has there been any progress in revising the LOMR to show the removal of the Zone AH that is west of the overchute and east of the new alignment of Litchfield Road? This area also has the CLOMR for the Palm Valley Phase I, downstream of the overchute.

Mike Duncan
Senior Civil Engineer
602-506-4732

Michael Duncan - FCDX

From: Kathryn Conley [KCONLEY@mbakercorp.com]
Sent: Tuesday, December 11, 2001 3:17 PM
To: mwd@mail.maricopa.gov
Subject: ANY FEEDBACK FROM FEMA YET? RE: What is Status of case 01-09-497P Revision --- LOMR at RID canal overchute

The information that you faxed is sufficient. We do not need the originals, unless you would like to send them.

We'll send out a letter in a couple of days acknowledging the new information.

Let me know if you have any questions.

Katie

>>> Michael Duncan - FCDX <mwd@mail.maricopa.gov> 12/11/01 10:53AM >>>
Have you discussed the downstream Zone A with FEMA? If you need anything else, let me know. If the items I faxed on 11-19-01 are sufficient, I can mail you the originals of the same items, if you want them.

-----Original Message-----

From: Kathryn Conley [mailto:KCONLEY@mbakercorp.com]
Sent: Monday, December 03, 2001 2:37 PM
To: mwd@mail.maricopa.gov
Subject: RE: What is Status of case 01-09-497P Revision

Mike-

Sorry it's taken me so long to get back to you. It looks like we should be able to revise the area based on the information that you faxed. We are going to discuss it with FEMA this week and then I'll get back to you.

Thank you,
Katie

Kathryn L. Conley
Assistant Engineer
Michael Baker Jr., Inc.
3601 Eisenhower Ave., Suite 600
Alexandria, VA 22304
Phone (703) 960-8800 ext. 3017
Fax (703) 960-9125
Email kconley@mbakercorp.com

>>> Michael Duncan - FCDX <mwd@mail.maricopa.gov> 11/19/01 04:37PM >>>
We just sent it again. (The fax confirmation of 11/06/01 showed 0 of 8 pages.)

Michael Duncan - FCDX

From: Michael Duncan - FCDX
Sent: Thursday, December 13, 2001 11:03 AM
To: 'Kathryn Conley'
Subject: RE: ANY FEEDBACK FROM FEMA YET? RE: What is Status of case 01-09-497P
Revision --- LOMR at RID canal overchute

I would be opposed to extending the delineation to Thomas Road. I ended the Zone A at about 500 feet north of Thomas Road. At that point the "undersized" channel bends to the southeast, and the floodplain limits would be very uncertain. Please call me if you would like to discuss, at 602-506-4732.

-----Original Message-----

From: Kathryn Conley [mailto:KCONLEY@mbakercorp.com]
Sent: Thursday, December 13, 2001 9:19 AM
To: mwd@mail.maricopa.gov
Subject: ANY FEEDBACK FROM FEMA YET? RE: What is Status of case 01-09-497P
Revision --- LOMR at RID canal overchute

Mike-

Would you be opposed to extending the revised Zone A delineation down to Thomas Road? Let me know what you think.

Thank you,
Katie

>>> Michael Duncan - FCDX <mwd@mail.maricopa.gov> 12/11/01 10:53AM >>>
Have you discussed the downstream Zone A with FEMA? If you need anything else, let me know. If the items I faxed on 11-19-01 are sufficient, I can mail you the originals of the same items, if you want them.

Michael Duncan - FCDX

From: Kathryn Conley [KCONLEY@mbakercorp.com]
Sent: Tuesday, December 18, 2001 8:54 AM
To: mwd@mail.maricopa.gov
Subject: RE: What is Status of case 01-09-497P Revision --- LOMR at RID canal overchute

Mike-

We will leave the Zone A area as you have it shown. The letters and the FIRM are being processed. In the meantime, we need to have community acknowledgment from Avondale and Goodyear, even though it is a map correction. Because we are showing an increase in flooding, we need to know that they are aware of the change. The acknowledgment can be in a form of a letter or they can sign Form 1. Faxing these in will be fine. Let me know if you have any questions.

Thank you,
Katie

Kathryn L. Conley
Assistant Engineer
Michael Baker Jr., Inc.
3601 Eisenhower Ave., Suite 600
Alexandria, VA 22304
Phone (703) 960-8800 ext. 3017
Fax (703) 960-9125
Email kconley@mbakercorp.com

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I ended the Zone A at about 500 feet north of Thomas Road. At that point
the "undersized" channel bends to the southeast, and the floodplain limits
would be very uncertain. Please call me if you would like to discuss, at
602-506-4732.

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Sent: Thursday, December 13, 2001 9:19 AM
To: mwd@mail.maricopa.gov
Subject: ANY FEEDBACK FROM FEMA YET? RE: What is Status of case
01-09-497P Revision --- LOMR at RID canal overchute

Michael Duncan - FCDX

From: Kathryn Conley [KCONLEY@mbakercorp.com]
Sent: Friday, December 21, 2001 7:27 AM
To: mwd@mail.maricopa.gov
Subject: RE: LOMR at RID canal overchute

I received your fax for the community acknowledgment. The LOMR will be mailed out after the first of the year, probably the second week in January.

Happy Holidays!
Katie

>>> Michael Duncan - FCDX <mwd@mail.maricopa.gov> 12/18/01 11:22AM >>>
I am going to try to get the signed forms to you by the end of this Thursday. Thanks for all your help.

-----Original Message-----

From: Kathryn Conley [mailto:KCONLEY@mbakercorp.com]
Sent: Tuesday, December 18, 2001 8:54 AM
To: mwd@mail.maricopa.gov
Subject: RE: What is Status of case 01-09-497P Revision --- LOMR at RID canal overchute

Mike-

We will leave the Zone A area as you have it shown. The letters and the FIRM are being processed. In the meantime, we need to have community acknowledgment from Avondale and Goodyear, even though it is a map correction. Because we are showing an increase in flooding, we need to know that they are aware of the change. The acknowledgment can be in a form of a letter or they can sign Form 1. Faxing these in will be fine. Let me know if you have any questions.

Thank you,
Katie



Federal Emergency Management Agency

Washington, D.C. 20472

DEC 27 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Ronald J. Drake
Mayor, City of Avondale
525 North Central Avenue
Avondale, AZ 85323

IN REPLY REFER TO:

Case No.: 01-09-497 P

Community: City of Avondale, AZ

Community No.: 040038

Map Panel Affected: 04013C2080 H

116

FLOOD CONTROL DISTRICT RECEIVED	
DEC 31 '01	
ICM & GM	FINANCE
IFIO	LANDS
ADMIN	IC & M
REG	P & PM
ENG	FILE
CONTRACTS	
ROUTING	

Dear Mayor Drake:

In a Letter of Map Revision dated August 23, 2001, you were notified of proposed modified flood elevation determinations affecting the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the City of Avondale, Maricopa County, Arizona. These determinations were for the Roosevelt Irrigation District Canal from Litchfield Road to just downstream of Dysart Road. The 90-day appeal period that was initiated on September 19, 2001, when the Federal Emergency Management Agency (FEMA) published a notice of proposed Base Flood Elevations (BFEs) in the *Arizona Republic*, has elapsed.

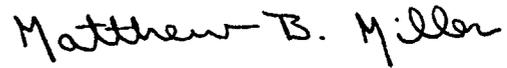
FEMA received no valid requests for changes to the modified BFEs. Therefore, the modified BFEs that became effective on August 23, 2001, remain valid and revise the FIRM that was in effect prior to that date.

The modifications are pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are 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. The community number and suffix code are unaffected by this revision. The community number and appropriate suffix code as shown above will be used by the National Flood Insurance Program (NFIP) for all flood insurance policies and renewals issued for your community.

