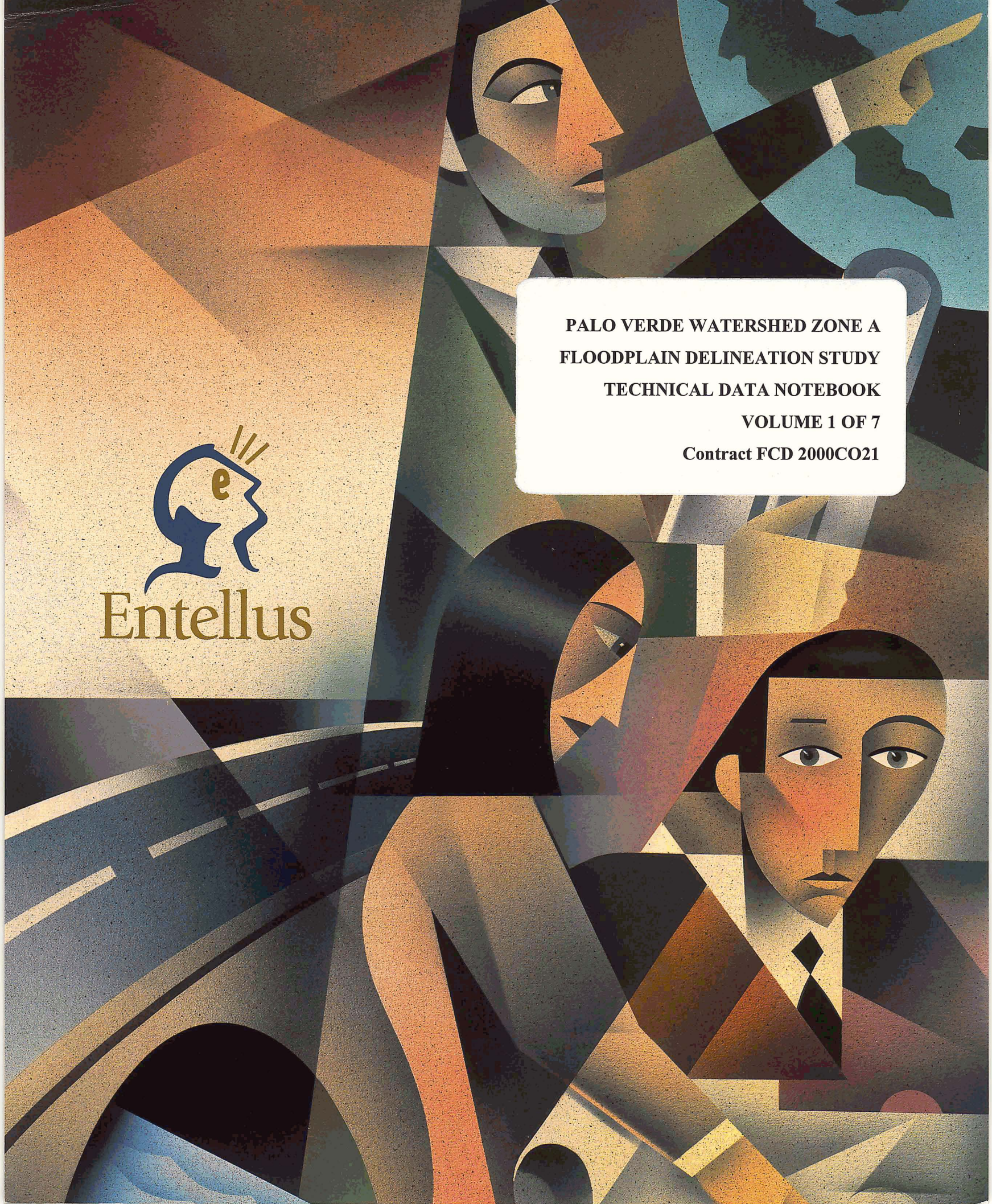

PALO VERDE WATERSHED ZONE A FLOODPLAIN DELINEATION STUDY TECHNICAL DATA NOTEBOOK

VOLUME 1 OF 7

Contract FCD 2000CO21

Entellus

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PALO VERDE WATERSHED ZONE A

FLOODPLAIN DELINEATION STUDY

TECHNICAL DATA NOTEBOOK

Contract FCD 2000CO21

Volume 1 of 7

MAY 30 2003

Prepared by:

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Environmental *Solutions*

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Registered Professional Engineer (Civil)
CERTIFICATE NO. 22737
HERNAN A. ARISTIZABAL
Date Signed 5/30/03
ARIZONA, U.S.A.

Entellus™

PALO VERDE WATERSHED ZONE A FLOODPLAIN DELINEATION STUDY

FCD 2000CO21

TECHNICAL DATA NOTEBOOK

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PALO VERDE WASH ZONE A DELINEATION

FCD 2000CO21

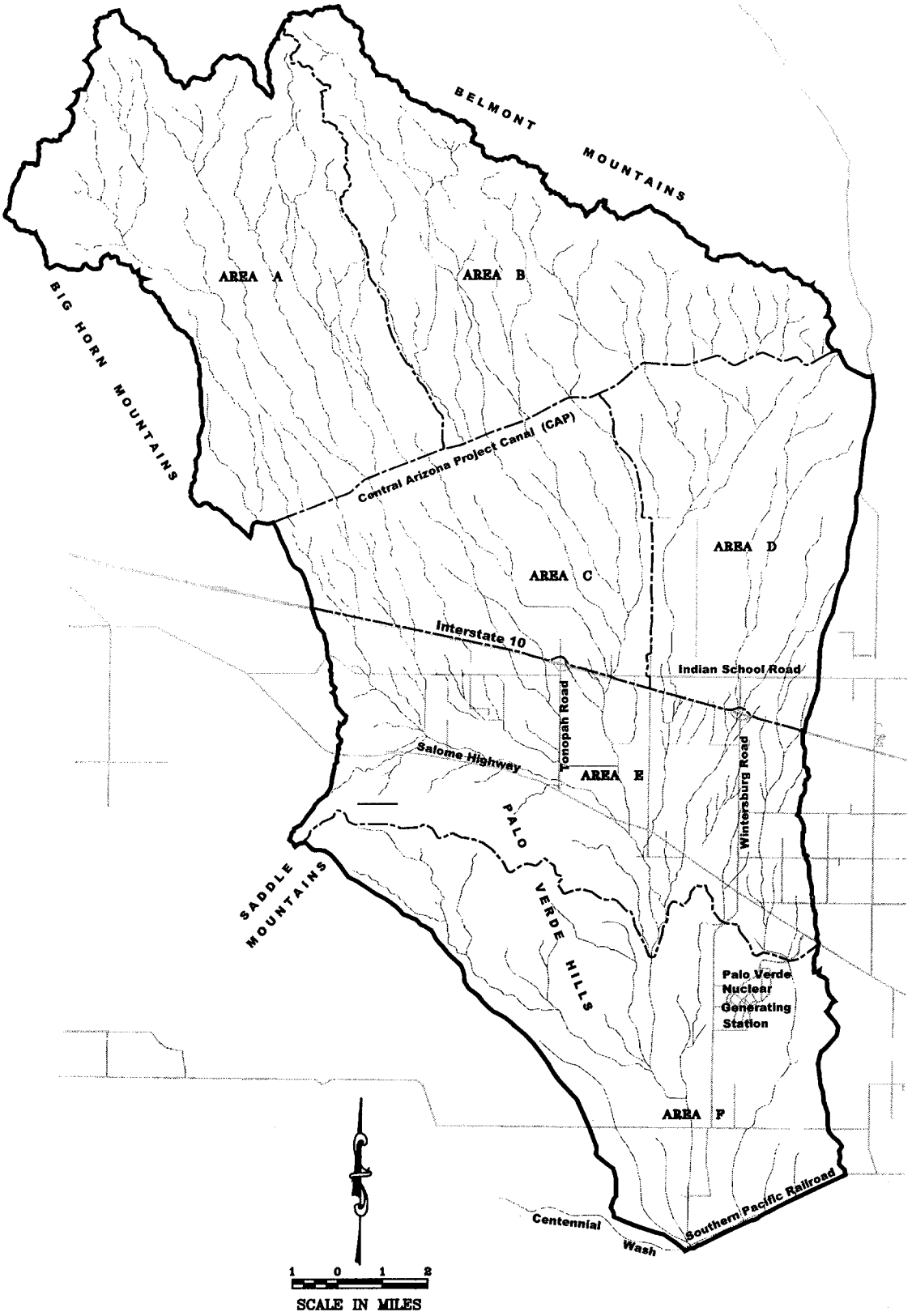
TECHNICAL DATA NOTEBOOK (TDN)

SECTION 1: INTRODUCTION

The information and analysis presented in this report is part of the scope of work performed by Entellus, Inc. for the Flood Control District of Maricopa County (District) under Contract FCD No. 2000CO21. The project under this contract consists of the development of the 100-year hydrology and delineation of an approximate Zone A 100-year floodplain for the major un-delineated watercourses that are located within the Palo Verde study area **(Figure 1)**. The contract involves the delineation of 400 miles of washes within the project area. The study area was mapped under two separate contracts, the first contract developed the Digital Terrain Model (DTM) **(Reference 1)**, and the second contract developed the 10-foot contour interval mapping **(Reference 2)**.

The study area is located in an unincorporated area of western Maricopa County. The general location of the study area is between the Big Horn Mountains and just east of Wintersburg Road, south of the Belmont Mountains and north of the Southern Pacific Railroad as shown in **Figure 1**. Interstate 10, Solome Highway and the Central Arizona Project (CAP) bisect the study area.

The area is mainly natural undeveloped desert with small portions of agricultural farmland and urban development. Most of the agricultural and urban developments are located within the southern portion of the watershed (south of CAP Canal). The Palo Verde Nuclear Power Plant is also located in the southeast portion of the study area.



LEGEND

- PROJECT AREA BOUNDARY
- MAJOR SUB-AREAS
- DELINIATED WASH
- EXISTING ROADWAY

Entellus

PALO VERDE WATERSHED
ZONE A FLOODPLAIN DELINEATION STUDY
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD PROJECT NO. 2000C021

VICINITY MAP
FIGURE 1

SECTION 2: ADWR/FEMA FORMS

FEMA Form 1: Overview and Concurrence Form

FEMA Form 2: Riverine Hydrology & Hydraulics Form

FEMA Form 3: Riverine Structures Form

Zone A – Floodplain Delineation Study
Palo Verde F.C.D. Contract No. 2000C021

FEMA Form 1: Overview and Concurrence Form

FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

O.M.B No. 3067-0148
Expires September 30, 2005

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A. REQUESTED RESPONSE FROM FEMA

This request is for a (check one):

☐ 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, regulatory floodway or flood elevations. (See Parts 60 & 65 of the NFIP Regulations.)

B. OVERVIEW

1. 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	City of Katy	TX	480301	0005D	02/08/83
480287	Harris County	TX	48201C	0220G	09/28/90
040037	Maricopa County, Unincorporated Areas	AZ	04013C	1475F	07/19/01
	See attached for additional information				

2. Flooding Source: Washes within the Palo Verde Zone A Watershed

3. Project Name/Identifier: Palo Verde Watershed Zone A Floodplain Delineation Study

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

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

☐ Physical Change ☐ Improved Methodology/Data

☐ Regulatory Floodway Revision ☒ Other (Attach Description)

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following types of flooding and structures (check all that apply)

Types of Flooding: ☒ Riverine ☐ Coastal ☒ Shallow Flooding (e.g., Zones AO and AH)

☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

Structures: ☐ Channelization ☐ Levee/Floodwall ☒ Bridge/Culvert

☐ Dam ☐ Fill ☐ Other, Attach Description

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☐ Yes Fee amount: $_____

☑ No, Attach Explanation

Please see the FEMA Web site at http://www.fema.gov/fhm/frm_fees.shtm **for Fee Amounts and Exemptions.**

D. SIGNATURE

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

Name: Hernan A. Aristizabal	Company: Entellus, Inc.	
Mailing Address: 2255 N 44th Street Suite 125 Phoenix, AZ 85008-3279	Daytime Telephone No.: 602-244-2566	Fax No.: 602-244-8947
	E-Mail Address: hernan@entellus.com	
Signature of Requester (required): Hernan A. Aristizabal		Date: 1/7/05

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: Timothy S. Phillips, P.E. Acting Chief Engineer and General Manager		Telephone No.: 602-506-1501
Community Name: Maricopa County	Community Official's Signature (required): Edward A. Raleigh	Date: 11/9/04

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Hernan A. Aristizabal	License No.: 29737	Expiration Date: 12/31/2004
Company Name: Entellus, Inc.	Telephone No.: 602-244-2566	Fax No.: 602-244-8947
Signature: Hernan A. Aristizabal		Date: 11/15/04

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if ...
☑ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☑ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

B. OVERVIEW (Cont.)

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

Community Nol	Community Name	State	Map No.	Panel No.	Effective Date
040037	Maricopa County, Unincorporated Areas	AZ	04013C	1500E	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	1525G	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	1950F	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	1975D	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	2000F	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	2425F	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	2450F	07/19/01
040037	Maricopa County, Unincorporated Areas	AZ	04013C	2475F	07/19/01

Zone A – Floodplain Delineation Study
Palo Verde F.C.D. Contract No. 2000C021

FEMA Form 2: Riverine Hydrology & Hydraulics Form

FEMA Form 2: Riverine Hydraulic Analysis

1. T1N-R6W-S03E
2. T1N-R6W-S03W
3. T1N-R6W-S04E
4. T1N-R6W-S05E
5. T1N-R6W-S05W
6. T1N-R6W-S07
7. T1N-R6W-S09E
8. T1N-R6W-S16
9. T1N-R6W-S17E
10. T1N-R6W-S17W
11. T1N-R6W-S18
12. T1N-R6W-S20E
13. T1N-R6W-S20W
14. T1N-R6W-S22E
15. T1N-R6W-S22N
16. T1N-R6W-S26
17. T1N-R6W-S27S
18. T1N-R6W-S29
19. T1N-R6W-S30E
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21. T1N-R7W-S01
22. T1N-R7W-S02
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153. T4N-R8W-S31W
154. T4N-R8W-S33
155. T4N-R8W-S35E
156. T4N-R8W-S35N
157. T4N-R8W-S35W

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S03E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371 Ave/Van Buren	310	N/A	N/A
Upstream Limit	371 Ave/I-10 Hwy	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R6W-S03W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371 Ave/Van Buren	310	N/A	N/A
Upstream Limit	379 Ave/McDowell	320	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S04E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379 Ave/Van Buren	310	N/A	N/A
Upstream Limit	379 Ave/McDowell	320	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S05E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387 Ave/Van Buren	310	N/A	N/A
Upstream Limit	387 Ave/I-10 Hwy	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S05W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387 Ave/McDowell	310	N/A	N/A
Upstream Limit	387 Ave/I-10 Hwy	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

ublic reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T1N-R6W-S07

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403 Ave/Van Buren	305	N/A	N/A
Upstream Limit	451Ave/Camelback	420	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S09E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387 Ave/Van Buren	310	N/A	N/A
Upstream Limit	387 Ave/Van Buren	320	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S16

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/L.Buckeye	310	N/A	N/A
Upstream Limit	379Ave/Buckeye Rd	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S17E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/L.Buckeye	340	N/A	N/A
Upstream Limit	379 Ave/McDowell	400	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ❑ Yes ❑ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ❑ Yes ❑ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ❑ Yes ❑ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ❑ Yes ❑ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ❑ Yes ❑ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R6W-S17W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/L.Buckeye	310	N/A	N/A
Upstream Limit	395 Ave/Van Buren	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, . ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S18

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/BuckeyeRd	310	N/A	N/A
Upstream Limit	387 Ave/Northern	690	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S20E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/L. Buckeye	310	N/A	N/A
Upstream Limit	363 Ave/Cactus Rd	750	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S20W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/Broadway	310	N/A	N/A
Upstream Limit	395Ave/L.Buckeye	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

[illegible] A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, [illegible]ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP [illegible]quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross [illegible]ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and [illegible]daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; [illegible]ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance [illegible]odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway [illegible]vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R6W-S22E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/Broadway	310	N/A	N/A
Upstream Limit	371Ave/L.Buckeye	330	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; elevation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R6W-S22N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/L.Buckeye	310	N/A	N/A
Upstream Limit	371Ave/McDowell	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S26

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/Broadway	310	N/A	N/A
Upstream Limit	371Ave/L.Buckeye	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S27S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/Broadway	310	N/A	N/A
Upstream Limit	379Ave/Broadway	320	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R6W-S29

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/Broadway	310	N/A	N/A
Upstream Limit	411Ave/BuckeyeRd	390	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R6W-S30E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/Broadway	70	N/A	N/A
Upstream Limit	403Ave/L.Buckeye	100	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R6W-S30W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/Broadway	10	N/A	N/A
Upstream Limit	411Ave/L.Buckeye	70	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S01

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/McDowell	310	N/A	N/A
Upstream Limit	419Ave/Van Buren	360	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T1N-R7W-S02

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Ave/McDowell	310	N/A	N/A
Upstream Limit	427Ave/McDowell	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R7W-S05

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Ave/McDowell	310	N/A	N/A
Upstream Limit	443Ave/McDowell	320	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S17

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Buckeye	10	N/A	N/A
Upstream Limit	435Ave/Buckeye	40	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s 'ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance 'oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S21E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/L.Buckeye	10	N/A	N/A
Upstream Limit	435Ave/L.Buckeye	20	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R7W-S21W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/L.Buckeye	10	N/A	N/A
Upstream Limit	443Ave/L.Buckeye	110	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S26E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Southern	10	N/A	N/A
Upstream Limit	411Ave/Southern	70	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S26W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Southern	100	N/A	N/A
Upstream Limit	411Ave/Southern	140	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S28E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/Broadway	10	N/A	N/A
Upstream Limit	427Ave/Buckeye	100	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R7W-S28W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/Broadway	10	N/A	N/A
Upstream Limit	443Ave/Buckeye	120	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1N-R7W-S35

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Southern	10	N/A	N/A
Upstream Limit	411Ave/Broadway	20	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1N-R7W-S36

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Southern	10	N/A	N/A
Upstream Limit	419Ave/Broadway	50	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S05E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/DobbinsRd	10	N/A	N/A
Upstream Limit	395Ave/Broadway	40	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1S-R6W-S05N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Baseline	10	N/A	N/A
Upstream Limit	387Ave/Southern	30	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1S-R6W-S05S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/DobbinsRd	10	N/A	N/A
Upstream Limit	427Ave/Broadway	90	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S05W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/VanBuren	10	N/A	N/A
Upstream Limit	387Ave/I-10 Hwy	40	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S08

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Dobbins	10	N/A	N/A
Upstream Limit	379Ave/VanBuren	360	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1S-R6W-S22W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/Ray Rd	10	N/A	N/A
Upstream Limit	371Ave/Elliot Rd	30	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S23

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	363Ave/Narramore	10	N/A	N/A
Upstream Limit	363Ave/Narramore	20	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S27

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/Ray Rd	10	N/A	N/A
Upstream Limit	363Ave/Camelback	580	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S28N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Ray Rd	20	N/A	N/A
Upstream Limit	411Ave/Baseline	70	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T1S-R6W-S29E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Ray Rd	10	N/A	N/A
Upstream Limit	411Ave/CactusRd	805	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T1S-R6W-S29W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Ray Rd	10	N/A	N/A
Upstream Limit	395Ave/Elliot Rd	50	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S02

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/Northern	505	N/A	N/A
Upstream Limit	363Ave/Olive Ave	600	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S05E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Northern	510	N/A	N/A
Upstream Limit	371Ave/PeoriaAve	650	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T2N-R6W-S05N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Northern	510	N/A	N/A
Upstream Limit	379Ave/PeoriaAve	590	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R6W-S05S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Northern	520	N/A	N/A
Upstream Limit	395Ave/Olive Ave	580	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S05W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Northern	510	N/A	N/A
Upstream Limit	395Ave/Greenway	875	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S18E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   - [x] Not revised (skip to section 2)
   - [ ] Alternative methodology
   - [ ] No existing analysis
   - [ ] Proposed Conditions (CLOMR)
   - [ ] Improved data
   - [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   - [ ] Statistical Analysis of Gage Records
   - [ ] Regional Regression Equations
   - [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   - [ ] Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Av/BethanyHome	505	N/A	N/A
Upstream Limit	411Ave/Olive Ave	585	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T2N-R6W-S18W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Av/BethanyHome	505	N/A	N/A
Upstream Limit	459Av/PinnaclePeak	854	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S19

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/Camelback	505	N/A	N/A
Upstream Limit	427Ave/Greenway	815	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM,** annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S22

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/Camelback	510	N/A	N/A
Upstream Limit	379Ave/Glendale	580	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S28

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/ThomasRd	510	N/A	N/A
Upstream Limit	371Av/BethanyHome	600	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F' 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ''ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R6W-S29W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Thomas	310	N/A	N/A
Upstream Limit	387Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S30W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/I-10 Hwy	505	N/A	N/A
Upstream Limit	435Ave/Olive Ave	535	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F[illegible]A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, [illegible]ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP [illegible]uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s[illegible]ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and [illegible]daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; [illegible]tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance [illegible]oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway [illegible]vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S31N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/McDowell	310	N/A	N/A
Upstream Limit	395Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S31S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/McDowell	310	N/A	N/A
Upstream Limit	435Av/IndianSch.Rd	410	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R6W-S32E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/ThomasRd	310	N/A	N/A
Upstream Limit	387Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R6W-S32N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/ThomasRd	310	N/A	N/A
Upstream Limit	395Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S33E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/ThomasRd	310	N/A	N/A
Upstream Limit	379Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R6W-S33S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/McDowell	310	N/A	N/A
Upstream Limit	379Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R6W-S34

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/McDowell	310	N/A	N/A
Upstream Limit	371Ave/I-10 Hwy	330	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s 'ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and .daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance "oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S02

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Northern	505	N/A	N/A
Upstream Limit	411Ave/Northern	515	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s 'ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance 'oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S07E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Ave/Glendale	505	N/A	N/A
Upstream Limit	443Ave/Glendale	520	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S07S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Ave/Glendale	505	N/A	N/A
Upstream Limit	443Ave/Glendale	520	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S10

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Av/BethanyHome	505	N/A	N/A
Upstream Limit	427Ave/Northern	545	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S15E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Av/BethanyHome	505	N/A	N/A
Upstream Limit	435Ave/Glendale	545	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S15W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Av/BethanyHome	505	N/A	N/A
Upstream Limit	435Av/BethanyHome	535	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ❑ Yes ❑ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ❑ Yes ❑ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ❑ Yes ❑ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ❑ Yes ❑ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ❑ Yes ❑ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S18E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Av/BethanyHome	505	N/A	N/A
Upstream Limit	443Av/BethanyHome	525	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F `A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T2N-R7W-S18W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/I-10 Hwy	505	N/A	N/A
Upstream Limit	451Av/BethanyHome	530	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S19E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Camelback	320	N/A	N/A
Upstream Limit	451Av/BethanyHome	520	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S19W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Camelback	310	N/A	N/A
Upstream Limit	467Ave/Olive Ave	846	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F' 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S20E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Av/IndianSch.Rd	310	N/A	N/A
Upstream Limit	451Ave/Olive Ave	785	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S20W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Av/IndianSch.Rd	310	N/A	N/A
Upstream Limit	459Ave/Olive Ave	895	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S25E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/Thomas	310	N/A	N/A
Upstream Limit	403Av/IndianSch.Rd	615	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S25S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/Thomas	310	N/A	N/A
Upstream Limit	411Ave/I-10 Hwy	360	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S25W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Av/IndianSch.Rd	310	N/A	N/A
Upstream Limit	411Ave/I-10 Hwy	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S26E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Thomas	310	N/A	N/A
Upstream Limit	427Av/BethanyHome	580	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S26W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Thomas	310	N/A	N/A
Upstream Limit	427Av/BethanyHome	580	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S27E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Ave/Thomas	310	N/A	N/A
Upstream Limit	427Av/IndianSch.Rd	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S27W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Ave/Thomas	320	N/A	N/A
Upstream Limit	435Ave/Glendale	550	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and .daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S29

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Thomas	320	N/A	N/A
Upstream Limit	435Av/IndianSch.Rd	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S30N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Av/IndianSch.Rd	310	N/A	N/A
Upstream Limit	451Av/IndianSch.Rd	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S30S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   - [x] Not revised (skip to section 2)
   - [ ] No existing analysis
   - [ ] Improved data
   - [ ] Alternative methodology
   - [ ] Proposed Conditions (CLOMR)
   - [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   - [ ] Statistical Analysis of Gage Records
   - [ ] Regional Regression Equations
   - [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   - [ ] Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Av/IndianSch.Rd	310	N/A	N/A
Upstream Limit	451Ave/Thomas	350	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S32E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Thomas	310	N/A	N/A
Upstream Limit	435Av/IndianSch.Rd	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S32N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Thomas	310	N/A	N/A
Upstream Limit	443Av/IndianSch.Rd	360	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance odplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S32S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Av/Salome Hwy	310	N/A	N/A
Upstream Limit	443Av/Salome Hwy	370	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S32W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Thomas	310	N/A	N/A
Upstream Limit	443Ave/Thomas	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F ·A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ·ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP ·quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ·ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and ·daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ·ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance ·oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway ·vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S33N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Av/Salome Hwy	310	N/A	N/A
Upstream Limit	443Av/Salome Hwy	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP quirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T2N-R7W-S33S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Av/Salome Hwy	310	N/A	N/A
Upstream Limit	451Ave/Van Buren	400	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S34E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Ave/Thomas	310	N/A	N/A
Upstream Limit	419Av/IndianSch.Rd	330	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S34N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/McDowell	310	N/A	N/A
Upstream Limit	427Ave/McDowell	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S34S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/McDowell	310	N/A	N/A
Upstream Limit	435Ave/Van Buren	350	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

ıic reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T2N-R7W-S34W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/Thomas	310	N/A	N/A
Upstream Limit	435Av/IndianSch.Rd	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R7W-S36E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/McDowell	310	N/A	N/A
Upstream Limit	411Ave/Thomas	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R7W-S36W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/McDowell	320	N/A	N/A
Upstream Limit	419Ave/Thomas	340	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T2N-R8W-S01

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	459Ave/Northern	755	N/A	N/A
Upstream Limit	499Ave/UnionHillsDr	925	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

ic reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T2N-R8W-S02E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	467Ave/Glendale	755	N/A	N/A
Upstream Limit	475Ave/Waddell	980	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T2N-R8W-S02W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	467Ave/Glendale	755	N/A	N/A
Upstream Limit	475Ave/Olive Ave	935	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R6W-S14W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	363Ave/CAP Canal	755	N/A	N/A
Upstream Limit	371Ave/Cactus Rd	775	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S15N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/CAP Canal	755	N/A	N/A
Upstream Limit	371Ave/Waddell	800	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

ic reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T3N-R6W-S15S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/CAP Canal	755	N/A	N/A
Upstream Limit	371Ave/Waddell	800	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R6W-S16E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Cactus Rd	755	N/A	N/A
Upstream Limit	387Ave/Waddell	820	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S16S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/CAP Canal	755	N/A	N/A
Upstream Limit	379Ave/Waddell	790	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S16W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/CAP Canal	755	N/A	N/A
Upstream Limit	387Ave/Waddell	795	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

.ic reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T3N-R6W-S18W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/CAP Canal	755	N/A	N/A
Upstream Limit	419Ave/Bell Rd	910	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R6W-S19

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	403Ave/CAP Canal	755	N/A	N/A
Upstream Limit	403Ave/Waddell	810	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S20

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] *Alternative methodology*
- [ ] No existing analysis
- [ ] *Proposed Conditions (CLOMR)*
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/CAP Canal	755	N/A	N/A
Upstream Limit	395Ave/Greenway	830	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S21

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/Peoria Ave	510	N/A	N/A
Upstream Limit	387Ave/Cactus Rd	765	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T3N-R6W-S21E
Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model [TR-20, HEC-1, HEC-HMS etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters) and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379th Ave/Peoria Ave	600	N/A	N/A
Upstream Limit	379th Ave/ Cactus Rd	620	N/A	N/A

Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2 , HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name:	Floodway File Name:
Corrected Effective Model*	Natural File Name:	Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name:	Floodway File Name:
Revised or Post-Project Conditions Model	Natural File Name:	Floodway File Name:
Other - (attach description)	Natural File Name:	Floodway File Name:

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) – for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A **certified topographic map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM,** annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:
- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(a)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S27S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	371Ave/Olive Ave	510	N/A	N/A
Upstream Limit	363Ave/Peoria Ave	540	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S27W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	379Ave/Olive Ave	510	N/A	N/A
Upstream Limit	379Ave/Peoria Ave	540	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R6W-S29

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	395Ave/Olive Ave	510	N/A	N/A
Upstream Limit	387Ave/Peoria Ave	530	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R6W-S33

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	387Ave/Olive Ave	510	N/A	N/A
Upstream Limit	387Ave/Olive Ave	530	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S05

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Greenway	755	N/A	N/A
Upstream Limit	435Ave/Bell Rd	780	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S06

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Greenway	760	N/A	N/A
Upstream Limit	451Ave/UnionHillsDr	915	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T3N-R7W-S09E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/Greenway	755	N/A	N/A
Upstream Limit	427Ave/Greenway	790	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R7W-S09W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/Greenway	755	N/A	N/A
Upstream Limit	435Ave/UnionHillsDr	845	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R7W-S11

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Greenway	755	N/A	N/A
Upstream Limit	411Ave/Bell Rd	820	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S12

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/Waddell	755	N/A	N/A
Upstream Limit	403Ave/Greenway	815	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T3N-R7W-S15

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Ave/Waddell	755	N/A	N/A
Upstream Limit	427Ave/UnionHillsDr	900	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R7W-S17

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Cactus Rd	755	N/A	N/A
Upstream Limit	435Ave/Waddell	815	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S20

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Cactus Rd	755	N/A	N/A
Upstream Limit	435Ave/Greenway	840	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S24

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	411Ave/CAP Canal	755	N/A	N/A
Upstream Limit	411Ave/Waddell	850	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S26

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	419Ave/CAP Canal	752	N/A	N/A
Upstream Limit	419Ave/Greenway	840	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R7W-S28E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/CAP Canal	755	N/A	N/A
Upstream Limit	435Ave/Cactus Rd	845	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S28W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	427Ave/CAP Canal	752	N/A	N/A
Upstream Limit	443Ave/UnionHillsDr	848	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S31E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/CAP Canal	752	N/A	N/A
Upstream Limit	467Ave/Beardsley	846	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S31S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Ave/CAP Canal	755	N/A	N/A
Upstream Limit	451Ave/Waddell	815	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R7W-S31W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/CAP Canal	751	N/A	N/A
Upstream Limit	475Ave/UnionHillsDr	940	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R7W-S32

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Ave/CAP Canal	755	N/A	N/A
Upstream Limit	451Ave/Greenway	935	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R8W-S05E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	491Ave/Bell Rd	751	N/A	N/A
Upstream Limit	491Av/PinnaclePk	943	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F' 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ›ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP ›uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ›ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and ›daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ›tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway ›vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R8W-S05W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	491Ave/Bell Rd	755	N/A	N/A
Upstream Limit	499Ave/Bell Rd	895	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R8W-S10

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	475Ave/Greenway	755	N/A	N/A
Upstream Limit	475Ave/Greenway	925	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F' 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ›ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ›ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ›tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance ›oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R8W-S11E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	459Ave/Greenway	760	N/A	N/A
Upstream Limit	459Ave/Bell Rd	850	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

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D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T3N-R8W-S11W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	459Ave/Greenway	755	N/A	N/A
Upstream Limit	459Ave/UnionHillsDr	895	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R8W-S12

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Greenway	760	N/A	N/A
Upstream Limit	451Ave/Greenway	850	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T3N-R8W-S13E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Waddell	760	N/A	N/A
Upstream Limit	459Ave/Bell Rd	890	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R8W-S13S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Waddell	755	N/A	N/A
Upstream Limit	451Ave/Greenway	840	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

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D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T3N-R8W-S13W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	451Ave/Waddell	760	N/A	N/A
Upstream Limit	459Ave/Greenway	840	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T4N-R7W-S28S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Beardsley	755	N/A	N/A
Upstream Limit	427Ave/Beardsley	805	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T4N-R7W-S28W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/Beardsley	755	N/A	N/A
Upstream Limit	435Ave/Beardsley	790	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R7W-S30

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	443Ave/Beardsley	755	N/A	N/A
Upstream Limit	451Ave/Beardsley	780	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F[illegible]A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, [illegible]ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP [illegible]uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s[illegible]ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and [illegible]daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; [illegible]ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance [illegible]loodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway [illegible]vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T4N-R7W-S32

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/UnionHillsDr	755	N/A	N/A
Upstream Limit	443Ave/Beardsley	850	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R7W-S33N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	435Ave/UnionHillsDr	755	N/A	N/A
Upstream Limit	435Ave/Beardsley	795	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T4N-R8W-S28E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	475Ave/UnionHillsDr	760	N/A	N/A
Upstream Limit	475Ave/Beardsley	860	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R8W-S28W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	475Ave/UnionHillsDr	770	N/A	N/A
Upstream Limit	483Ave/Beardsley	850	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F[illegible] *A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, [illegible]ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP [illegible]uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s[illegible]ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and [illegible]daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; [illegible]tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway [illegible]vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T4N-R8W-S29E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	491Ave/UnionHillsDr	760	N/A	N/A
Upstream Limit	491Av/PinnaclePk	930	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F[illegible]A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, [illegible]ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP [illegible]uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s[illegible]ions with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and [illegible]daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; [illegible]ation and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

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D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance [illegible]oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway [illegible]vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T4N-R8W-S29W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	491Ave/Beardsley	760	N/A	N/A
Upstream Limit	491Ave/Beardsley	840	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F' 'A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, ctively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP uirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s' 'ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: T4N-R8W-S31E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	491Ave/Bell Rd	755	N/A	N/A
Upstream Limit	499Ave/Beardsley	830	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T4N-R8W-S31N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	499Ave/UnionHillsDr	760	N/A	N/A
Upstream Limit	499Ave/UnionHillsDr	860	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R8W-S31S

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

   ☒ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
   ☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

   ☐ Statistical Analysis of Gage Records ☐ Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
   ☐ Regional Regression Equations ☐ Other (please attach description)

   Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

   If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

   Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	491Ave/Bell Rd	760	N/A	N/A
Upstream Limit	491Ave/UnionHillsDr	850	N/A	N/A

2. Hydraulic Method Used

   Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R8W-S31W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	499Ave/UnionHillsDr	760	N/A	N/A
Upstream Limit	507Ave/Bell Rd	860	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: T4N-R8W-S33

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	475Ave/UnionHillsDr	755	N/A	N/A
Upstream Limit	475Ave/DeerValley	865	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R8W-S35E

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] Alternative methodology
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	459Ave/Bell Rd	760	N/A	N/A
Upstream Limit	459Ave/Beardsley	880	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

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Flooding Source: T4N-R8W-S35N

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] No existing analysis
- [ ] Improved data
- [ ] Alternative methodology
- [ ] Proposed Conditions (CLOMR)
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	459Ave/UnionHillsDr	755	N/A	N/A
Upstream Limit	459Ave/DeerValley	885	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B. No. 3067-0148
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Flooding Source: T4N-R8W-S35W

Note: Fill out one form for each flooding source studied.

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- [x] Not revised (skip to section 2)
- [ ] *Alternative methodology*
- [ ] No existing analysis
- [ ] Proposed Conditions (CLOMR)
- [ ] Improved data
- [ ] Changed physical condition of watershed

2. Comparision of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

- [ ] Statistical Analysis of Gage Records
- [ ] Regional Regression Equations
- [ ] Precipitation/Runoff Model _____ [TR-20, HEC-1, HEC-HMS, etc.]
- [ ] Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? [ ] Yes [ ] No If Yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	459Ave/Bell Rd	760	N/A	N/A
Upstream Limit	459Ave/UnionHillsDr	790	N/A	N/A

2. Hydraulic Method Used

Hydraulic Analysis Normal Depth [HEC-2, HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre -Submittal Review of Hydraulic Models

F[illegible]A has developed two review programs, CHECK-2 and CHECK-RAS to aid in the review of HEC-2 and HEC-RAS hydraulic models, [illegible]ectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP [illegible]irements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/mit/tsd/frm_soft.htm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☐ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name	_____	Floodway File Name	_____
Corrected Effective Model*	Natural File Name	_____	Floodway File Name	_____
Existing or Pre-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Revised or Post-Project Conditions Model	Natural File Name	_____	Floodway File Name	_____
Other - (attach description)	Natural File Name	_____	Floodway File Name	_____

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) - for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" list the models accepted by FEMA. This document can be found at: http://www.fema.gov/mit/tsd/en_modl.htm.

C. MAPPING REQUIREMENTS

A certified topographic map must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross s[illegible]ons with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and [illegible]daries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; [illegible]tion and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2% -annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) Increase? ☐ Yes ☐ No

   For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
   - The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☐ Yes ☐ No

   If Yes, the community must acknowledge that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets (will meet) all of the standards of the the local floodplain ordinances, and is (will be) reasonably safe from flooding in accordance with NFIP regulation 44 CFR 65.2(c). Please see the MT-2 Instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance [illegible]oodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway [illegible]vision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☐ No

   If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

Zone A – Floodplain Delineation Study
Palo Verde F.C.D. Contract No. 2000C021

FEMA Form 3: Riverine Structures Form

Central Arizona Project (CAP) Canal Ponding

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting 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, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Central Arizona Project (CAP) Canal Ponding

Note: Fill out one form for each flooding source studied.

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization..... complete Section B
Bridge/Culvert..... complete Section C
Dam..... complete Section D
Levee/Floodwall..... complete Section E
Sediment Transport..... complete Section F (if required)

Description Of Structure

1. **Name of Structure:** CAP Canal

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: Wash T2N-R8W-S02E and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

2. **Name of Structure:** CAP Canal

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: Wash T2N-R7W-S19W and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

3. **Name of Structure:** CAP Canal

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: Wash T2N-R7W-S20W and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

Note: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: _____

Name of Structure: _____

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees (Attach Levee/Floodwall System Analysis Form - Section E)
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☐ Other (Describe):
- ☐ Drop structures
- ☐ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry ____ (cfs) and/or the _____ -year flood.

The design elevation in the channel is based on (check one):

☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions
☐ Other locations (specify): _____

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: CAP Canal Ponding

Name of structure: CAP Canal

1. This revision reflects (check one):

- ☒ 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

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): See page 13.
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- ☐ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☐ Material
- ☐ Beveling or Rounding
- ☐ Wing Wall Angle
- ☐ Skew Angle
- ☐ Distances Between Cross Sections
- ☐ Erosion Protection
- ☐ Low Chord Elevations - Upstream and Downstream
- ☐ Top of Road Elevations - Upstream and Downstream
- ☐ Structure Invert Elevations - Upstream and Downstream
- ☐ Stream Invert Elevations - Upstream and Downstream
- ☐ Cross-Section Locations

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why transport was not considered.

D. DAM

Flooding Source: _____

e of Structure: _____

1. This request is for (check one): ❑ Existing dam ❑ New dam ❑ Modification of existing dam

2. The dam was designed by (check one): ❑ Federal agency ❑ State agency ❑ Local government agency

   ❑ Private organization Name of the agency or organization: _____

3. Does the project involve revised hydrology? ❑ Yes ❑ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2)

4. Does the submittal include debris/sediment yield analysis? ❑ Yes ❑ No

   If Yes,then fill out Section F (Sediment Transport).
   If No, then attach your explanation for why debris/sediment analysis was not considered.

5. Does the Base Flood Elevation behind the dam or downstream of the dam change?

   ❑ Yes ❑ No If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

Stillwater Elevation Behind the Dam

FREQUENCY (% annual chance)	FIS	REVISED
10-year (10%)	_____	_____
50-year (2%)	_____	_____
100-year (1%)	_____	_____
500-year (0.2%)	_____	_____
Normal Pool Elevation	_____	_____

ease attach a copy of the formal Operation and Maintenance Plan.

E. LEVEE/FLOODWALL

1. System Elements

This Levee/Floodwall analysis is based on (check one):

- ❑ upgrading of an existing levee/floodwall system
- ❑ a newly constructed levee/floodwall system
- ❑ reanalysis of an existing levee/floodwall system

b. Levee elements and locations are (check one):

- ❑ earthen embankment, dike, berm, etc. Station _____ to _____
- ❑ structural floodwall Station _____ to _____
- ❑ Other (describe): _____ Station _____ to _____

c. Structural Type (check one):

- ❑ monolithic cast-in place reinforced concrete
- ❑ reinforced concrete masonry block
- ❑ sheet piling
- ❑ Other (describe):

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

❑ Yes ❑ No

If Yes, by which agency? _____

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

1. Plan of the levee embankment and floodwall structures — Sheet Numbers: _____
2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. — Sheet Numbers: _____
3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure — Sheet Numbers: _____
4. A layout detail for the embankment protection measures. — Sheet Numbers: _____
5. Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations. — Sheet Numbers: _____

2. Freeboard

a. The minimum freeboard provided the BFE is:

Riverine

3.0 feet or more at the downstream end and throughout	❑ Yes	❑ No
3.5 feet or more at the upstream end	❑ Yes	❑ No
4.0 feet within 100 feet upstream of all structures and/or constrictions	❑ Yes	❑ No

Coastal

1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater)	❑ Yes	❑ No
2.0 feet above the 1%-annual-chance stillwater surge elevation	❑ Yes	❑ No

2. Freeboard (continued)

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE? ❑ Yes ❑ No

If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Closures

a. Opening through the levee system (check one): ❑ exists ❑ does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data
In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

4. Embankment Protection

a. The maximum levee slope landside is: _____

b. The maximum levee slope floodside is: _____

c. The range of velocities along the levee during the base flood is: _____ (min.) to _____ (max.)

d. Embankment material is protected by (describe what kind): _____

e. Riprap Design Parameters (check one): ❑ Velocity ❑ Tractive stress
Attach references

Reach	Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
					D_{100}	D_{50}	Thickness	
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								

(Extend table on an added sheet as needed and reference each entry)

4. Embankment Protection (continued)

Is a bedding/filter analysis and design attached? ❑ Yes ❑ No

g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embankment and Foundation Stability

a. Identify locations and describe the basis for selection of critical location for analysis:

_____

❑ Overall height: Sta. _____ , height _____ ft.

❑ Limiting foundation soil strength:

Sta. _____ , depth _____ to

strength ϕ = _____ degrees, c = _____ psf

slope: SS = _____ (h) to _____ (v)

(Repeat as needed on an added sheet for additional locations)

b. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):

_____

c. Summary of stability analysis results:

Case	Loading Conditions	Critical Safety Factor	Critical (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

d. Was a seepage analysis for the embankment performed? ❑ Yes ❑ No

If Yes, describe methodology used: _____

e. Was a seepage analysis for the foundation performed? ❑ Yes ❑ No

f. Were uplift pressures at the embankment landside toe checked? ❑ Yes ❑ No

g. Were seepage exit gradients checked for piping potential? ❑ Yes ❑ No

h. The duration of the base flood hydrograph against the embankment is _____ hours.

Attach engineering analysis to support construction plans.

6. Floodwall and Foundation Stability

a. Describe analysis submittal based on Code (check one):

☐ UBC (1988) or ☐ Other (specify): _____

b. Stability analysis submitted provides for:

☐ Overturning ☐ Sliding If not, explain: _____

c. Loading included in the analyses were:

☐ Lateral earth @ P_A = _____ psf; P_p = _____ psf

☐ Surchage-Slope @ _____ , ☐ surface _____ psf

☐ Wind @ P_w = _____ psf

☐ Seepage (Uplift); _____ ☐ Earthquake @ P_{eq} = _____ %g

☐ 1%-annual-chance significant wave heightft. _____

☐ 1%-annual-chance significant wave period: _____ sec.

d. Summary of Stability Analysis Results: Factors of Safety.

Itemize for each range in site lay out dimension and loading condition limitation for each respective reach.

ading Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)

(Note: Extend table on an added sheet as needed and reference)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

f. Foundation scour protection ☐ is, ☐ is not provided. If provided, attach explanation and supporting documentation.

Attach engineering analysis to support construction plans.

7. Settlement

a. Has anticipated potential settlement been determined and incorporated into the specific construction elevations to maintain the established freeboard margin? ❑ Yes ❑ No

b. The computed range of settlement is _____ ft. to _____ ft.

c. Settlement of the levee crest is determined to be primarily from:

❑ Foundation consolidation
❑ Embankment compression
❑ Other (Describe):

d. Differential settlement of floodwalls ❑ has ❑ has not been accommodated in the structural design and construction.

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

Draining to pressure conduit: _____ acres
Draining to ponding area: _____ acres

b. Relationships Established

Ponding elevation vs. storage	❑ Yes	❑ No
Ponding elevation vs. gravity flow	❑ Yes	❑ No
Differential head vs. gravity flow	❑ Yes	❑ No

c. The river flow duration curve is enclosed: ❑ Yes ❑ No

d. Specify the discharge capacity of the head pressure conduit: _____ cfs

e. Which flooding conditions were analyzed?

Gravity flow (Interior Watershed)	❑ Yes	❑ No
• Common storm (River Watershed)	❑ Yes	❑ No
• Historical ponding probability	❑ Yes	❑ No
• Coastal wave overtopping	❑ Yes	❑ No

If No for any of the above, attach explanation.

f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ❑ Yes ❑ No

If No, attach explanation.

g. The rate of seepage through the levee system for the base flood is _____ cfs.

h. The length of levee system used to drive this seepage rate in item g: _____ ft.

8. Interior Drainage (continued)

Will pumping plants be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants:
For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic? ☐ Yes ☐ No

If the pumps are electronic, are there backup power sources? ☐ Yes ☐ No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction ☐ is ☐ is not a problem
Hydrocompaction ☐ is ☐ is not a problem
Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation.

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure? ☐ Yes ☐ No

Attach supporting documentation.

d. Sediment Transport Considerations:

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

E. LEVEE/FLOODWALL (CONTINUED)

10. Operational Plan and Criteria

Are the planned/installed works in full compliance with Part 65.10 of the NFIP regulations? ❑ Yes ❑ No

b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations? ❑ Yes ❑ No

c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations? ❑ Yes ❑ No

If the answer is No to any of the above, please attach supporting documentation.

11. Maintenance Plan

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP regulations? ❑ Yes ❑ No
If No, please attach supporting documentation.

12. Operations and Maintenance Plan

Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

F. SEDIMENT TRANSPORT

Flooding Source: _____

Name of Structure: _____

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume _____ acre-feet

Debris load associated with the base flood discharge: Volume _____ acre-feet

Sediment transport rate _____ (percent concentration by volume)

Method used to estimate sediment transport: _____

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition: _____

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport:
Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

_____

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.

A. GENERAL (Cont.)

Description of Structure (Cont.)

4. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S20E and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

5. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R6W-S30W and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

6. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R6W-S19 and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

7. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R6W-S18W and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

8. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T1S-R6W-S29E and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

9. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R6W-S05W and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

10. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T3N-R6W-S21 and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

11. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T3N-R6W-S16S and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

12. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T3N-R6W-S15N and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

13. **Name of Structure:** CAP Canal

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T3N-R6W-S14W and CAP Canal

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

C. BRIDGE/CULVERT (Cont.)

2. **Justification:** The approximate methodology was used to analyze the hydraulic models along the CAP Canal. FHA Nomographs were used to analyze the structures.

3. See survey as-builts.

4. **Explanation:** Not required for approximated analysis.