FEMA has developed criteria for floodplain management as required under the above-mentioned Acts of 1968 and 1973. To continue participation in the NFIP, your community must use the modified BFEs to carry out the floodplain management regulations for the NFIP. The modified BFEs will also be used to calculate the appropriate flood insurance premium rates for all new buildings and their contents and for the second layer of insurance on existing buildings and their contents.

If you have any questions regarding the necessary floodplain management measures for your community or the NFIP in general, please contact the Director, Mitigation Division of FEMA in San Francisco, at (415) 923-7184. If you have any questions regarding the LOMR, the proposed modified BFEs, or mapping issues in general, please contact the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,

A handwritten signature in black ink that reads "Matthew B. Miller". The signature is written in a cursive style with a horizontal line underlining the first name.

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and Mitigation Administration

cc: Mr. David W. Fitzhugh, P.E.
City Engineer
City of Avondale



Federal Emergency Management Agency

Washington, D.C. 20472

DEC 27 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338

IN REPLY REFER TO:
Case No.: 01-09-497 P

Community: City of Goodyear, AZ
Community No.: 040046
Map Panel Affected: 040130

FLOOD CONTROL DISTRICT RECEIVED	
DEC 31 '01	
ICB & CV	FINANCE
AG	LANDS
ADMIN	IS & M
2080-H	P & PM
✓ENG	FILE
CONTRACTS	
ROUTING	MWD

116

Dear Mayor Arnold:

In a Letter of Map Revision dated August 23, 2001, you were notified of proposed modified flood elevation determinations affecting the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the City of Goodyear, Maricopa County, Arizona. These determinations were for the Roosevelt Irrigation District Canal from Litchfield Road to just downstream of Dysart Road. The 90-day appeal period that was initiated on September 19, 2001, when the Federal Emergency Management Agency (FEMA) published a notice of proposed Base Flood Elevations (BFEs) in the *Arizona Republic*, has elapsed.

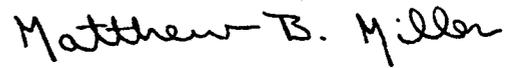
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Sincerely,

A handwritten signature in black ink that reads "Matthew B. Miller". The signature is written in a cursive style with a large, prominent "M" and "B".

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and Mitigation Administration

cc: Mr. Harvey H. Krauss
Community Development Director
City of Goodyear

Baker

Engineering & Energy

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

3601 Eisenhower Avenue
Alexandria, VA 22304-6425
(703) 960-8800
FAX (703) 960-9125

Fax Transmittal

DATE AND TIME: 01/07/02

TO: Mr. Mike Duncan

ORGANIZATION: FCDMC

RECIPIENT'S FAX NO.: 602-506-4601

FROM: Sacha Tohme

CASE# 02-09-257P

MESSAGE:
Mr. Duncan,

Please find attached a draft copy of FIRM 04013C2080 H, reflecting the changes you requested. If you would have any concerns about the changes, or any other question about the case please call me at 703-960-8800 ext. 3028

Thank you,

TOTAL NUMBER OF PAGES (INCLUDING THIS COVER PAGE): _____

IF YOU DO NOT RECEIVE THE NUMBER OF PAGES INDICATED, PLEASE

CALL _____ AT _____ AS SOON AS POSSIBLE.

ChallengeUs.

01/07/02 MON 11:30 AM FAX 703 980 3168
MICHAEL BAKER

002

ZONE A

CITY OF LITCHFIELD PARK

CITY OF GOODYEAR

CITY OF GOODYEAR

040046



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

PANEL 3060 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

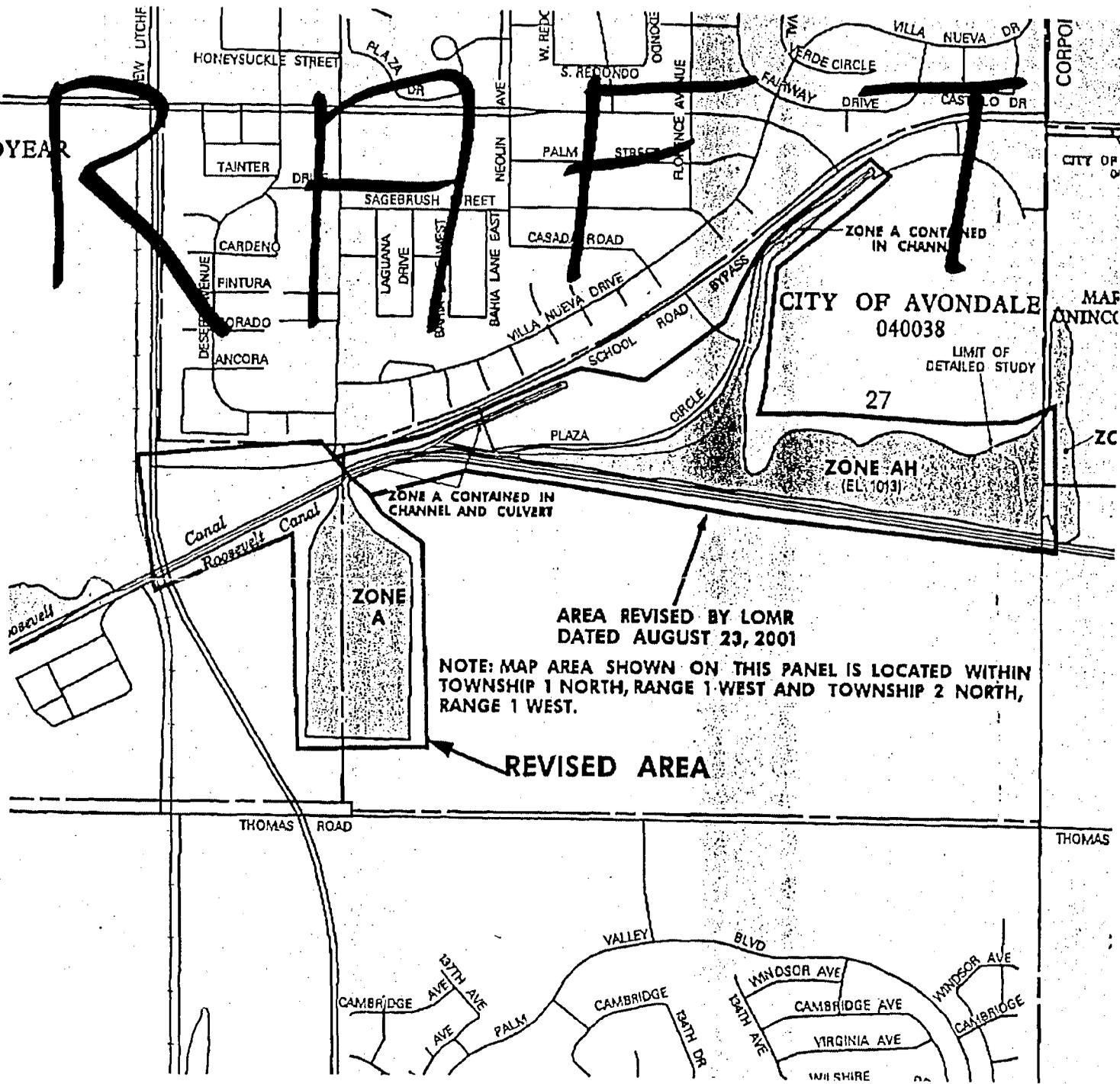
CONTAINS:	NUMBER	DATE	STATUS
AVONDALE CITY OF	040038	1983	X
GOODYEAR CITY OF	040046	1983	X
LITCHFIELD PARK CITY OF	040047	1983	X
MARICOPA COUNTY INCORPORATED AREAS	040048	1983	X
PHOENIX CITY OF	040049	1983	X

MAP NUMBER
04013C2080 H

MAP REVISED:
JULY 19, 2001



Federal Emergency Management Agency



AREA REVISED BY LOMR
DATED AUGUST 23, 2001

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN
TOWNSHIP 1 NORTH, RANGE 1 WEST AND TOWNSHIP 2 NORTH,
RANGE 1 WEST.

REVISED AREA



Federal Emergency Management Agency

Washington, D.C. 20472

FLOOD CONTROL DISTRICT	
RECEIVED	
AUG 27 '01	
CH & SV	FINANCE
PIO	LANDS
ADMN	IC & V
REC	PEPM
<input checked="" type="checkbox"/> ENG	FILE
CONTRACTS	
ROUTING	
AZ	MWD

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338

IN REPLY REFER TO:
Case No.: 01-09-497P

Community: City of Goodyear, AZ

Community No.: 040046

Panel Affected: 04013C2080 H

Effective Date of **AUG 23 2001**

This Revision:

102-I-A-C

Dear Mayor Arnold:

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 (the effective FIRM for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated February 9, 2001 Mr. Michael W. Duncan, P.E., Senior Civil Engineer, Engineering Division, Flood Control District of Maricopa County, requested that FEMA revise the FIRM to show the effects of construction of an overchute/siphon structure, detention basins, and three channels along the Roosevelt Irrigation District (RID) Canal from Litchfield Road to just downstream of Dysart Road.

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

We have completed our review of the submitted data and the flood data shown on the effective FIRM and in the effective Flood Insurance Study (FIS) report. We have revised the FIRM to modify the elevations and floodplain boundary delineations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along RID Canal. As a result of the modifications, the Base Flood Elevations (BFEs) for RID Canal decreased, and the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, increased in some areas and decreased in other areas throughout the revised reach. The modifications are shown on the enclosed annotated copy of FIRM Panel 04013C2080 H. This Letter of Map Revision (LOMR) hereby revises the above-referenced panel of the effective FIRM dated July 19, 2001.

Because this revision request also affects the City of Avondale, a separate LOMR for that community was issued on the same date as this LOMR.

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

The following table is a partial listing of existing and modified BFEs:

Location	Existing BFE (feet)*	Modified BFE (feet)*
Just downstream of Dysart Road	1,015	1,013

*Referenced to the National Geodetic Vertical Datum, rounded to the nearest whole foot

Public notification of the proposed modified BFEs will be given in the *Arizona Republic* on or about September 12 and September 19, 2001. A copy of this notification is enclosed. In addition, a notice of changes will be published in the *Federal Register*. Within 90 days of the second publication in the *Arizona Republic*, any interested party may request that FEMA reconsider the determination made by this LOMR. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that, until the 90-day period elapses, the determination to modify the BFEs made by this LOMR may itself be modified.

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 a related article for publication in your community's local newspaper. This article should describe the assistance that officials of your community will give to interested persons by providing these data and interpreting the NFIP maps.

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

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.

The basis of this LOMR is, in whole or in part, a channel-modification/culvert project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the modified channel and culvert rests with your community.

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 minimum NFIP criteria. These criteria are the minimum

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. Our records show that your community has met this requirement.

A Consultation Coordination Officer (CCO) has been designated to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. Jack Eldridge
Chief, Community Mitigation Programs Branch
Federal Emergency Management Agency, Region IX
The Presidio of San Francisco, Building 105
San Francisco, CA 94129-1250
(415) 923-7184

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please call the CCO for your community at the telephone number cited above. If you have any questions regarding this LOMR, please call our Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,



Max H. Yuan, P.E., Project Engineer
Hazards Study Branch
Federal Insurance and
Mitigation Administration

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and
Mitigation Administration

Enclosure

cc: The Honorable Ronald J. Drake
Mayor, City of Avondale

Mr. Michael W. Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of
Maricopa County

Mr. Harvey H. Krauss
Community Development Director
City of Goodyear

CHANGES ARE MADE IN DETERMINATIONS OF BASE FLOOD ELEVATIONS FOR THE CITIES OF AVONDALE AND GOODYEAR, MARICOPA COUNTY, ARIZONA, UNDER THE NATIONAL FLOOD INSURANCE PROGRAM

On July 19, 2001, the Federal Emergency Management Agency identified Special Flood Hazard Areas (SFHAs) in the Cities of Avondale and Goodyear, Maricopa County, Arizona, through issuance of a Flood Insurance Rate Map (FIRM). The Federal Insurance and Mitigation Administration has determined that modification of the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) for certain locations in these communities is appropriate. The modified Base Flood Elevations (BFEs) revise the FIRM for the communities.

The changes are being made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are 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.

Hydraulic analyses were performed to incorporate construction of an overchute/siphon structure, detention basins, and three channels along the Roosevelt Irrigation District Canal from Litchfield Road to just downstream of Dysart Road. This has resulted in increases and decreases in SFHA width and decreased BFEs for the Roosevelt Irrigation District Canal throughout the revised reach. The table below indicates existing and modified BFEs for selected locations along the affected lengths of the flooding source(s) cited above.

Location	Existing BFE (feet)*	Modified BFE (feet)*
Just downstream of Dysart Road	1,015	1,013

*National Geodetic Vertical Datum, rounded to nearest whole foot

Under the above-mentioned Acts of 1968 and 1973, the Federal Insurance and Mitigation Administration must develop criteria for floodplain management. To participate in the National Flood Insurance Program (NFIP), the community must use the modified BFEs to administer the floodplain management measures of the NFIP. These modified BFEs will also be used to calculate the appropriate flood insurance premium rates for new buildings and their contents and for the second layer of insurance on existing buildings and contents.

Upon the second publication of notice of these changes in this newspaper, any person has 90 days in which he or she can request, through the Chief Executive Officer of the community, that the Federal Insurance and Mitigation Administration reconsider the determination. Any request for reconsideration must be based on knowledge of changed conditions or new scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Federal Insurance and Mitigation Administration's determination to modify the BFEs may itself be changed.

Any person having knowledge or wishing to comment on these changes should immediately notify:

The Honorable Ronald J. Drake
Mayor, City of Avondale
525 North Central Avenue
Avondale, AZ 85323

OR

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338



Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Ronald J. Drake
Mayor, City of Avondale
525 North Central Avenue
Avondale, AZ 85323

IN REPLY REFER TO:
Case No.: 01-09-497P

Community: City of Avondale, AZ
Community No.: 040038
Panel Affected: 04013C2080 H
Effective Date of **AUG 23 2001**
This Revision:

102-I-A-C

Dear Mayor Drake:

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 (the effective FIRM for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated February 9, 2001 Mr. Michael W. Duncan, P.E., Senior Civil Engineer, Engineering Division, Flood Control District of Maricopa County, requested that FEMA revise the FIRM to show the effects of construction of an overchute/siphon structure, detention basins, and three channels along the Roosevelt Irrigation District (RID) Canal from Litchfield Road to just downstream of Dysart Road.

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We have completed our review of the submitted data and the flood data shown on the effective FIRM and in the effective Flood Insurance Study (FIS) report. We have revised the FIRM to modify the elevations and floodplain boundary delineations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along RID Canal. As a result of the modifications, the Base Flood Elevations (BFEs) for RID Canal decreased, and the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, increased in some areas and decreased in other areas throughout the revised reach. The modifications are shown on the enclosed annotated copy of FIRM Panel 04013C2080 H. This Letter of Map Revision (LOMR) hereby revises the above-referenced panel of the effective FIRM dated July 19, 2001.

Because this revision request also affects the City of Goodyear, a separate LOMR for that community was issued on the same date as this LOMR.