Interstate 10 Ponding

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: Interstate 10 Ponding

Note: Fill out one form for each flooding source studied.

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization..... complete Section B
Bridge/Culvert..... complete Section C
Dam..... complete Section D
Levee/Floodwall..... complete Section E
Sediment Transport..... complete Section F (if required)

Description Of Structure

1. **Name of Structure:** Interstate 10

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: 1/2 mile west of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

2. **Name of Structure:** Interstate 10

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: 2/5 mile west of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

3. **Name of Structure:** Interstate 10

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: 2/7 mile west of 451 Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

Note: For more structures, attach additional pages as needed. See pages 11 through 26.

B. CHANNELIZATION

Flooding Source: _____

Name of Structure: _____

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees (Attach Levee/Floodwall System Analysis Form - Section E)
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☐ Other (Describe):
- ☐ Drop structures
- ☐ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry ____ (cfs) and/or the _____ -year flood.

The design elevation in the channel is based on (check one):

☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions
☐ Other locations (specify): _____

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: Interstate 10 Ponding

Name of structure: Interstate 10

1. This revision reflects (check one):

- ☒ 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

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): See page 27
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided): See page 27.

- ☐ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☐ Material
- ☐ Beveling or Rounding
- ☐ Wing Wall Angle
- ☐ Skew Angle
- ☐ Distances Between Cross Sections
- ☐ Erosion Protection
- ☐ Low Chord Elevations - Upstream and Downstream
- ☐ Top of Road Elevations - Upstream and Downstream
- ☐ Structure Invert Elevations - Upstream and Downstream
- ☐ Stream Invert Elevations - Upstream and Downstream
- ☐ Cross-Section Locations

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why transport was not considered. See page 27.

D. DAM

Flooding Source: _____

ɜ of Structure: _____

1. This request is for (check one): ❑ Existing dam ❑ New dam ❑ Modification of existing dam

2. The dam was designed by (check one): ❑ Federal agency ❑ State agency ❑ Local government agency

   ❑ Private organization Name of the agency or organization: _____

3. Does the project involve revised hydrology? ❑ Yes ❑ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2)

4. Does the submittal include debris/sediment yield analysis? ❑ Yes ❑ No

   If Yes,then fill out Section F (Sediment Transport).
   If No, then attach your explanation for why debris/sediment analysis was not considered.

5. Does the Base Flood Elevation behind the dam or downstream of the dam change?

   ❑ Yes ❑ No If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

Stillwater Elevation Behind the Dam

FREQUENCY (% annual chance)	FIS	REVISED
10-year (10%)	_____	_____
50-year (2%)	_____	_____
100-year (1%)	_____	_____
500-year (0.2%)	_____	_____
Normal Pool Elevation	_____	_____

ıease attach a copy of the formal Operation and Maintenance Plan.

E. LEVEE/FLOODWALL

1. System Elements

This Levee/Floodwall analysis is based on (check one):

- ❑ upgrading of an existing levee/floodwall system
- ❑ a newly constructed levee/floodwall system
- ❑ reanalysis of an existing levee/floodwall system

b. Levee elements and locations are (check one):

❑ earthen embankment, dike, berm, etc.	Station _____ to _____
❑ structural floodwall	Station _____ to _____
❑ Other (describe): _____	Station _____ to _____

c. Structural Type (check one):

- ❑ monolithic cast-in place reinforced concrete
- ❑ reinforced concrete masonry block
- ❑ sheet piling
- ❑ Other (describe):

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

❑ Yes ❑ No

If Yes, by which agency? _____

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

1. Plan of the levee embankment and floodwall structures — Sheet Numbers: _____
2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. — Sheet Numbers: _____
3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure — Sheet Numbers: _____
4. A layout detail for the embankment protection measures. — Sheet Numbers: _____
5. Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations. — Sheet Numbers: _____

2. Freeboard

a. The minimum freeboard provided the BFE is:

Riverine

3.0 feet or more at the downstream end and throughout	❑ Yes	❑ No
3.5 feet or more at the upstream end	❑ Yes	❑ No
4.0 feet within 100 feet upstream of all structures and/or constrictions	❑ Yes	❑ No

Coastal

1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater)	❑ Yes	❑ No
2.0 feet above the 1%-annual-chance stillwater surge elevation	❑ Yes	❑ No

2. Freeboard (continued)

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE? ❑ Yes ❑ No

If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Closures

a. Opening through the levee system (check one): ❑ exists ❑ does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data
In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

4. Embankment Protection

a. The maximum levee slope landside is: _____

b. The maximum levee slope floodside is: _____

c. The range of velocities along the levee during the base flood is: _____ (min.) to _____ (max.)

d. Embankment material is protected by (describe what kind): _____

e. Riprap Design Parameters (check one): ❑ Velocity ❑ Tractive stress
Attach references

Reach	Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
					D_{100}	D_{50}	Thickness	
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								

(Extend table on an added sheet as needed and reference each entry)

4. Embankment Protection (continued)

Is a bedding/filter analysis and design attached? ❑ Yes ❑ No

g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embankment and Foundation Stability

a. Identify locations and describe the basis for selection of critical location for analysis:

_____

❑ Overall height: Sta. _____ , height _____ ft.

❑ Limiting foundation soil strength:

Sta. _____ , depth _____ to

strength ϕ = _____ degrees, c = _____ psf

slope: SS = _____ (h) to _____ (v)

(Repeat as needed on an added sheet for additional locations)

Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):

_____

c. Summary of stability analysis results:

Case	Loading Conditions	Critical Safety Factor	Critical (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

d. Was a seepage analysis for the embankment performed? ❑ Yes ❑ No

If Yes, describe methodology used: _____

e. Was a seepage analysis for the foundation performed? ❑ Yes ❑ No

f. Were uplift pressures at the embankment landside toe checked? ❑ Yes ❑ No

g. Were seepage exit gradients checked for piping potential? ❑ Yes ❑ No

h. The duration of the base flood hydrograph against the embankment is _____ hours.

Attach engineering analysis to support construction plans.

6. Floodwall and Foundation Stability

Describe analysis submittal based on Code (check one):

☐ UBC (1988) or ☐ Other (specify): _____

b. Stability analysis submitted provides for:

☐ Overturning ☐ Sliding If not, explain: _____

c. Loading included in the analyses were:

☐ Lateral earth @ P_A = _____ psf; P_p = _____ psf

☐ Surchage-Slope @ _____, ☐ surface _____ psf

☐ Wind @ P_w = _____ psf

☐ Seepage (Uplift); _____ ☐ Earthquake @ P_{eq} = _____ %g

☐ 1%-annual-chance significant wave heightft. _____

☐ 1%-annual-chance significant wave period: _____ sec.

d. Summary of Stability Analysis Results: Factors of Safety.

Itemize for each range in site lay out dimension and loading condition limitation for each respective reach.

ıding Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)

(Note: Extend table on an added sheet as needed and reference)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

f. Foundation scour protection ☐ is, ☐ is not provided. If provided, attach explanation and supporting documentation.

Attach engineering analysis to support construction plans.

7. Settlement

. Has anticipated potential settlement been determined and incorporated into the specific construction elevations to maintain the established freeboard margin? ❑ Yes ❑ No

b. The computed range of settlement is _____ ft. to _____ ft.

c. Settlement of the levee crest is determined to be primarily from:

❑ Foundation consolidation
❑ Embankment compression
❑ Other (Describe):

d. Differential settlement of floodwalls ❑ has ❑ has not been accommodated in the structural design and construction.

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

Draining to pressure conduit: _____ acres
Draining to ponding area: _____ acres

b. Relationships Established

Ponding elevation vs. storage	❑ Yes	❑ No
Ponding elevation vs. gravity flow	❑ Yes	❑ No
Differential head vs. gravity flow	❑ Yes	❑ No

c. The river flow duration curve is enclosed: ❑ Yes ❑ No

d. Specify the discharge capacity of the head pressure conduit: _____ cfs

e. Which flooding conditions were analyzed?

Gravity flow (Interior Watershed)	❑ Yes	❑ No
• Common storm (River Watershed)	❑ Yes	❑ No
• Historical ponding probability	❑ Yes	❑ No
• Coastal wave overtopping	❑ Yes	❑ No
•		

If No for any of the above, attach explanation.

f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ❑ Yes ❑ No

If No, attach explanation.

g. The rate of seepage through the levee system for the base flood is _____ cfs.

h. The length of levee system used to drive this seepage rate in item g: _____ ft.

8. Interior Drainage (continued)

Will pumping plants be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants:
For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic? ☐ Yes ☐ No

If the pumps are electronic, are there backup power sources? ☐ Yes ☐ No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction ☐ is ☐ is not a problem
Hydrocompaction ☐ is ☐ is not a problem
Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation.

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure? ☐ Yes ☐ No

Attach supporting documentation.

d. Sediment Transport Considerations:

Was sediment transport considered? ☐ Yes ☐ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

E. LEVEE/FLOODWALL (CONTINUED)

10. Operational Plan and Criteria

Are the planned/installed works in full compliance with Part 65.10 of the NFIP regulations? ❑ Yes ❑ No

b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations? ❑ Yes ❑ No

c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations? ❑ Yes ❑ No

If the answer is No to any of the above, please attach supporting documentation.

11. Maintenance Plan

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP regulations? ❑ Yes ❑ No
If No, please attach supporting documentation.

12. Operations and Maintenance Plan

Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

F. SEDIMENT TRANSPORT

Flooding Source: _____

Name of Structure: _____

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume _____ acre-feet

Debris load associated with the base flood discharge: Volume _____ acre-feet

Sediment transport rate _____ (percent concentration by volume)

Method used to estimate sediment transport: _____

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition: _____

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport:
Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

_____

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.

A. GENERAL (Cont.)

Description of Structure (Cont.)

4. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/6 mile west of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

5. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/8 mile west of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

6. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/9 mile west of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

7. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just west of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

8. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

9. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S19W and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

10. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/7 mile east of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

11. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S19E and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

12. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 451st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

13. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S18W and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

14. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile west of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

15. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ¼ mile west of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

16. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/9 mile west of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

17. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

18. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/7 mile east of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

19. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ¼ mile east of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

20. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S20W and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

21. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

22. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 3/5 mile east of 443rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

23. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile west of 435th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

24. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S20E and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

25. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just west of 435th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

26. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 435th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

27. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/6 mile east of 435th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

28. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/7 mile east of 435th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

29. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 435th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

30. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/5 mile west of 427th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

31. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S27W and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

32. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just west of 427th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

33. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 427th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

34. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ¼ mile east of 427th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

35. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 427th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

36. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/5 mile east of 419th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

37. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S26W and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

38. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 419th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

39. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 419th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

40. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/9 east of 410th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

41. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/7 east of 410th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

42. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/7 mile east of 410th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

43. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile west of 411th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

44. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 4/9 mile west of 411th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

45. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R7W-S26E and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

46. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 411th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

47. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/7 mile east of 411th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

48. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/9 mile east of 411th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

49. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 3/8 mile east of 411th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

50. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/5 mile west of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

51. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R6W-S30W and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

52. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/8 mile west of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

53. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just east of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

54. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T1S-R6W-S29E and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

55. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/7 mile east of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

56. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 4/9 mile east of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

57. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

58. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 403rd Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

59. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile west of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

60. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile west of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

61. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 2/7 mile west of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

62. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/7 mile west of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

63. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just west of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

64. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just east of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

65. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/5 mile east of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

66. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile east of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

67. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 3/7 mile east of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

68. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 395th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

69. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile west of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

70. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T1N-R6W-S18 and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

71. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ¼ mile west of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

72. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/8 mile west of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

73. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just west of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

74. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just east of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

75. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/6 mile east of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

76. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile east of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

77. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile east of 387th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

78. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile west of 379th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

79. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile west of 379th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

80. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/5 mile west of 379th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

81. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T1N-R6W-S20E and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

82. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T2N-R6W-S28 and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

83. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ¼ mile east of 379th Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

84. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: ½ mile west of 371st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

85. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/3 mile west of 371st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

86. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Wash T1S-R6W-S27 and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

87. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: Just east of 371st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

88. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 1/7 mile east of 371st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

89. **Name of Structure:** Interstate 10

Type (check one): ☐Channelization ☒Bridge/Culvert ☐Levee/Floodwall ☐Dam

Location of Structure: 3/8 mile east of 371st Ave. and Interstate 10

Downstream Limit/Cross Section: N/A

Upstream Limit/Cross Section: N/A

C. BRIDGE/CULVERT (Cont.)

2. **Justification:** The approximate methodology was used to analyze the hydraulic models along Interstate 10. FHA Nomographs, hand, and spreadsheet calculations were used to analyze the structure.

3. See survey as-builts.

4. **Explanation:** Not required for approximated analysis.

SECTION 3: MAPPING AND SURVEY INFORMATION

3.1 Field Survey Information

Field surveys were conducted for hydraulic structures, to supplement aerial topographic mapping, to establish Elevation Reference Markers (ERM's), and to verify the projects topographic mapping. The results of the field survey are documented in the *Palo Verde Zone A Floodplain Delineation Study Survey Report.*

3.2 Mapping

Vertical and Horizontal controls were tied to the Maricopa County G DACS Grid. This grid ties into the State Plane Coordinate System (1983 NAD) and the elevations are based on the North American Vertical Datum of 1988 (NAVD 88). The District supplied topographic mapping for this project. It was generated under two different contracts. The first contract **(Reference 1)** developed a Digital Terrain Model (DTM) consisting of mass points and flow-lines. The second contract **(Reference 2)** developed the 10-foot contours from the DTM information.

3.2.1 Watershed Map

Watershed boundaries and hydrologic parameters were obtained primarily from the USGS 7.5 minutes quadrangle topographic maps and from preliminary contours generated by Entellus using the DTM provided by the District. These preliminary contours were generated because the District's contour information was not available at the time when sub-basin boundaries were delineated.

Additionally, aerial photography provided by the District **(Reference 3)** was overlaid with the watershed map to verify the basin boundaries.

3.2.2 Floodplain Maps

Triangular Irregular Networks (TIN) generated from the DTM supplied by the District and the contour maps provided by the District were used to delineate the floodplain.

3.2.3 Soils Map

Electronic soils maps were furnished by the District's GIS Department. This mapping is a digital version of the Natural Resources Conservation Service NRCS (formerly SCS) *Soil Survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties, Arizona* **(Reference 5)** and *Soil Survey of Central Maricopa County, Arizona* **(Reference 6)**. The Soils Map is presented on **Plate 4.4**.

3.2.4 Land Use Map

The electronic land use map was furnished by the District's GIS Department. This mapping is a digital version of the Maricopa Association of Governments (MAG) existing land use for the Palo Verde project area. **(Reference 7)** The Existing Conditions Land Use Map is presented on **Plate 4.3**.

SECTION 4: HYDROLOGY

4.1 Method Description

An Area/Runoff Relationship was developed as means of calculating the 100-year peak flows for this project. In order to obtain site-specific Area/Runoff Relationships, a general HEC-1 model was developed for the project area. However, concentration point locations and the level of detail used to develop this model are not adequate to develop peak flows for individual washes within the watershed. To obtain the level of detail desired for this project, the values obtained from this HEC-1 model were plotted and a regression analysis was performed to obtain a representative Area/Runoff Relationship. There were two specific types of terrain encountered in the study area, mountain and valley. The mountain basins are mostly in the northern and southwestern portions of the study area. These basins typically had rocky soils with steep slopes, which resulted in a higher flow than the valley basins for the same basin size. The valley basins had milder slopes, somewhat more permeable soils, and a more dense vegetative cover.

Two different sets of HEC-1 models were generated. The first one included the entire watershed. In the second model, the mountain basins were removed and only the valley basins were included. The second model was used to develop the valley Area/Runoff Relationships, while the first model was used to develop the mountain Area/Runoff Relationships. The resulting flows from the HEC-1 model for both types of terrains were plotted against basin areas as shown in **Figure 2**. From this figure, it is apparent that most of the plotted values for the mountain basins fall into a narrow band. A line near the upper limit of this band was considered to be the most appropriate estimate of the flow for this particular area and type of terrain. Based on this line, an Area/Runoff Relationship was developed in order to approximate the flows at desired concentration points for the mountain terrain.

FIGURE 2
PALO VERDE FLOW EQUATIONS

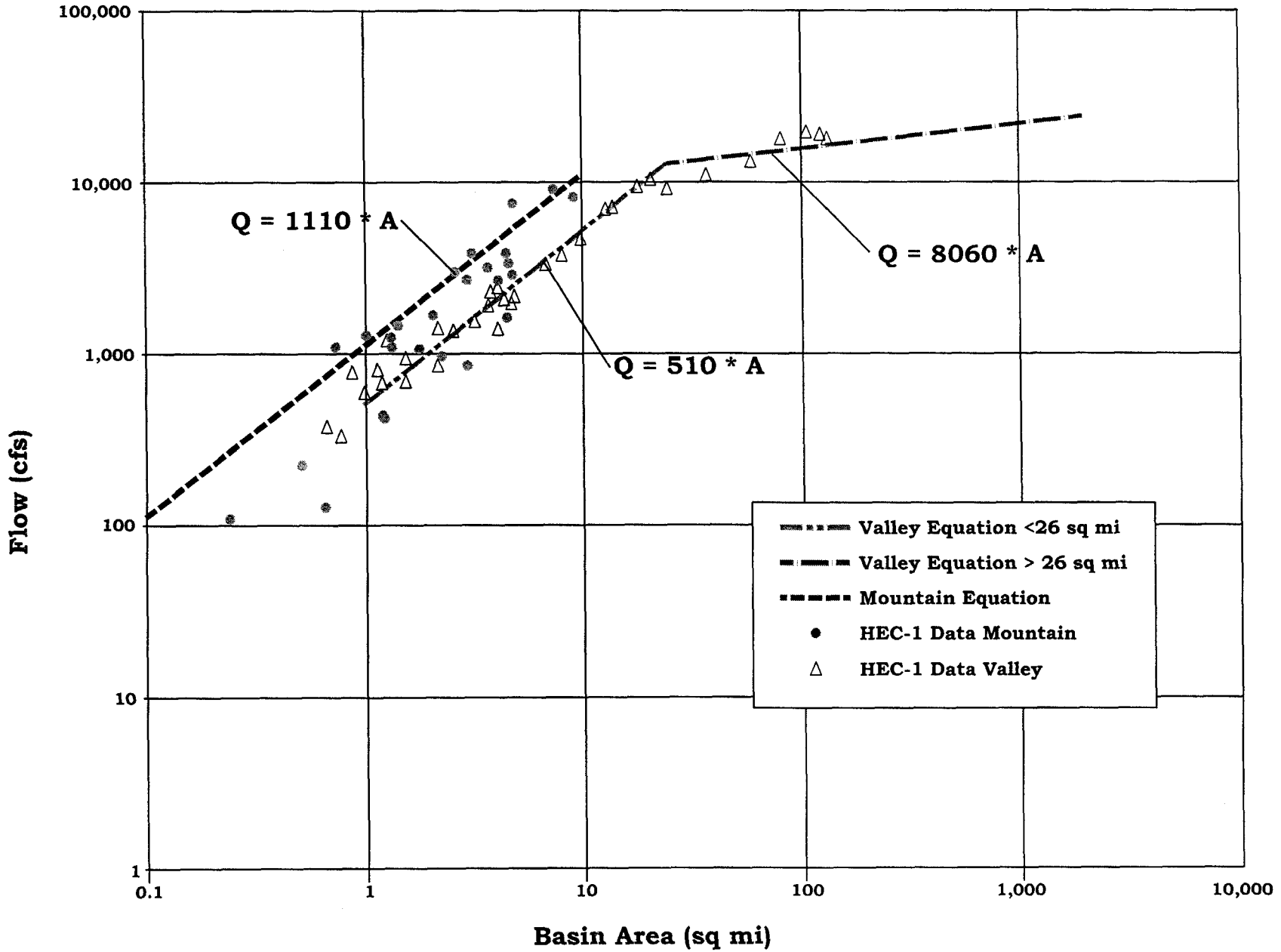


Figure 2 shows the HEC-1 data for the valley basins follow a linear pattern for the smaller basins (less than 26 square miles). However, as the areas become larger, the relationship is exponential. In order to better represent the watershed hydrologic characteristics, two different equations were developed for the valley areas, the first equation was used for contributing areas less than 26 square miles and the second for areas greater than 26 square miles. These equations are shown in **Figure 2.** The mountain areas in the project area are shown in **Figure 3.** The flow calculations used for each wash are presented in **Tables D.9A through D.9F in Appendix D.9.**

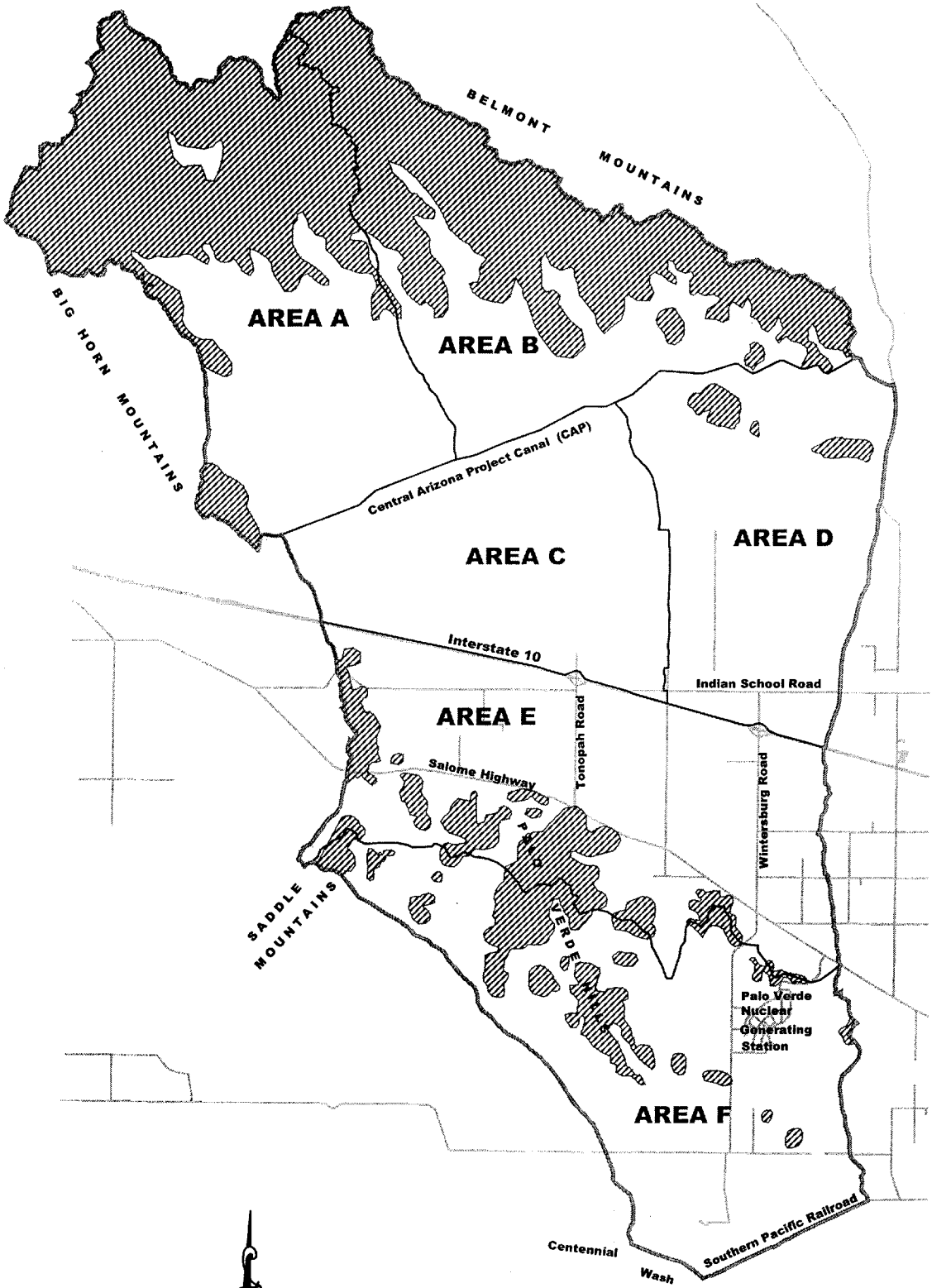
4.2 Parameter Estimation

4.2.1 Drainage Area Boundary

Based on the DTM provided by the District **(Reference 1),** Entellus developed a preliminary set of contours. These contours were used to divide the watershed into several sub-basins in order to obtain the contributing area at the desired concentration points. Two different sets of drainage area boundaries were developed for this project.

The first drainage area boundary was generated to develop the HEC-1 model. The level of detail used to generate these boundaries was only to provide adequate data for developing the representative Area/Runoff Relationships. The HEC-1 Schematic Map is showing **Plate 4.1** and basin boundaries in **Plate 4.2**.

The second drainage area boundary is a more detailed breakdown of contributing areas used in the Area/Runoff Analysis to obtain flows at relevant points for the delineation of the washes. To facilitate handling, the study area was divided into 6 main sub-areas, A through F. Basin boundaries are shown in **Plates 4.5A through 4.5F and Plates 4.6A through 4.6F**.



1 0 1 2
SCALE IN MILES

LEGEND

- PROJECT AREA BOUNDARY
- MAJOR SUB-AREAS
- MOUNTAIN AREA
- VALLEY AREA
- EXISTING ROADWAY

Entellus™

PALO VERDE WATERSHED
ZONE A FLOODPLAIN DELINEATION STUDY
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
FCD PROJECT NO. 2000C021

Mountain and Valley Areas Map

FIGURE 3

4.2.2 Watershed Work Map

The watershed maps were based on the USGS 7.5 minutes quadrangle topographic maps, 2001 aerial photography geo-registered on the State Plane Coordinates System, and preliminary contours developed by Entellus from the DTM provided by the District. The delineated basins are presented in **Plate 4.2** for the HEC-1 model and **Plates 4.5A through 4.5F** for the Area/Runoff Analysis.

4.2.3 Gage Data

Most of the watercourses in this study are wide, shallow streams that are not very well suited for gaging. No gaging stations are located within the study area.

4.2.4 Statistical Parameters

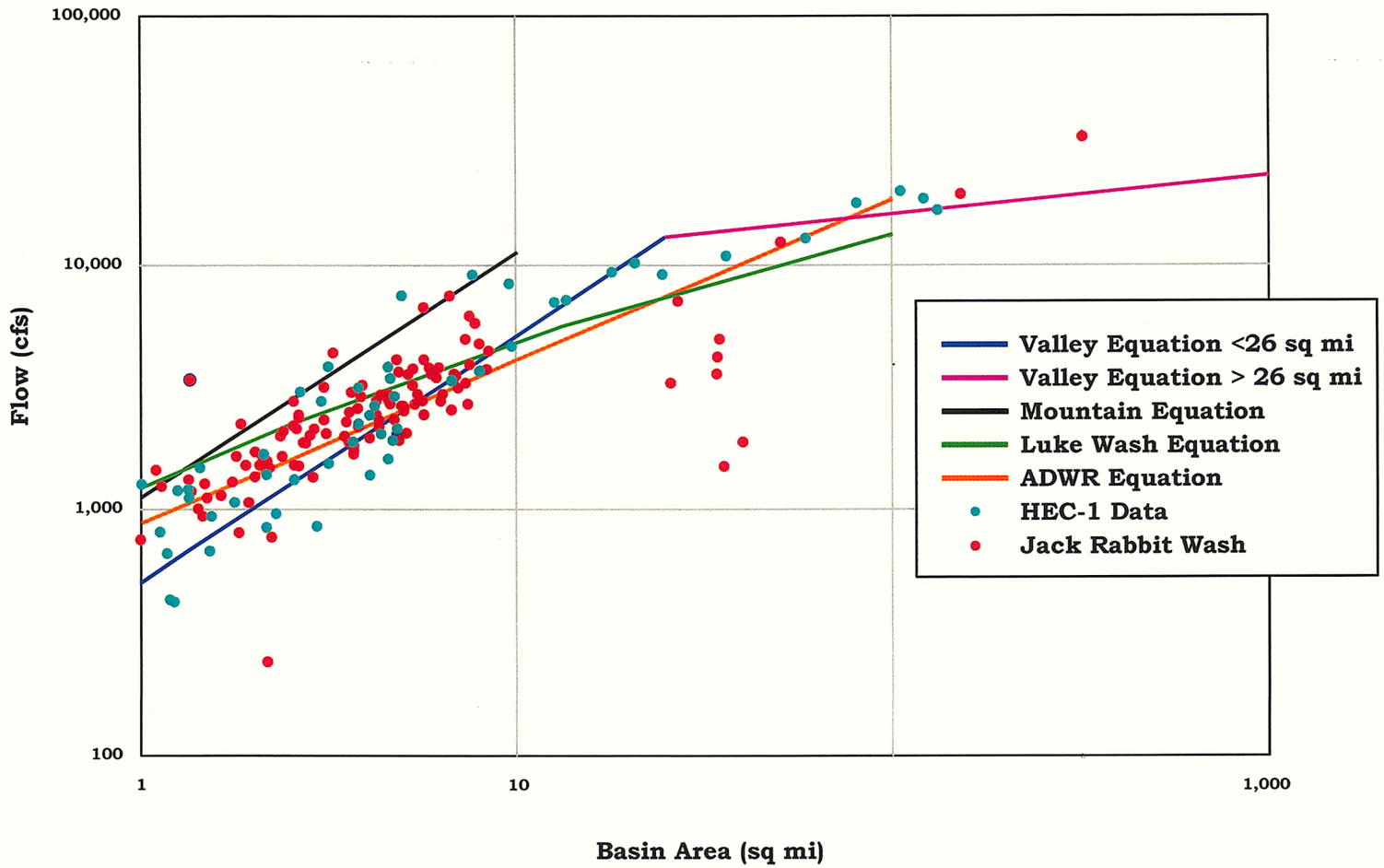
The Arizona Department of Water Resources (ADWR) State Standard Attachment SSA 2-96 **(Reference 8)**, documents regional regression equations developed for the State of Arizona. The project area is located within Region 13, which includes most of the southern portion of the state. This equation is very general, and as shown in **Figure 4** does not represent the peak runoff in the project area adequately. The ADWR regression equations were developed based on gage data across the entire region and represents larger, more defined watercourses than the ones within the project area.

Figure 4 also compares the equations developed for this project with the equation developed in the *Luke Wash Zone A Delineation Study* **(Reference 9)** and the data from the *Jackrabbit Wash Zone A Delineation Study* **(Reference 10)**.

4.2.5 Precipitation (HEC-Models only)

Precipitation data was obtained from the isopluvial maps contained in the NOAA Atlas of Arizona **(Reference 11)**. Selected isopluvial maps used for

FIGURE 4
PALO VERDE FLOW EQUATIONS COMPARISONS



Maricopa County are also encountered in *The Drainage Design Manual of Maricopa County – Volume I Hydrology (Figures 2.1 through 2.13)* **(Reference 12)**. Copies of these figures, as well as the precipitation frequency (PreFre) output are included in **Appendix D.1**.

4.2.6 Physical Parameters

The only two physical parameters required for the Area/Runoff Analysis are the area and storage. However, the following section describes the parameters used to develop the HEC-1 model as well.

4.2.6.1 Watershed parameters (HEC-1 Model)

Soils and land use percentages were estimated using the District's Geographic Information System (GIS) database. This information, as well as other physical parameters estimated from the work maps, was entered into the *Drainage Design Menu System* (DDMS) to obtain the Green and Ampt rainfall loss parameters.

The Clark Unit Hydrograph was used in the computation of peak discharges in this study because the average subbasin area is less than five square miles. Clark Unit Hydrograph calculated using the MCUHP1 module of the DDMS software **(Reference 13)**. Supporting documentation and DDMS reports are included in **Appendix D.2.**

4.2.6.2 Equivalent Mountain Area Calculations (Area/Runoff Analysis)

Three different area/runoff equations were developed for this watershed, a mountain equation and two valley equations. In order to facilitate calculations, mountain areas were converted to an equivalent valley area. That is, the flow for the mountain areas was calculated using the mountain equation. Then the appropriate valley equation was used to estimate the equivalent valley area that would produce the same amount of runoff. This equivalent area

was used instead of the actual area for any subsequent downstream calculations.

4.2.6.3 Storage Routing Parameters (Area/Runoff Analysis)

Storage was ignored in the development of the original HEC-1 model, which was used to develop the Area/Runoff Relationships. The equations do not include the effect of storage at the CAP Canal, or at Interstate 10.

There is significant storage upstream of the CAP Canal and peak flows are significantly reduced at this location. Interstate 10 also impedes the runoff but the amount of storage available in the upstream side of the roadway is limited and has little effect on reducing peak flows. However, it tends to redirect some flow towards the east along the north side of the roadway and even though it does little to reduce the peak flows it does redistribute the flows. The Southern Pacific Railroad is the downstream boundary of this project and since no downstream flows are required, it did not affect the hydrology developed for this study.

In order to account for storage at the CAP Canal, and flow through the structures at the CAP Canal, an additional HEC-1 model was developed by modifying the original model to include a level pool storage routing at these locations. The stage/discharge and stage/storage parameters were estimated from the topographic information and Federal Highway Administration (FHA) graphs for inlet control. Details on the calculation of these parameters as well as the results are included in **Appendix E.1.** A different analysis was performed at Interstate 10 to determine the flow crossing the roadway as well as the flow diverted to the east. This analysis typically included interactive calculations of inlet control flow through the culvert and weir or channel flow towards the east

along the roadway embankment at each of the numerous crossings within the study area. Detailed calculations are included in **Appendix E.2.**

Once the flow crossing any of these structures was determined, the Area/Runoff Relationship was used to determine an equivalent area that would generate the estimated outflow from the structure. This equivalent area was then used instead of the actual upstream area for subsequent downstream flow calculations. These procedures are further discussed in **Section 4.3.1.**

4.3 Problems Encountered During the Study

4.3.1 Special Problems and Solutions

4.3.1.1 CAP Structures

There are several structures crossing the CAP Canal. There is considerable storage upstream of the CAP because of dikes that were constructed to protect the upstream canal bank. These dikes are approximately twenty feet high in some locations, so storage behind these structures is significant. In most cases, several structures drain a single impoundment area. Stage-discharge relationships were based on the combined effect of all the structures within the impoundment, and the outflow was prorated between the different structures depending on their relative position and size. The parameters used in developing the stage-storage and stage-discharge is included in **Appendix E.1**.

To estimate the outflow the HEC-1 model used to develop the site specific Area/Runoff Relationships was modified to include storage routings at the CAP structures. The modified HEC-1 is included in **Appendix D.6.** Storage reduction for the CAP was

accomplished by using equivalent areas as described in the previous section. Once the outflow from each of the structures was estimated, the equivalent valley area that would produce that flow was calculated and used instead of the actual contributing area for flow estimates downstream.

4.3.1.2 Outside Flow

There is a 67-foot wide by approximately 8-foot high structure located near the east boundary of the project area that is fed by Jackrabbit Wash, which is located outside the project area. Developing the hydrology upstream from this structure was outside the scope of work for this project. However, the District provided the flow at this location. This flow was estimated (by others) as part of the *Jackrabbit Wash Zone A Delineation Study* **(Reference 10)**.

The contributing Hydrology from this wash was input into the project HEC-1 model and compared to the original HEC-1 model. The flow in the new model decreased downstream due to the addition of the large contributing area and relatively low flow due to storage upstream of the CAP Canal. The results of this analysis can be found in **Appendix D.10**.

The flow through this structure was used to calculate an equivalent area (area that will produce the estimated outflow), and this area was added to all downstream concentration point. In order to include the affect of this flow in the downstream flows.

4.3.1.3 Interstate 10 Structures

The small amount of storage behind the I-10 was not estimated using the HEC-1 model. However, hydraulic calculations were performed at this location to estimate the runoff crossing the

highway and the runoff flowing east along the upstream edge of the highway. This analysis typically included interactive calculations of inlet control flow through the culvert and weir, or channel flow towards the east along the roadway embankment at each of the numerous crossings within the study area. Detailed calculations are also included in **Appendix E.2.** Once the flow at each structure was determined, equivalent valley areas were used to calculate the downstream flows in the same manner as it was applied at the CAP Canal, as described previously.

4.3.1.4 Southern Pacific Railroad

The Southern Pacific Railroad is located at the downstream boundary for the project area. Therefore, no downstream flow estimates are required.

4.3.1.5 Flow Splits

There are numerous locations within the study area where flow splits occur. The HEC-1 model was not detailed enough to identify the flow splits and splits were mostly ignored in the development of this model. However, flow splits have a significant effect on the relative flow in the washes to be delineated under this project. Since the hydrologic analysis is based on contributing area to determine the flow, splits were handled by dividing the contributing area between the different splits in the same ratio as calculated for the flow. That is, if 30% of the flow was estimated to break from the main wash and 70% remains in the wash, then 30% of the area was assigned to the break away from the path and 70% of the area was assigned to the main wash.

Depending on the particular conditions, flow splits were estimated mainly by using normal depth or weir flow equations. The main

assumption was that the water surface at the split flow location was the same for either pathway. Detailed flow splits calculations are included in **Appendix D.5**.

4.4 Calibration

Flows estimated for this project were based on an overall HEC-1 model developed for this project area. The Area/Runoff equation is based on this model and the results are in agreement with this model. The results obtained during this study were plotted and compared with gage data collected from the Flood Control District of Maricopa County **(Reference 14)** and is shown in **Figure 5**. These results were also compared with regional regression equations and results from similar studies including the *Luke Wash* and *Jackrabbit Wash* studies **(Reference 9 & 10)** is shown in **Figure 4**. **Figure 4 and 5** show that the flows used are in general agreement with other sources and appear to be reasonable.

4.5 Final Results

4.5.1 Hydrologic Analysis

The HEC-1 output files are included in **Appendix D**. The final results of the Area/Runoff Analysis are presented in **Tables D.9A through D.9F in Appendix D.9**.

4.5.2 Verification of Results

The results of the Hydrology analysis were plotted and compared with the original set of data obtained from the overall HEC-1 model and the equation lines. As expected, all the data falls within the expected region (see **Figure 4**). Additionally, comparison with the Flood Control District gage data shows that the data is within the lower portion of the data envelope, as expected, considering the physical characteristics of the watershed. The flows are also consistent with the flows estimated by other studies within the same general area, mainly the *Luke Wash* and *Jackrabbit Wash* studies **(Reference 9 & 10)**.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

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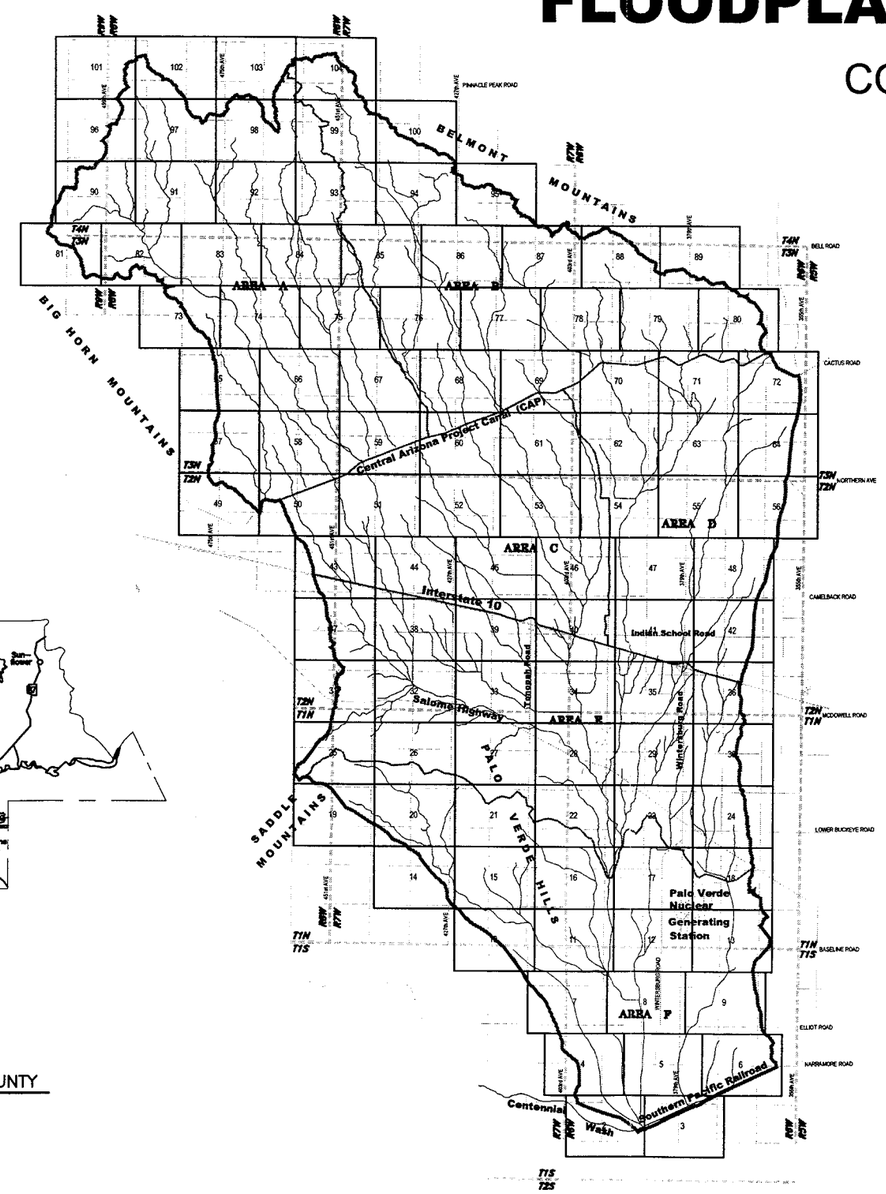

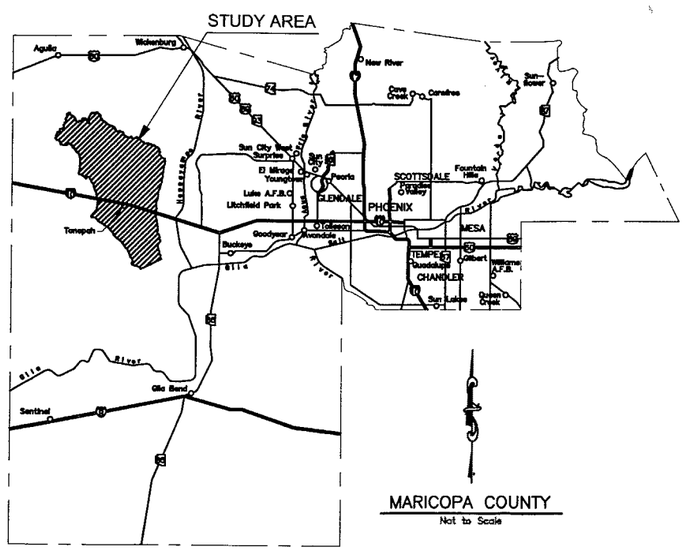

MARICOPA COUNTY
Not to Scale

LOCATION MAP

AERIAL MAPPING

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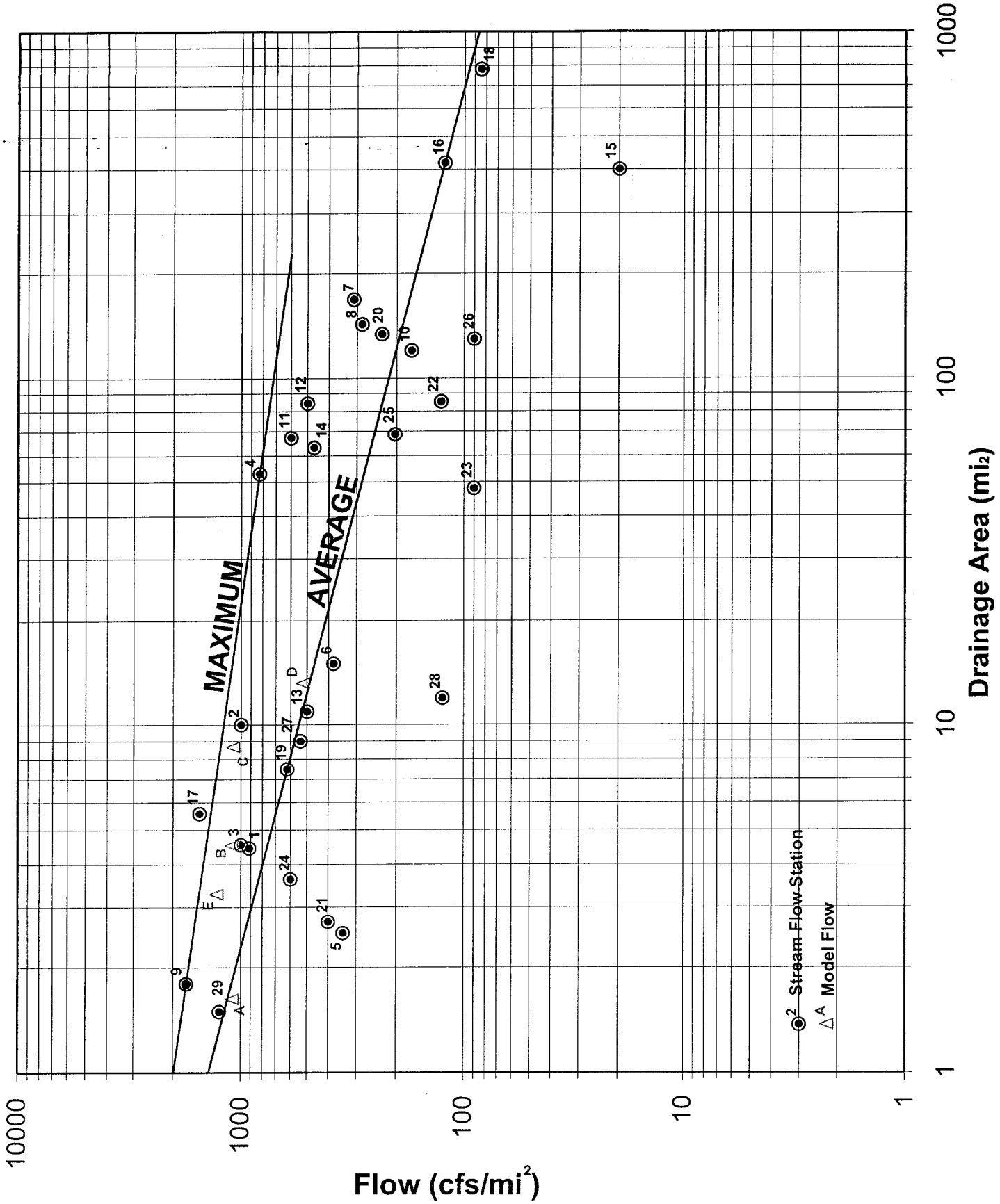


FIGURE 5
VERIFICATION OF RESULTS

SECTION 5: HYDRAULICS

5.1 Method Description

The floodplain limits were estimated using approximate methods. Cross-sections were obtained using Boss RMS software (**Reference 15**). Using these cross-sections along with the general slope of the wash and estimated n values, normal depths were calculated using Manning's formula. The resulting water surface elevations were then input into RMS as a known water surface. The inundation limits were plotted automatically by RMS and adjusted manually in areas where RMS had problems, or where mapping accuracy did not appear to be adequate. Manually drawn floodplains were based on known water surface elevations for each cross section and interpolated between cross sections using the contour map and/or the aerial photograph.