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The following table is a partial listing of existing and modified BFEs:

Location	Existing BFE (feet)*	Modified BFE (feet)*
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Chief, Community Mitigation Programs Branch
Federal Emergency Management Agency, Region IX
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Sincerely,



Max H. Yuan, P.E., Project Engineer
Hazards Study Branch
Federal Insurance and
Mitigation Administration

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and
Mitigation Administration

Enclosure

cc: The Honorable Bill Arnold
Mayor, City of Goodyear

Mr. Michael W. Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of
Maricopa County

Mr. David W. Fitzhugh, P.E.
City Engineer
City of Avondale

CHANGES ARE MADE IN DETERMINATIONS OF BASE FLOOD ELEVATIONS FOR THE CITIES OF AVONDALE AND GOODYEAR, MARICOPA COUNTY, ARIZONA, UNDER THE NATIONAL FLOOD INSURANCE PROGRAM

On July 19, 2001, the Federal Emergency Management Agency identified Special Flood Hazard Areas (SFHAs) in the Cities of Avondale and Goodyear, Maricopa County, Arizona, through issuance of a Flood Insurance Rate Map (FIRM). The Federal Insurance and Mitigation Administration has determined that modification of the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) for certain locations in these communities is appropriate. The modified Base Flood Elevations (BFEs) revise the FIRM for the communities.

The changes are being made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are 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.

Hydraulic analyses were performed to incorporate construction of an overchute/siphon structure, detention basins, and three channels along the Roosevelt Irrigation District Canal from Litchfield Road to just downstream of Dysart Road. This has resulted in increases and decreases in SFHA width and decreased BFEs for the Roosevelt Irrigation District Canal throughout the revised reach. The table below indicates existing and modified BFEs for selected locations along the affected lengths of the flooding source(s) cited above.

Location	Existing BFE (feet)*	Modified BFE (feet)*
Just downstream of Dysart Road	1,015	1,013

*National Geodetic Vertical Datum, rounded to nearest whole foot

Under the above-mentioned Acts of 1968 and 1973, the Federal Insurance and Mitigation Administration must develop criteria for floodplain management. To participate in the National Flood Insurance Program (NFIP), the community must use the modified BFEs to administer the floodplain management measures of the NFIP. These modified BFEs will also be used to calculate the appropriate flood insurance premium rates for new buildings and their contents and for the second layer of insurance on existing buildings and contents.

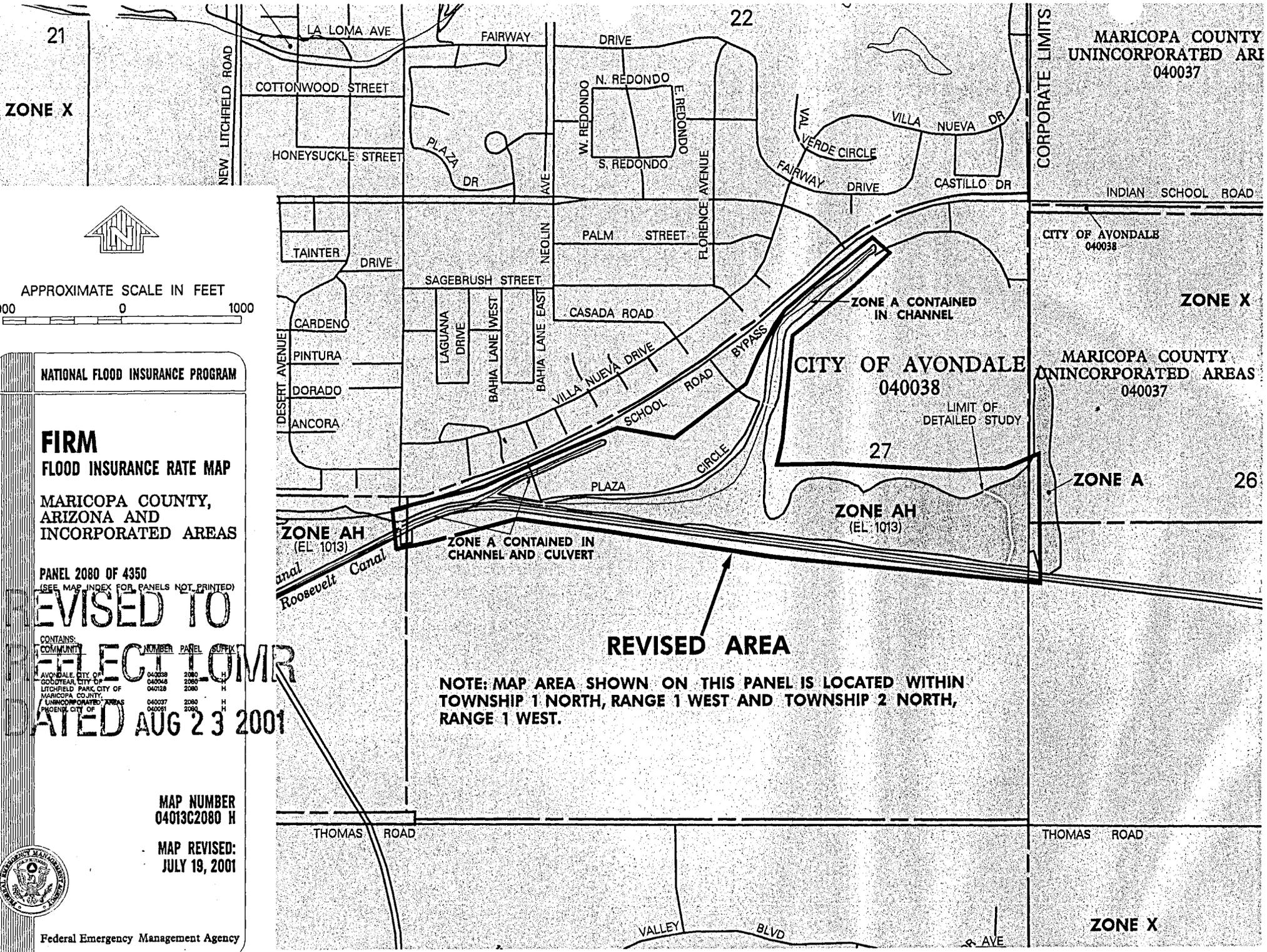
Upon the second publication of notice of these changes in this newspaper, any person has 90 days in which he or she can request, through the Chief Executive Officer of the community, that the Federal Insurance and Mitigation Administration reconsider the determination. Any request for reconsideration must be based on knowledge of changed conditions or new scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Federal Insurance and Mitigation Administration's determination to modify the BFEs may itself be changed.

Any person having knowledge or wishing to comment on these changes should immediately notify:

The Honorable Ronald J. Drake
Mayor, City of Avondale
525 North Central Avenue
Avondale, AZ 85323

OR

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

PANEL 2080 OF 4350

(SEE MAP INDEX FOR PANELS NOT PRINTED)

REVISED TO

REFLECT LOMR

DATED AUG 23 2001

CONTAINS:	NUMBER	PANEL	SUFFIX
AVONDALE, CITY OF	040038	2080	H
GOODYEAR, CITY OF	040046	2080	H
LITCHFIELD PARK, CITY OF	040128	2080	H
MARICOPA COUNTY UNINCORPORATED AREAS	040037	2080	H
PHOENIX, CITY OF	040091	2080	H

MAP NUMBER
04013C2080 H

MAP REVISED:
JULY 19, 2001



Federal Emergency Management Agency

REVISED AREA

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 1 NORTH, RANGE 1 WEST AND TOWNSHIP 2 NORTH, RANGE 1 WEST.



Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:

Case No.: 02-09-257P

The Honorable Ronald J. Drake
Mayor, City of Avondale
525 North Central Avenue
Avondale, AZ 85323

Community: City of Avondale, AZ
Community No.: 040038
Panel Affected: 04013C2080 H
Effective Date of **JAN 15 2002**
This Revision:

102-I-C

Dear Mayor Drake:

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 (the effective FIRM for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated November 19, 2001, Mr. Michael W. Duncan, P.E., Senior Civil Engineer, Engineering Division, Flood Control District of Maricopa County, requested that FEMA revise the FIRM to show the effects of an additional hydraulic analysis along Roosevelt Irrigation District (RID) Canal from just downstream of New Litchfield Road to just upstream of the RID Canal Overchute and extending south to approximately 500 feet north of Thomas Road. This request follows up on a Letter of Map Revision (LOMR) dated August 23, 2001.

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

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 of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) from the RID Canal Overchute to approximately 500 feet north of Thomas Road. As a result of the modifications, the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, increased, and an SFHA designated Zone A, with no Base Flood Elevations determined, was added. The modifications are shown on the enclosed annotated copy of FIRM Panel 04013C2080 H. This LOMR hereby revises the above-referenced panel of the effective FIRM dated July 19, 2001. The determinations for the other areas revised by the August 23 LOMR remain valid.

Because this revision request also affects the City of Goodyear, a separate LOMR for that community was issued on the same date as this LOMR.

The modifications are effective as of the date shown above. The map panel 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 will not physically revise and republish the FIRM for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

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.

The basis of this LOMR is, in whole or in part, a channel-modification/culvert project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the modified channel and culvert rests with your community.

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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 minimum NFIP criteria. These criteria are the minimum 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 made by this LOMR. Our records show that your community has met this requirement.

A Consultation Coordination Officer (CCO) has been designated to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. Jack Eldridge
Chief, Community Mitigation Programs Branch
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The Presidio of San Francisco, Building 105
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Sincerely,



Max H. Yuan, P.E., Project Engineer
Hazards Study Branch
Federal Insurance and
Mitigation Administration

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and
Mitigation Administration

Enclosures

cc: The Honorable Bill Arnold
Mayor, City of Goodyear

Mr. Jim Mitchell
Flood Plain Administrator
City of Avondale

Ms. Shanna Yager
Branch Manager
Floodplain Administrator
Flood Control District of Maricopa County

Mr. Michael W. Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of Maricopa County

Mr. Victor Calderon
NFIP Coordinator
Arizona Division of Emergency
Management



Federal Emergency Management Agency

Washington, D.C. 20472

FLOOD CONTROL DISTRICT	
RECEIVED	
JAN 22 '02	
CH & EM	FINANCE
PIO	LANDS
ADMIN	D & N
REC	P & PM
<input checked="" type="checkbox"/> ENG	FILE
CONTRACTS	
ASSTING	MWD

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338

IN REPLY REFER TO:
Case No.: 02-09-257P

Community: City of Goodyear
Community No.: 040046
Panel Affected: 04013C2080 H
Effective Date of **JAN 15 2002**
This Revision

102-I-A-C

Dear Mayor Arnold:

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 (the effective FIRM for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated November 19, 2001, Mr. Michael W. Duncan, P.E., Senior Civil Engineer, Engineering Division, Flood Control District of Maricopa County, requested that FEMA revise the FIRM to show the effects of an additional hydraulic analysis along Roosevelt Irrigation District (RID) Canal from just downstream of New Litchfield Road to just upstream of the RID Canal Overchute and extending south to approximately 500 feet north of Thomas Road. This request follows up on a Letter of Map Revision (LOMR) dated August 23, 2001.

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Because this revision request also affects the City of Avondale, a separate LOMR for that community was issued on the same date as this LOMR.

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

The following table is a partial listing of existing and modified BFEs:

Location	Existing BFE (feet)*	Modified BFE (feet)*
Upstream of RID Canal and east of New Litchfield Road	1,013	None

*Referenced to the National Geodetic Vertical Datum, rounded to the nearest whole foot

Public notification of the proposed modified BFEs will be given in *The Arizona Republic* on or about January 24 and January 31, 2002. A copy of this notification is enclosed. In addition, a notice of changes will be published in the *Federal Register*. Within 90 days of the second publication in *The Arizona Republic*, any interested party may request that FEMA reconsider the determination made by this LOMR. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that, until the 90-day period elapses, the determination to modify the BFEs made by this LOMR may itself be modified.

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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.

The basis of this LOMR is, in whole or in part, a channel-modification/culvert project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the modified channel and culvert rests with your community.

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 minimum NFIP criteria. These criteria are the minimum 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 made by this LOMR. Our records show that your community has met this requirement.

A Consultation Coordination Officer (CCO) has been designated to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. Jack Eldridge
Chief, Community Mitigation Programs Branch
Federal Emergency Management Agency, Region IX
The Presidio of San Francisco, Building 105
San Francisco, CA 94129-1250
(415) 923-7184

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please call the CCO for your community at the telephone number cited above. If you have any questions regarding this LOMR, please call our Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,



Max H. Yuan, P.E., Project Engineer
Hazards Study Branch
Federal Insurance and
Mitigation Administration

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and
Mitigation Administration

Enclosure

cc: The Honorable Ronald J. Drake
Mayor, City of Avondale

Mr. Harvey Krauss
Floodplain Administrator
City of Goodyear

Ms. Shanna Yager
Branch Manager
Floodplain Administrator
Flood Control District of Maricopa County

Mr. Michael W. Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of Maricopa County

Mr. Victor Calderon
NFIP Coordinator
Arizona Division of Emergency
Management

CHANGES ARE MADE IN DETERMINATIONS OF BASE FLOOD ELEVATIONS FOR THE CITY OF GOODYEAR, ARIZONA UNDER THE NATIONAL FLOOD INSURANCE PROGRAM

On July 19, 2001, the Federal Emergency Management Agency identified Special Flood Hazard Areas (SFHAs) in Maricopa County, Arizona and Incorporated Areas, through issuance of a Flood Insurance Rate Map (FIRM). The Federal Insurance and Mitigation Administration has determined that modification of the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) for certain locations in this community is appropriate. The modified Base Flood Elevations (BFEs) revise the FIRM for the community.

The changes are being made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are 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.

A hydraulic analysis was performed to incorporate the effects of a mapping error along the Roosevelt Irrigation District (RID) Canal from just downstream of New Litchfield Road to just upstream of the RID Canal Overchute, and has resulted in the addition of an SFHA designated Zone A from the RID Canal Overchute to approximately 500 feet North of Thomas Road and the removal of an SFHA designated Zone AH along the RID Canal from just downstream of New Litchfield Road to the RID Canal Overchute. The flood having a 1-percent chance of being equaled or exceeded in any given year will be contained in the channel from the RID Canal Overchute to approximately 500 feet North of Thomas Road. The table below indicates existing and modified BFEs for selected locations along the affected lengths of the flooding source cited above.