5.2 Work Study Maps

The work study maps consist of TIN's developed from the DTM's. In areas where the DTM didn't appear to accurately represent the topography, the 10-foot contour mapping or a combination of the DTM breaklines and contours were used.

5.3 Parameter Estimation

5.3.1 Roughness Coefficient

The roughness coefficients were estimated from field observations and using the methodology described in *Manning's Roughness Coefficient for Stream Channels and Floodplains in Maricopa County, Arizona* (**Reference 16**). The project area was divided into six areas, therefore the roughness coefficients are identified by Areas A through F. The n value report shows a higher value in the main channel than the overbanks in some instances. The reason for this is that the main channel includes the surrounding vegetation alongside the channel. Vegetation typically grows along the low-flow channel and can be

very dense in some areas. This condition can produce an n value that could be significantly higher in the channel. The overbanks vegetation is very sparse resulting in relatively low n values. Detailed information and field photographs are included in **Appendix E.4.** A summary of n values used is included in **Plates 5.2A to 5.2F** located in **Appendix E.4**.

5.3.2 Expansion and Contraction Coefficients

Since this study was conducted by approximate methods using normal depth calculations, the use of expansion and contraction coefficients is not required.

5.3.3 Normal Depth Slopes

Average normal depth slopes were estimated from the USGS 7.5 minutes quadrangle map and the results are summarized in **Table E.2** located in **Appendix E.5**, and a summary of slopes used is included in **Plates 5.1A to 5.1F** located in **Appendix E**.

5.3.4 Riverine Stations

Riverine stations were not developed for this approximate method study. Since there are no base flood elevations associated with the approximate method, this stationing is not required.

5.4 Cross Section Description

Cross-sections for this study were obtained from the project's work map. Plots of the cross-sections used for the hydraulic analysis are included in Volumes 4 through 7, **Appendix E**.

5.5 Modeling Considerations

5.5.1 Hydraulic Jumps and Drop Analysis

There are no obvious hydraulic jumps or drops within the study area and further analysis is not required for approximate methodology.

5.5.2 CAP Canal, Bridges, and Culverts

There are eleven structures along the CAP Canal, as well as two box culverts. The runoff flowing through the structures were analyzed using a ponding type analysis. The CAP Canal upstream dike appears not to be overtopped during the 100-year storm event and runoff was routed through the structures. A more detailed discussion is included in **Section 4.3**. Detailed calculations of the ponding analysis along the CAP Canal are included in **Appendix E.1.**

There are several culverts within the study area along Interstate-10 and the Southern Pacific Railroad. These are the only locations where the capacity of the culverts may have any significant effect on the water surface. Therefore, all other culverts were ignored and all flow was assumed to overtop the roadways at certain locations. The culverts under Interstate 10 were analyzed using the Federal Highway Administration (FHA) nomographs. Detailed calculations are included in **Appendix E.2.** Refer to **Section 4.3** for a more detailed discussion.

5.5.3 Levees and Dikes

The dike along the north side of the CAP Canal is more than 15 feet high. The runoff upstream from the dike ponds on the north side of the dike and continues south through several structures along the canal alignment. There are no other significant levees or dikes affecting the delineated area south of the CAP Canal other than the embankments of Interstate-10 and the railroad tracks. These are discussed in **Section 5.5.2.**

5.5.4 Islands and Flow Splits

Approximate methodology is usually not detailed enough to accurately depict the effect of flow splits. However, where obvious splits occurred, the inundation area was interpolated along both branches. Split flows are further discussed under the special problems section in **Appendix D.5**.

5.5.5 Ineffective Flow Areas

After the preliminary flooding boundaries were plotted, the wash cross-sections were checked to insure that each reflected the actual flow area. Several cross-sections were modified to exclude tributaries and non-effective areas.

5.5.6 Supercritical Flow

Most of the washes analyzed in this study appear to be in the sub-critical regime. However, the approximate methodology is not detailed enough to discern reaches of possible super-critical flow.

5.6 Floodway Modeling

Floodway modeling is not required for approximate methodology.

5.7 Problems Encountered During Modeling

5.7.1 Special Problems and Solutions

Several problems were encountered while generating the cross-sections and plotting the limits of inundation. The following paragraphs describe these problems and how they were solved.

5.7.1.1 DTM and 10 foot Contour Mapping Accuracy

The DTM initially obtained consisted of a 5-foot accuracy mass point and breaklines (flow lines). At several locations the DTM breaklines (wash flow lines) were at higher elevations than the surrounding mass points giving the appearance of a ridge instead of a flow line. This problem was within the accuracy (5-foot) of the DTM, but made it impossible to obtain reasonable water surface elevations in these areas. In areas where the DTM was determined to be unsuitable, the 10-foot contour interval mapping provided by the District was used. This new mapping provided

more accurate topographic information than the DTM, but there were some areas where problems appeared to persist. This presented problems in modeling the floodplain, however the shape of the new contours in combination with aerial photography provided enough information to estimate the inundation limits.

5.7.1.2 Inundation upstream of CAP Canal, I-10, and the Railroad tracks

Refer to **Section 4.3** for a more detailed discussion.

5.7.1.3 Adjacent Washes

In many areas within the study limits, adjacent washes were found to merge during the 100-year storm event. Each wash was first analyzed separately. After discovering that the flow was not contained within each wash, a new analysis was performed. This analysis used the combined flows from each wash. In some cases, each wash would overflow into one larger wash, and then eventually become separated again downstream. This effect created islands at several locations within the study area. However, unless the size and elevation of the islands were significant, the entire area was assumed to be within the floodplain. A detailed description of specific washes is located in **Appendix D.5.**

5.7.1.4 Flow Splits

There are a significant number of flow splits within the study area. These splits range from small braided streams to large main wash splits. The main splits were analyzed in the hydrology portion of this study and are discussed in **Section 4**. However, smaller split or splits within the same hydrologic basin were calculated as needed to obtain reasonable flows for delineation of the washes. In general, flows in each branch were determined by placing a cross section just downstream of the split location and dividing the flow

proportionally to the area. **Appendix D.5** contains a list of locations where these conditions were encountered and copies of detailed calculations.

5.7.1.5 Piedmonts

In certain areas of the project, piedmont conditions were present. In these areas the floodplain boundaries were estimated by using aerial photographs to estimate active and inactive areas. The entire active areas in the piedmonts were included within the floodplain boundary, and the inactive areas were assumed to be outside of the floodplain boundary. **Appendix E.8** contains a list of locations where these conditions were encountered and copies of detailed calculations.

5.7.2 Modeling Warnings and Errors

This section does not apply to approximate methodology

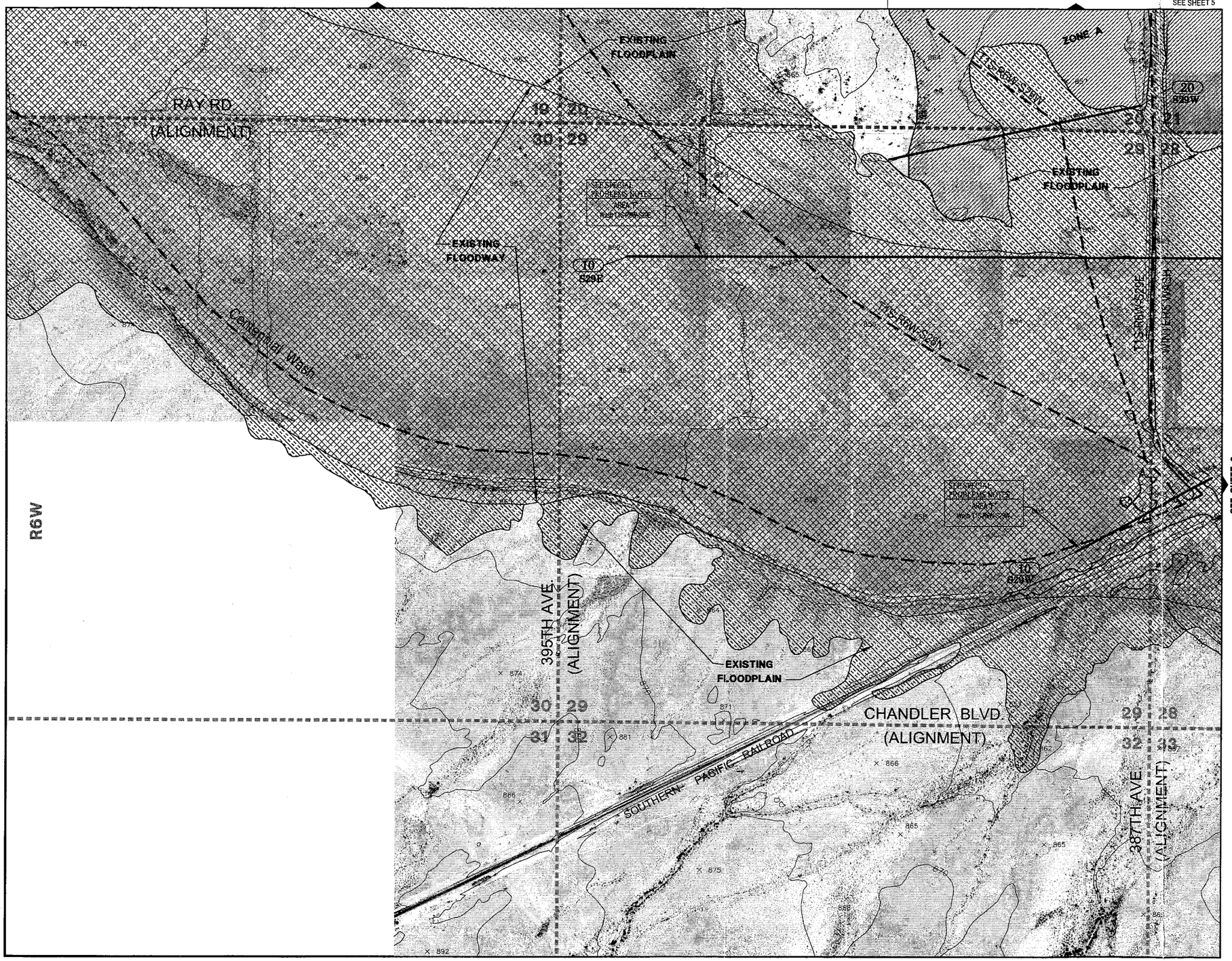
5.8 Calibration

This section does not apply to approximate methodology

5.9 Final Results

5.9.1 Hydraulic Analysis Results

The results of the normal depth hydraulic analysis are included in **Appendix E** (Volumes 2 through 7) and the flooding limits are shown in **Exhibits 1-104.** Full size exhibits are located in the pockets under separate cover and half sizes are at the end of this section. A digital copy of the exhibits and hydraulic calculations are also included on a CD.



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

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LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

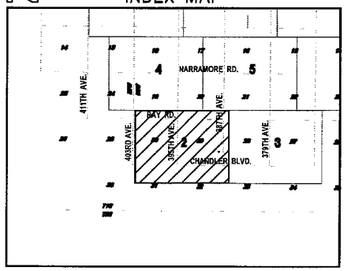
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
17	879.28	GDACS Station 38L2. Located in Sec 22, T-1-S, R-6-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: BL2 11-1999. From intersection of 355th Avenue and Elliot Road travel 2.5 miles west along Elliot Road to dirt road on left (S.), dirt road is immediately west of N-S railroad tracks, thence south on dirt road for 1.0 mile to the described station.

NOTES

INDEX MAP



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SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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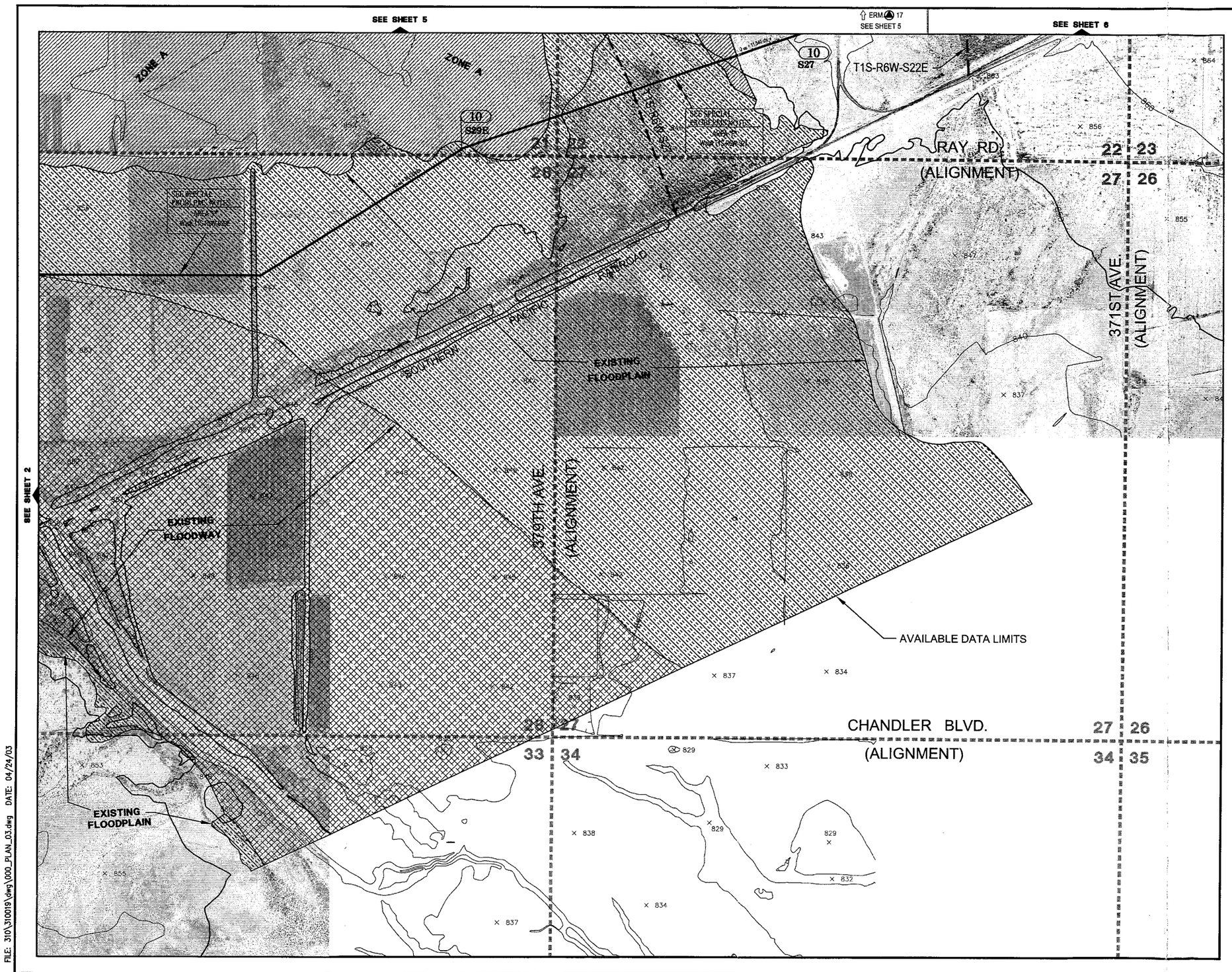

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PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

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100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

ELEVATION REFERENCE MARKS

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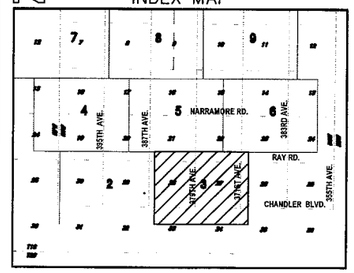
NOTES

INDEX MAP



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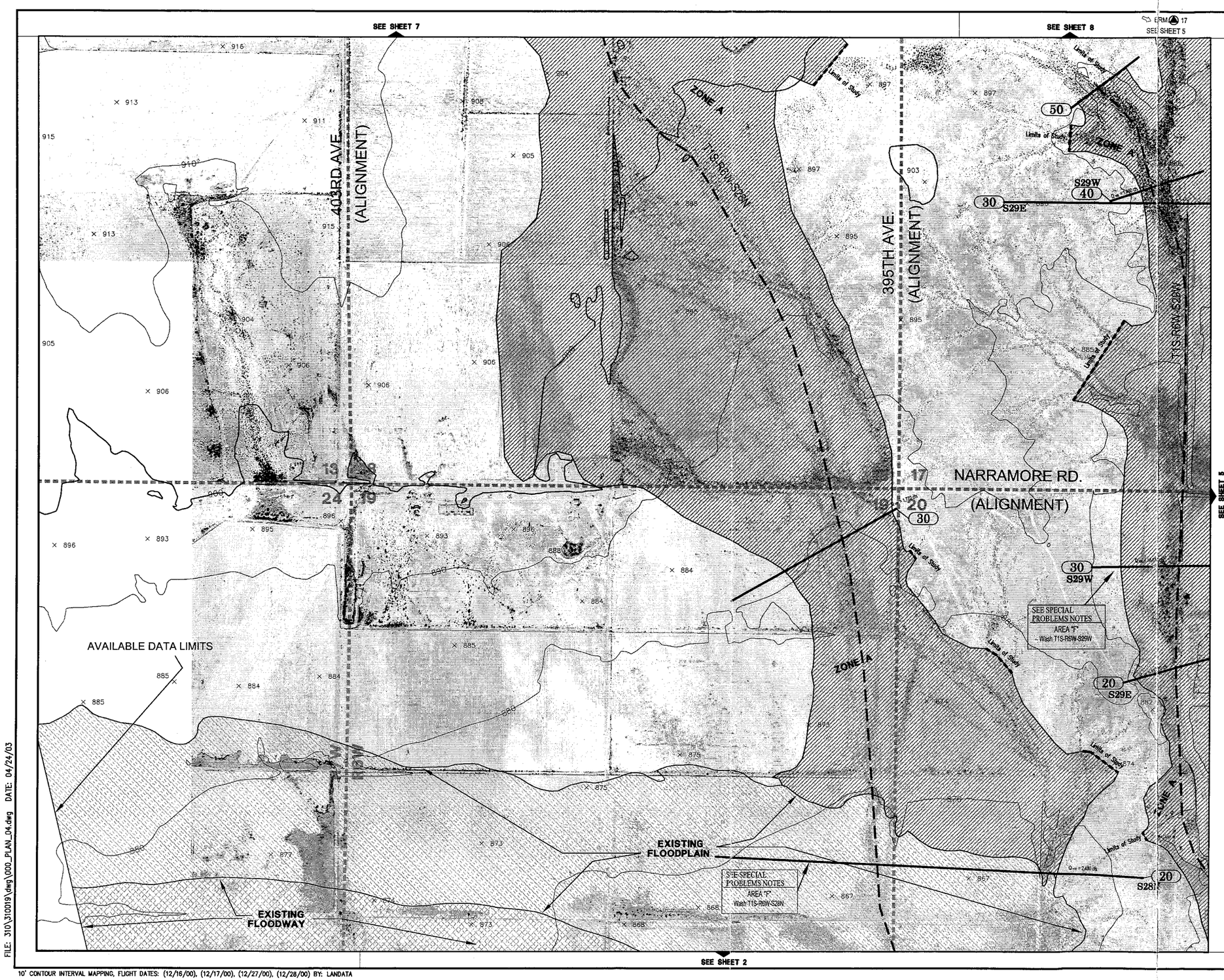

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LEGEND

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HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
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SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
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FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

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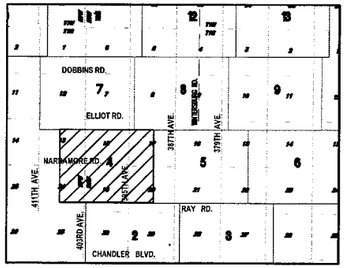

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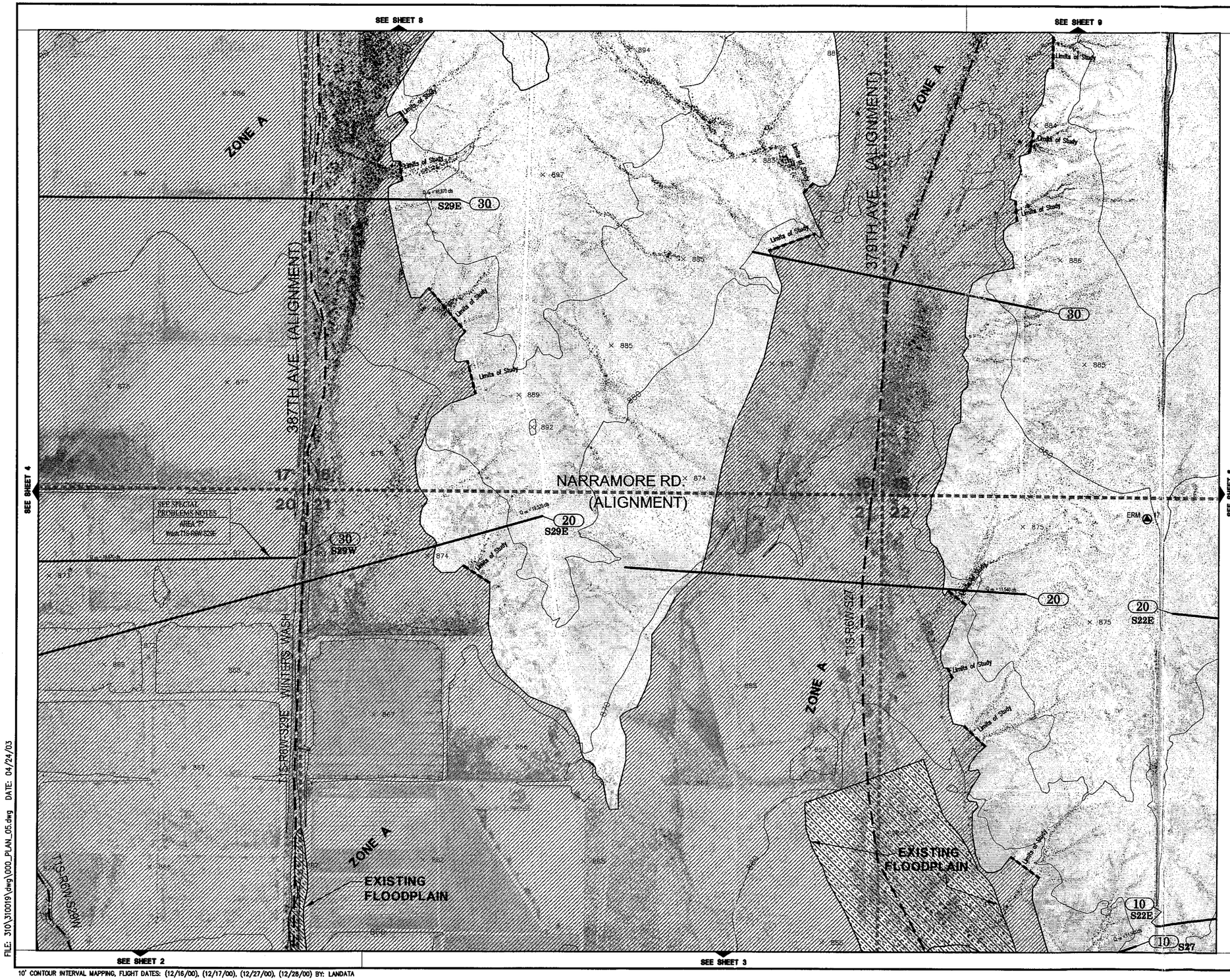

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HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
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EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
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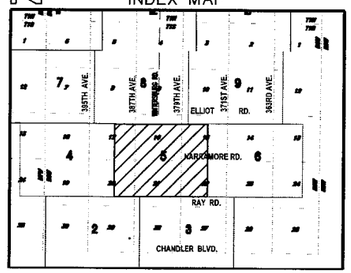

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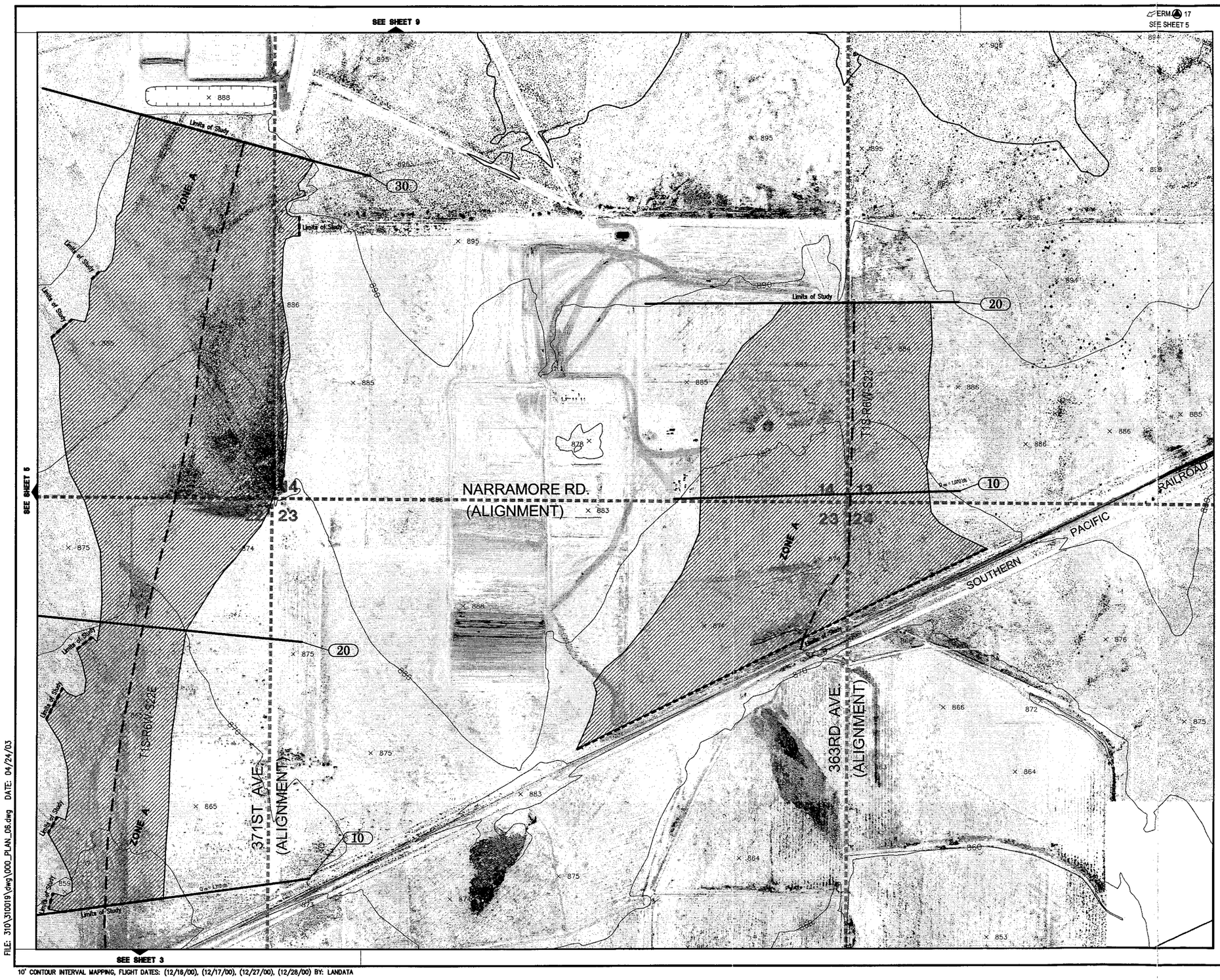

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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

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LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
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EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
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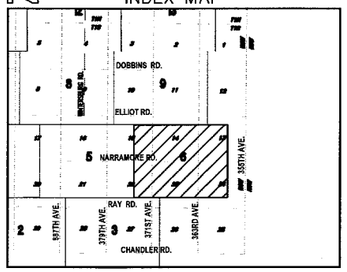
NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

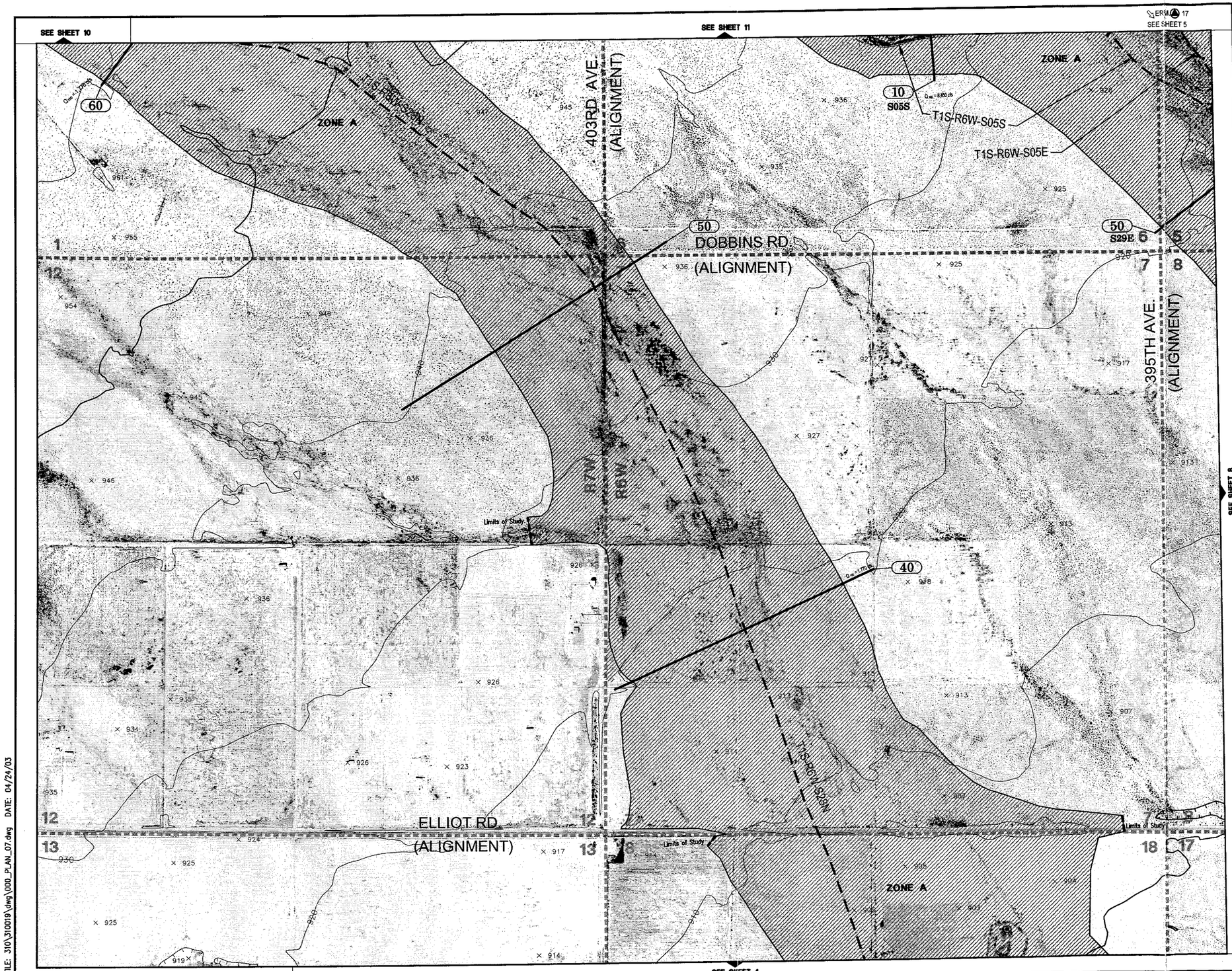
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

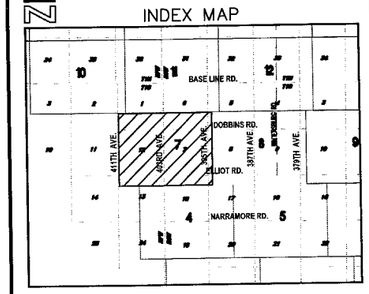
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
17	879.28	GDACS Station 3BL2. Located in Sec 22, T-1-S, R-6-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: BL2 11-1999. From intersection of 355th Avenue and Elliot Road travel 2.5 miles west along Elliot Road to dirt road on left (S.), dirt road is immediately west of N-S railroad tracks, thence south on dirt road for 1.0 mile to the described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

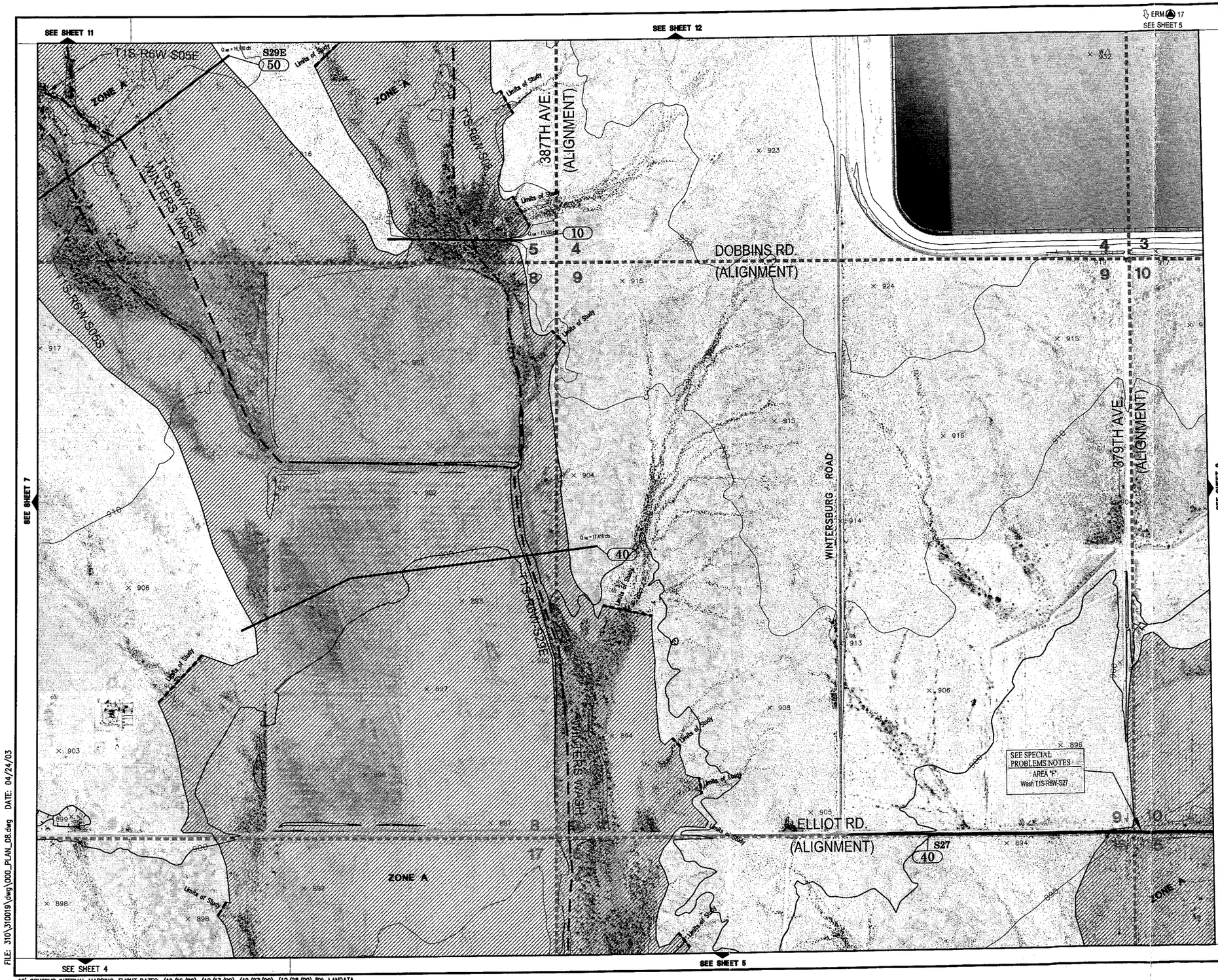
Entellus
8255 N. 44th Street Suite 125
Phoenix, AZ 85066-3279
Tel 602.344.2566
Fax 602.344.2847
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 7 OF 104

FILE: 310\310019\dwg\000_PLAN_07.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

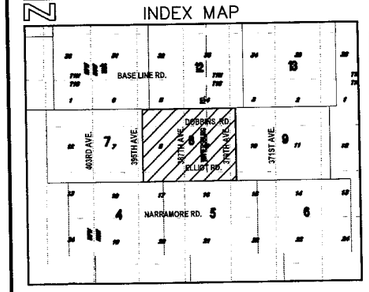
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
17	879.28	GDACS Station 38L2. Located in Sec 22, T-1-S, R-6-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: BL2 11-1999. From intersection of 355th Avenue and Elliot Road travel 2.5 miles west along Elliot Road to dirt road on left (S.), dirt road is immediately west of N-S railroad tracks, thence south on dirt road for 1.0 mile to the described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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2855 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.3047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

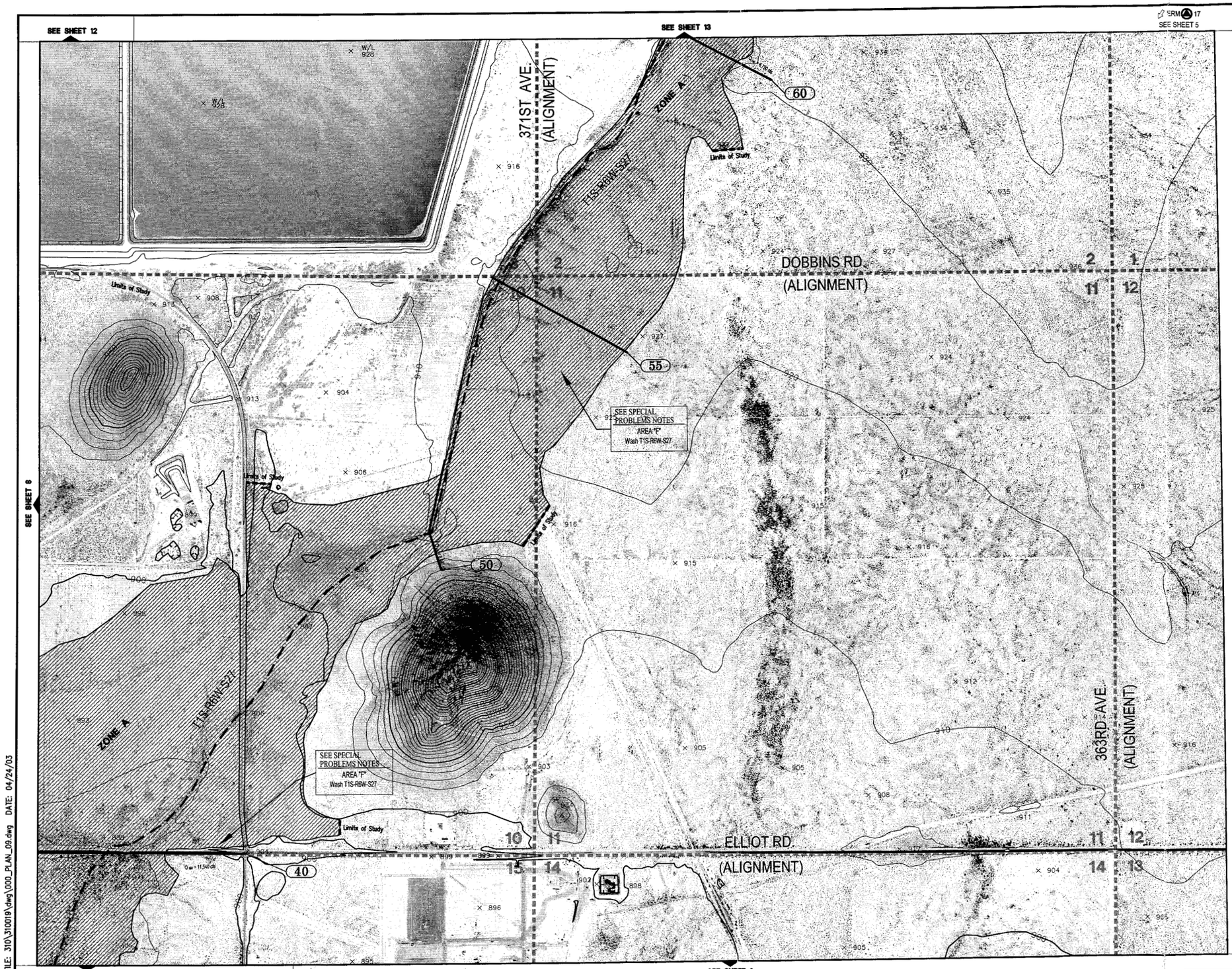
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_08.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

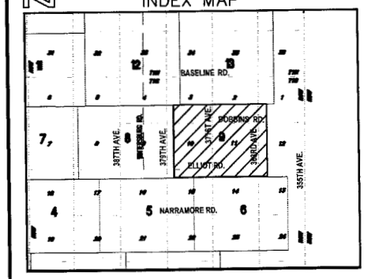
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
17	879.28	GDACS Station 38L2. Located in Sec 22, T-1-S, R-6-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: BL2 11-1999. From intersection of 355th Avenue and Elliot Road travel 2.5 miles west along Elliot Road to dirt road on left (S.), dirt road is immediately west of N-S railroad tracks, thence south on dirt road for 1.0 mile to the described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008.2879
Tel 602.244.2566
Fax 602.244.9047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

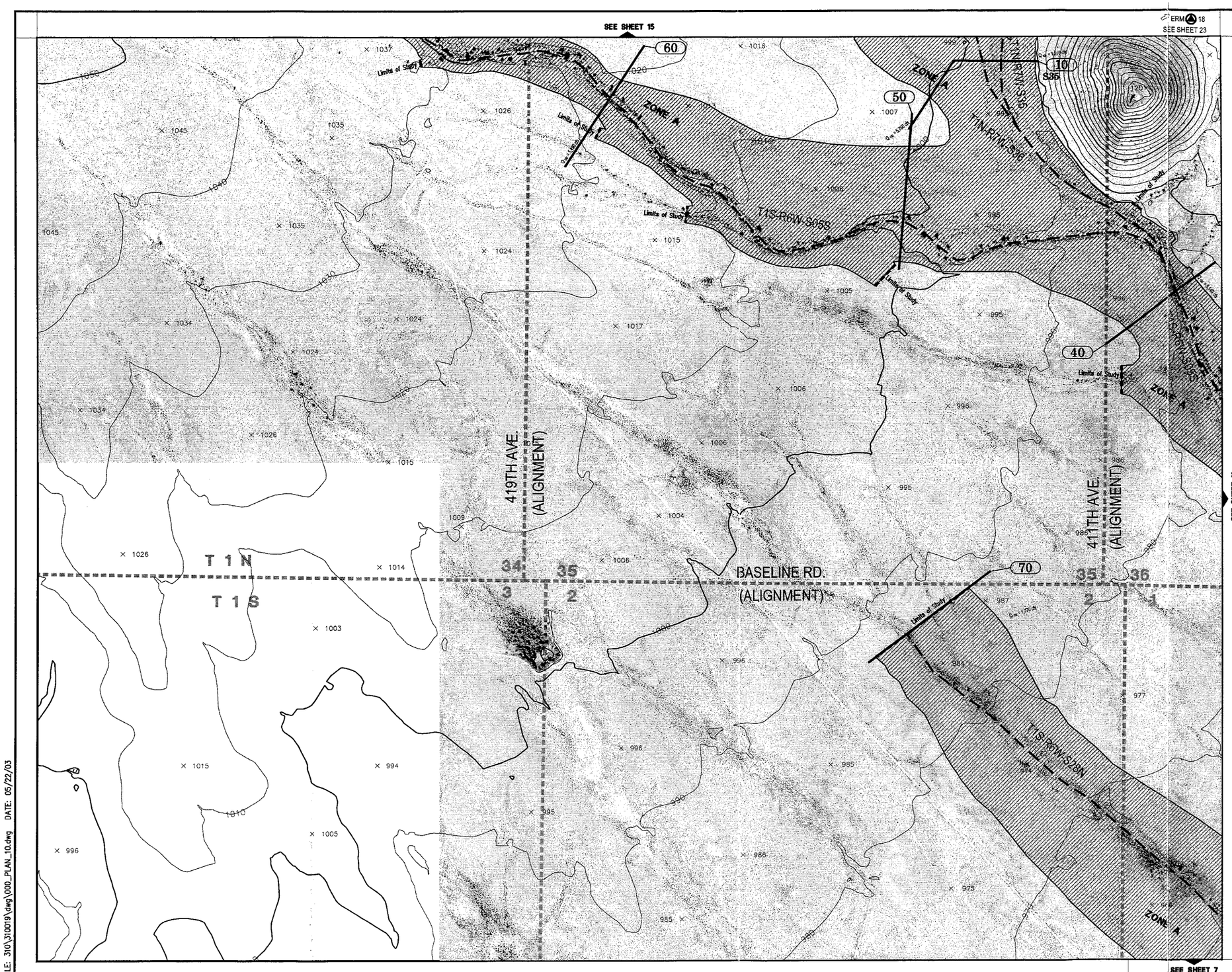
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 9 OF 104

FILE: 310\310019\dwg\000_PLAN_09.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

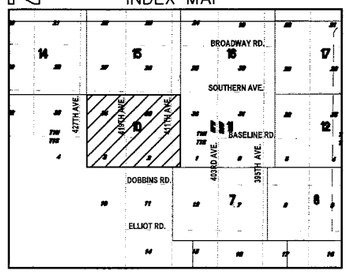
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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2255 N. 44th Street Suite 125
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_10.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

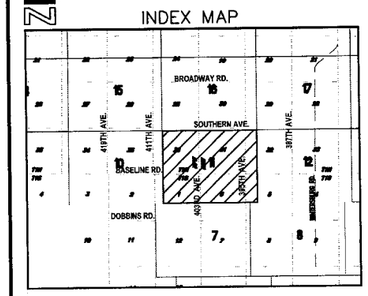
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