Location	Existing BFE (feet)*	Modified BFE (feet)*
Upstream of RID Canal and East of New Litchfield Road	1,013	None

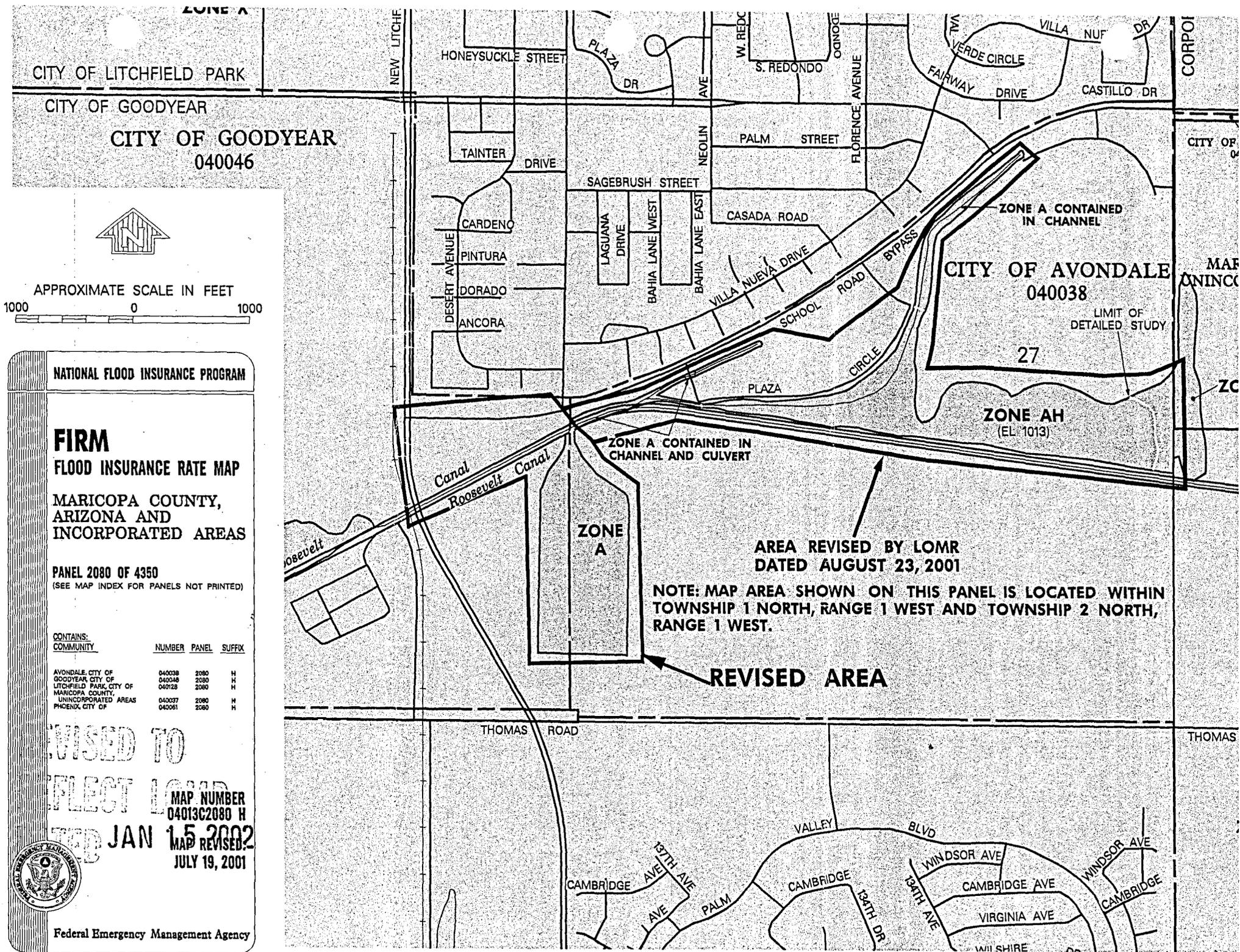
*National Geodetic Vertical Datum, rounded to nearest whole foot

Under the above-mentioned Acts of 1968 and 1973, the Federal Insurance and Mitigation Administration must develop criteria for floodplain management. To participate in the National Flood Insurance Program (NFIP), the community must use the modified BFEs to administer the floodplain management measures of the NFIP. These modified BFEs will also be used to calculate the appropriate flood insurance premium rates for new buildings and their contents and for the second layer of insurance on existing buildings and contents.

Upon the second publication of notice of these changes in this newspaper, any person has 90 days in which he or she can request, through the Chief Executive Officer of the community, that the Federal Insurance and Mitigation Administration reconsider the determination. Any request for reconsideration must be based on knowledge of changed conditions or new scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Federal Insurance and Mitigation Administration's determination to modify the BFEs may itself be changed.

Any person having knowledge or wishing to comment on these changes should immediately notify:

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338



CITY OF LITCHFIELD PARK

CITY OF GOODYEAR
CITY OF GOODYEAR
 040046

CITY OF AVONDALE
 040038

ZONE AH
 (EL. 1013)

ZONE A

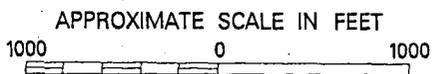
ZONE A CONTAINED IN CHANNEL AND CULVERT

ZONE A CONTAINED IN CHANNEL

AREA REVISED BY LOMR
 DATED AUGUST 23, 2001

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN
 TOWNSHIP 1 NORTH, RANGE 1 WEST AND TOWNSHIP 2 NORTH,
 RANGE 1 WEST.

REVISED AREA



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
 FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
 ARIZONA AND
 INCORPORATED AREAS

PANEL 2080 OF 4350
 (SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AVONDALE CITY OF	040038	2080	H
GOODYEAR CITY OF	040046	2080	H
LITCHFIELD PARK CITY OF	040128	2080	H
MARICOPA COUNTY UNINCORPORATED AREAS	040037	2080	H
PHOENIX CITY OF	042061	2080	H

REVISED TO
 REFLECT LOMR
 MAP NUMBER
 04013C2080 H
 JAN 15 2002
 MAP REVISED
 JULY 19, 2001



Federal Emergency Management Agency



Federal Emergency Management Agency

Washington, D.C. 20472

MAY 10 2002

FLOOD CONTROL DISTRICT	
RECEIVED	
MAY 16 '02	
CH & G	FINANCE
PIO	GENERAL
ADMIN	INSURANCE
RE	PLANNING
ENG	FILE
CONTRACTS	
ROUTING	MWD

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 02-09-257P

The Honorable Bill Arnold
Mayor, City of Goodyear
119 North Litchfield Road
Goodyear, AZ 85338

Community: City of Goodyear, AZ
Community No.: 040046
Map Panel Affected: 04013C2080 H

116

Dear Mayor Arnold:

In a Letter of Map Revision (LOMR) dated January 15, 2002, your community was notified of modified Base Flood Elevations (BFEs) affecting the Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the City of Goodyear, Maricopa County and Incorporated Areas, Arizona (the effective FIRM and FIS report to your community). These determinations were for Roosevelt Irrigation District (RID) Canal from just downstream of New Litchfield Road to the RID Canal Overchute. The 90-day appeal period that was initiated on January 31, 2002, when the Federal Emergency Management Agency (FEMA) published a notice of the modified (BFEs) in the *Arizona Republic*, has elapsed.

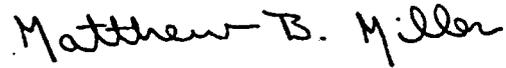
FEMA received no valid requests for changes to the modified BFEs. Therefore, the modified BFEs that became effective on January 15, 2002, remain valid and revise the FIRM that was in effect prior to that date.

The modifications are pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are 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. The community number(s) and suffix code(s) are unaffected by this revision. The community number and appropriate suffix code as shown above will be used by the National Flood Insurance Program (NFIP) for all flood insurance policies and renewals issued for your community.

FEMA has developed criteria for floodplain management as required under the above-mentioned Acts of 1968 and 1973. To continue participation in the NFIP, your community must use the modified BFEs to carry out the floodplain management regulations for the NFIP. The modified BFEs will also be used to calculate the appropriate flood insurance premium rates for all new buildings and their contents and for the second layer of insurance on existing buildings and their contents.