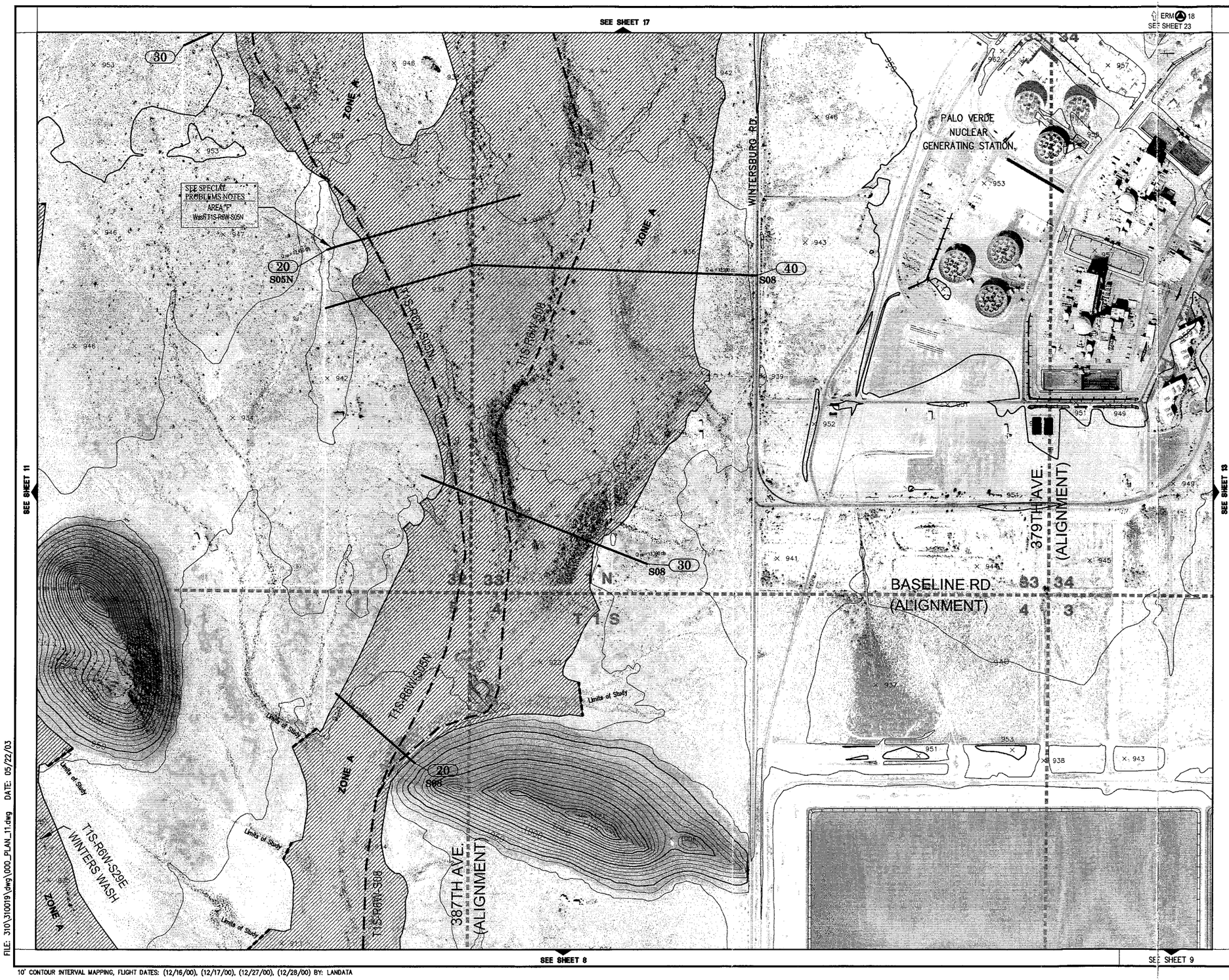
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 11 OF 104

FILE: 310\310019\dwg\000_PLAN_11.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

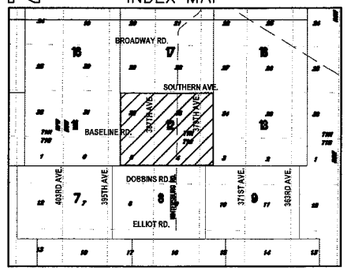
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.5505
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

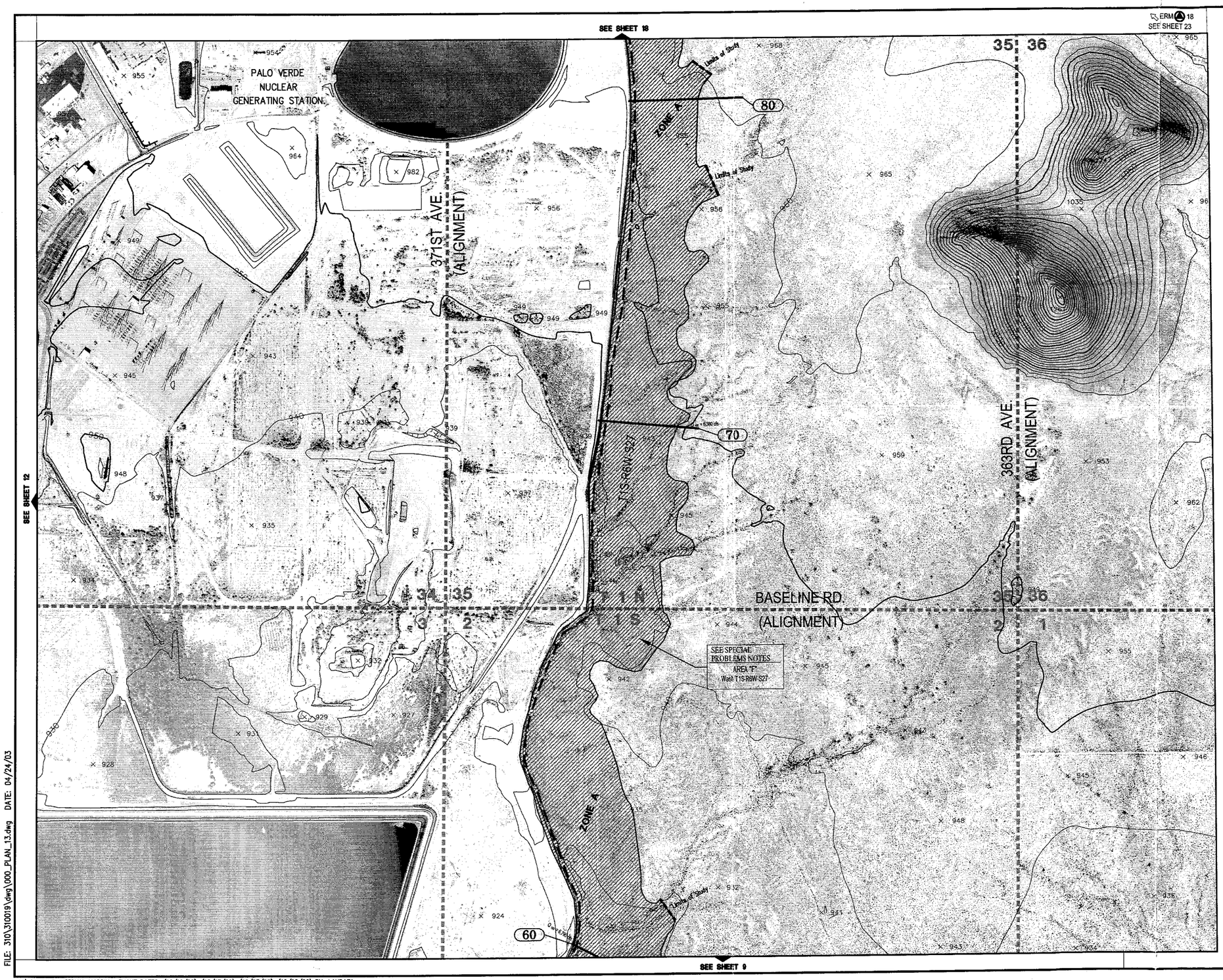
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_11.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

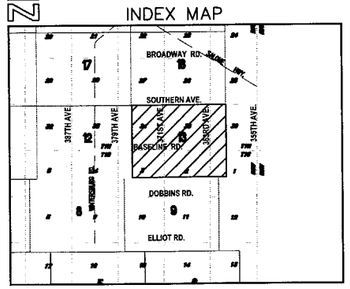
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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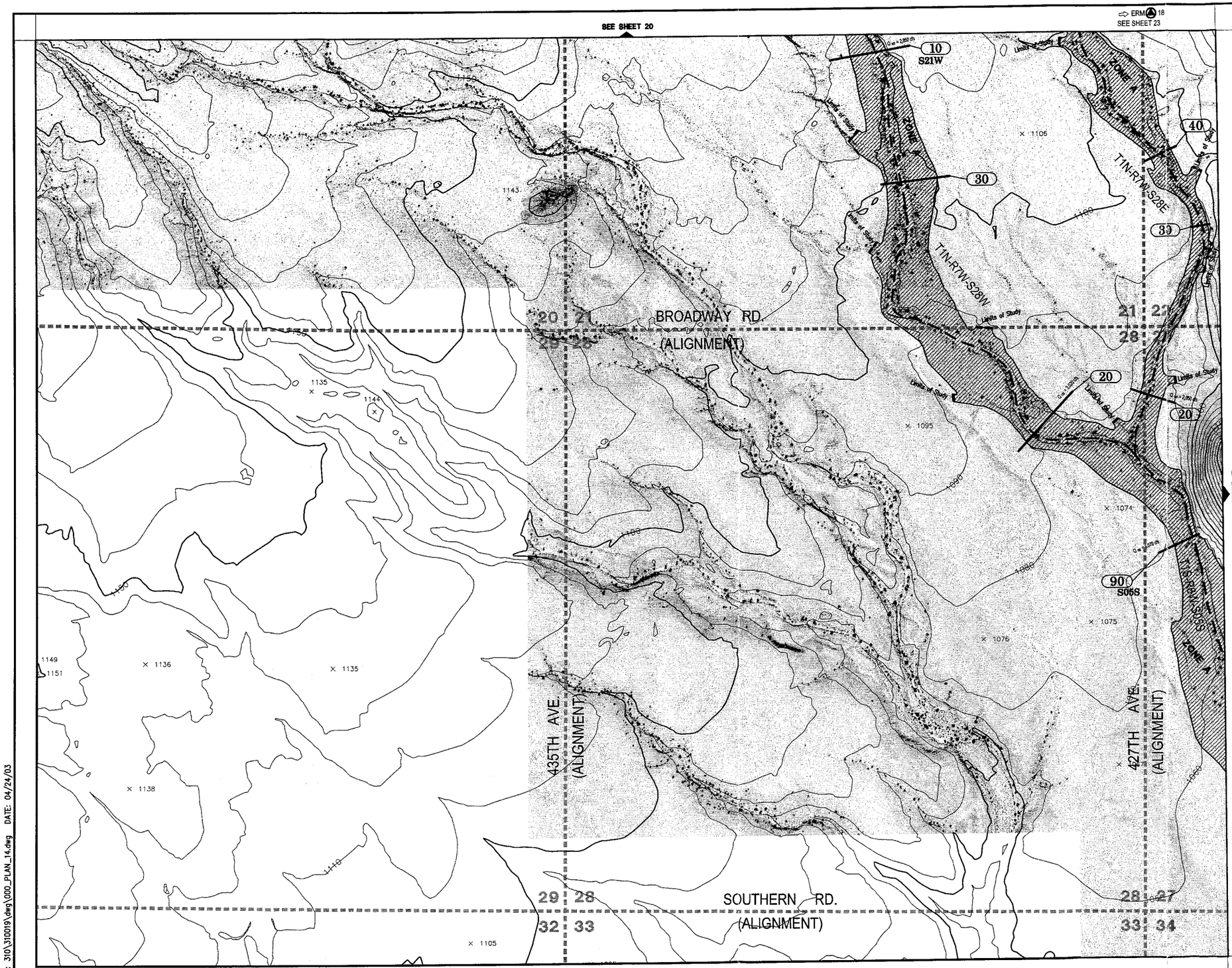
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.244.2500
Fax 602.244.2547
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 13 OF 104

FILE: 310\310019\dwg\000_PLAN_13.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

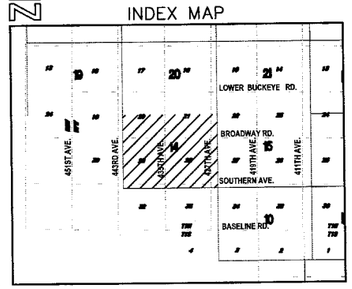
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3566
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/JP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

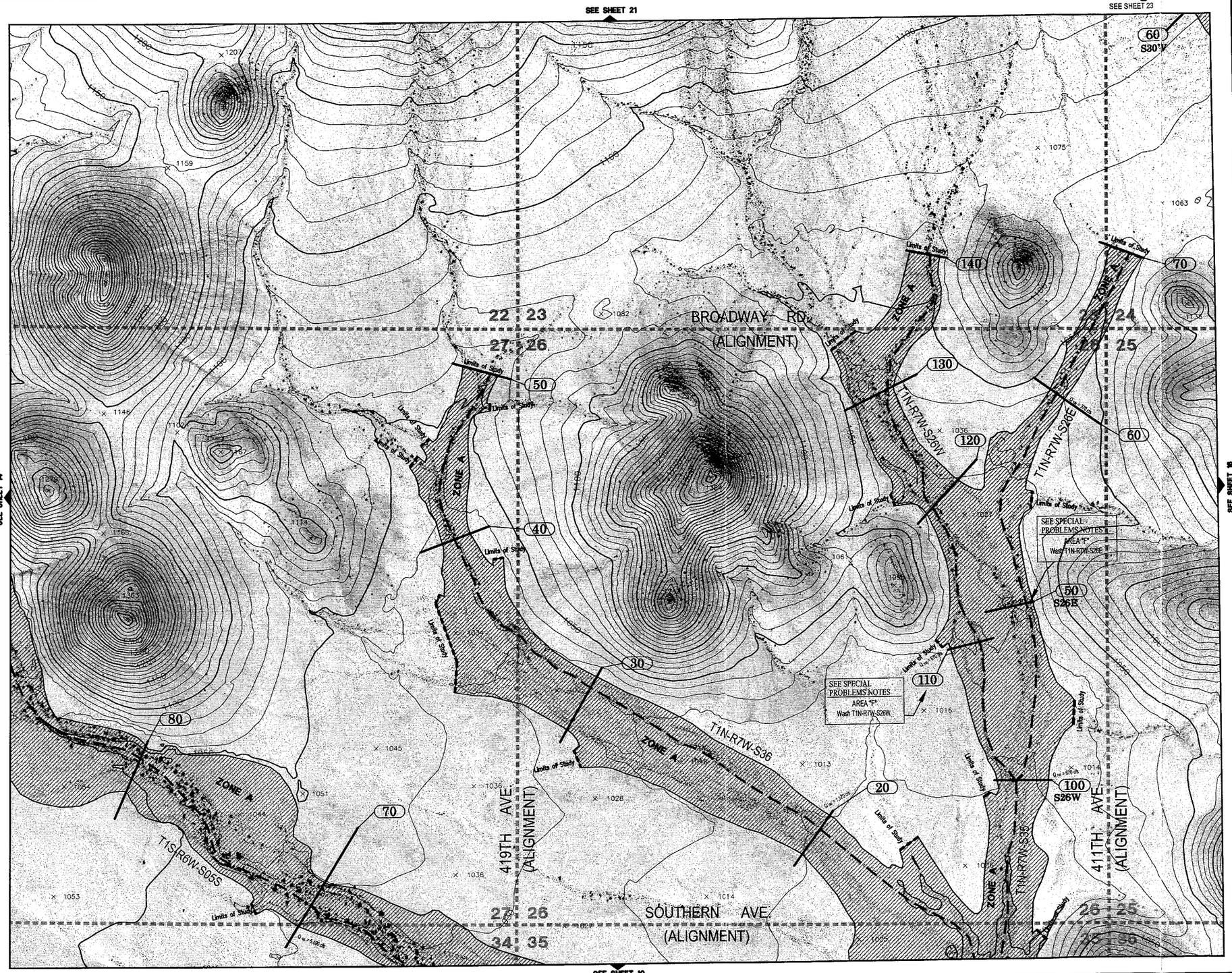
CHIEF ENGINEER AND GENERAL MANAGER

SUBMITTED BY: DATE:

SHEET 14 OF 104

FILE: 310\310019\dwg\000_PLAN_14.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 5
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

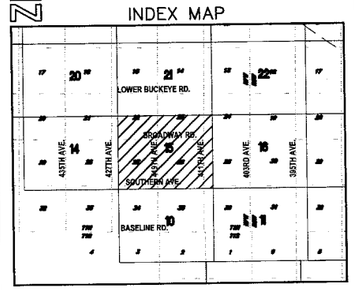
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
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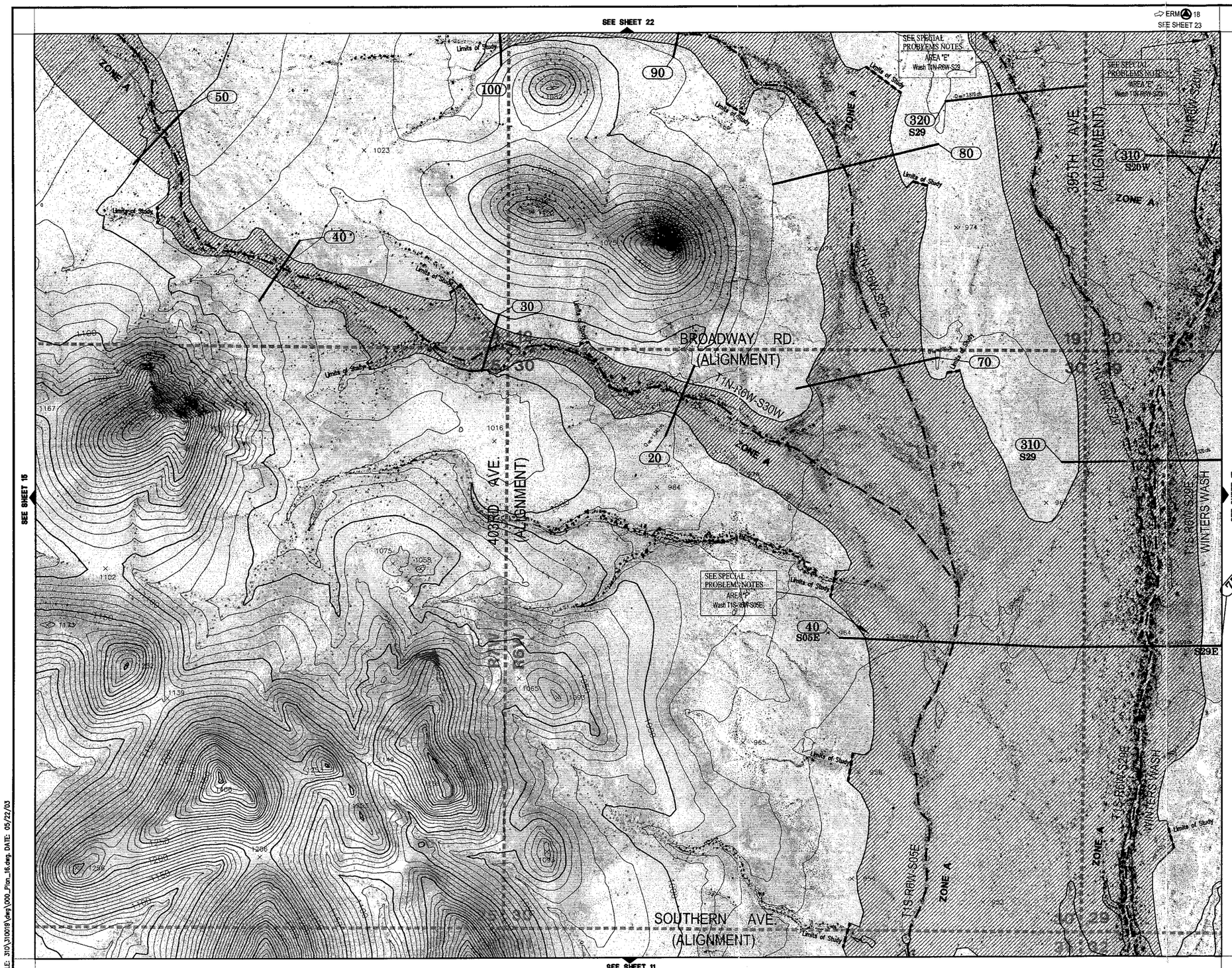
	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN	AMG/UP	09/2002	
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 15 OF 104

FILE: 310\310019\dwg\000_Plan_15.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

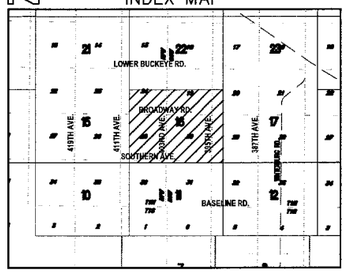
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus

2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.3647
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

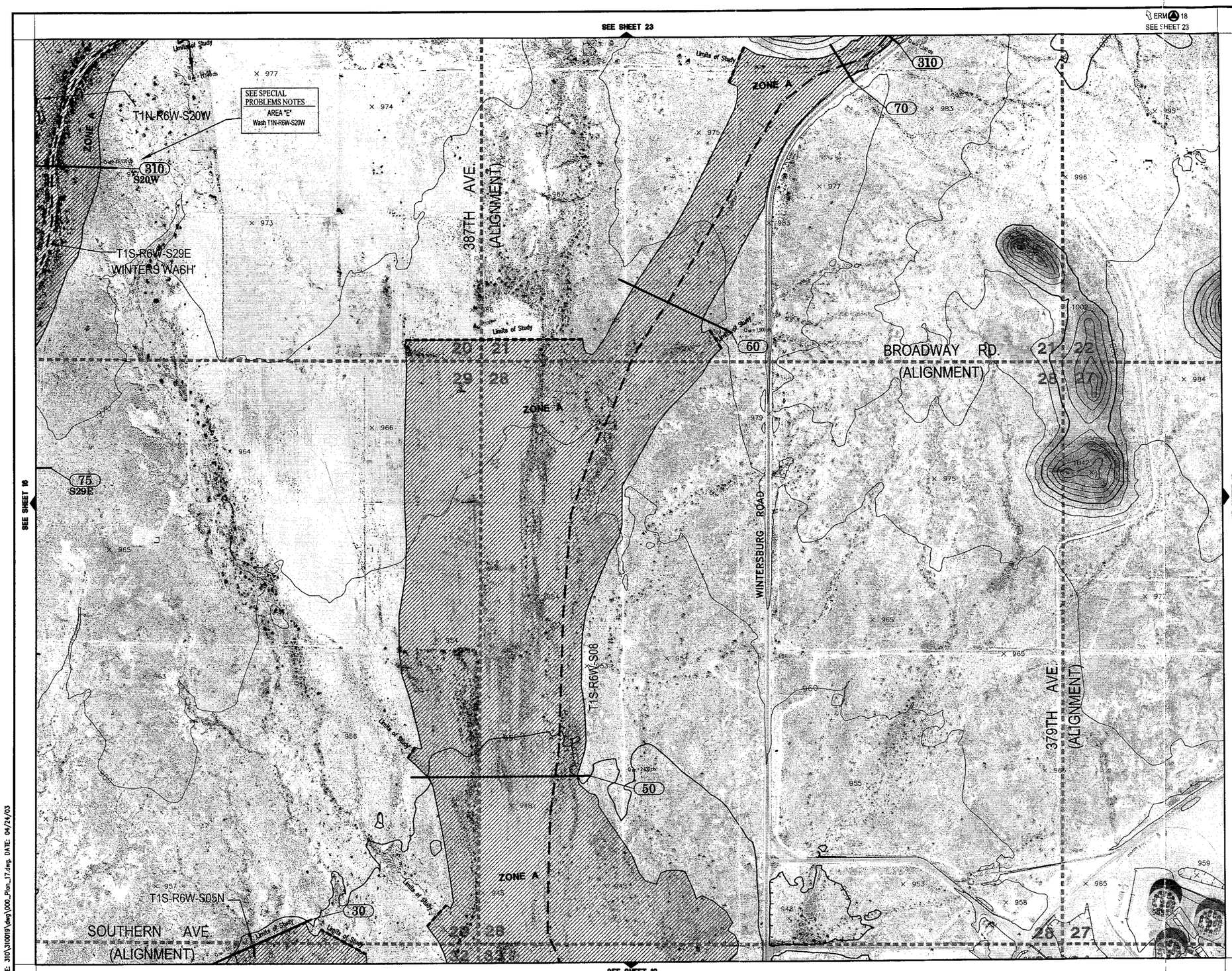
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 16 OF 104

FILE: 310\310019\dwg\000_Plan_16.dwg, DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

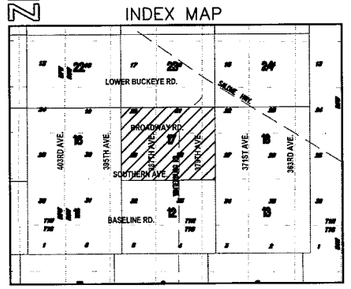
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.2506
Fax 602.244.2047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

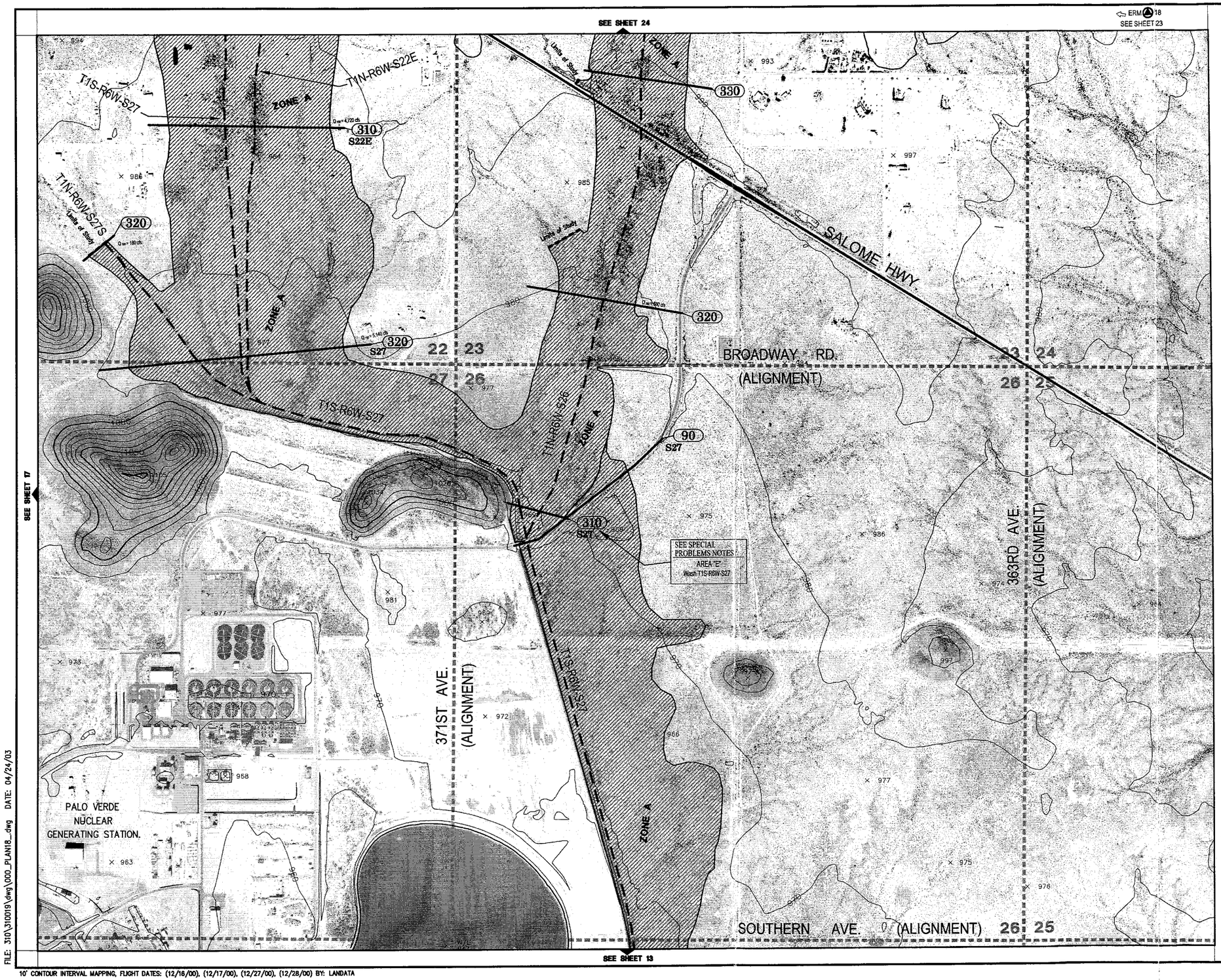
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_Plan_17.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN18_.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

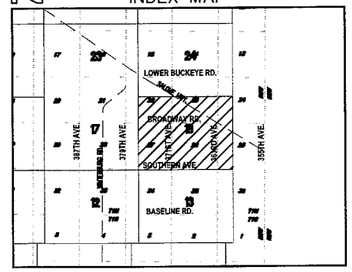
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.2566
Fax 602.244.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

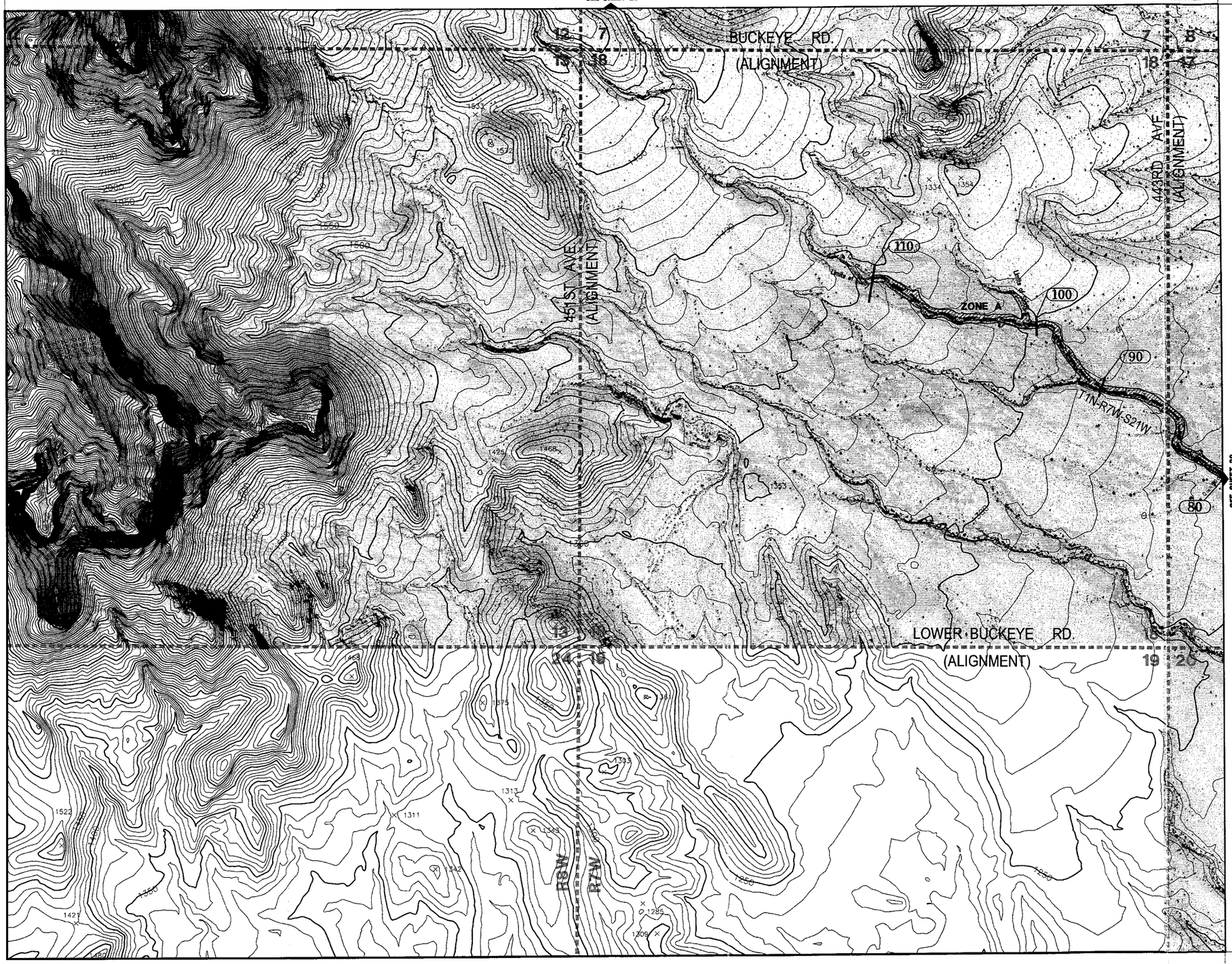
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

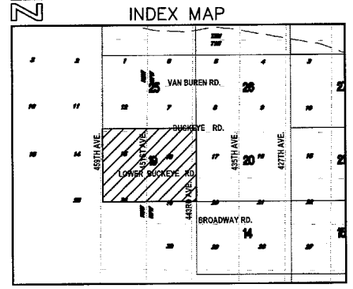
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

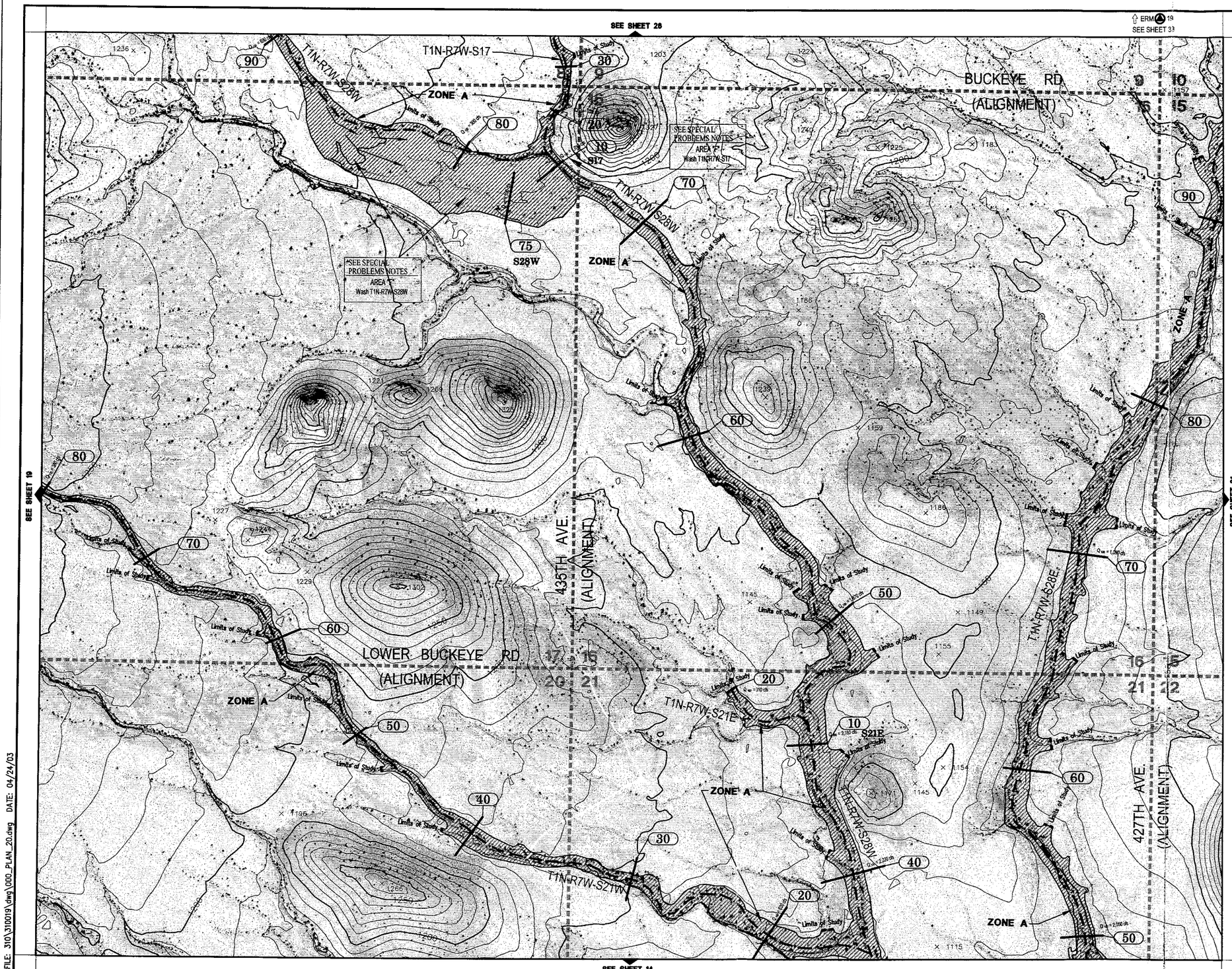
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_19.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_20.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

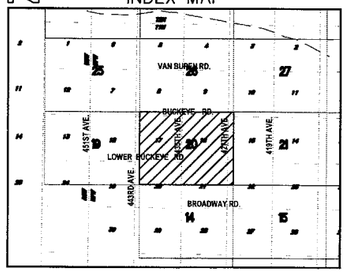
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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Phoenix, AZ 85008-2279
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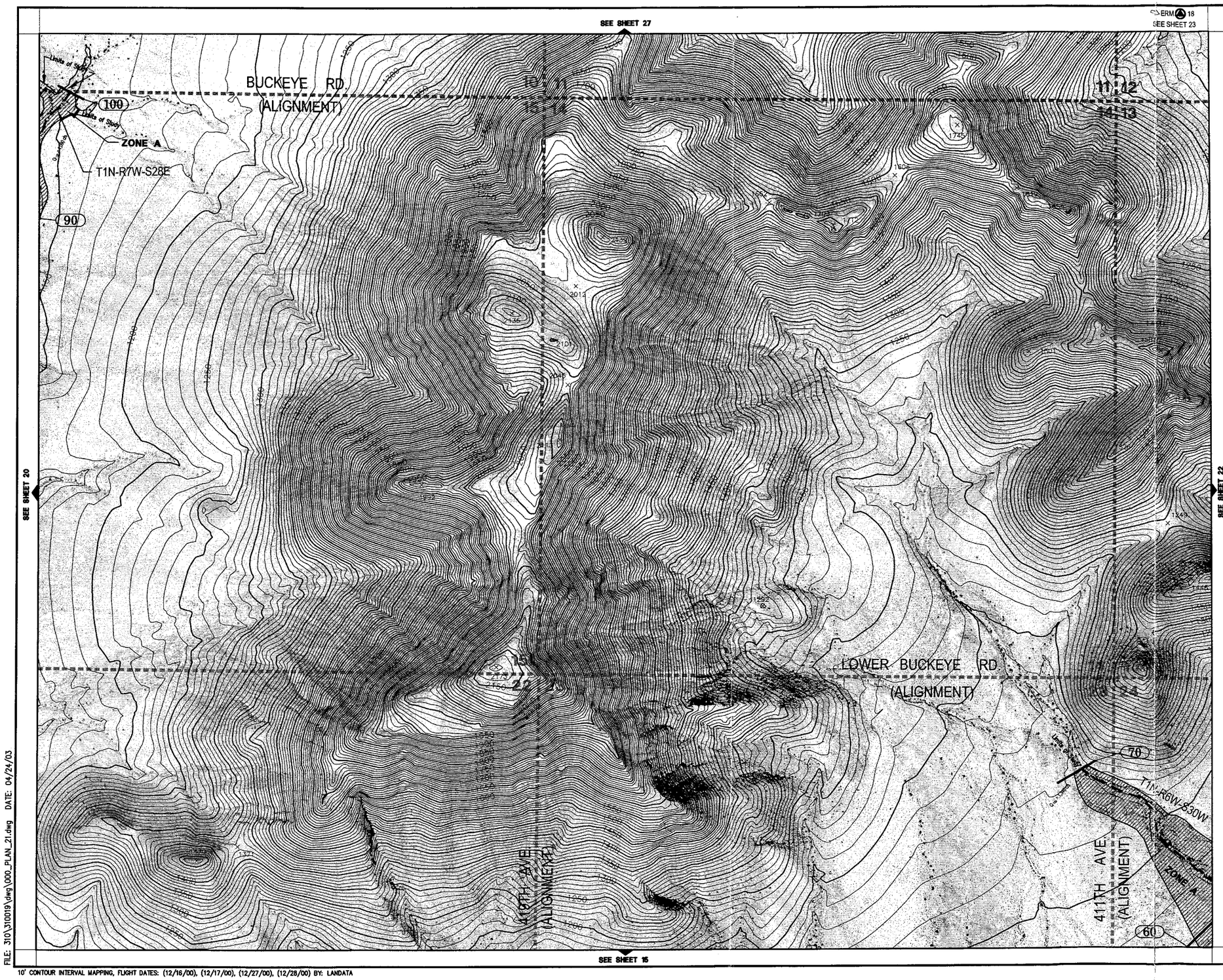
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/JP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

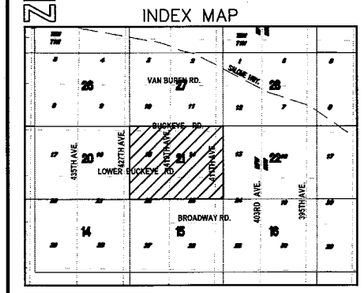
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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Phoenix, AZ 85008-3279
Tel 602.244.2566
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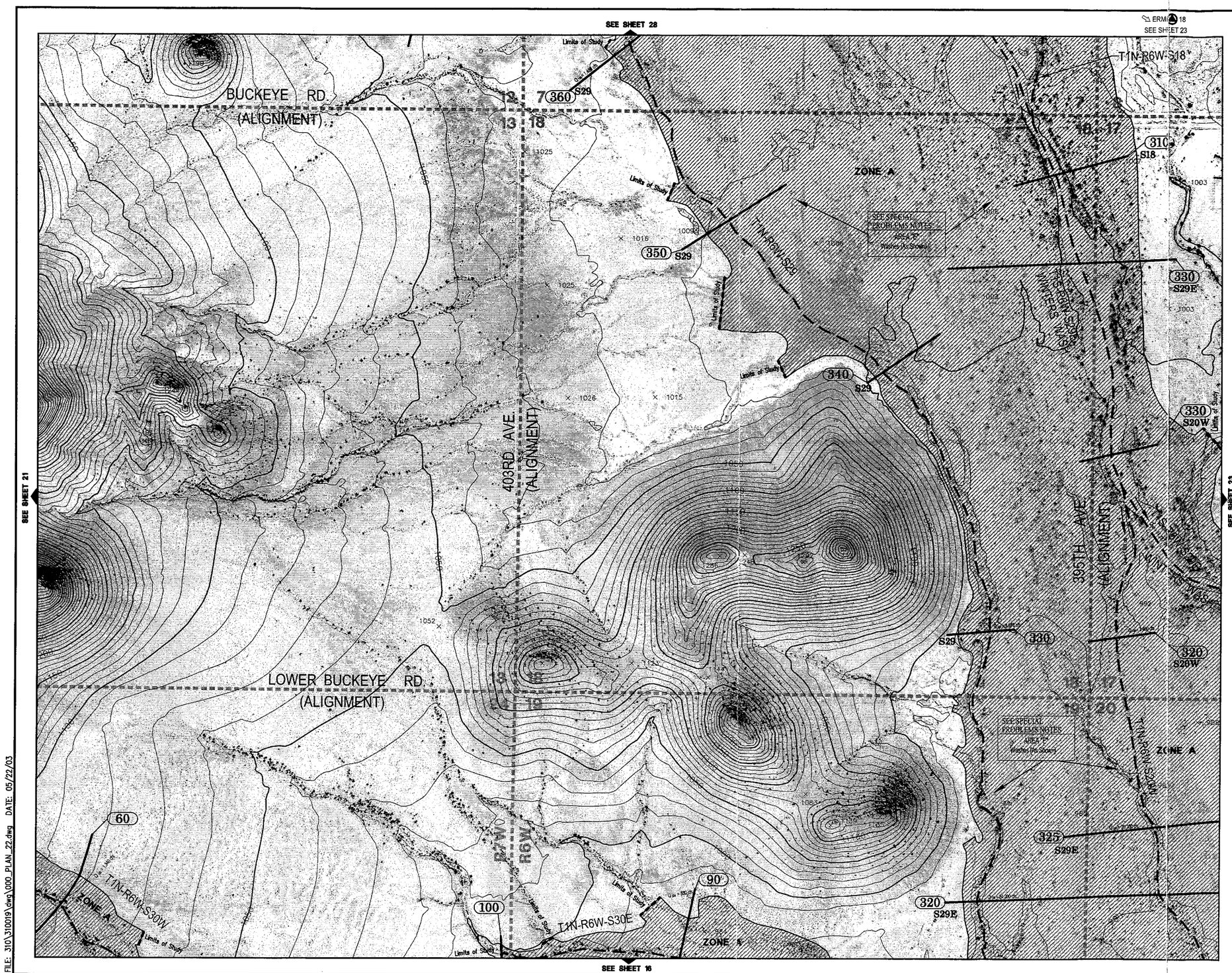
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER
			SHEET 21 OF 104

FILE: 310\310019\dwg\000_PLAN_21.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_22.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

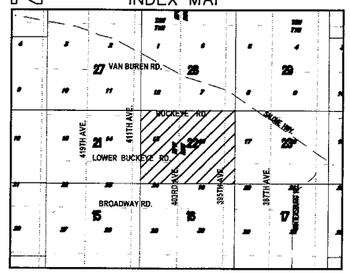
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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Tel 602.344.2566
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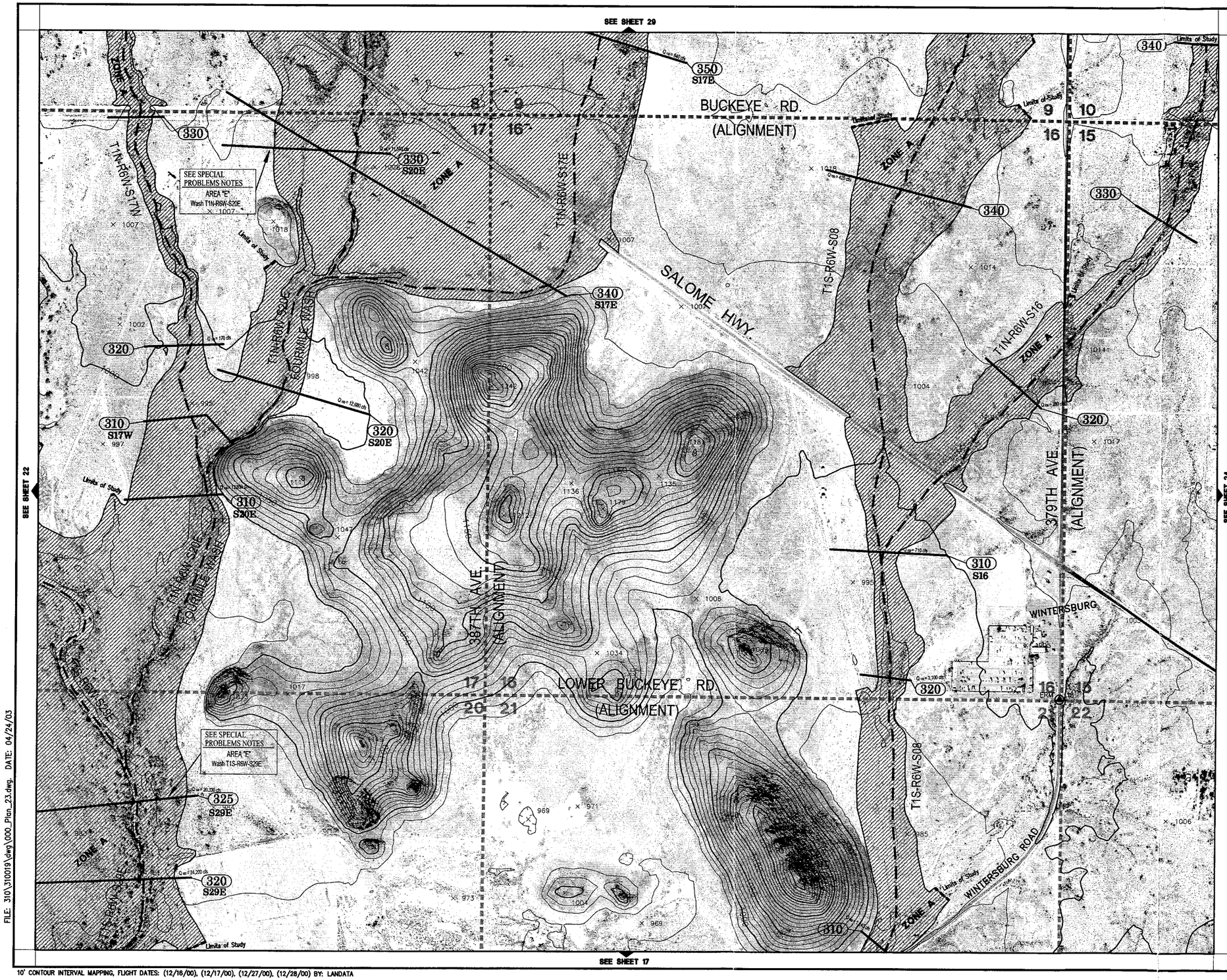
	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 5
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

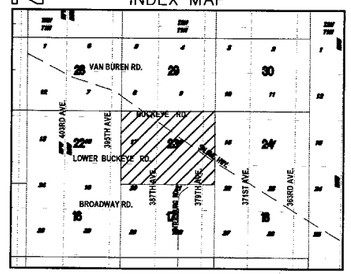
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.3566
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

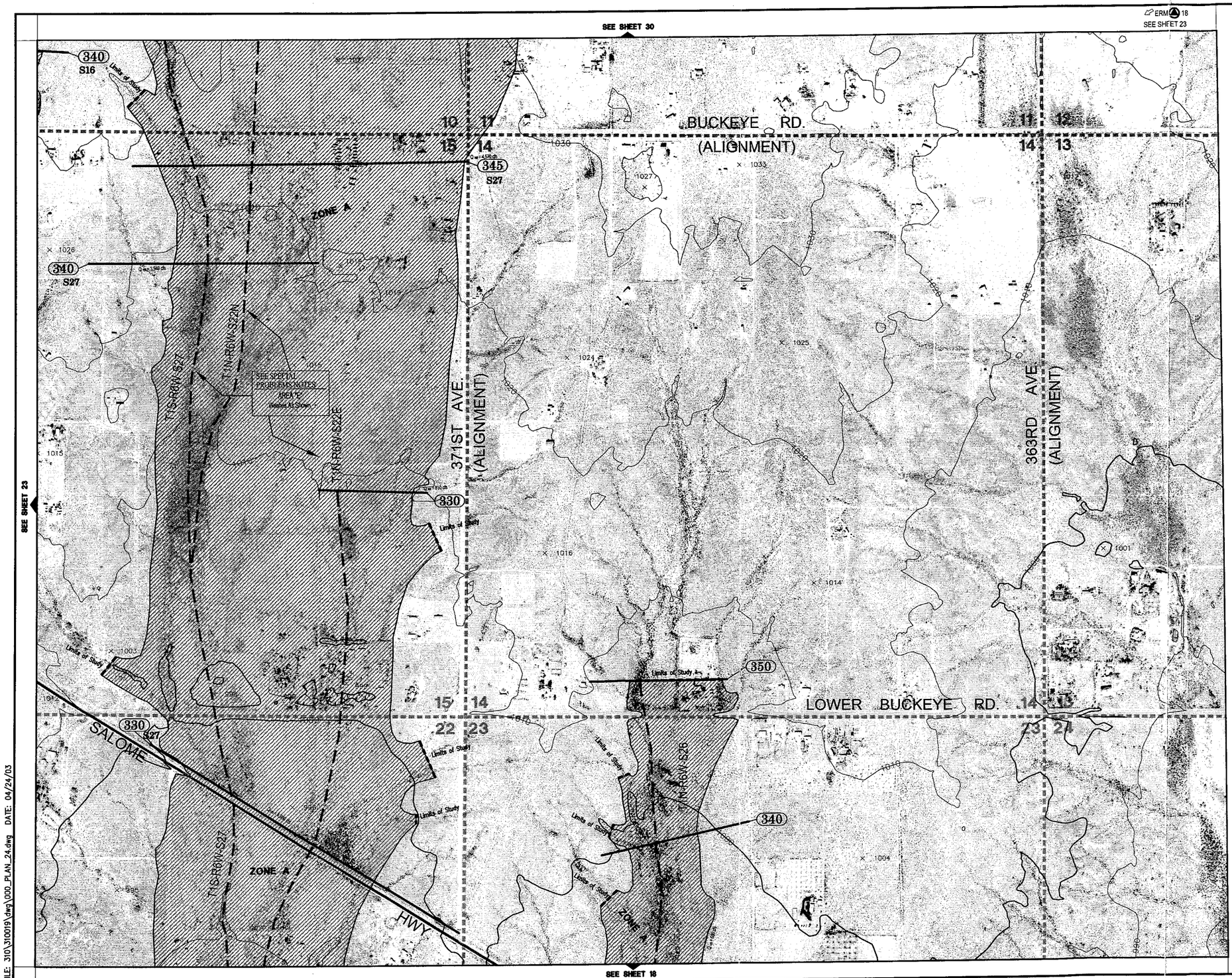
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_Plan_23.dwg, DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_24.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

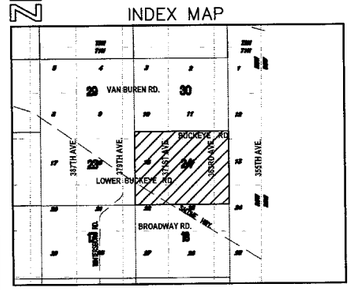
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
18	1002.12	MCHD Brass Cap in handhole at intersection of Wintersburg Road and Transmission Road (1/4 mile south of Salome Highway.)