If you have any questions regarding the necessary floodplain management measures for your community or the NFIP in general, please contact the Director, Mitigation Division of FEMA in San Francisco, at (415) 923-7184. If you have any questions regarding the LOMR, the proposed modified BFEs, or mapping issues in general, please contact the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

Sincerely,

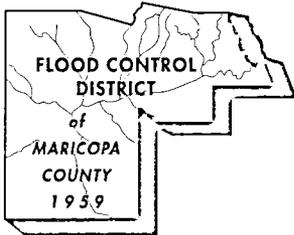


Matthew B. Miller, P.E., Chief
Hazards Study Branch
Federal Insurance and Mitigation Administration

cc: Mr. Harvey Krauss
Floodplain Administrator
City of Goodyear

Ms. Shanna Yager
Branch Manager
Floodplain Administrator
Flood Control District of Maricopa County

Mr. Michael W. Duncan, P.E.
Senior Civil Engineer
Engineering Division
Flood Control District of Maricopa County



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
Fulton Brock
Andrew Kunasek
Don Stapley
Mary Rose Garrido Wilcox
Max W. Wilson

May 15, 2002

TO: OWNERS OF PROPERTY NEAR LITCHFIELD ROAD AND INDIAN SCHOOL ROAD BYPASS, GOODYEAR, ARIZONA

TOPIC: NOTICE OF REVISED FLOODPLAINS AT ROOSEVELT IRRIGATION DISTRICT (R.I.D.) CANAL

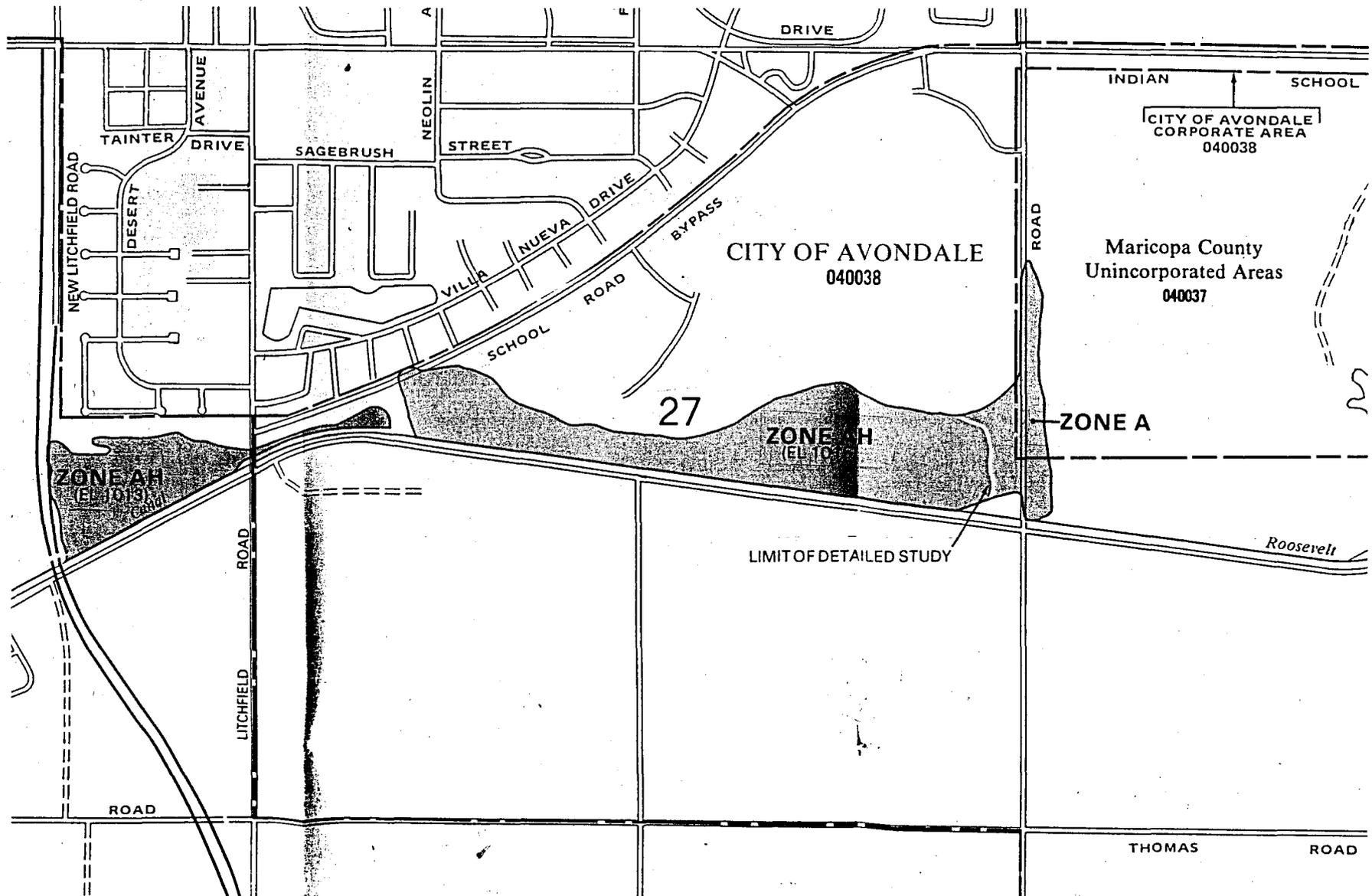
Dear Property Owner:

As a result flood control structures (detention basin, channels, and overchute over the R.I.D. Canal) that were built by the Flood Control District and the local communities, the floodplains along the R.I.D. Canal have been revised. The area affected is southeast of the intersection of Litchfield Road and Indian School Road Bypass. For comparison, I have enclosed a map of the former floodplains, and a map of the revised floodplains (effective JAN 15 2002).

If your building is no longer in a floodplain, you are not required to have flood insurance. Of course, anybody can purchase flood insurance, if they wish, even if they are outside a floodplain.

If you have any questions about this, please call Mike Duncan at 602-506-4732.

FORMER FLOODPLAINS



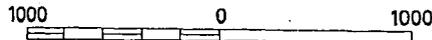
CITY OF LITCHFIELD PARK

CITY OF GOODYEAR

CITY OF GOODYEAR
040046



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

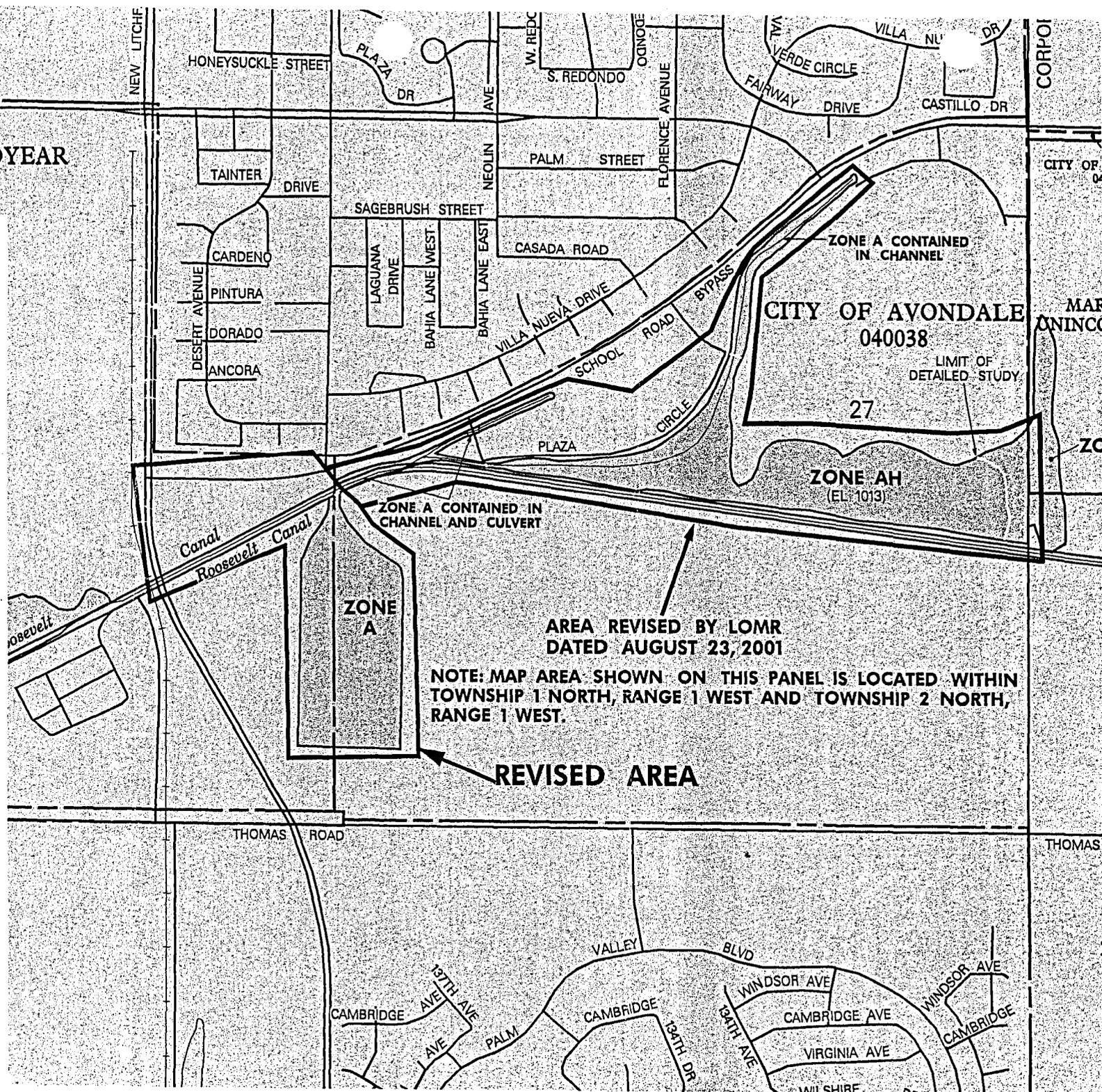
PANEL 2080 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
AVONDALE, CITY OF	040038	2080	H
GOODYEAR, CITY OF	040046	2080	H
LITCHFIELD PARK, CITY OF	040128	2080	H
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2080	H
PHOENIX, CITY OF	040061	2080	H