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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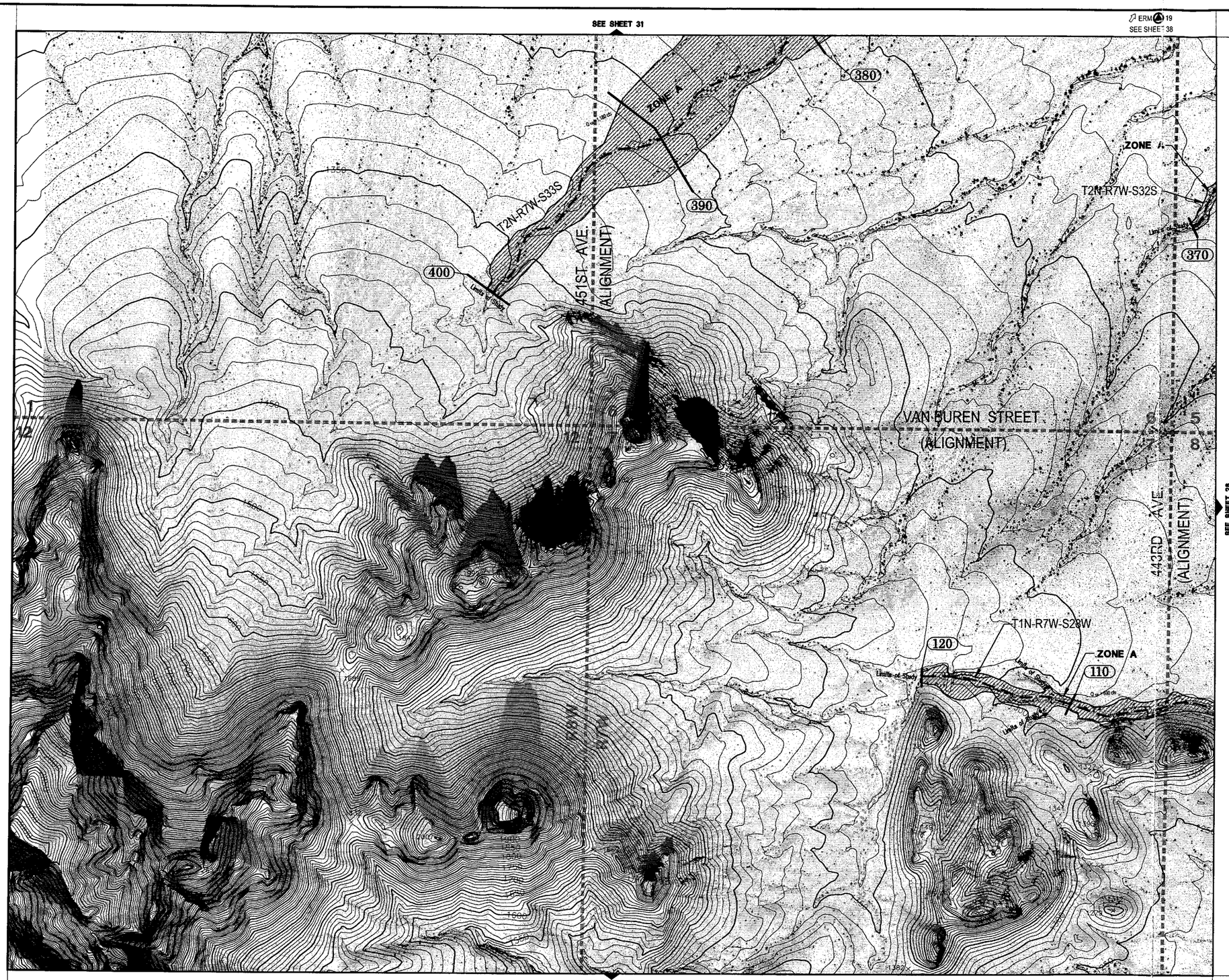
	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

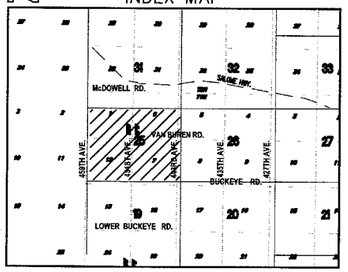
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.5566
Fax 602.244.9947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

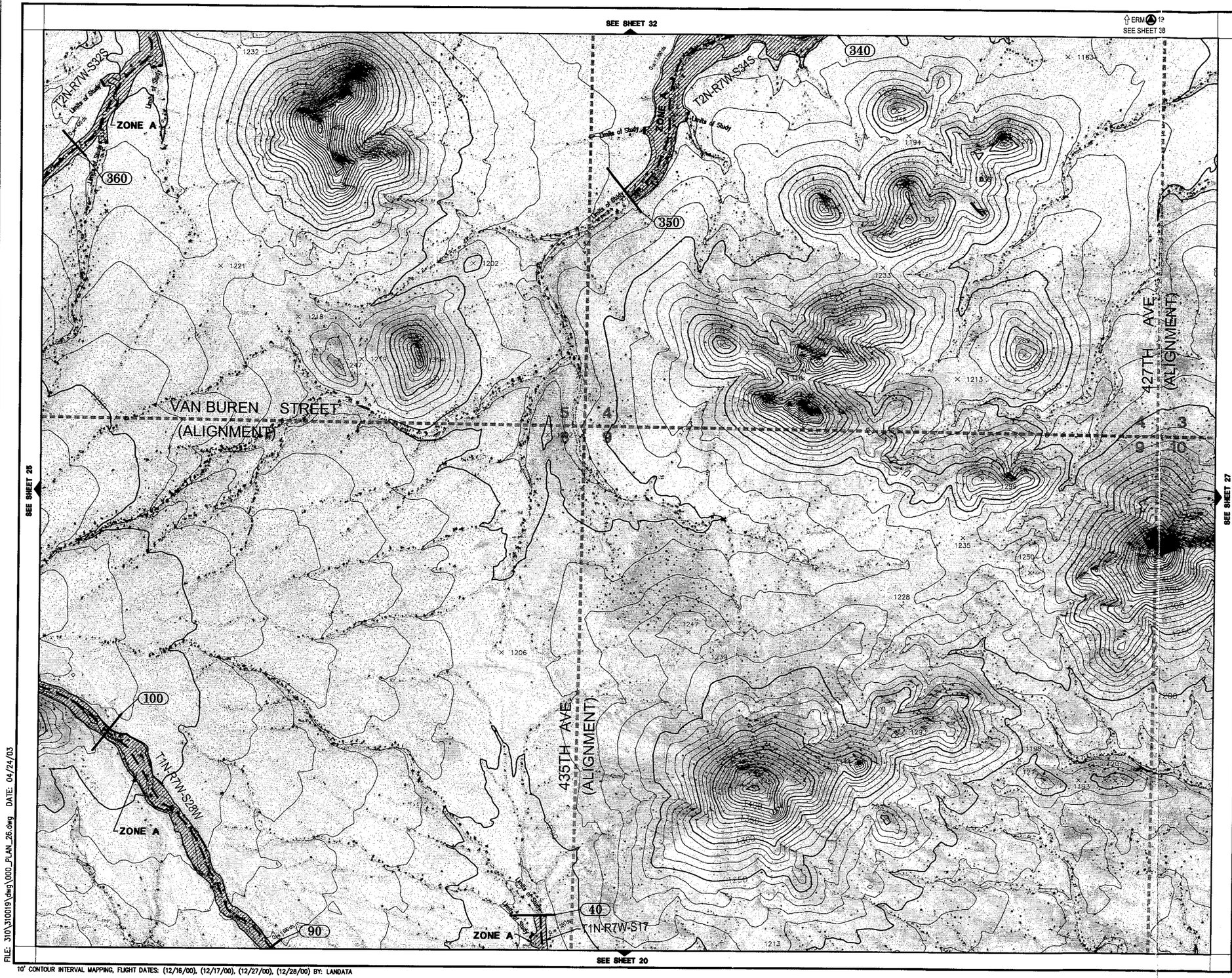
CHIEF ENGINEER AND GENERAL MANAGER

SUBMITTED BY: DATE:

SHEET 25 OF 104

FILE: 310\310019\dwg\000_PLAN_25.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

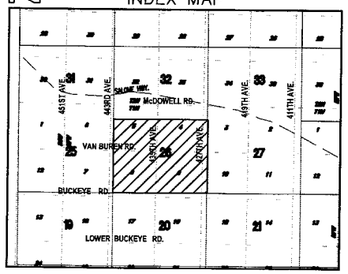
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.2555
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

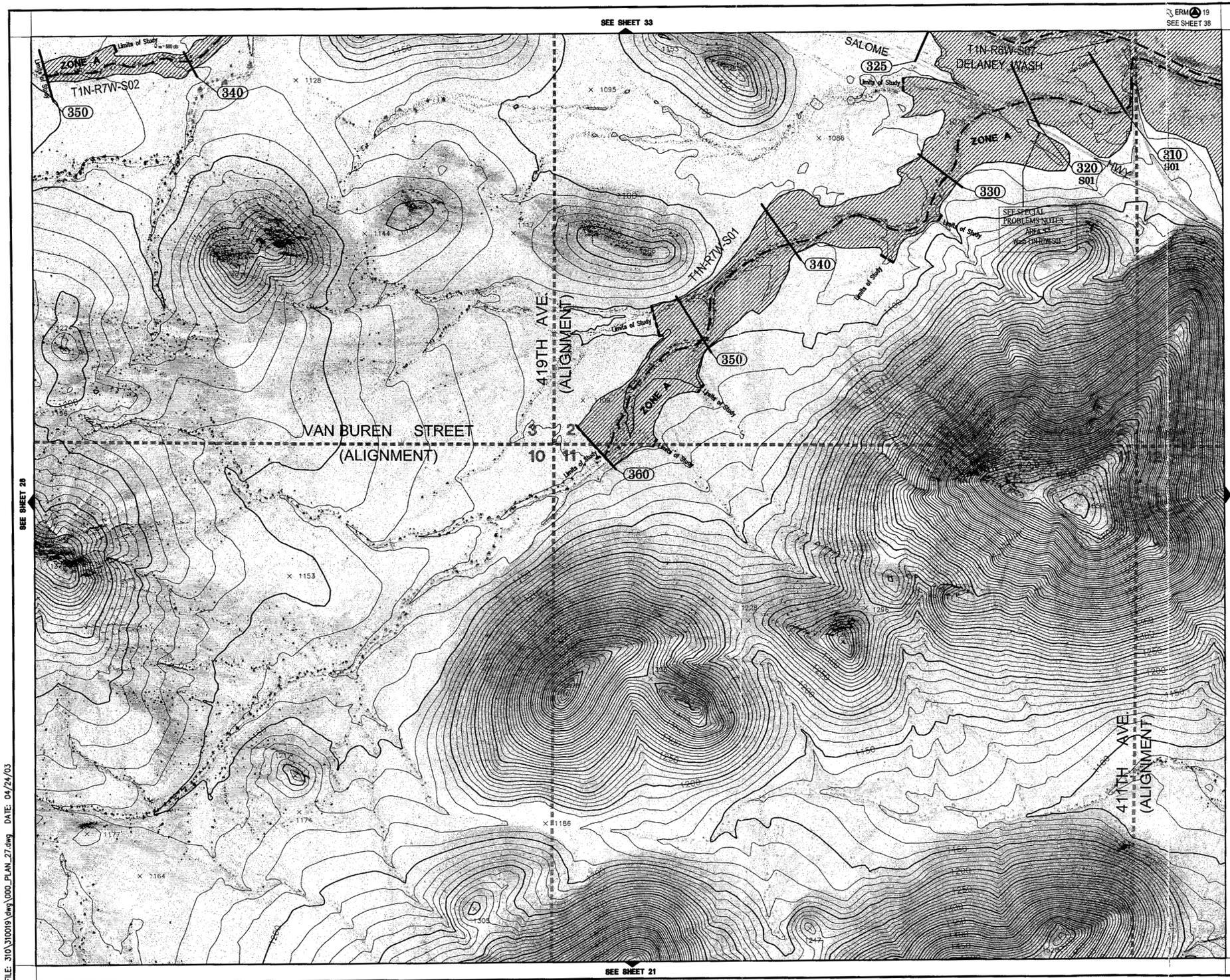
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_26.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

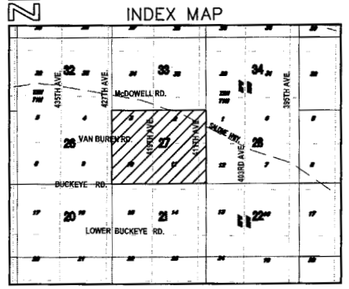
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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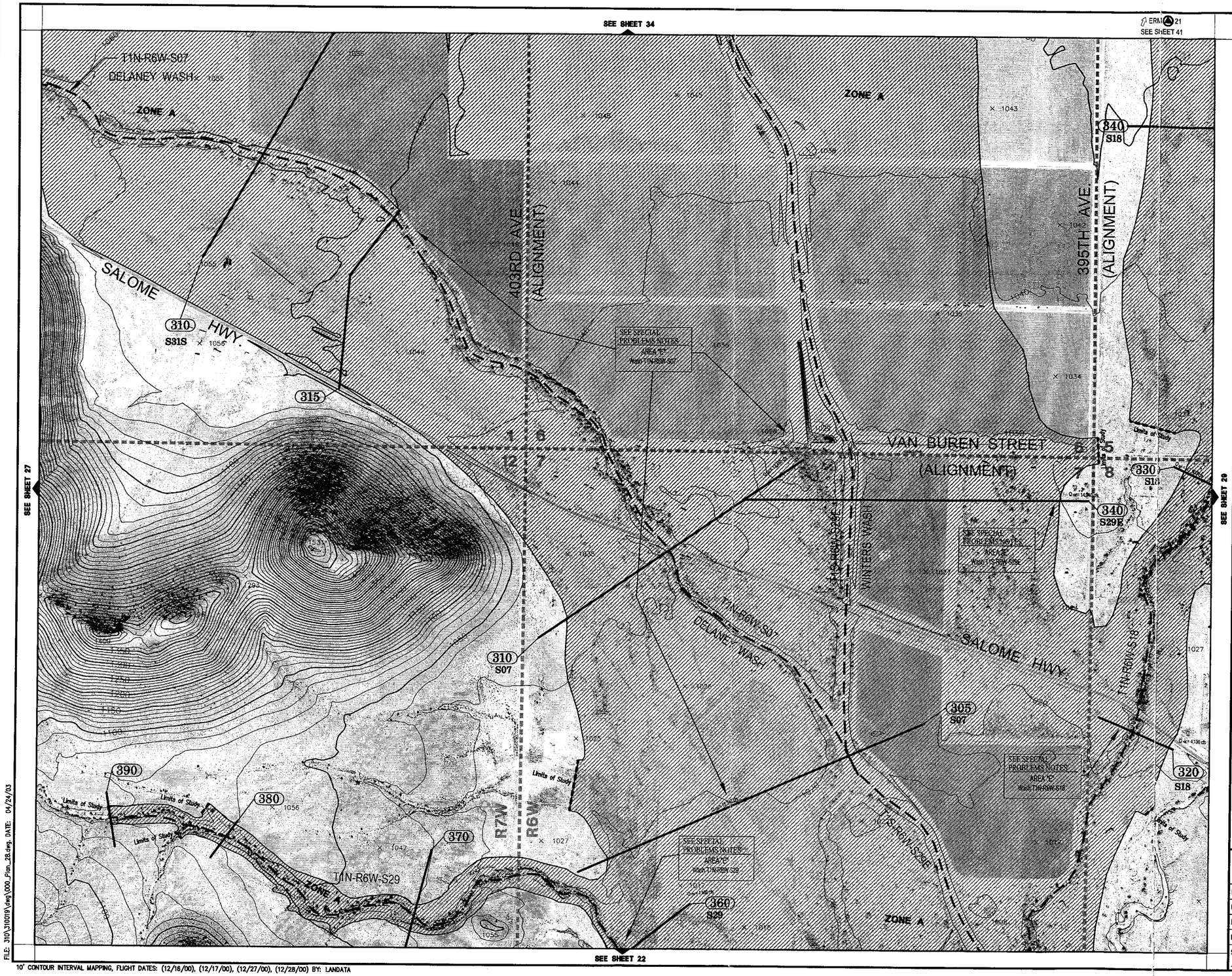
	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:		DATE:	SHEET 27 OF 104

FILE: 310\310019\dwg\000_PLAN_27.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



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FILE: 310\310019\dwg\000_Plan_28.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

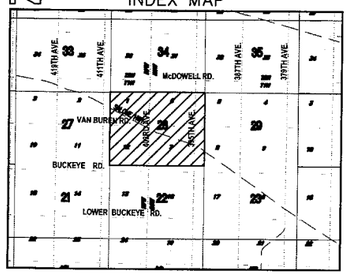
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
21	1108.61	MCDOT Brass cap in handhole at intersection of Indian School Road and 387th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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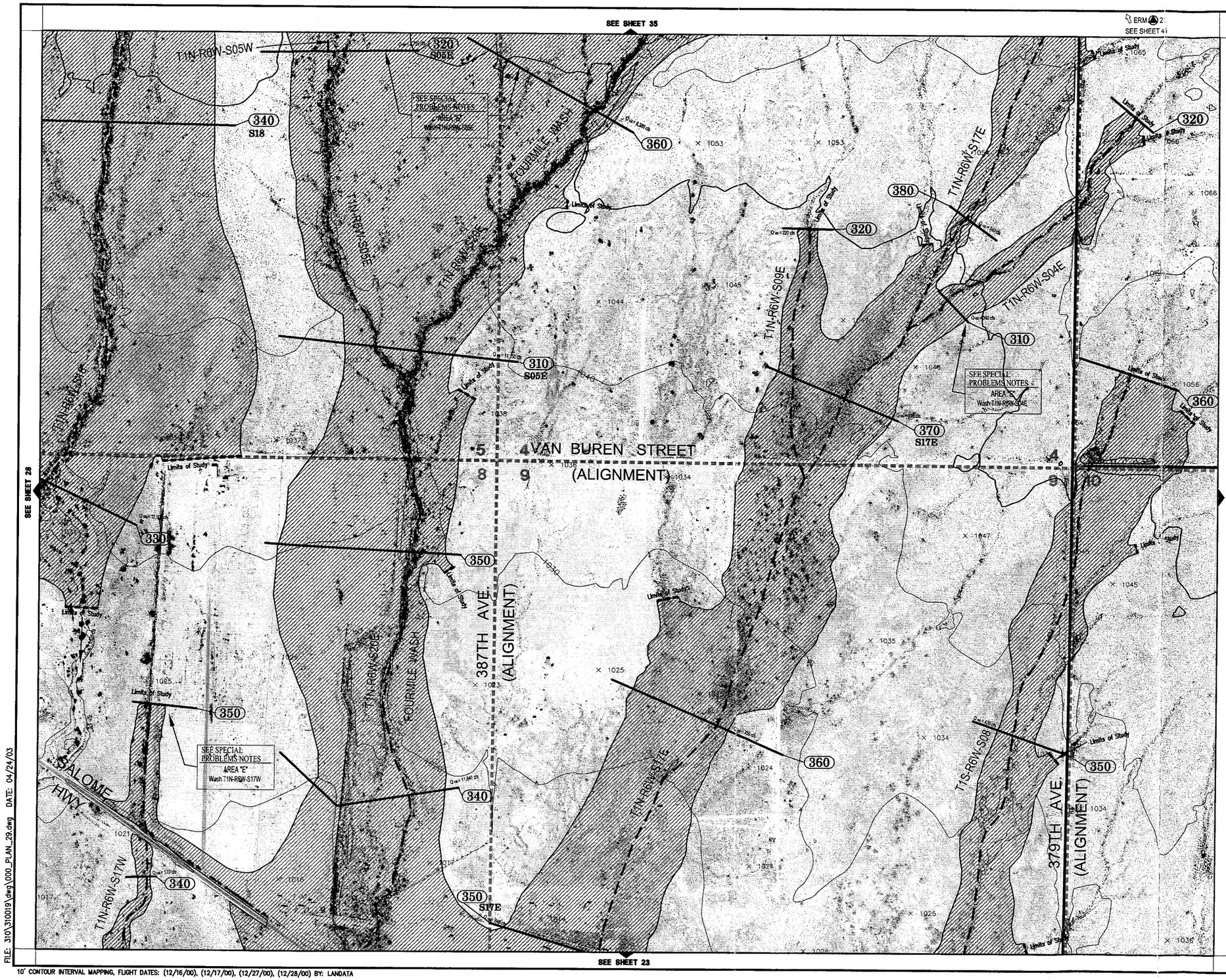
	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_29.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 5
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

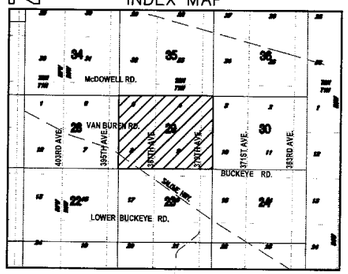
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
21	1108.61	MCDOT Brass cap in handhole at intersection of Indian School Road and 387th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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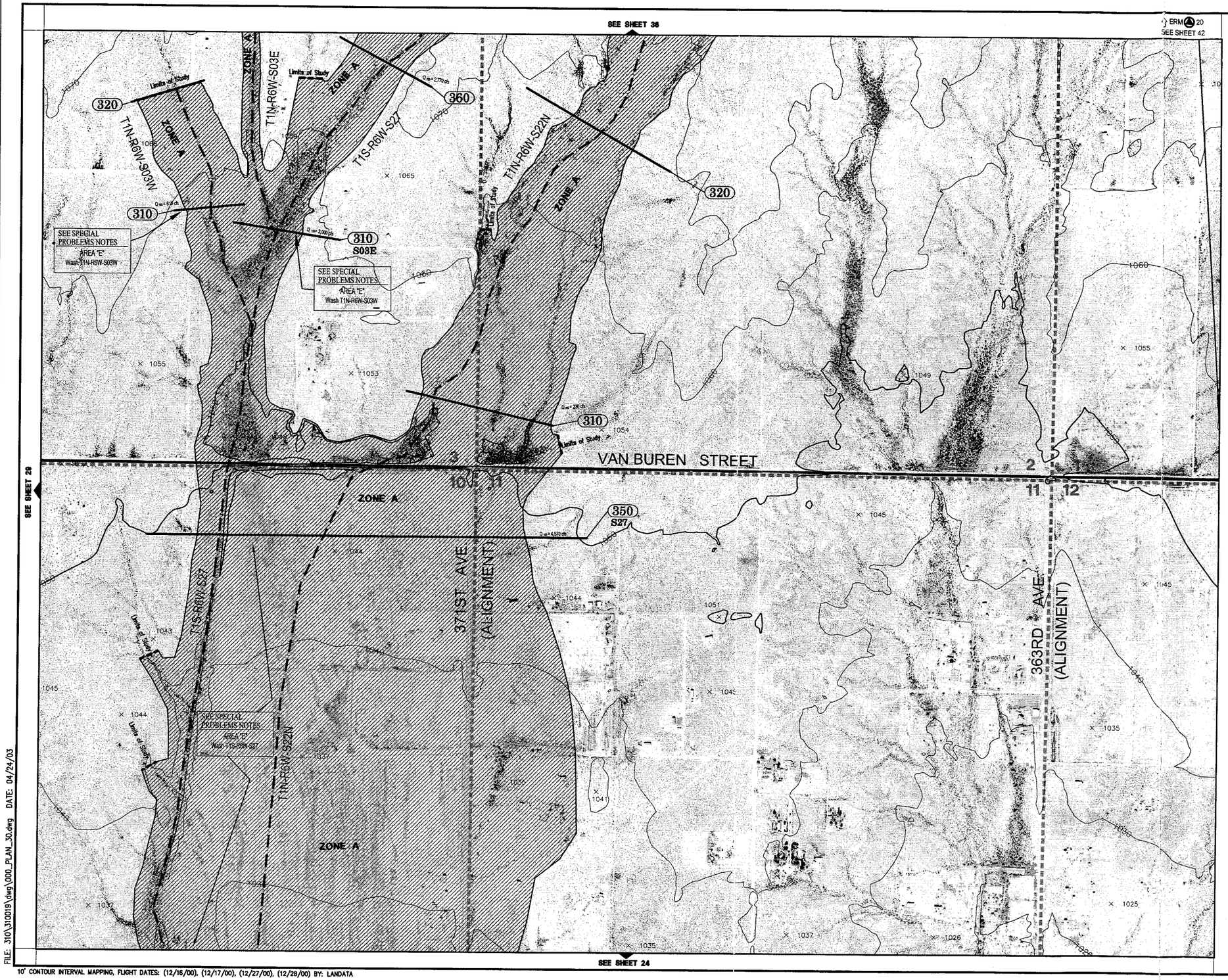
	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

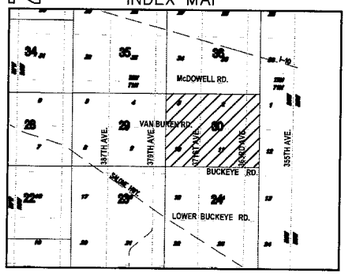
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
20	1131.05	Brass cap in handhole, 1.0 mile east of intersection of 371st Avenue & Indian School Road. (20 feet west of cattle- guard).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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2355 N. 44th Street Suite 125
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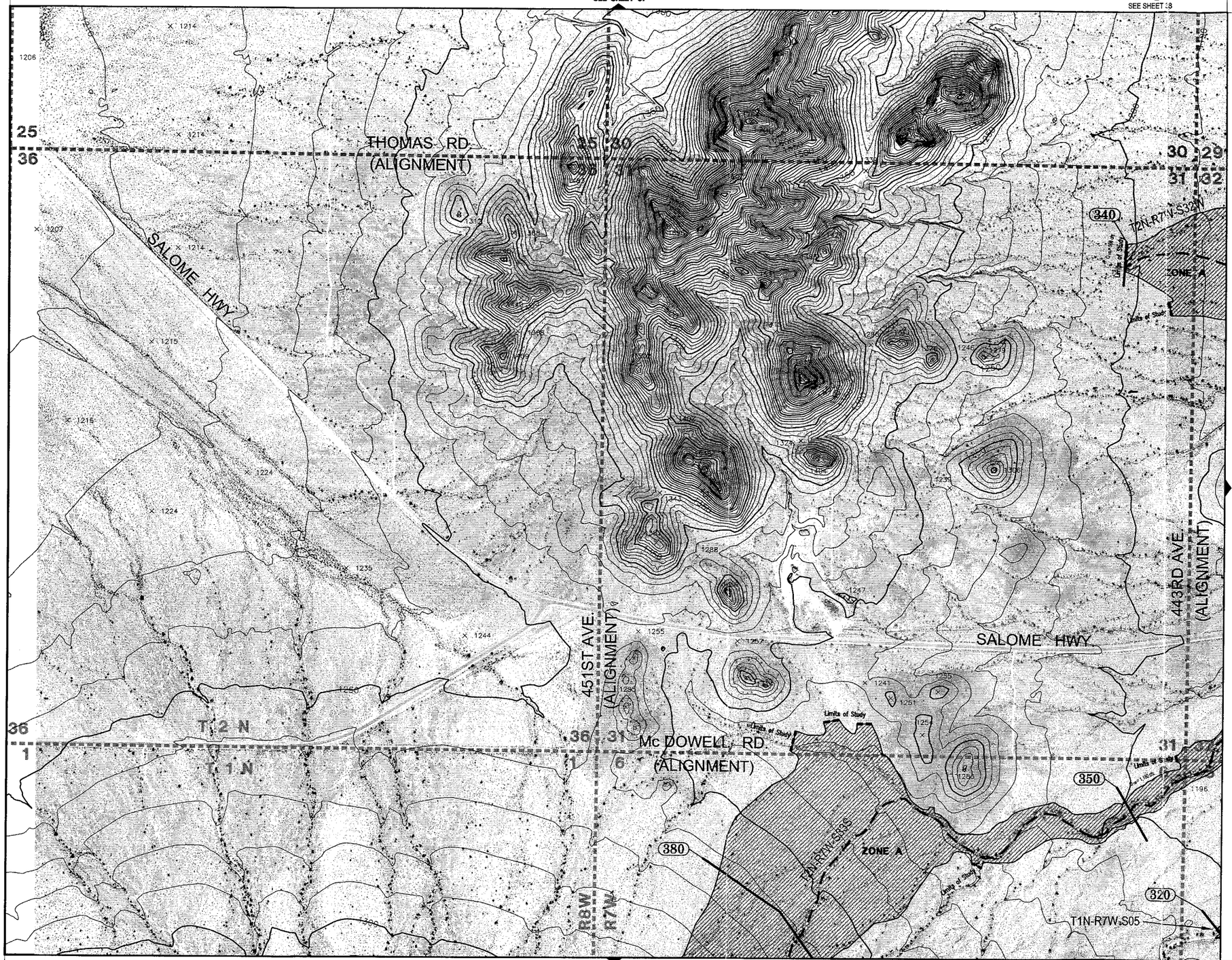
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 30 OF 104

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_30.dwg DATE: 04/24/03



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 5
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

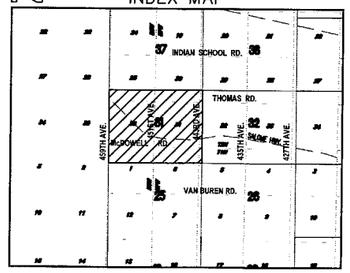
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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Phoenix, AZ 85008-3279
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DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

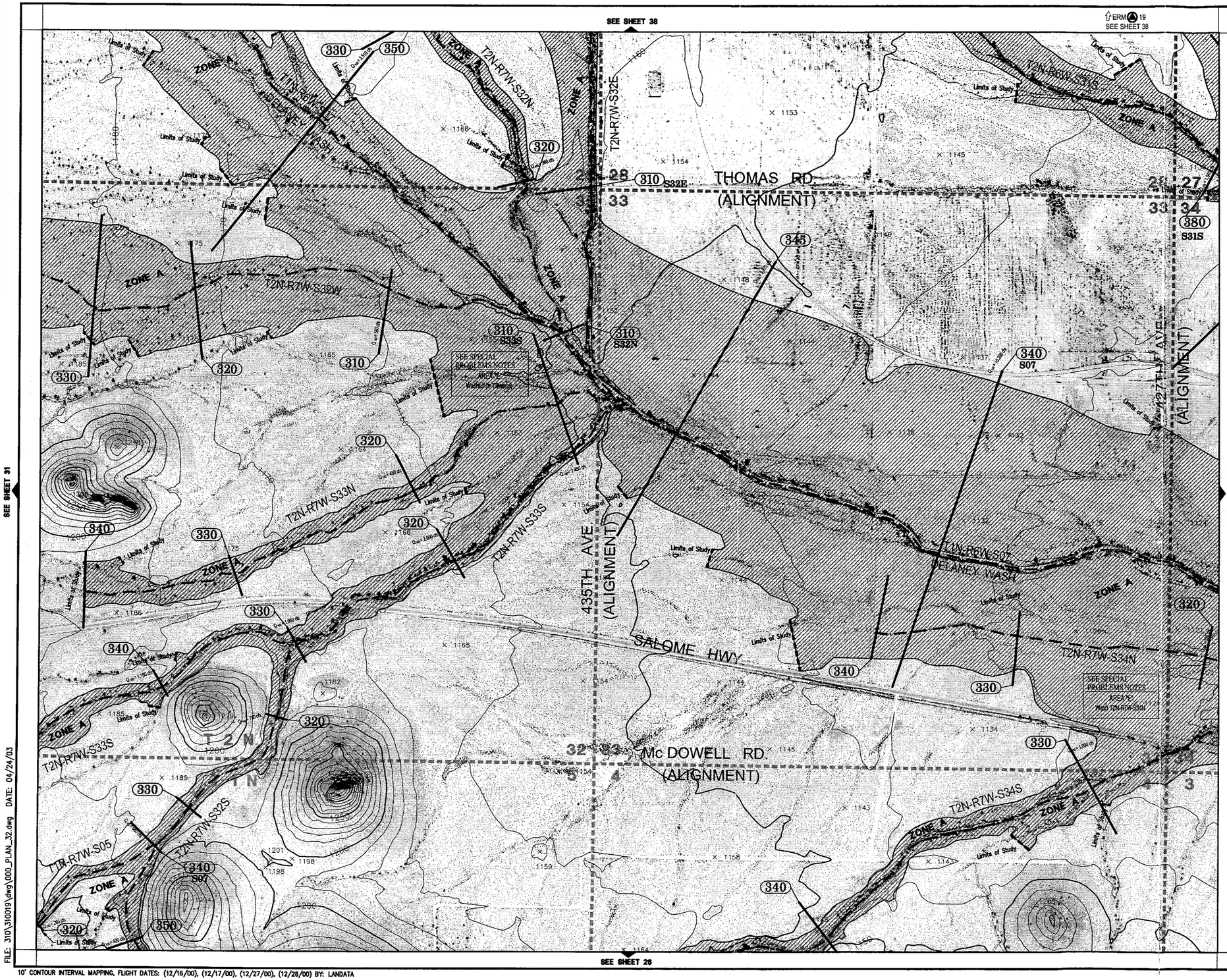
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_31.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

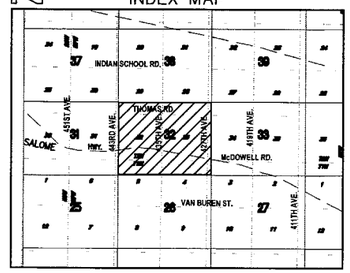
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 to for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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Phoenix, AZ 85008-3279
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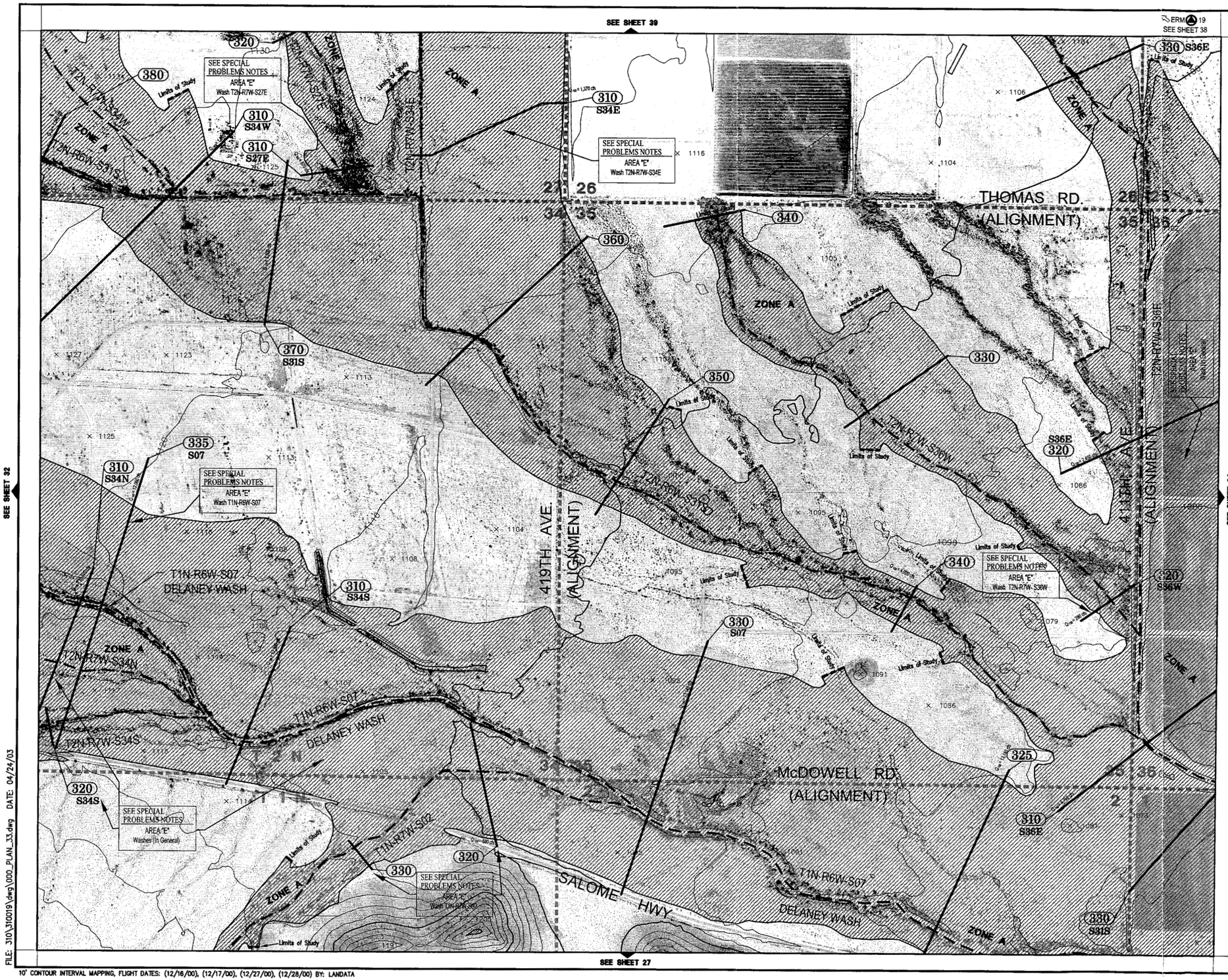
Fax 602.244.5947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/JP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 32 OF 104

FILE: 310\310019\dwg\000_PLAN_32.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

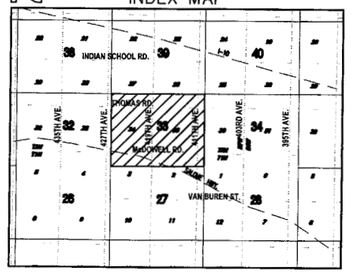
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
3255 N. 44th Street Suite 135
Phoenix, AZ 85018-5270
Tel 602.344.3566
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

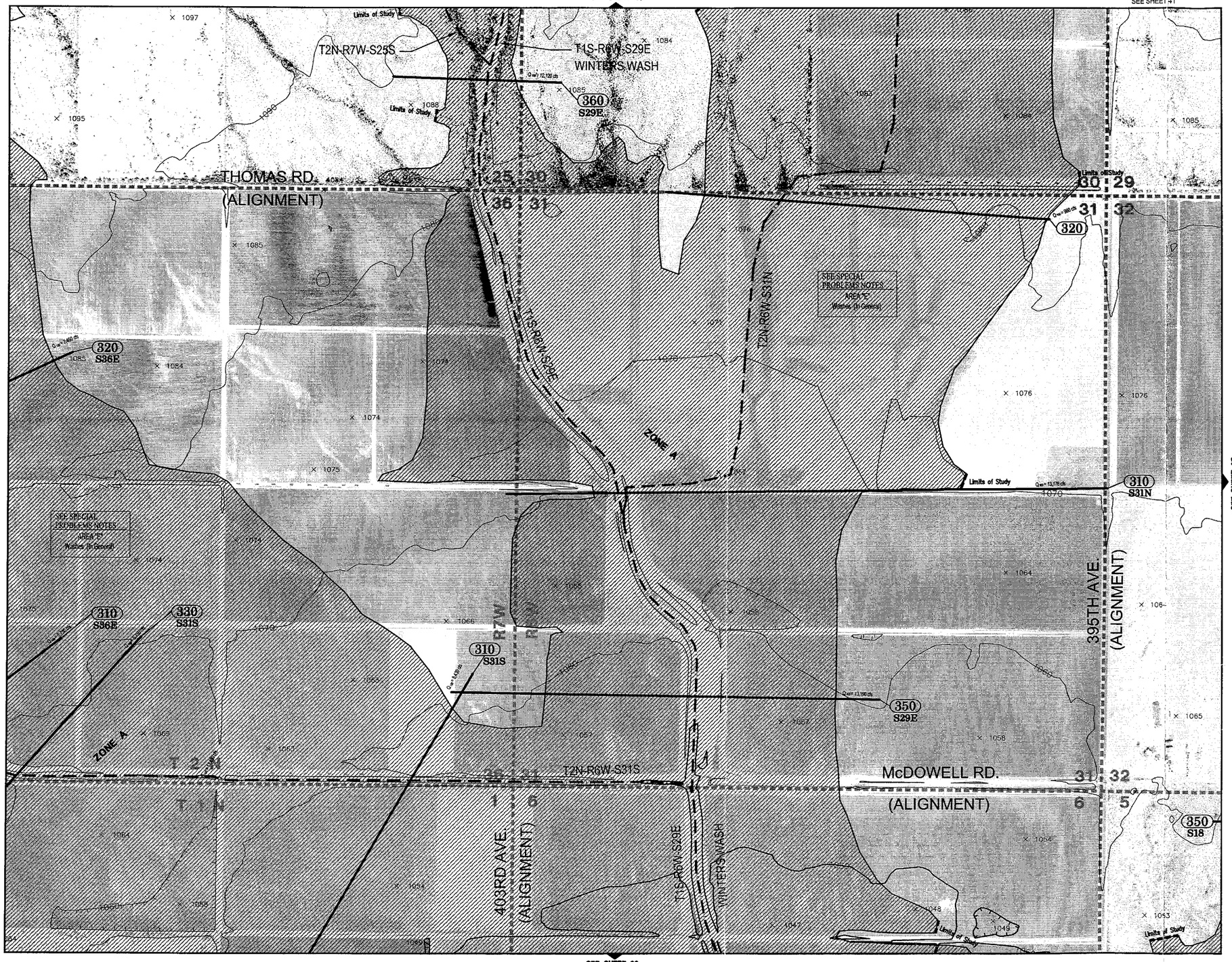
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_33.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

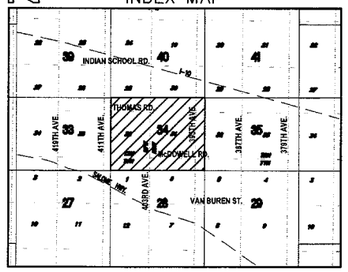
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
21	1108.61	MCDOT Brass cap in handhole at intersection of Indian School Road and 387th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2505
Fax 602.344.8947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 34 OF 104

FILE: 310\310019\dwg\000_PLAN_34.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_35.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

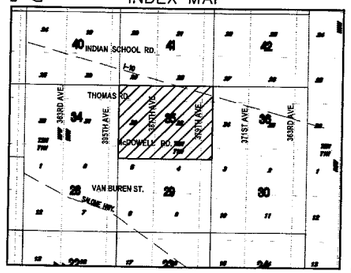
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
21	1108.61	MCDOT Brass cap in handhole at intersection of Indian School Road and 387th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.2505
Fax 602.244.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