REVISED TO
EFFECT
MAP NUMBER
04013C2080 H
JAN 15 2002
MAP REVISED
JULY 19, 2001



Federal Emergency Management Agency



ZONE A CONTAINED IN CHANNEL AND CULVERT

ZONE A CONTAINED IN CHANNEL

CITY OF AVONDALE
040038

LIMIT OF DETAILED STUDY

27

ZONE AH
(EL. 1013)

AREA REVISED BY LOMR
DATED AUGUST 23, 2001

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN
TOWNSHIP 1 NORTH, RANGE 1 WEST AND TOWNSHIP 2 NORTH,
RANGE 1 WEST.

REVISED AREA

Amar Investment
8241 W Grand Ave
Peoria AZ 85345

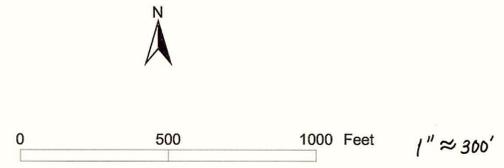
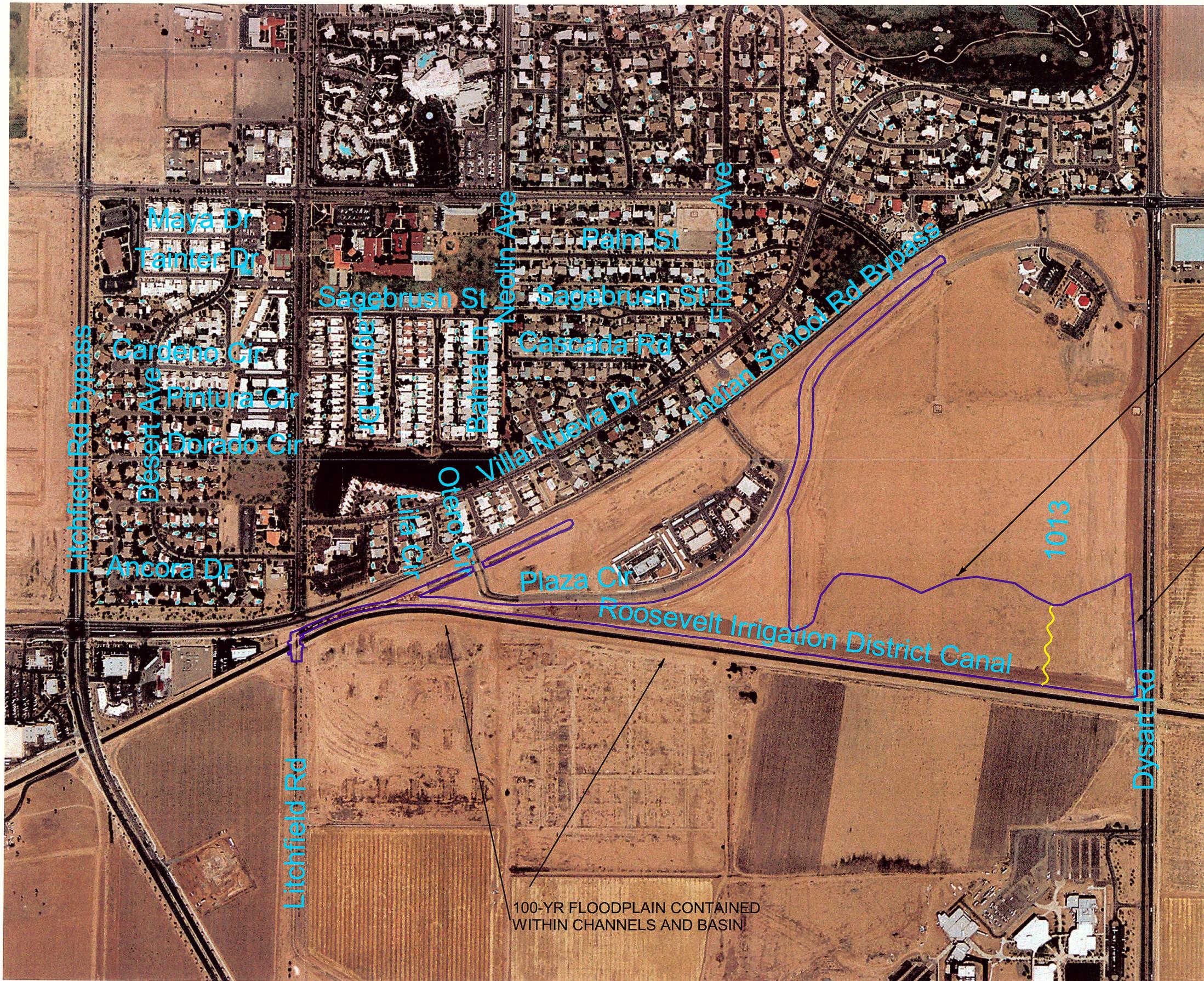
Robert and Marcella Greening
5001 E Road Runner Rd
Paradise Valley AZ 85253

Michael and Yuk Devine
1216 Via Coronel
Palos Verdes Estates CA 90274

Arizona Public Service
PO Box 53999 Sta 9282
Phoenix AZ 85072

Desert Springs LLC
3301 N Litchfield Rd
Goodyear AZ 85338

Suncor Development
3838 N Central Av # 1500
Phoenix AZ 85012



ZONE AE 100-YR FLOODPLAIN

LIMIT OF STUDY

100-YR FLOODPLAIN CONTAINED WITHIN CHANNELS AND BASIN

Flood Control District of Maricopa County
22 Nov 00

RID CANAL OVERCHUTE LOMR EXHIBIT

SECTION 10

DISKETTE of Hydraulic Models

Folder

East Channel

Main Channel

Plaza Circle Channel

West Interceptor Channel

Alias Filename

Channel Along RID Canal

RID Canal Overchute

Ridjob4

Ridjob5