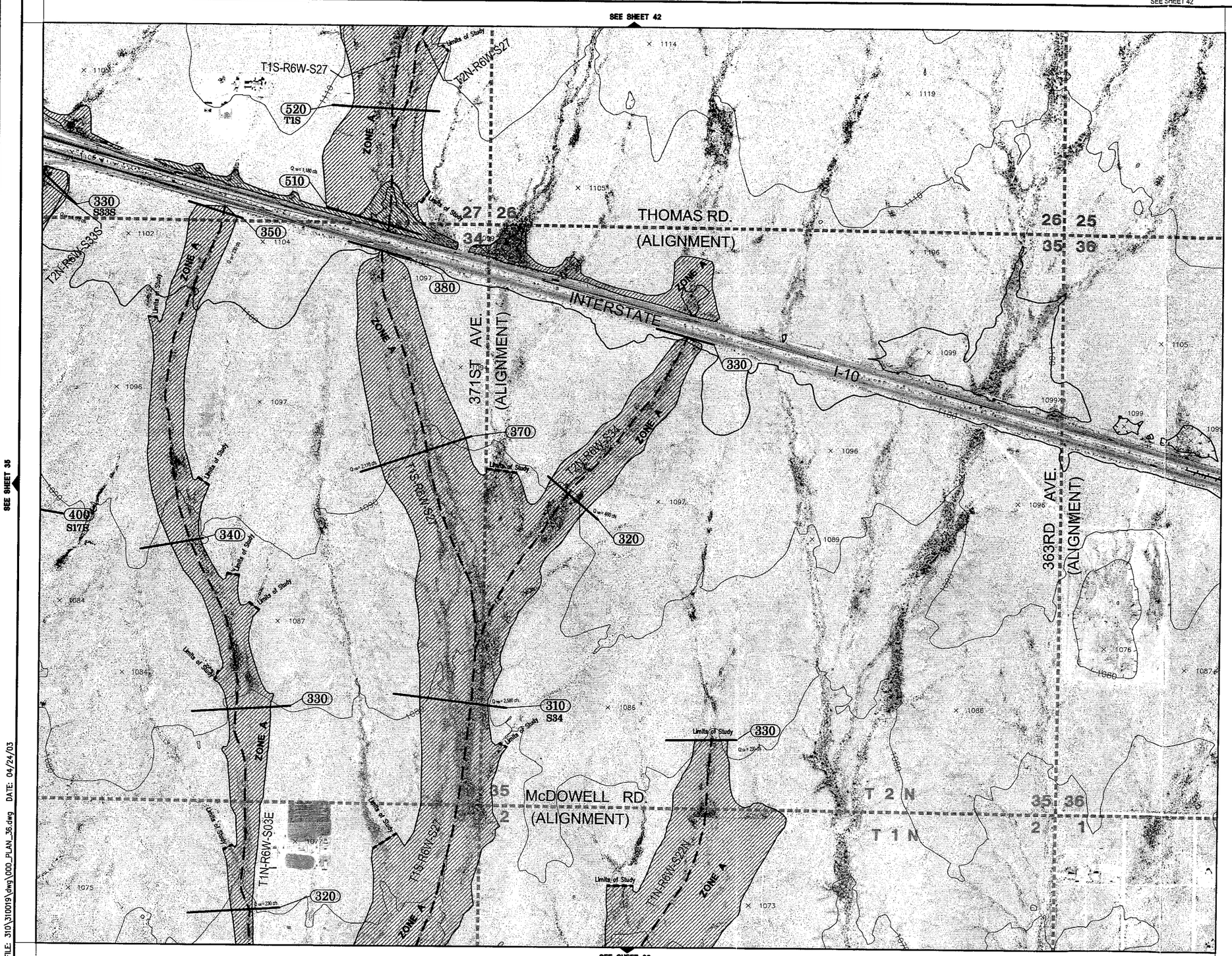
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

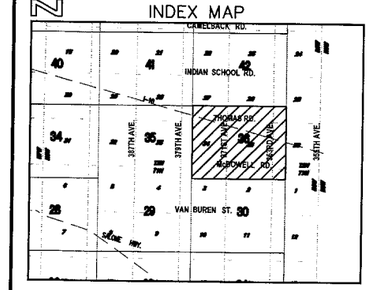
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
20	1131.05	Brass cap in handhole, 1.0 mile east of intersection of 371st Avenue & Indian School Road. (20 feet west of cattle- guard).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.2500
Fax 602.344.2947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

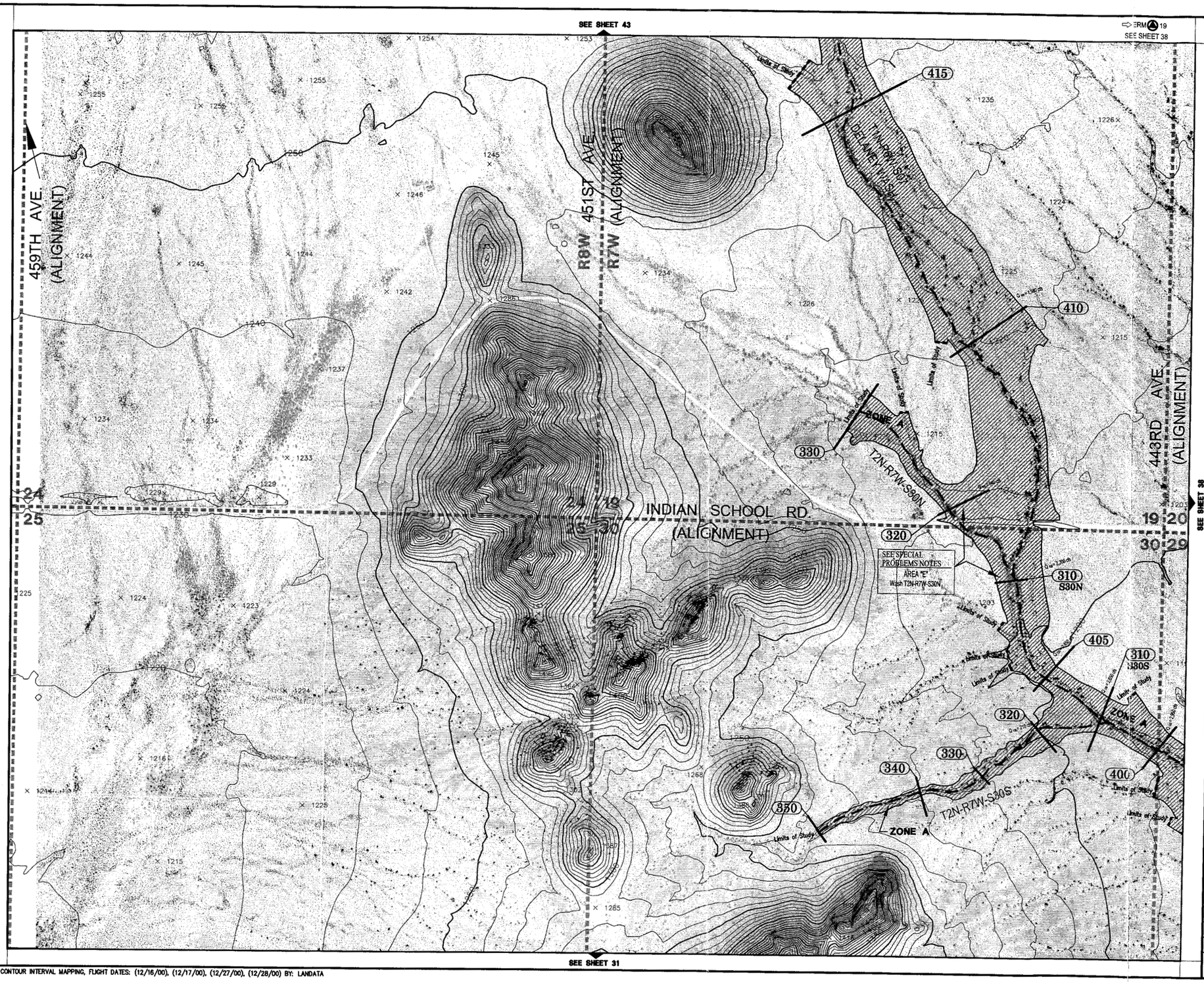
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 36 OF 104

FILE: 310\310019\dwg\000_PLAN_36.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

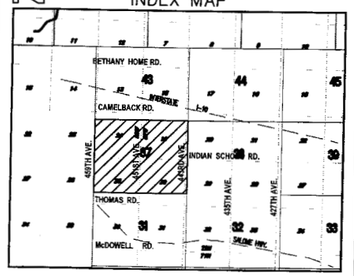
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 to for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2666
Fax 602.344.0947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

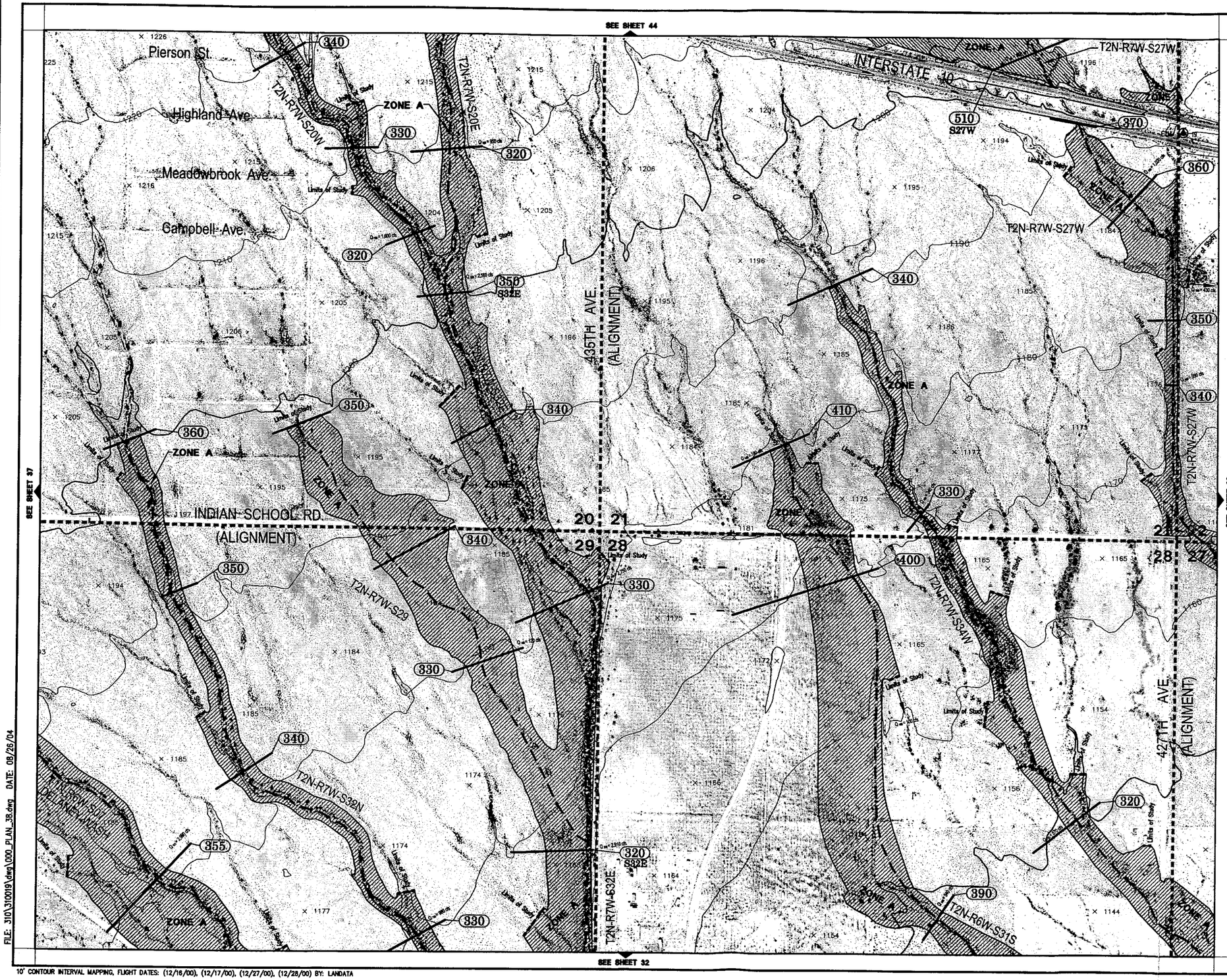
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 37 OF 104

FILE: 310\310019\dwg\000_PLAN_37.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_38.dwg DATE: 08/26/04

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

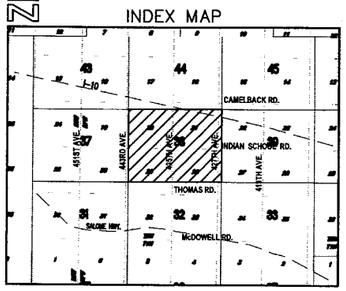
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 to for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.244.2556
Fax 602.244.2547
E-mail www.entellus.com

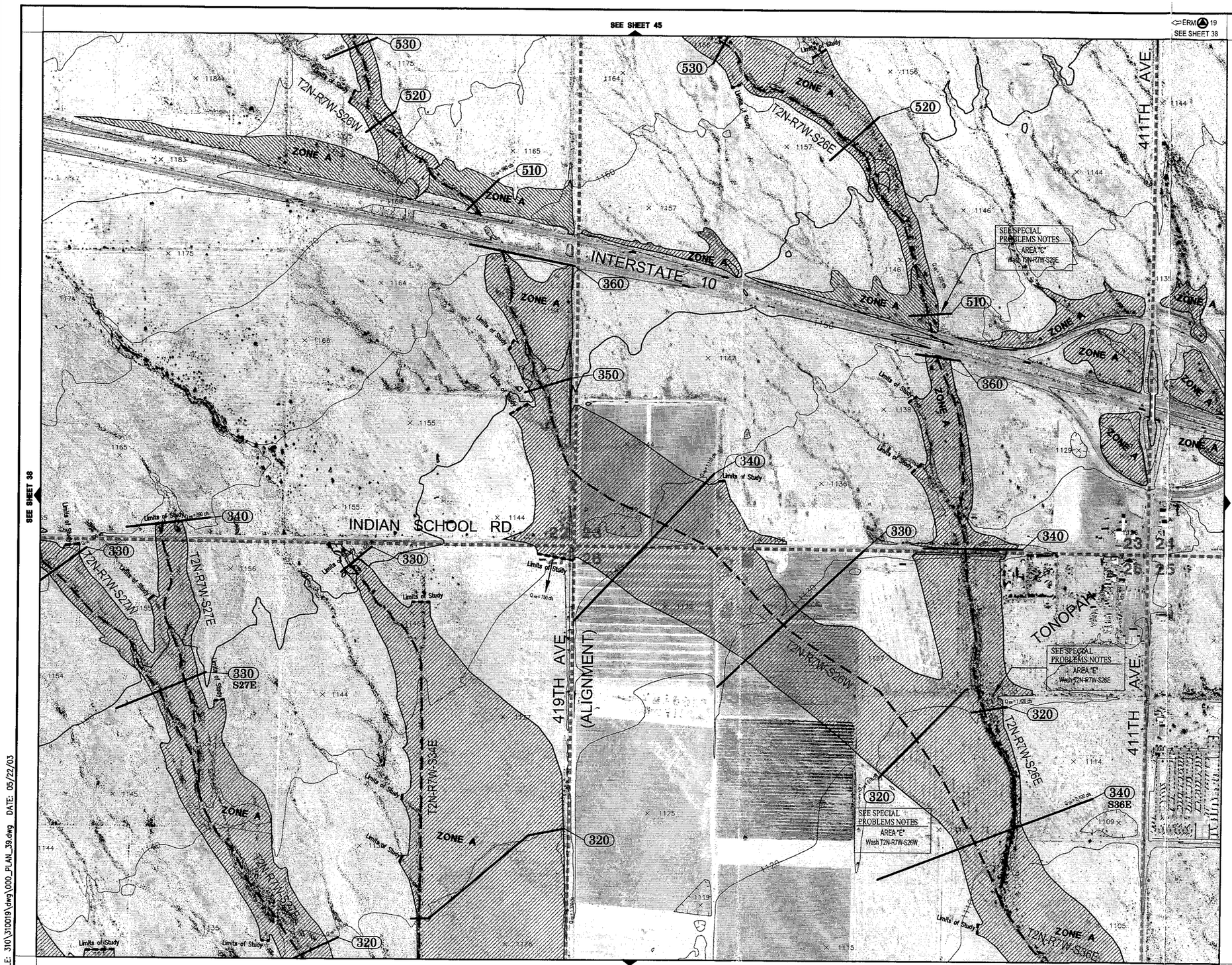
	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

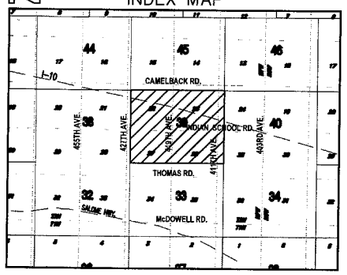
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 to for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

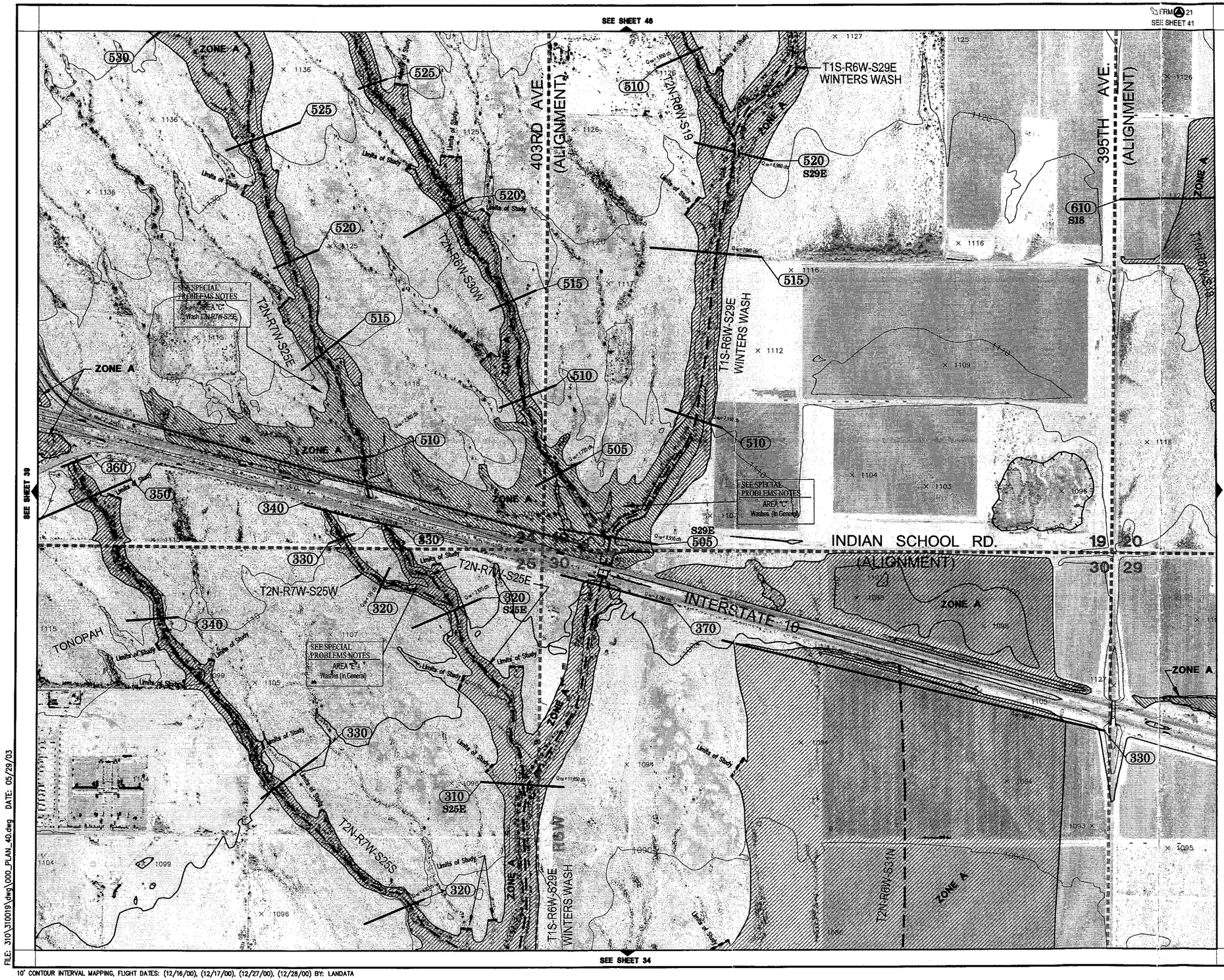
CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 135
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.0947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_39.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

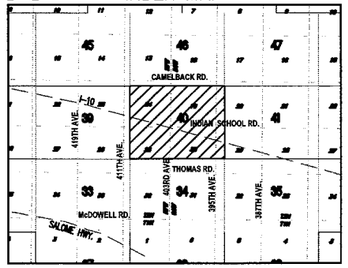
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
21	1108.61	MCDOT Brass cap in handhole at intersection of Indian School Road and 387th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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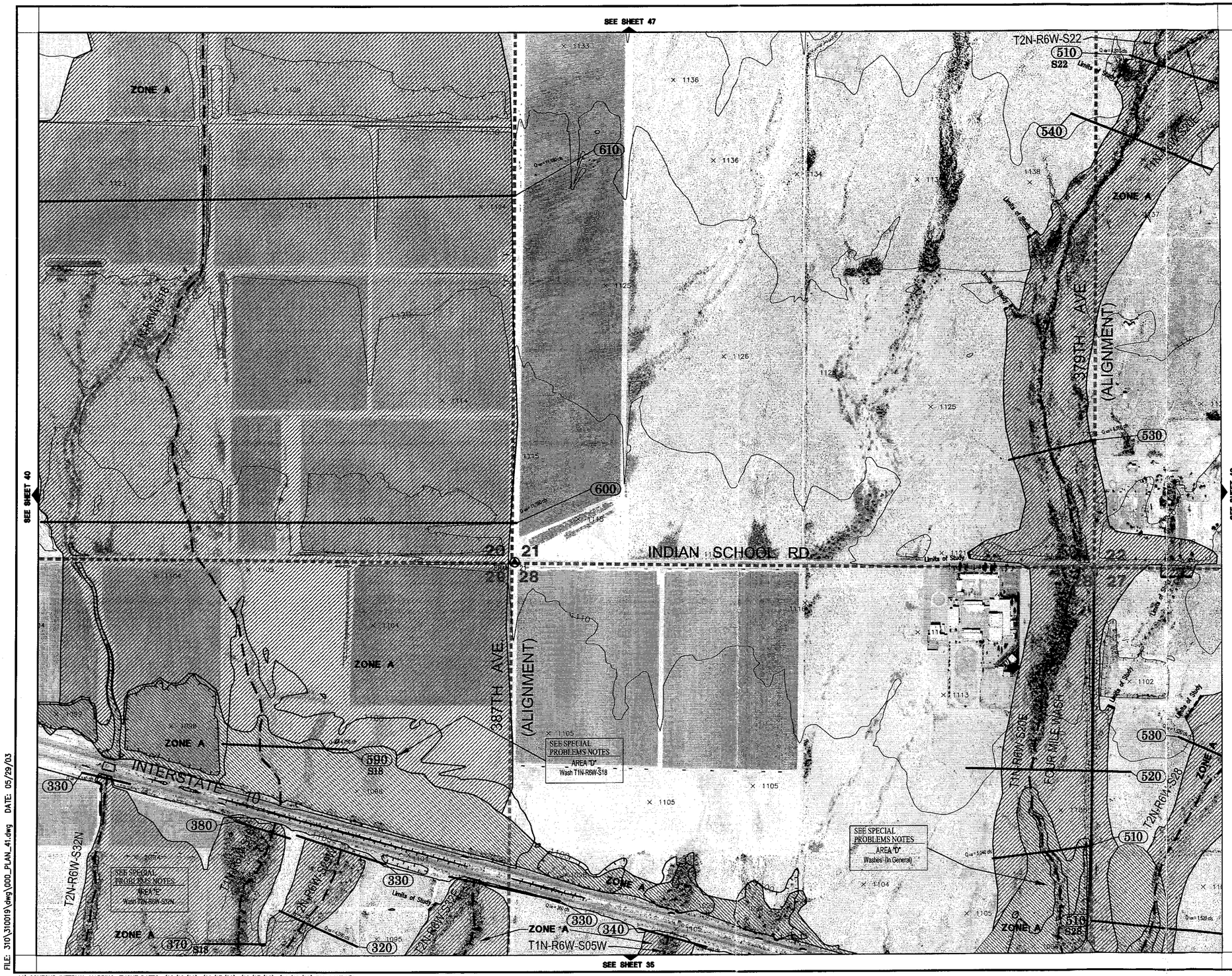
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.3505
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN	AMG/UP	09/2002	
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:		DATE:	SHEET 40 OF 104

FILE: 310\310019\dwg\000_PLAN_40.dwg DATE: 05/29/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

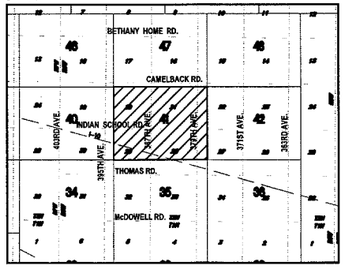
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
21	1108.61	MCDOT Brass cap in handhole at intersection of Indian School Road and 387th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.2566
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

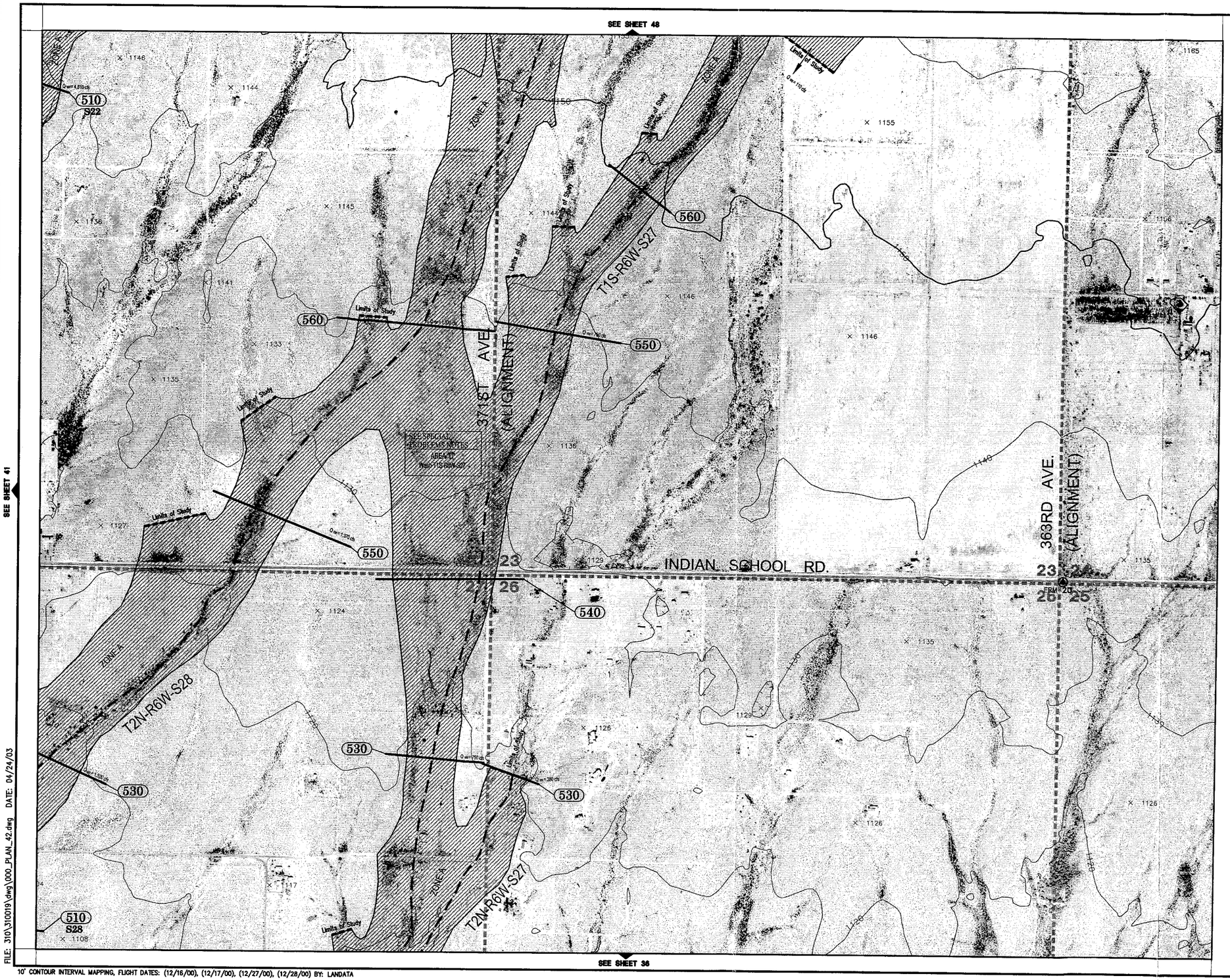
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_41.dwg DATE: 05/29/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_42.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

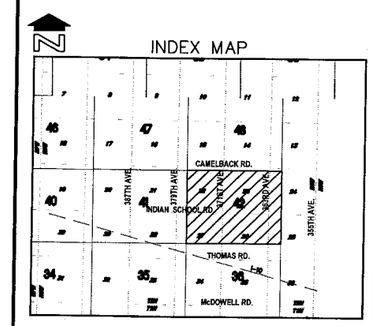
100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
20	1131.05	Brass cap in handhole, 1.0 mile east of intersection of 371st Avenue & Indian School Road. (20 feet west of cattle- guard).

NOTES



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2566
Fax 602.344.9047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

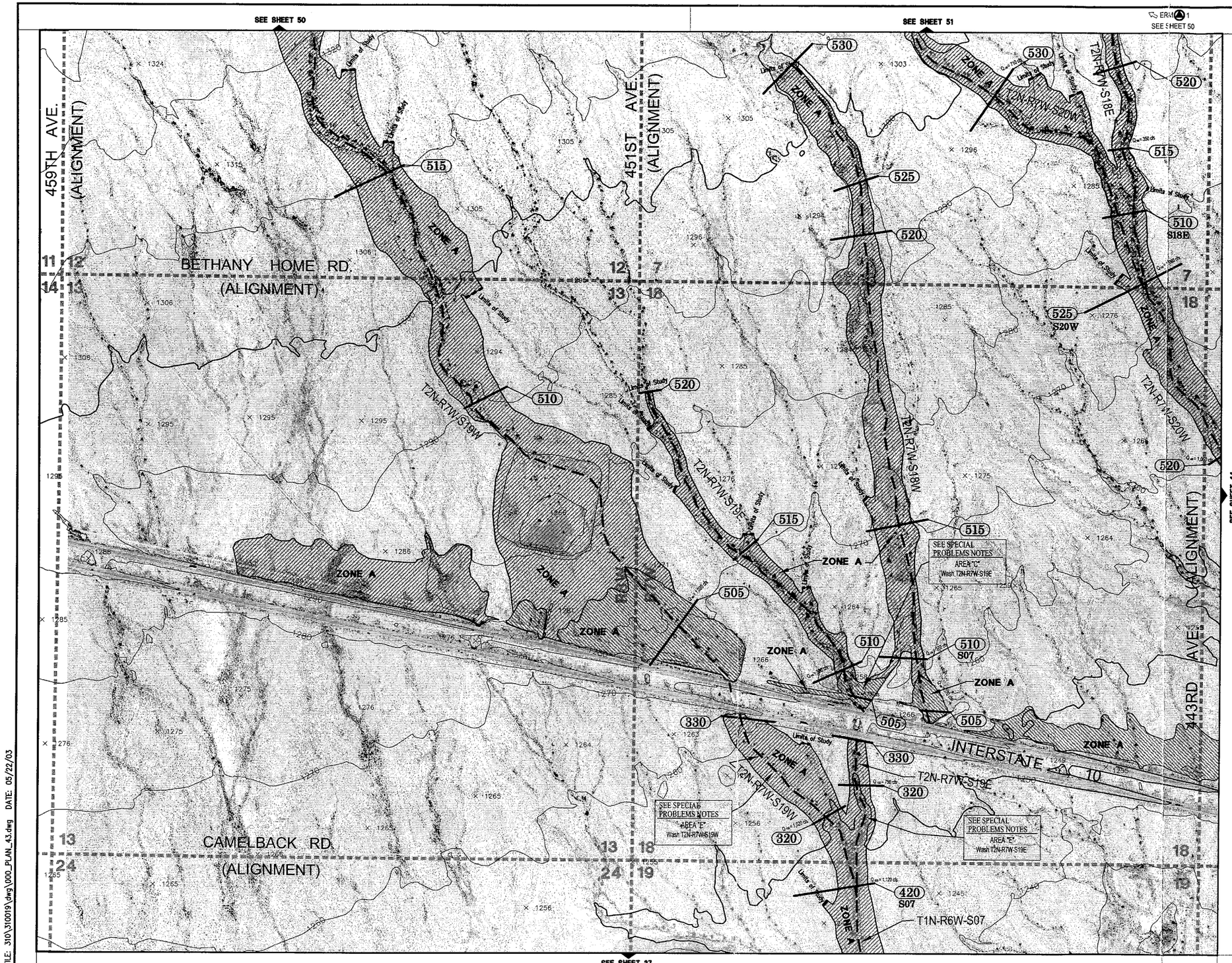
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

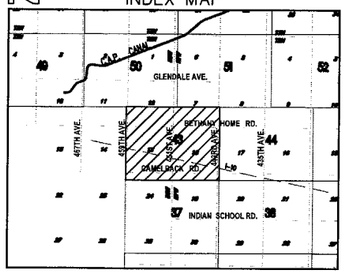
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1	1390.31	U. S. Dept. of Interior brass cap in concrete atop flume, south side of the CAP canal, 12.6 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.2566
Fax 602.244.0947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

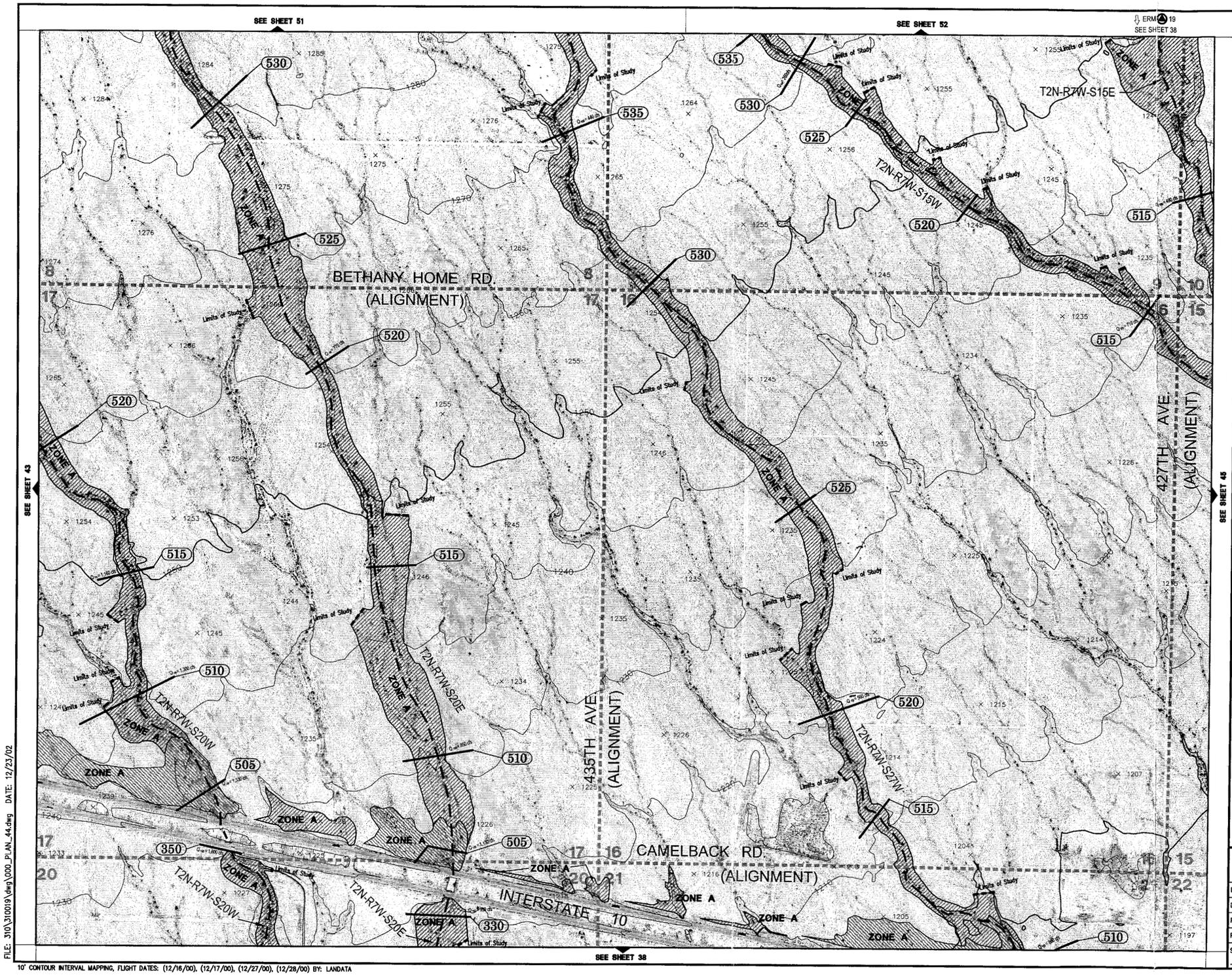
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_43.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

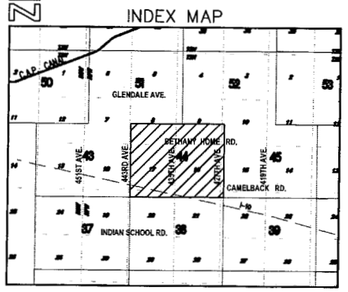
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 to for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 85 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3270
Tel 602.344.2506
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

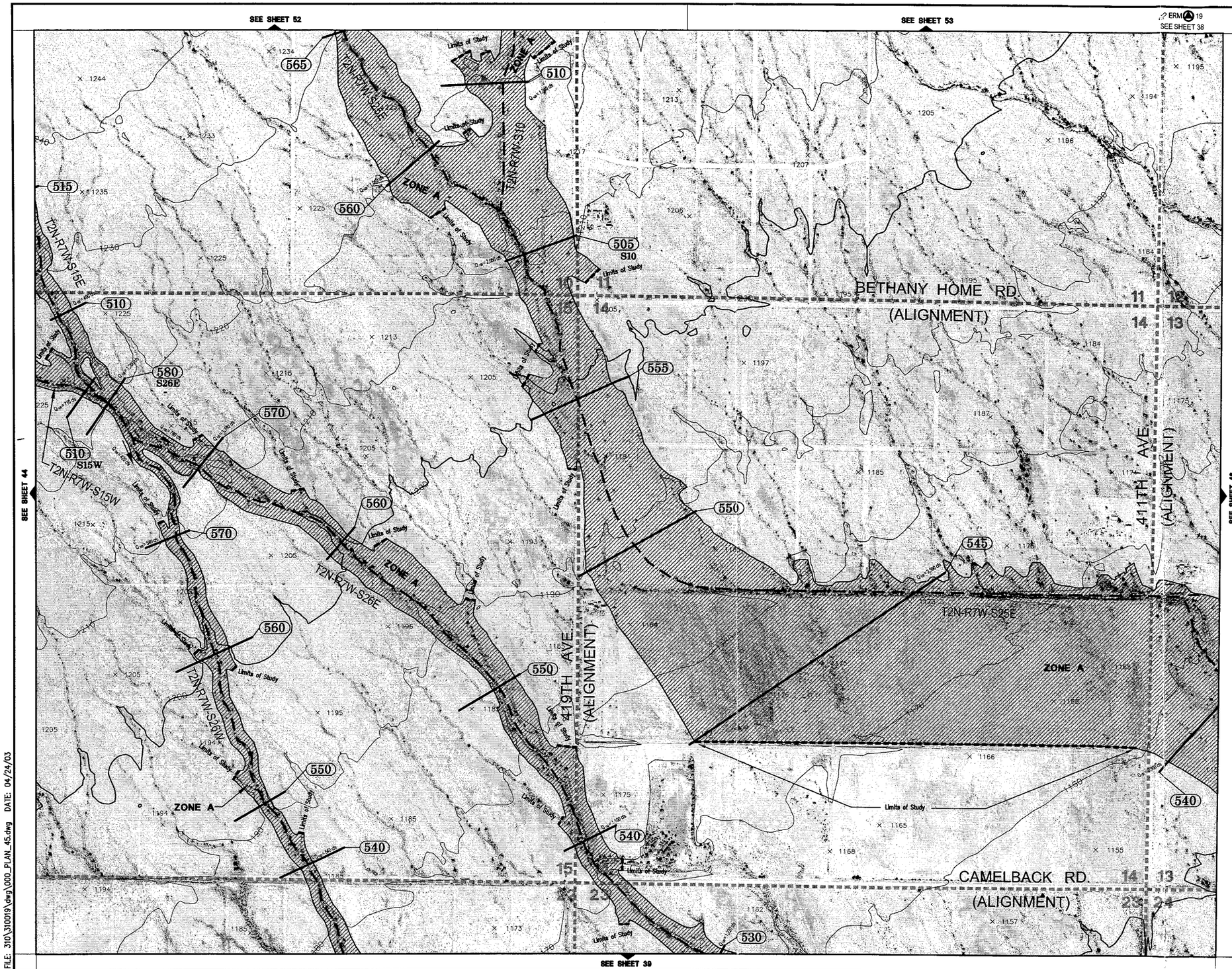
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_44.dwg DATE: 12/23/02

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

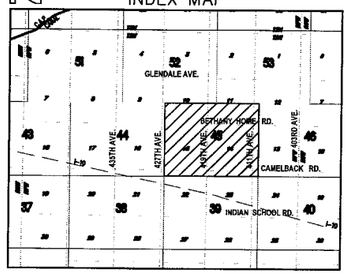
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
19	1189.47	GDACS Station 4DN1. Located in Sec 22, T-2-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC, stamped: 4DN1 1999. From intersection of Interstate Hwy 17 and Interstate Hwy 10, travel W on Interstate 10 to for 51.3 miles to MP 93, thence continue W on Interstate 10 for 0.9 mile to "emergency turn-around" on left and park vehicle. Station is located 65 feet S of WB lanes of I-10 & midway between EB-WB lanes below E top of slope of turn-around.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
3255 N. 44th Street Suite 125
Phoenix, AZ 85008-3270
Tel 602.344.3566
Fax 602.344.3047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

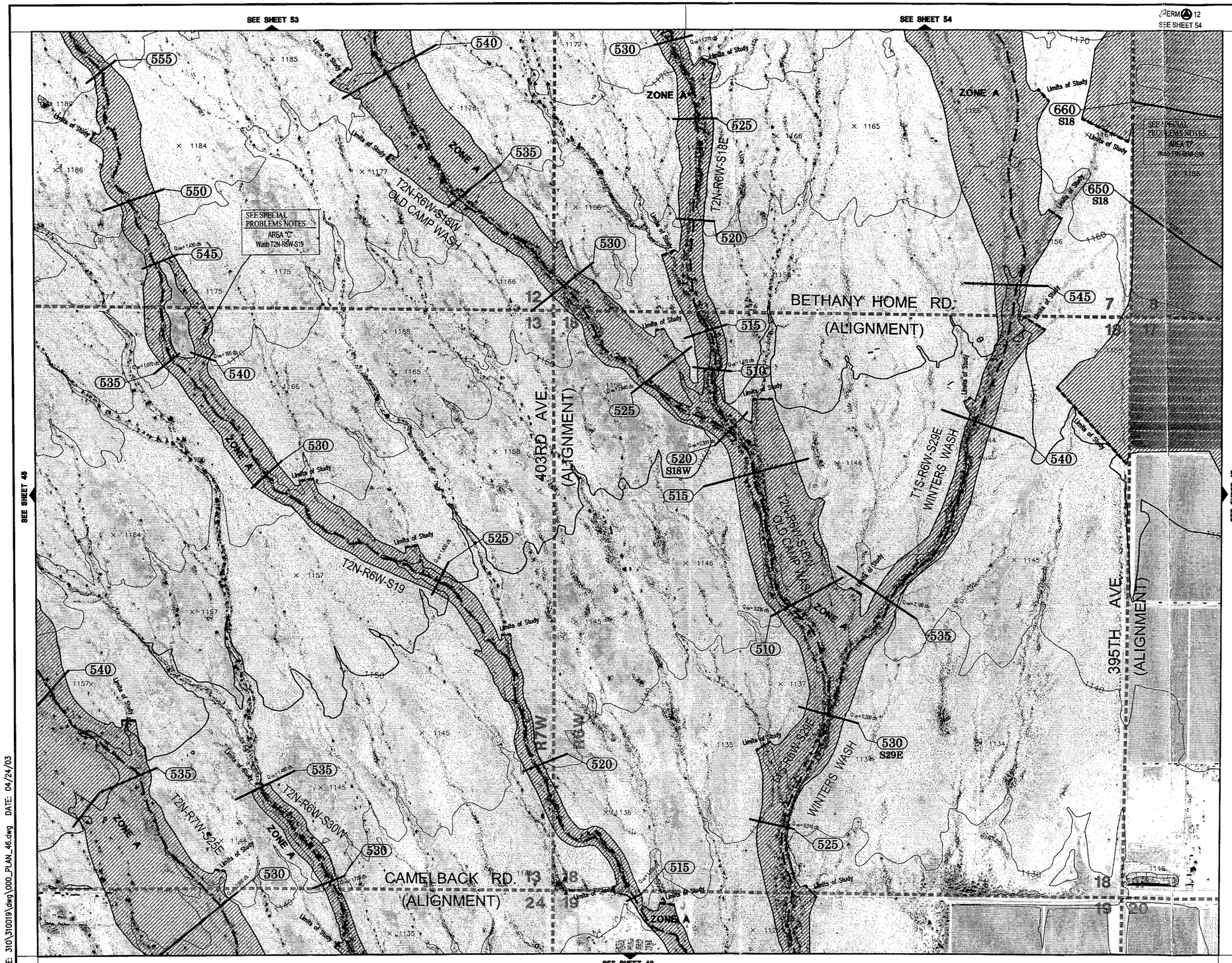
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 45 OF 104

FILE: 310\310019\dwg\000_PLAN_45.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

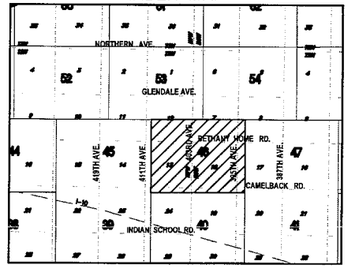
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
12	1205.13	Brass cap flush at intersection of 387th Avenue and Orangewood Avenue. (1/4 corner of sections 4 and 5, T2N-R6W).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-2279
Tel 602.344.2566
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

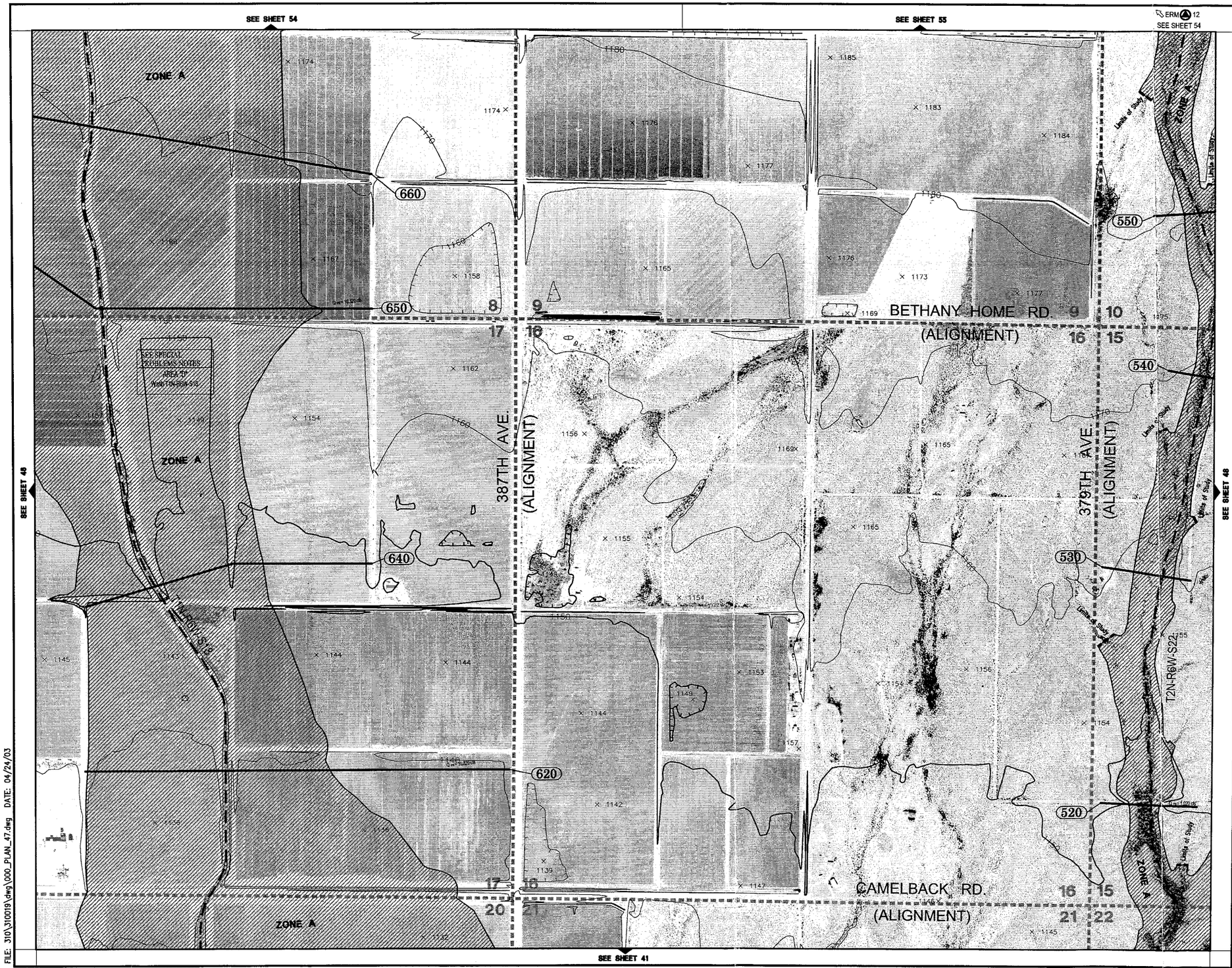
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_46.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

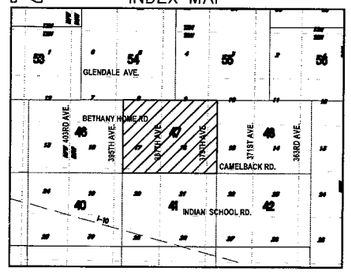
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
12	1205.13	Brass cap flush at intersection of 387th Avenue and Orangewood Avenue. (1/4 corner of sections 4 and 5, T2N-R6W).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008.3279
Tel 602.244.2666
Fax 602.244.9947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SUBMITTED BY: DATE:

SHEET 47 OF 104

FILE: 310\310019\dwg\000_PLAN_47.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

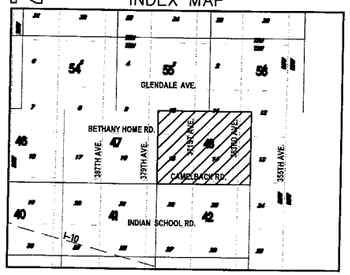
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
20	1131.05	Brass cap in handhole, 1.0 mile east of intersection of 371st Avenue & Indian School Road. (20 feet west of cattle- guard).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2566
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

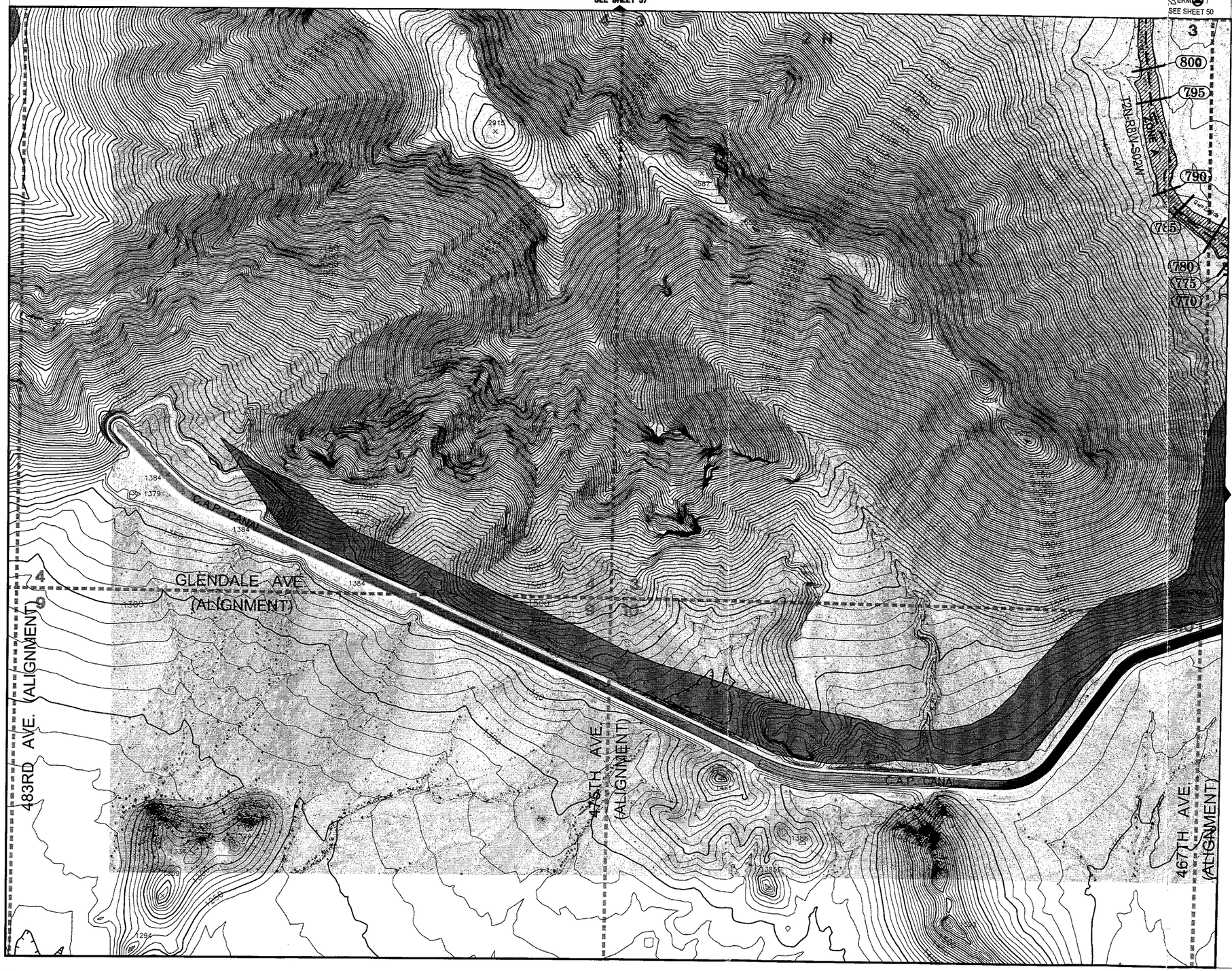
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_48.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

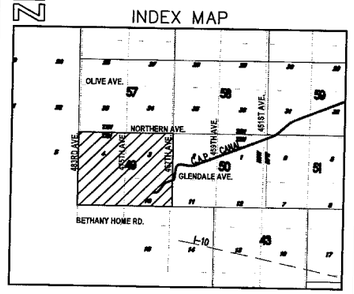
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1	1390.31	U. S. Dept. of Interior brass cap in concrete atop flume, south side of the CAP canal, 12.8 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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Phoenix, AZ 85008-3270
Tel 602.344.2566
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

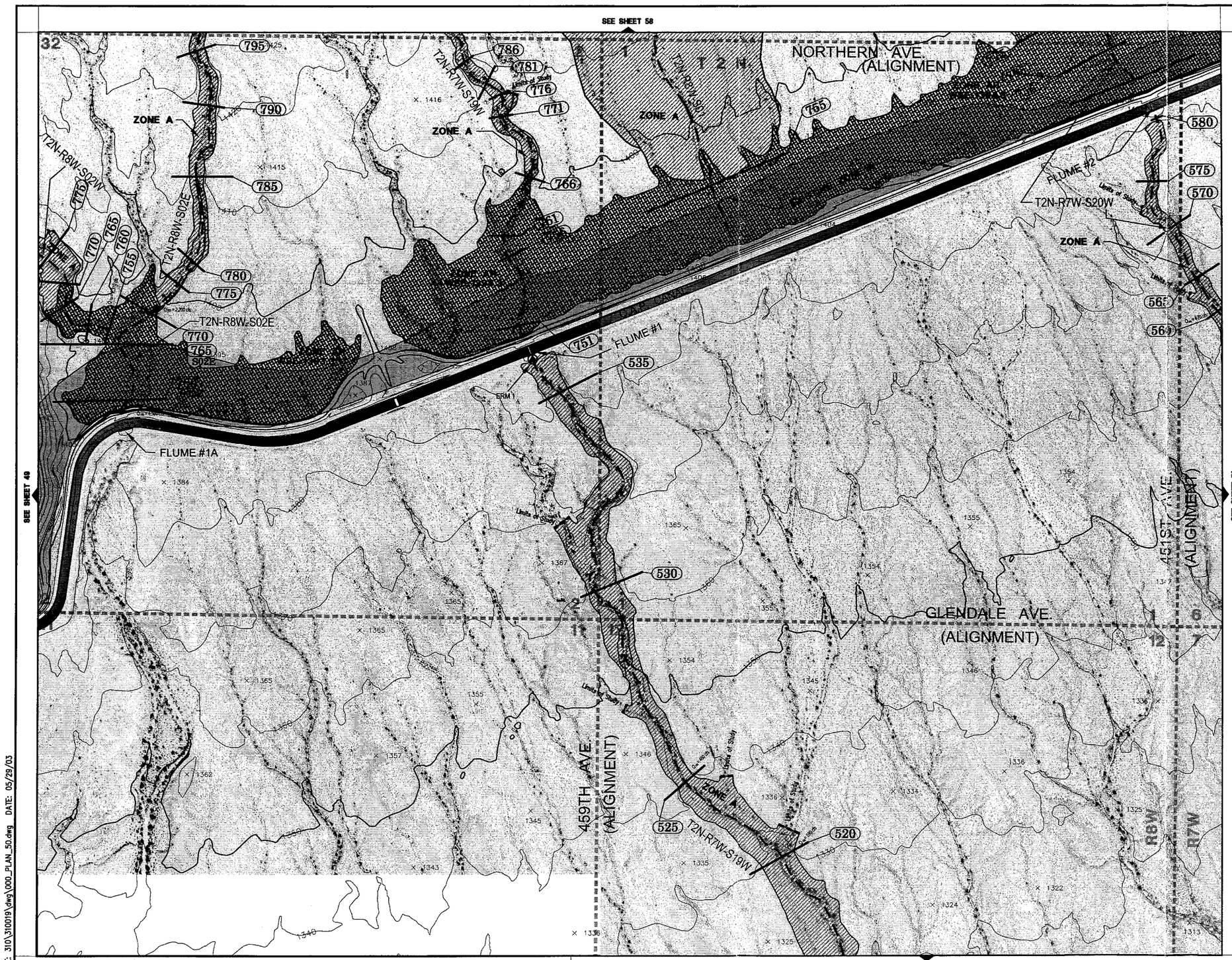
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_49.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

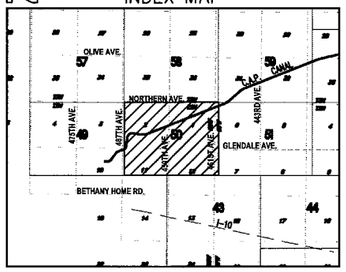
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1	1390.31	U. S. Dept. of Interior brass cap in concrete atop flume, south side of the CAP canal, 12.8 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street, Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.3566
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

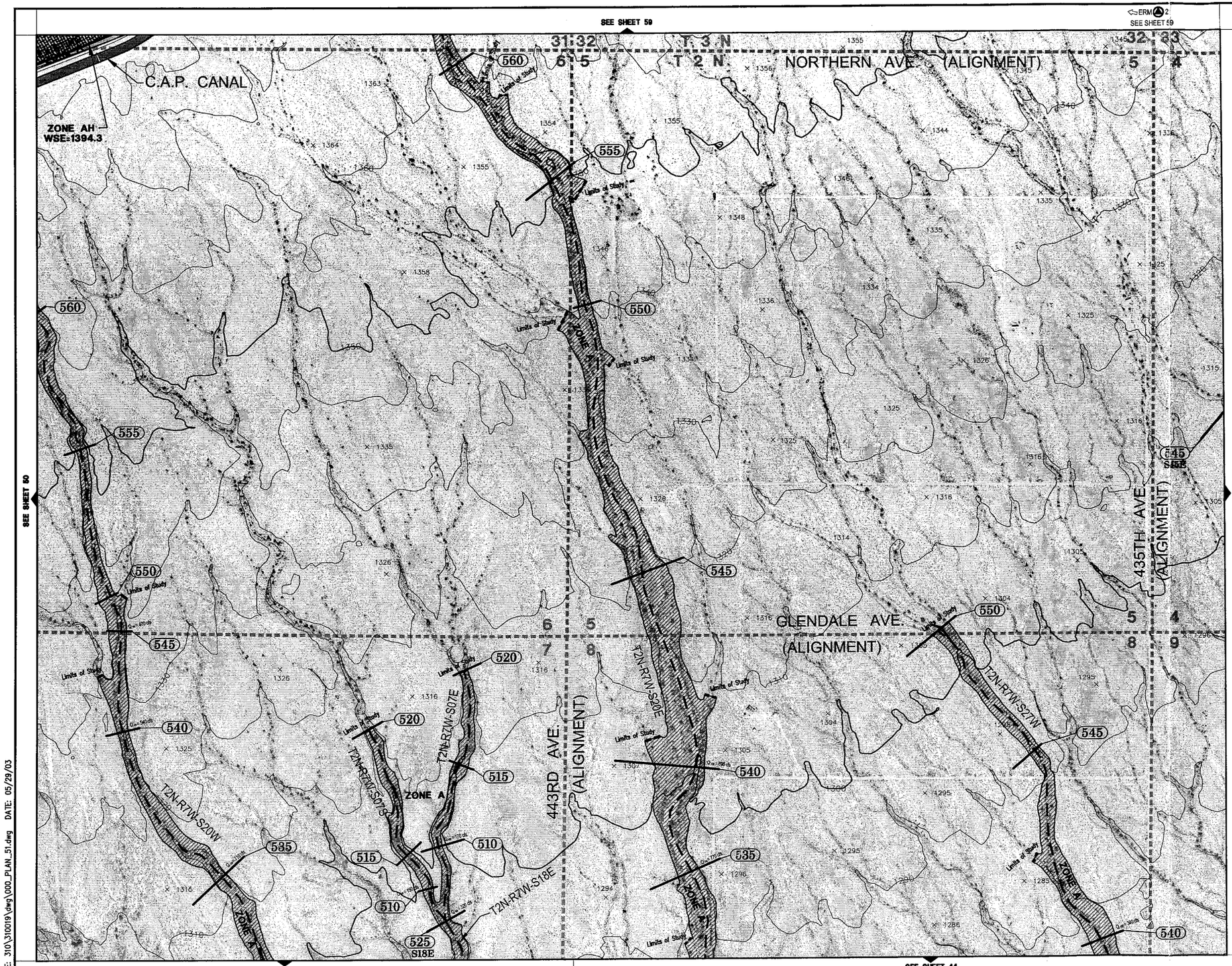
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_50.dwg DATE: 05/29/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

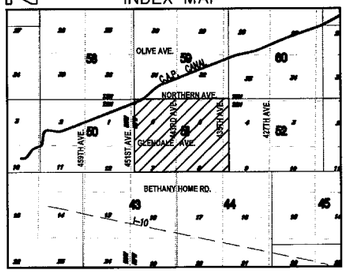
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
2	1389.82	U.S. Dept of Interior brass cap in conc. atop flume, south side CAP, 10.8 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2359 N. 44th Street Suite 135
Phoenix, AZ 85008-3270
Tel 602.244.3506
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

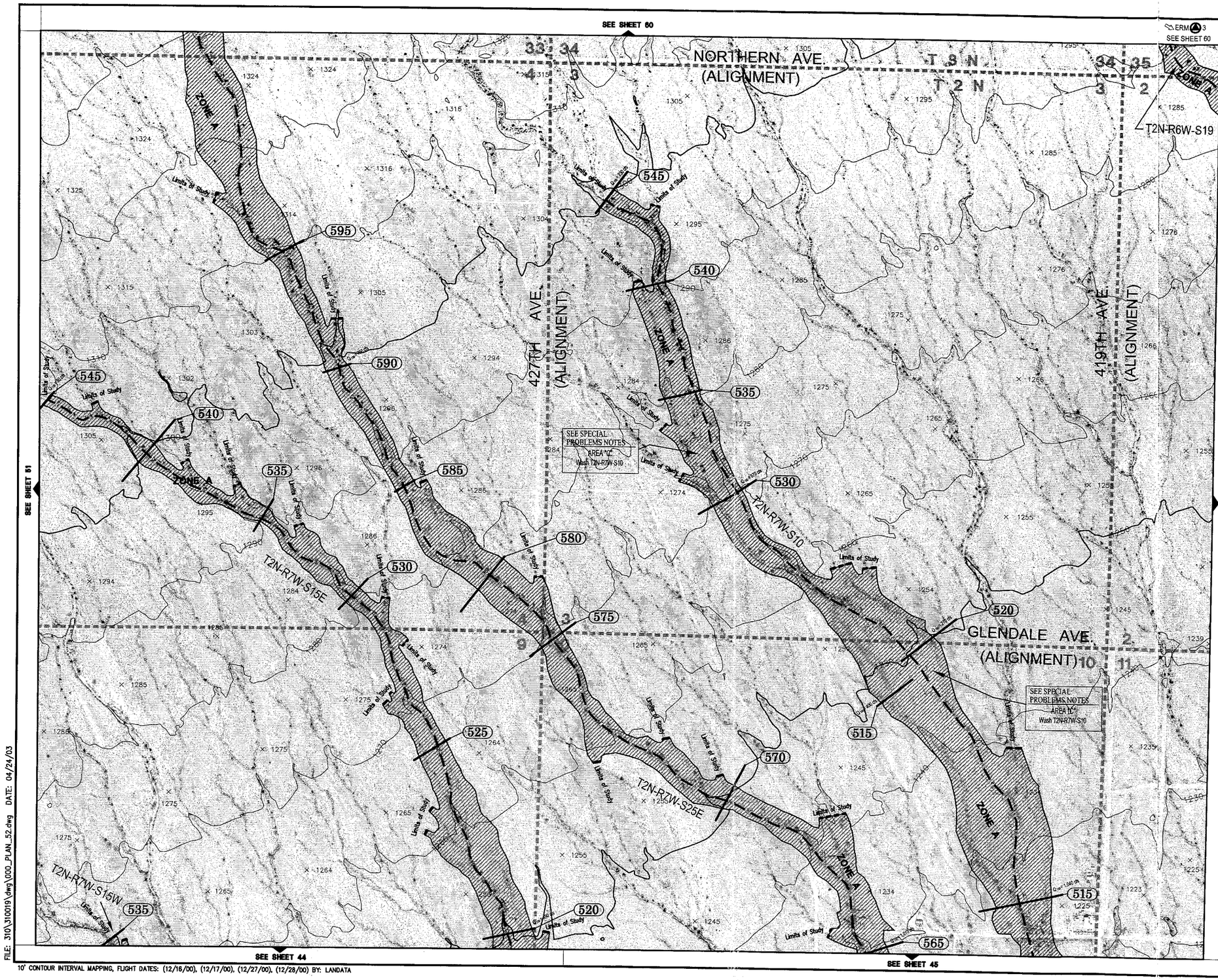
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_51.dwg DATE: 05/29/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_52.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

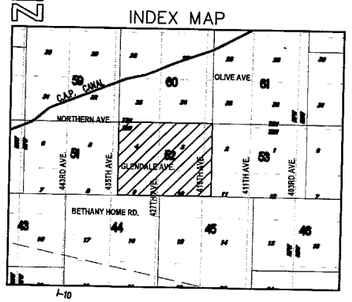
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
3	1388.12	U.S. Dept of Interior brass cap in concrete atop flume, south side CAP canal, 8.1 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

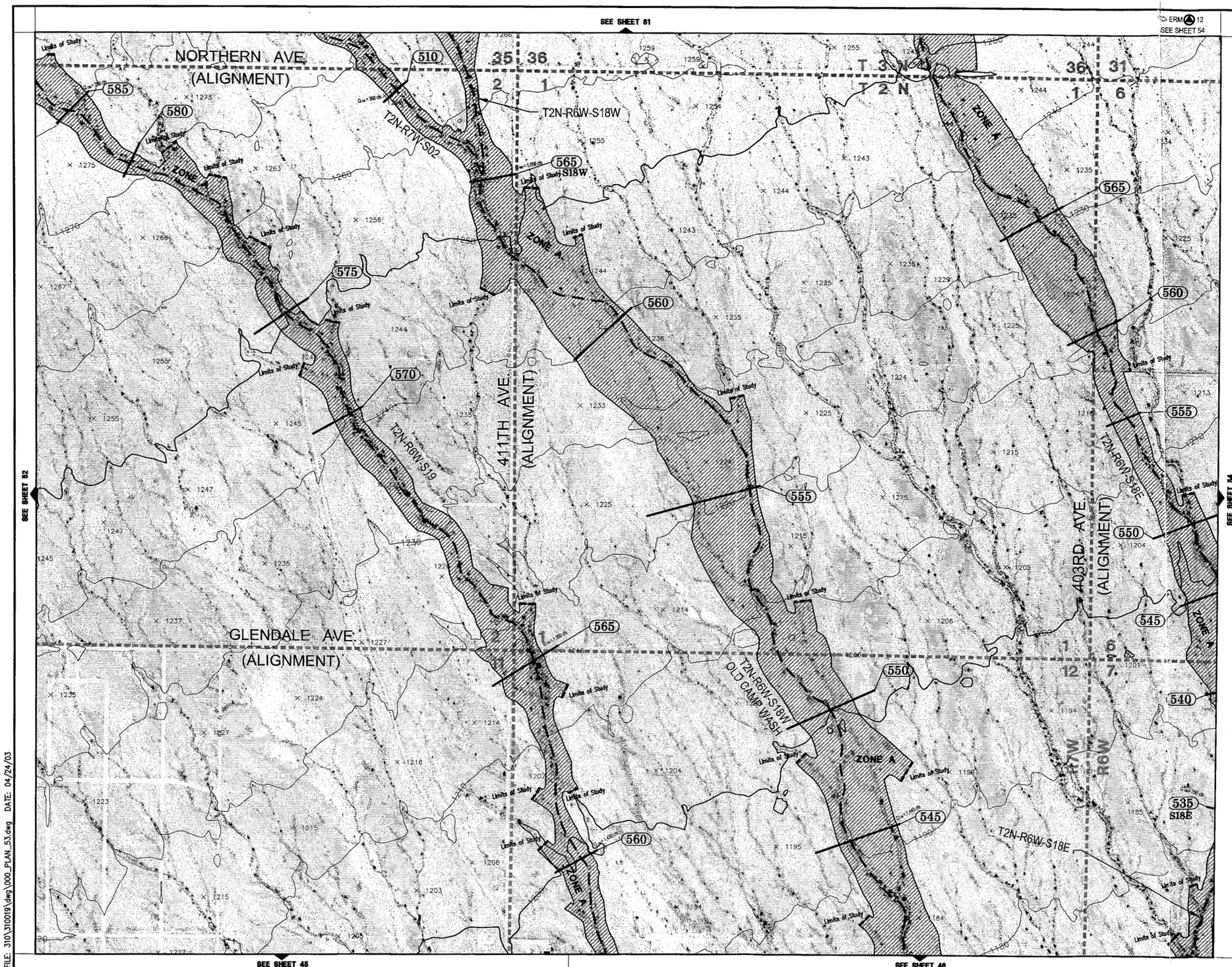
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

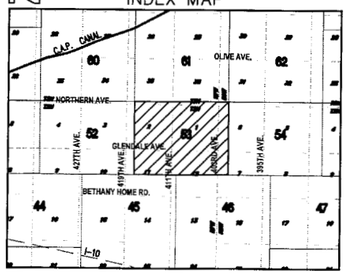
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
12	1205.13	Brass cap flush at intersection of 387th Avenue and Orangewood Avenue. (1/4 corner of sections 4 and 5, T2N-R6W).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_53.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

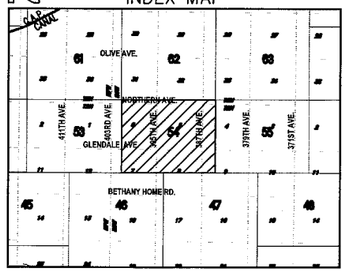
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
12	1205.13	Brass cap flush at intersection of 387th Avenue and Orangewood Avenue. (1/4 corner of sections 4 and 5, T2N-R6W).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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DESIGN	AMG/JP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

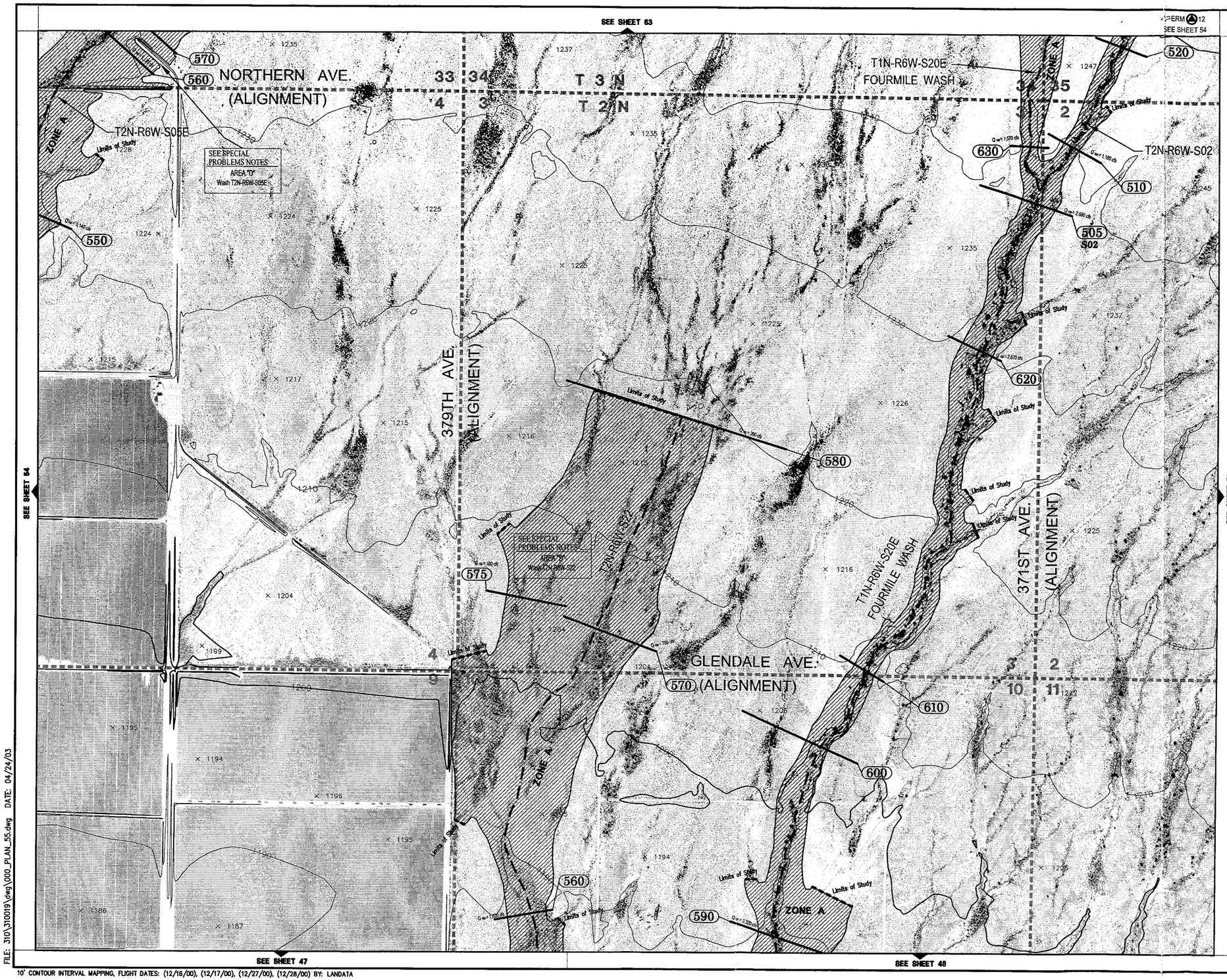
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_54.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 5
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

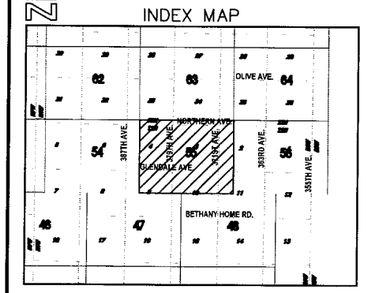
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
12	1205.13	Brass cap flush at intersection of 387th Avenue and Orangewood Avenue. (1/4 corner of sections 4 and 5, T2N-R6W).

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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	BY	DATE
DESIGN	AMG/JP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

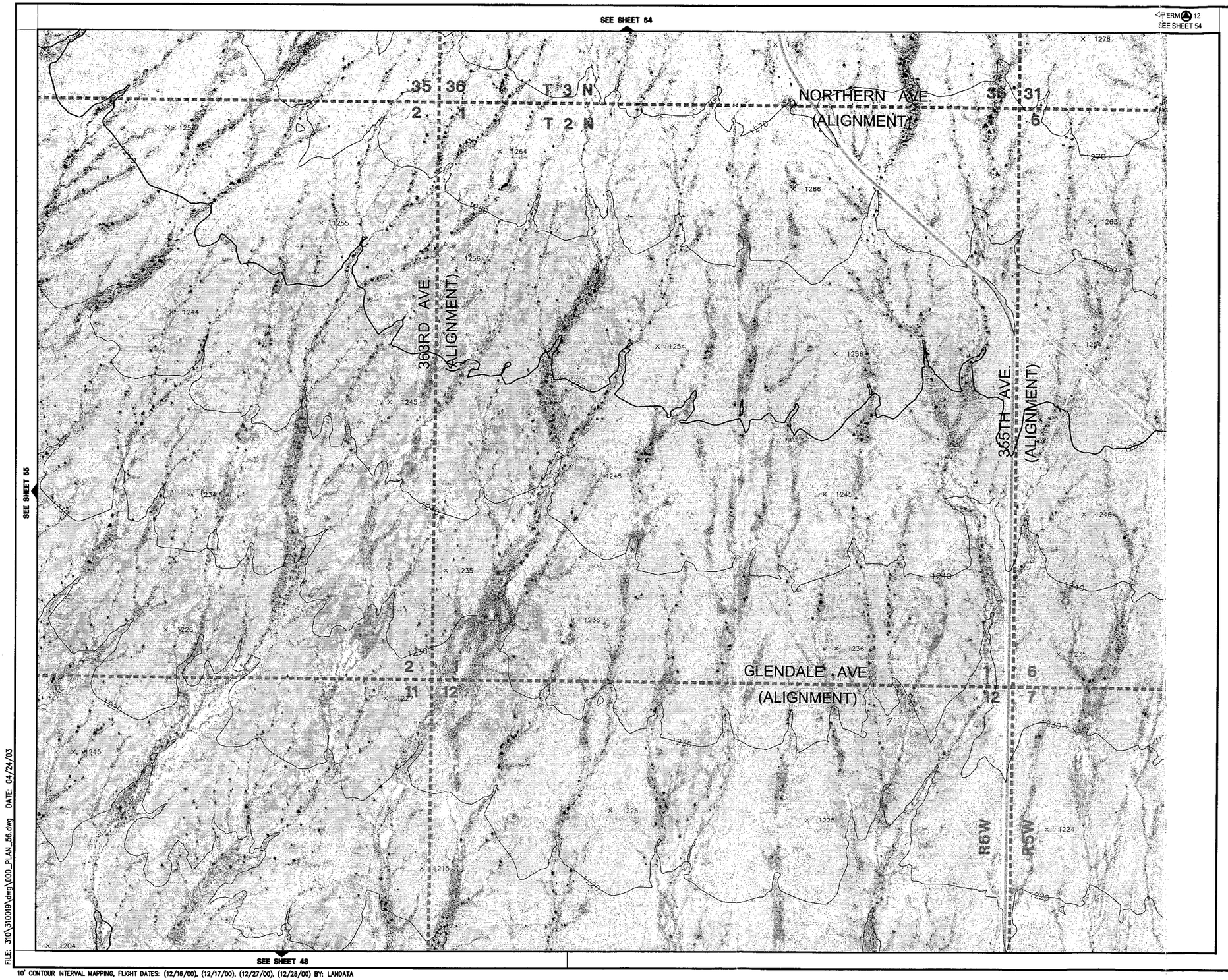
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_55.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_56.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

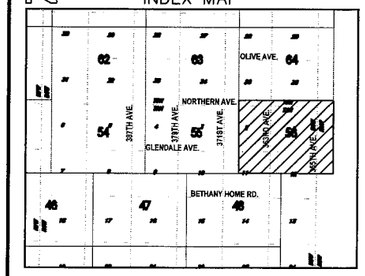
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
12	1205.13	*Brass cap flush at intersection of 387th Avenue and Orangewood Avenue. (1/4 corner of sections 4 and 5, T2N-R6W).*

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3565
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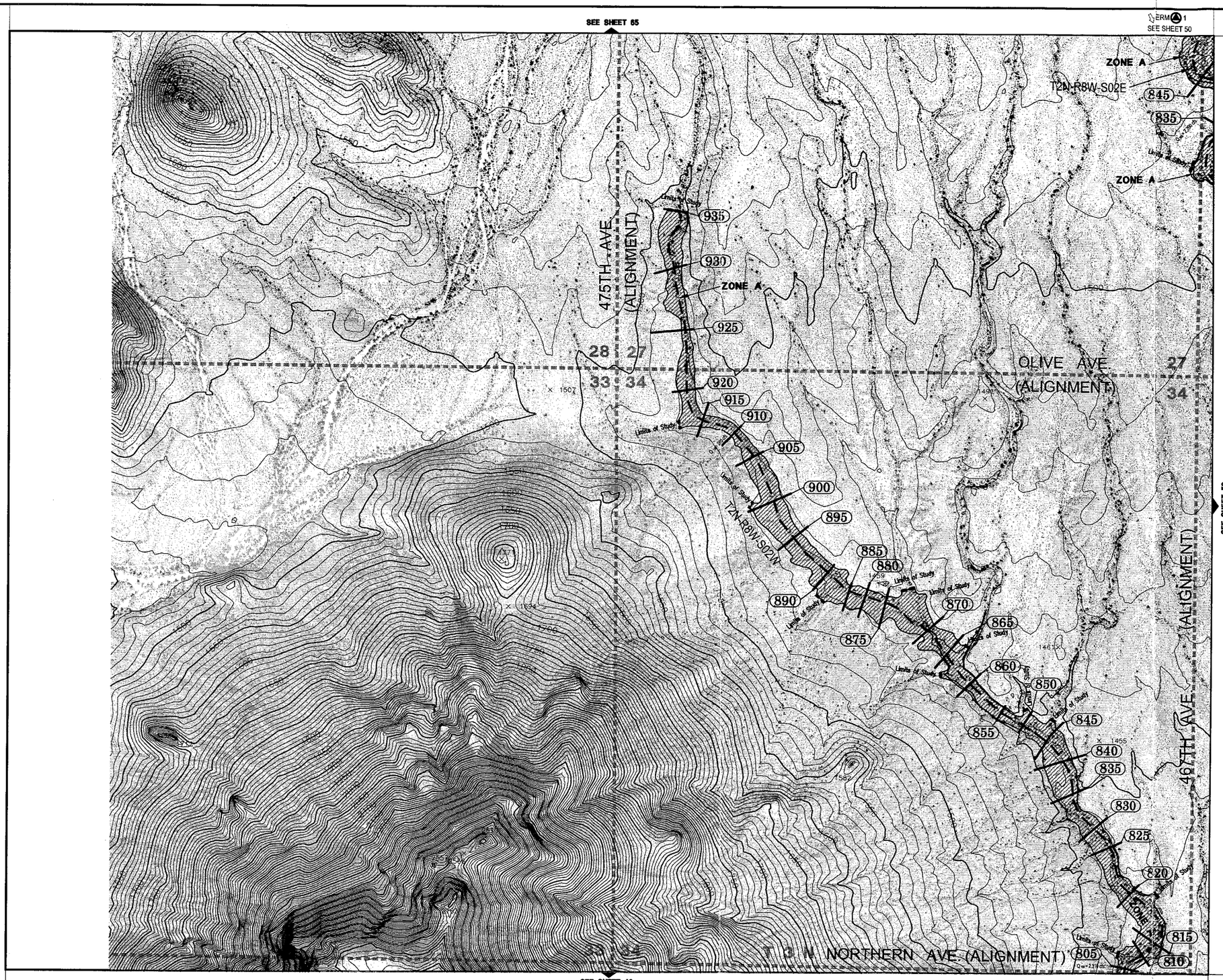
	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

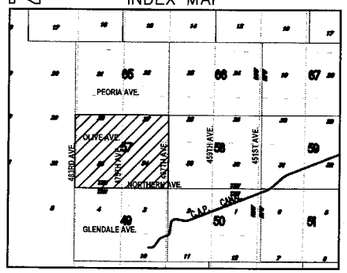
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1	1390.31	U. S. Dept. of Interior brass cap in concrete atop flume, south side of the CAP canal, 12.8 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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Phoenix, AZ 85008-3279
Tel 602.344.3556
Fax 602.344.3647
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

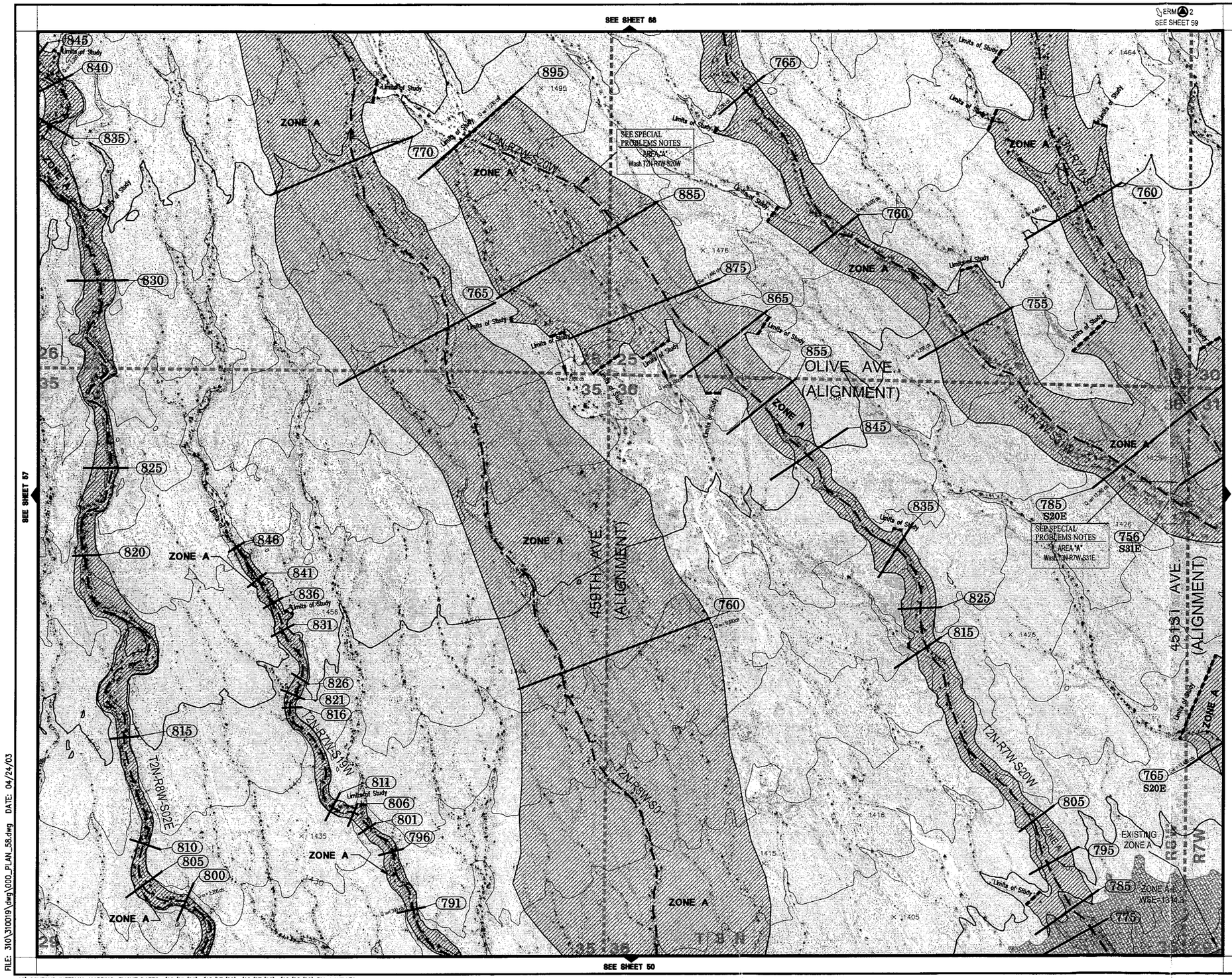
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_57.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_58.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

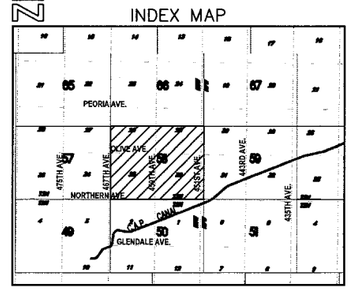
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
2	1389.82	U.S. Dept of Interior brass cap in conc. atop flume, south side CAP, 10.8 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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Phoenix, AZ 85008-3279
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

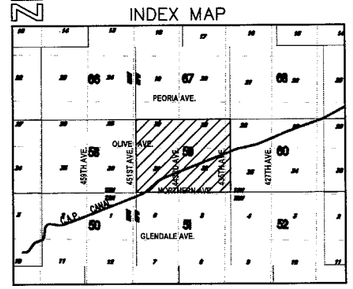
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
2	1389.82	U.S. Dept of Interior brass cap in conc. atop flume, south side CAP, 10.8 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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Tel 602.344.3566
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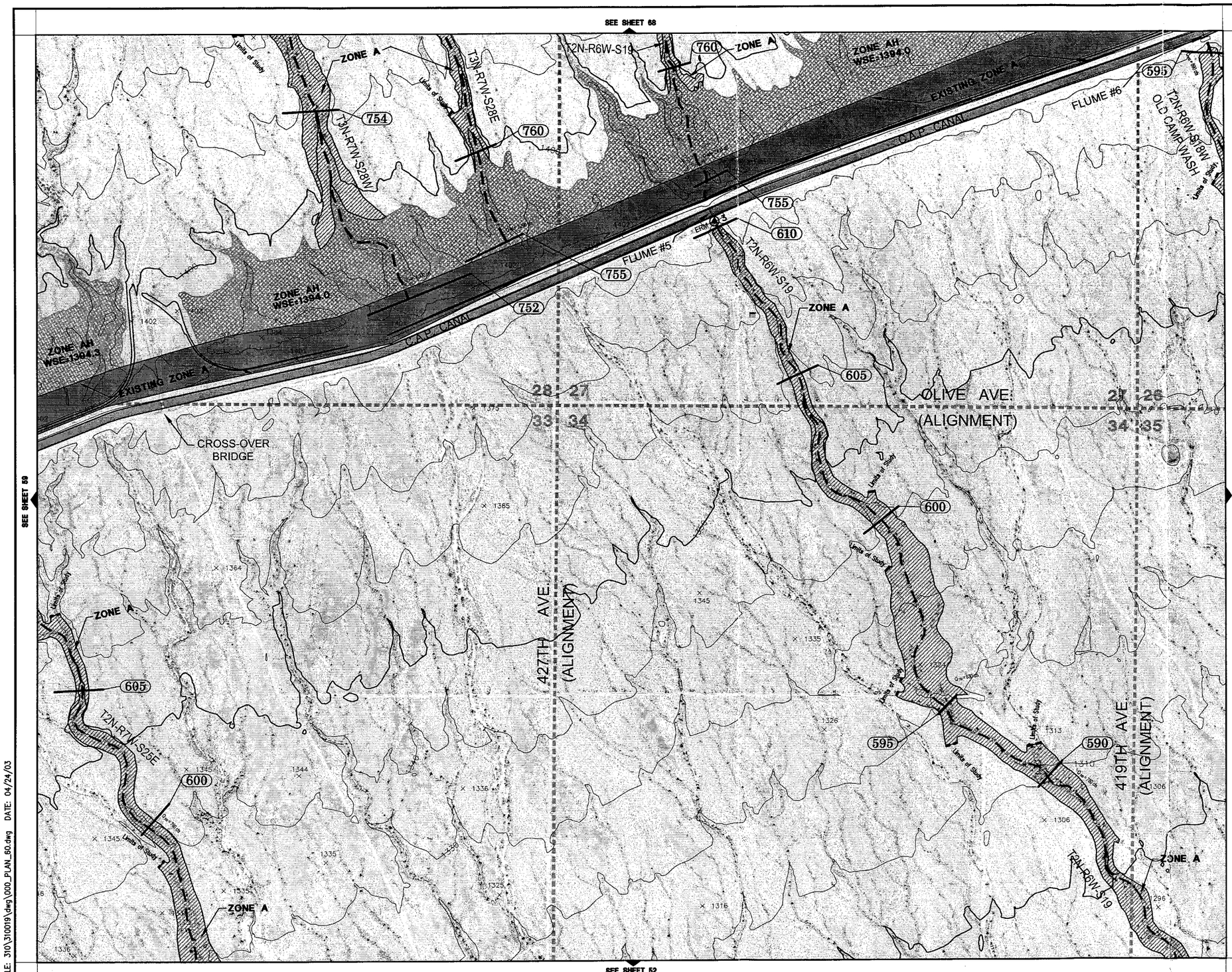
	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN	AMG/UP	09/2002	
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 59 OF 104

FILE: 310\310019\dwg\000_PLAN_59.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_60.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

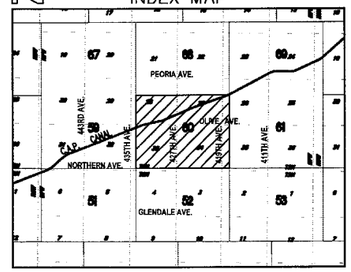
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
3	1388.12	U.S. Dept of Interior brass cap in concrete atop flume, south side CAP canal, 8.1 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
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Phoenix, AZ 85008-3279
Tel 602.244.2566
Fax 602.244.2047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

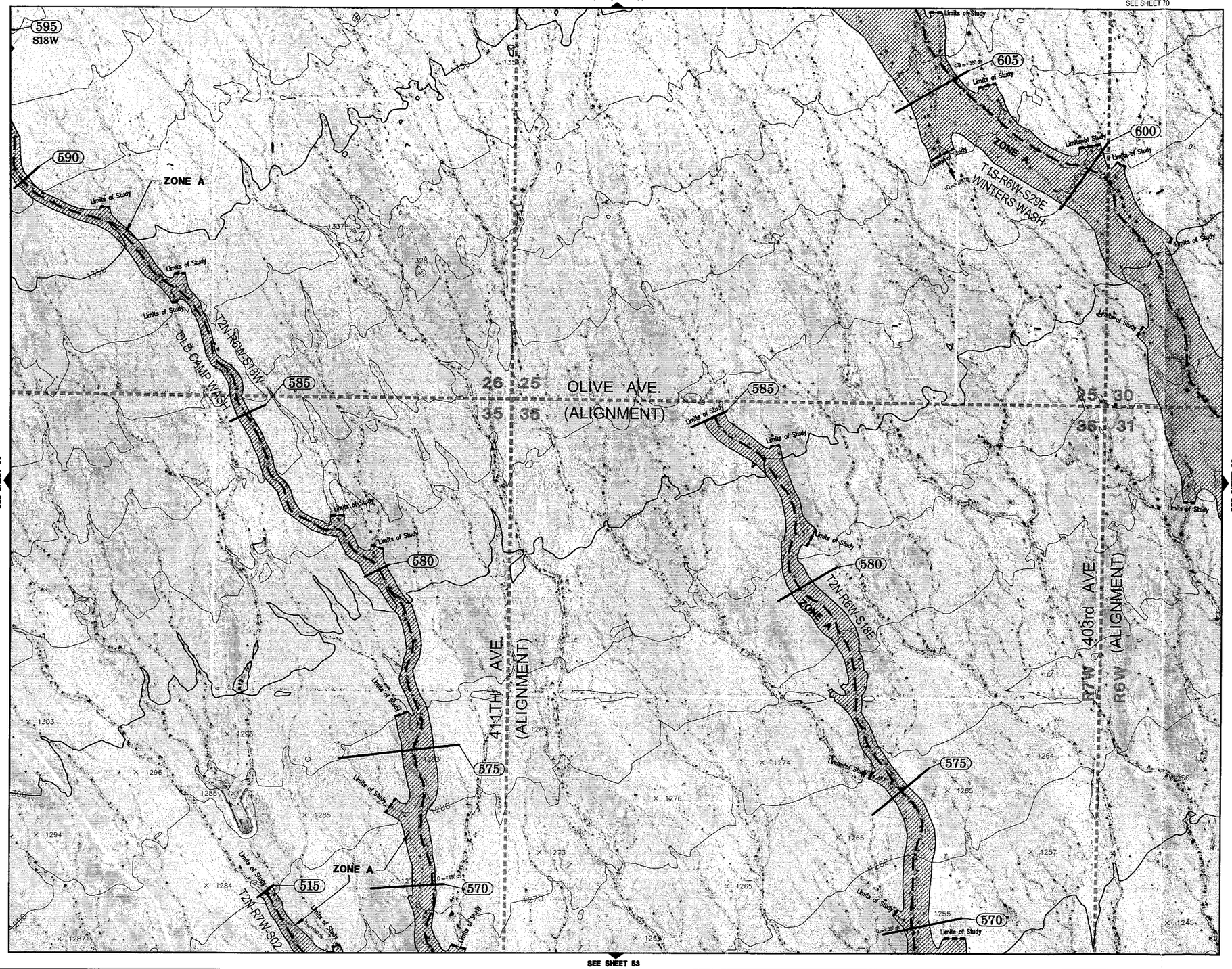
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 60 OF 104



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

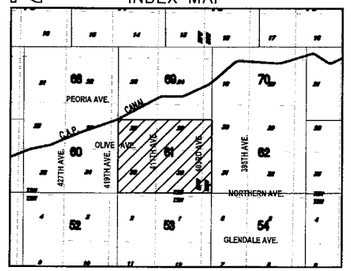
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
4	1386.44	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 4.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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Phoenix, AZ 85008-3270
Tel 602.344.3556
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

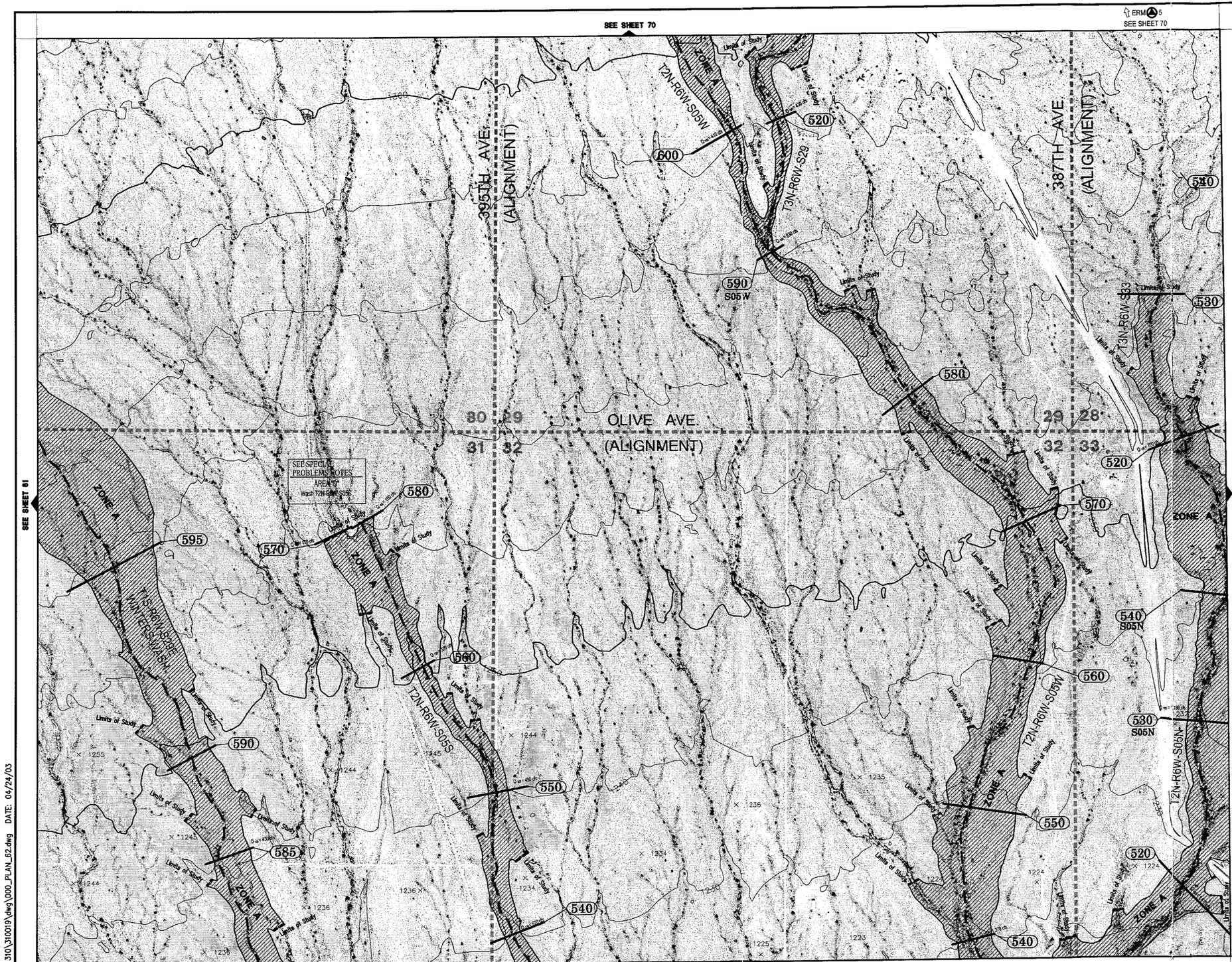
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_61.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

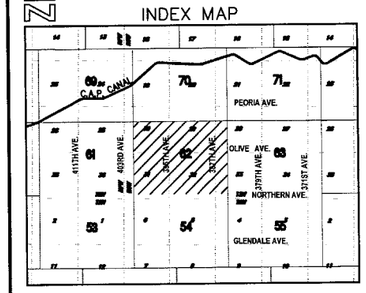
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2666
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

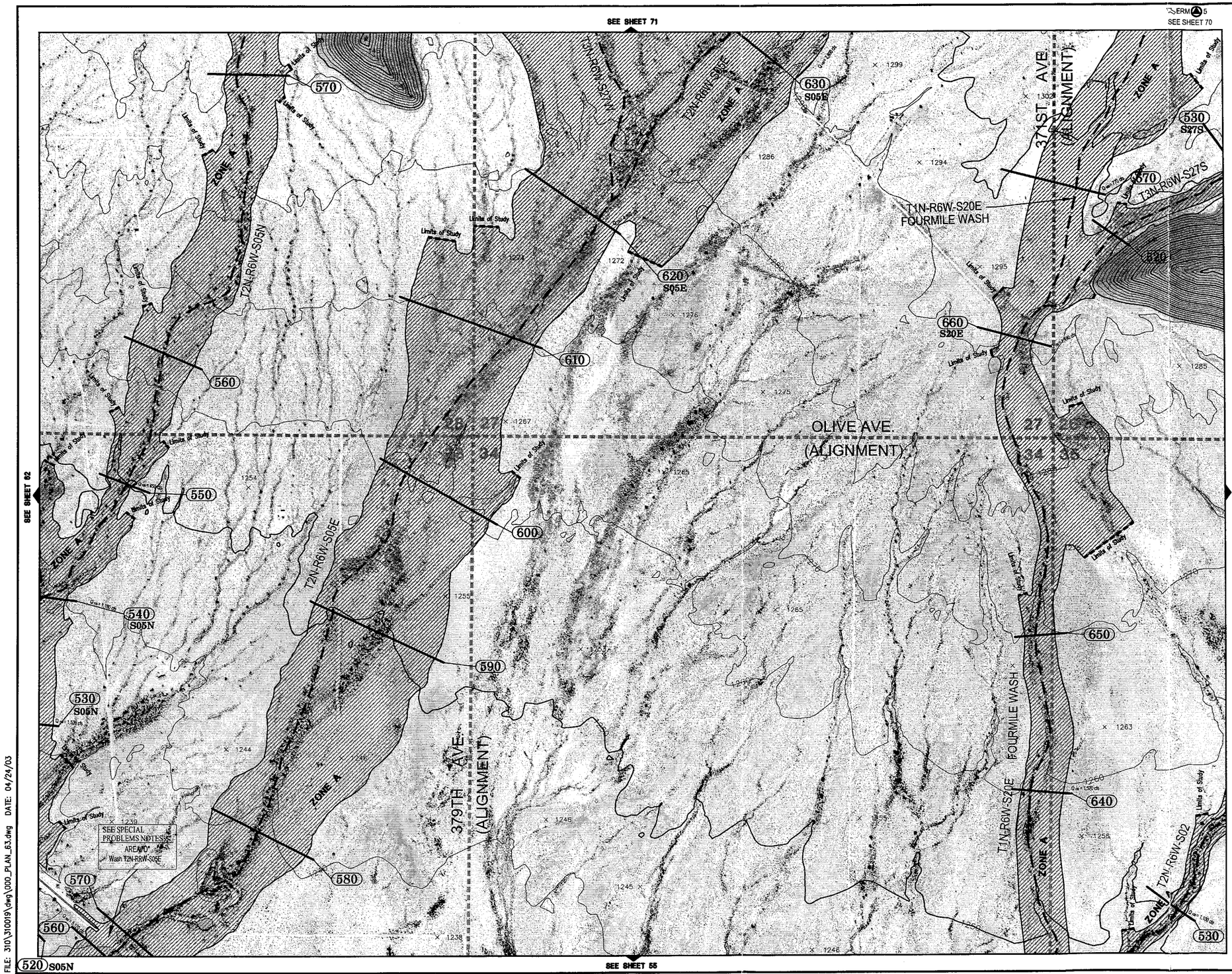
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_62.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_63.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

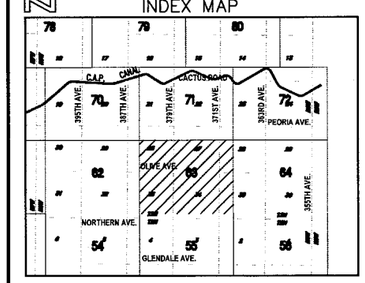
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

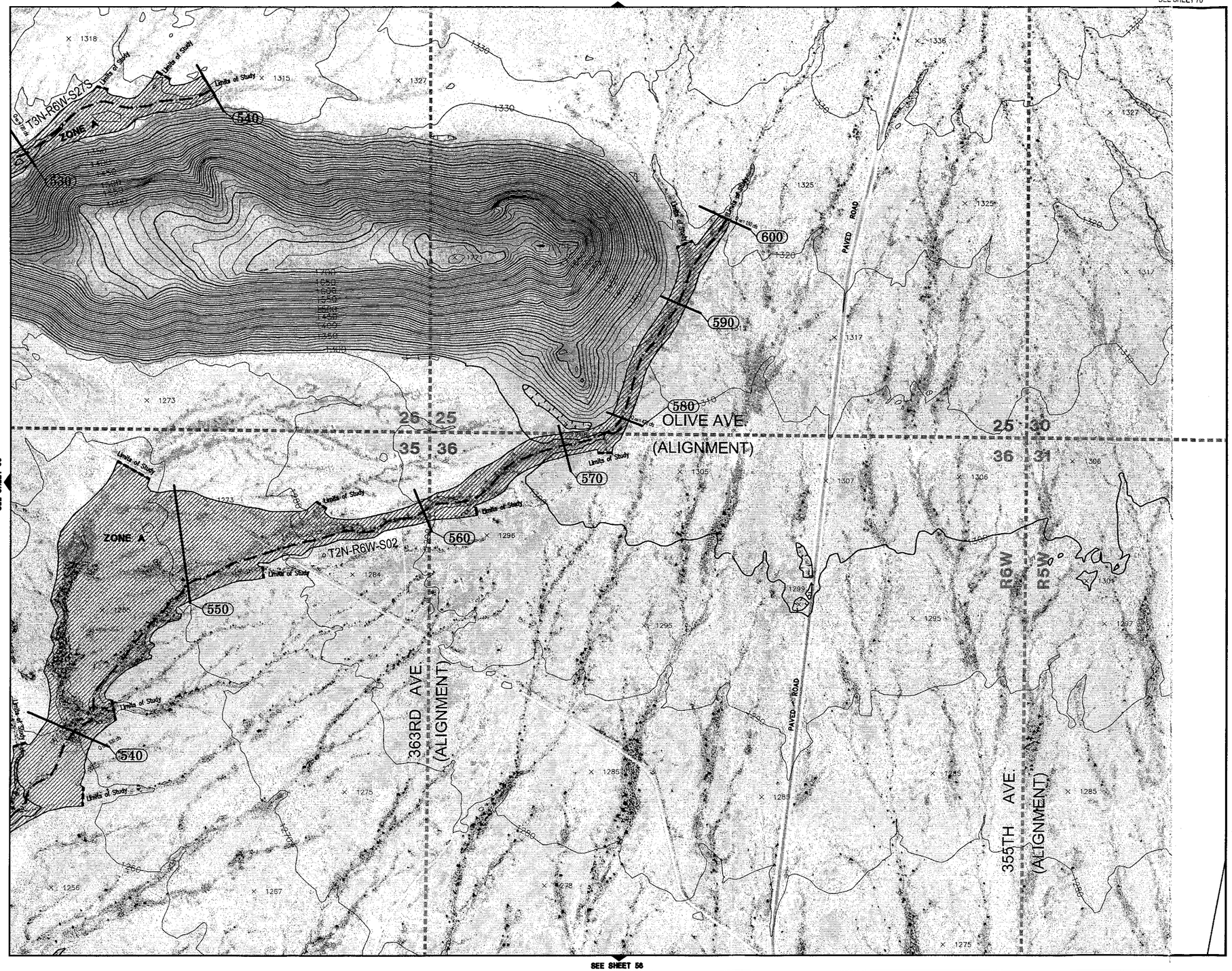
SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2256 N. 44th Street Suite 135
Phoenix, AZ 85008.3370
Tel 602.344.2566
Fax 602.344.9947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 63 OF 104



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

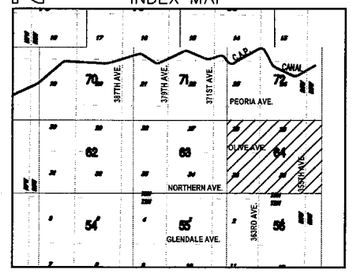
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.3566
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

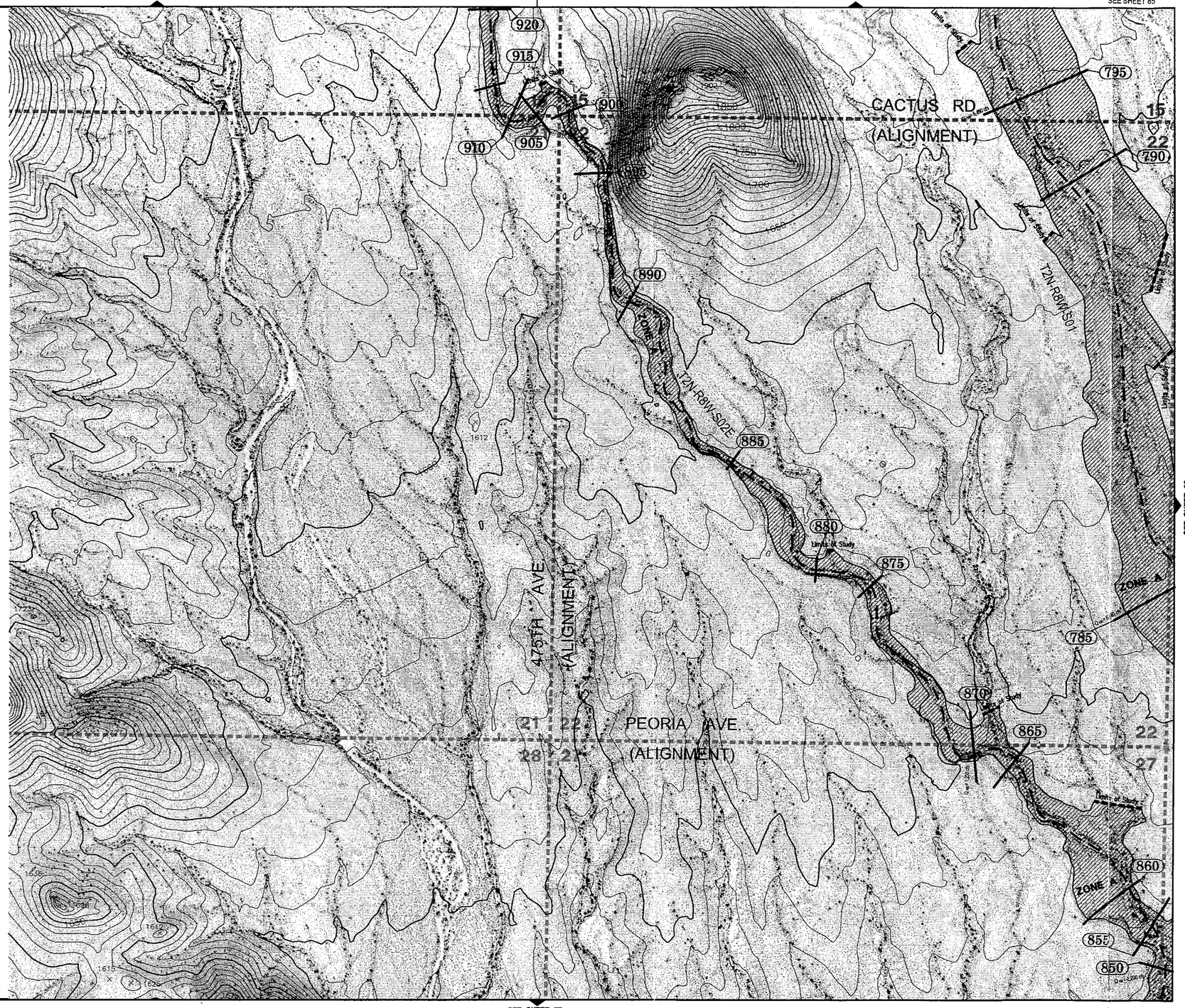
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_64.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

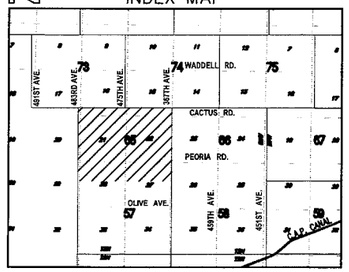
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-3270
Tel 602.244.3566
Fax 602.244.9047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

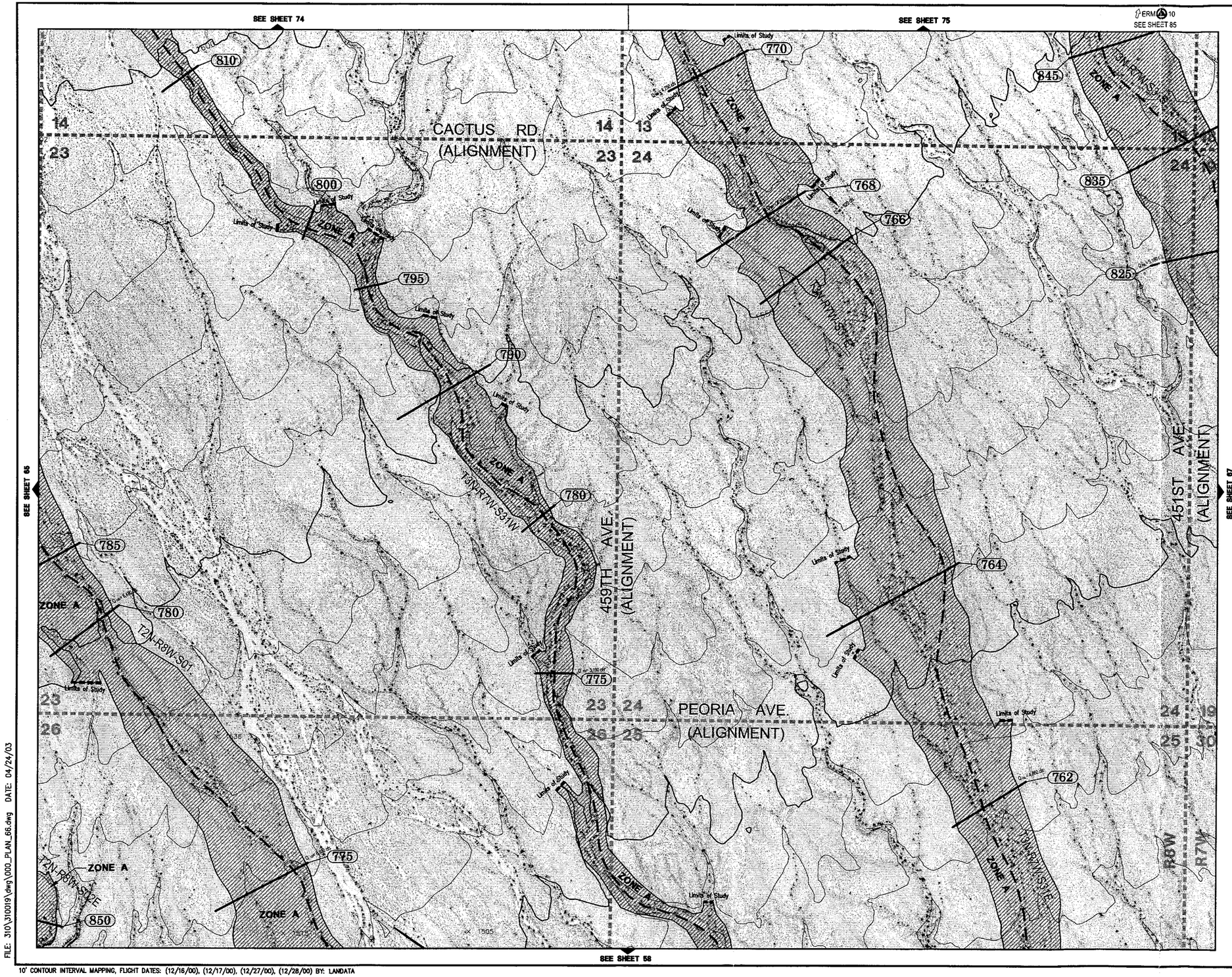
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_65.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

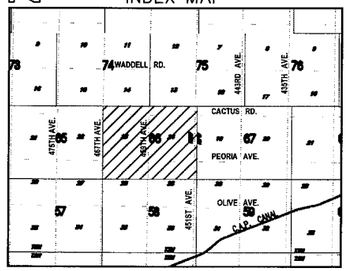
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GC9. Located in Sec 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GC9 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

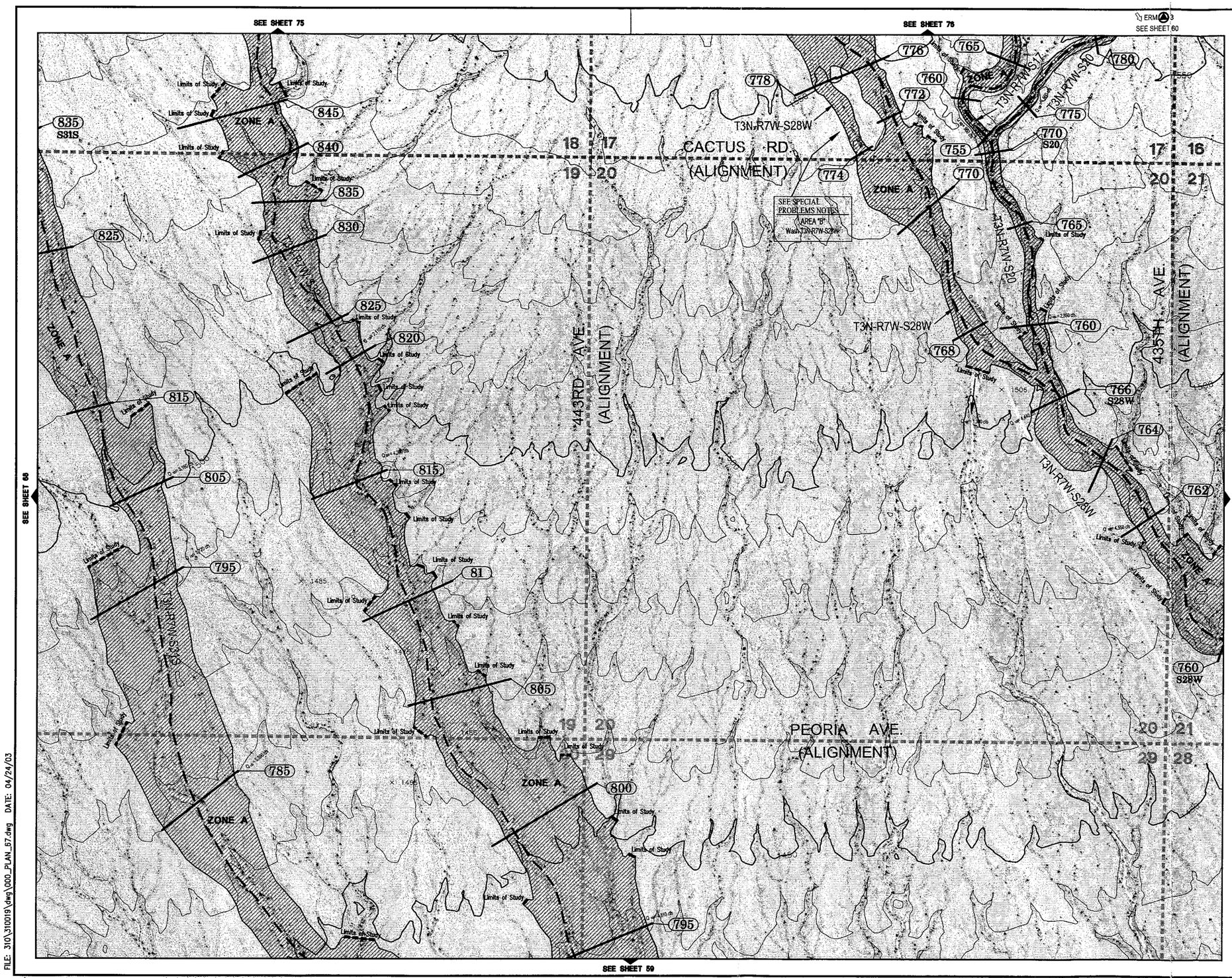
Entellus™
2354 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2566
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 66 OF 104

FILE: 310\310019\dwg\000_PLAN_66.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

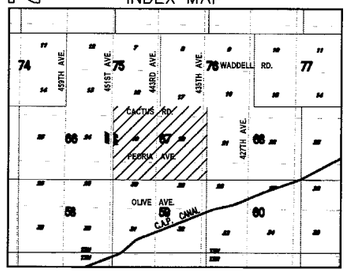
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
3	1388.12	U.S. Dept of Interior brass cap in concrete atop flume, south side CAP canal, 8.1 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

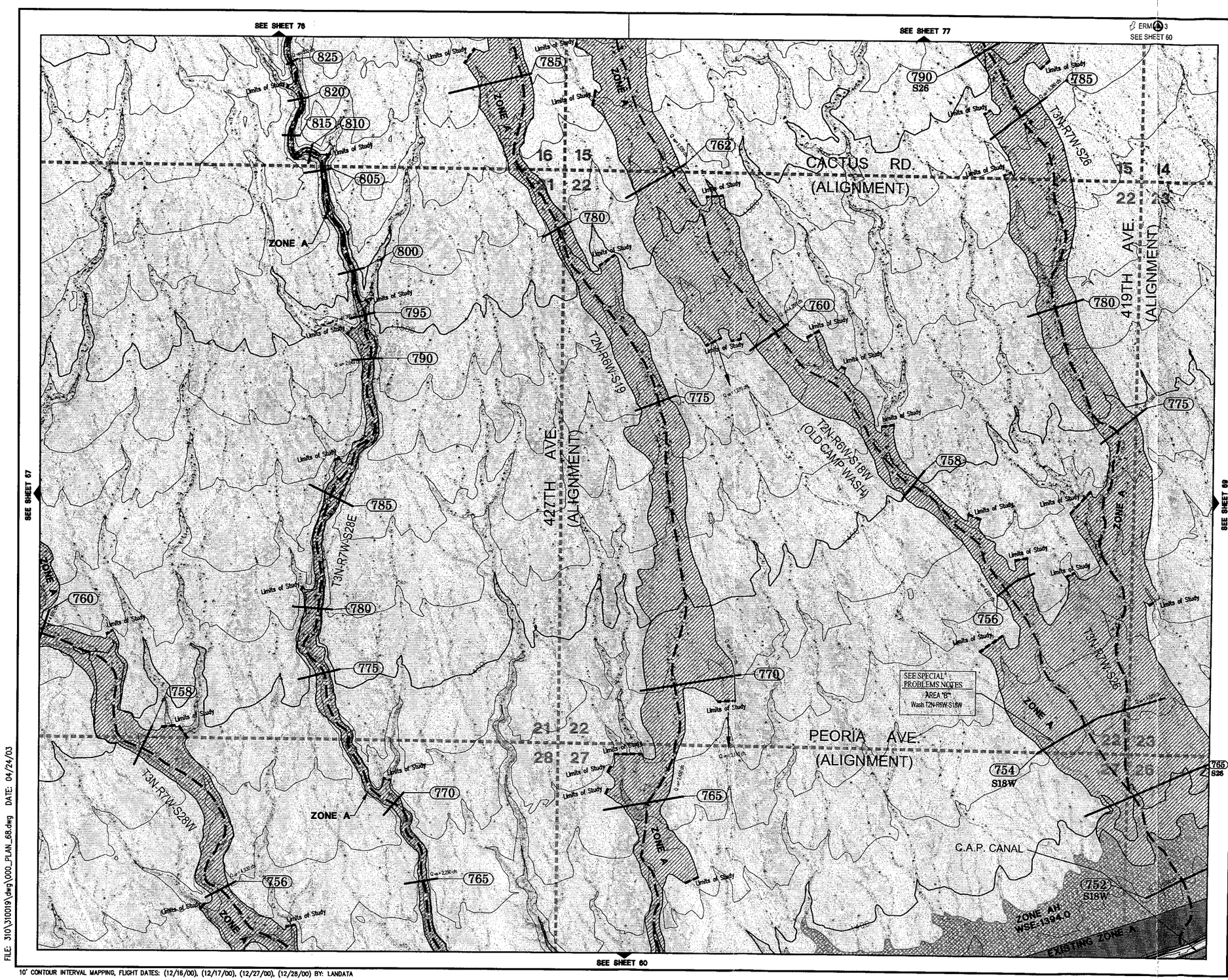
CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2566
Fax 602.344.2567
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER
			SHEET 67 OF 104

FILE: 310\310019\dwg\000_PLAN_67.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

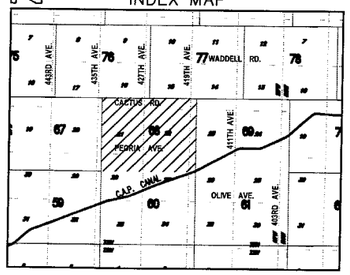
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
3	1388.12	U.S. Dept of Interior brass cap in concrete stop flume, south side CAP canal, 8.1 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

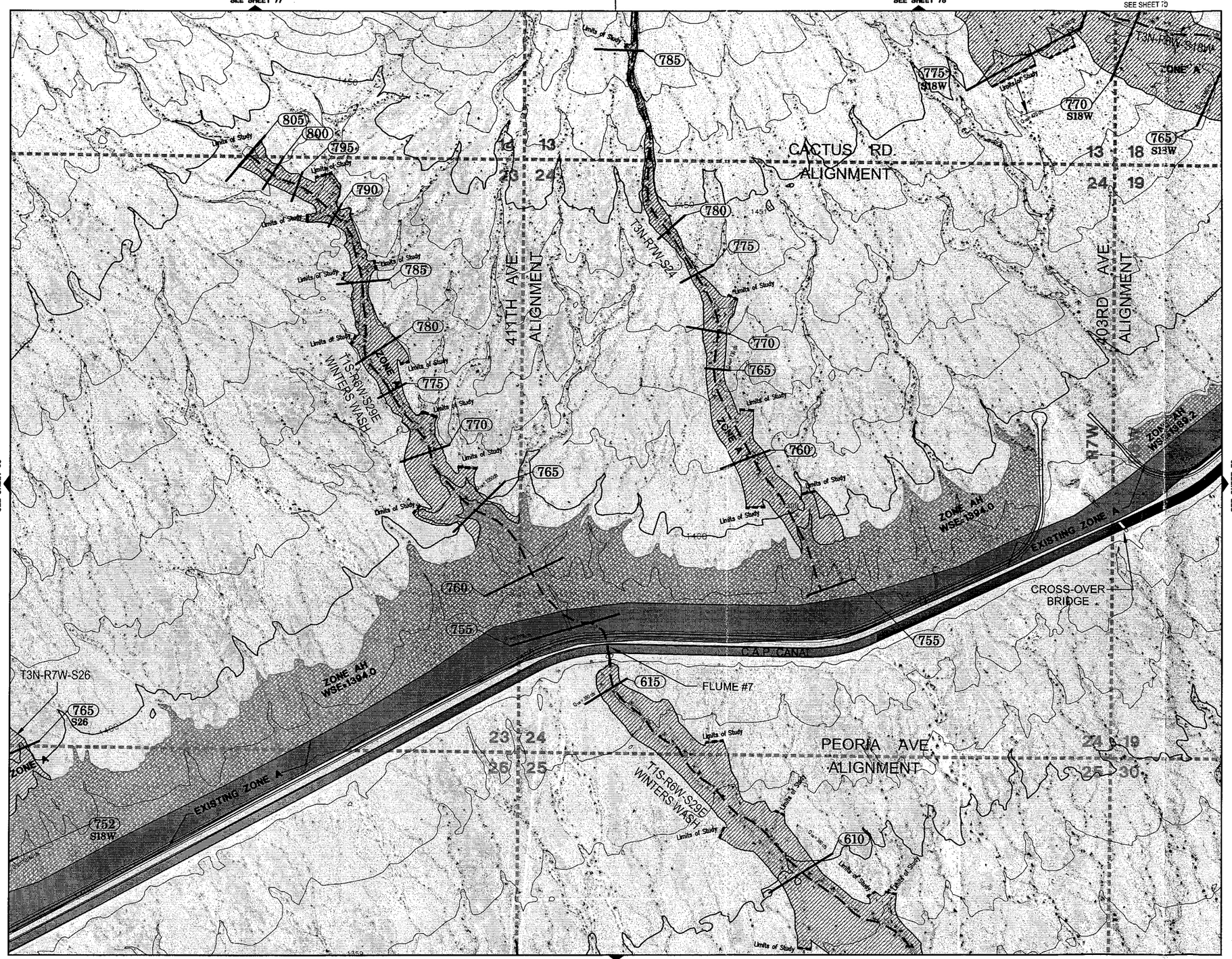
CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ. 85008-3279
Tel 602.244.2666
Fax 602.244.8047
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_68.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

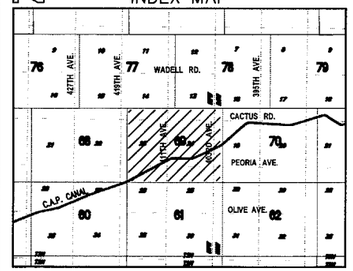
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
4	1386.44	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 4.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3270
Tel 602.344.3566
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

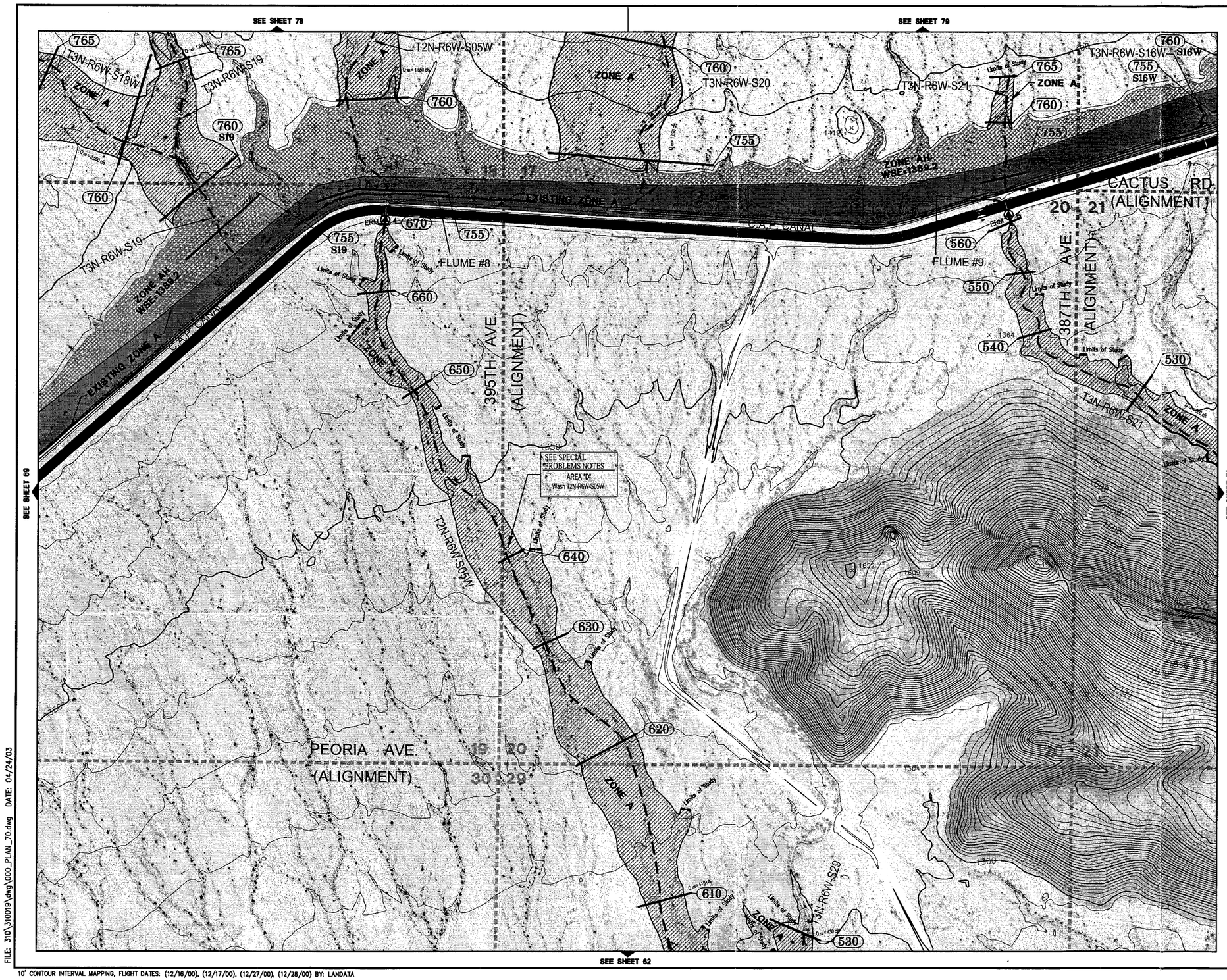
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_Plan_69.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

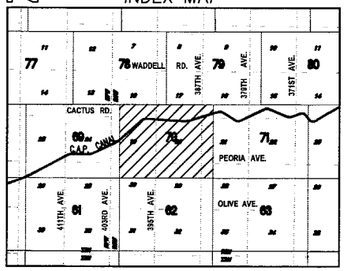
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
4	1386.44	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 4.3 miles west of 355th Avenue.
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
3255 N. 44th Street Suite 125
Phoenix, AZ 85008-2270
Tel 602.344.3556
Fax 602.344.3047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

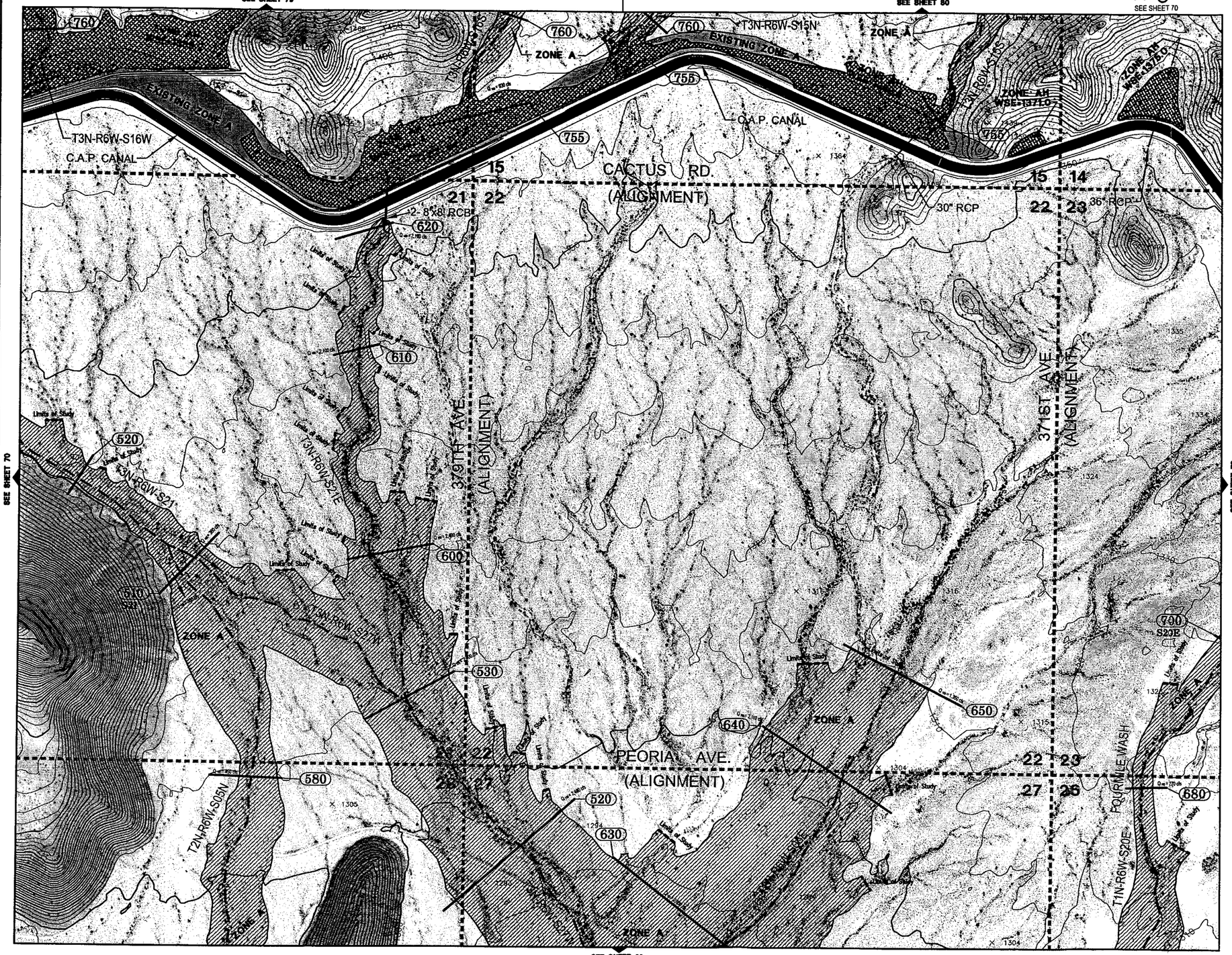
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 70 OF 104

FILE: 310\310019\dwg\000_PLAN_70.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

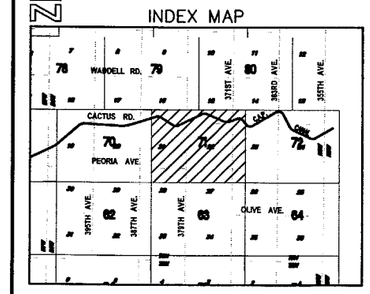
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

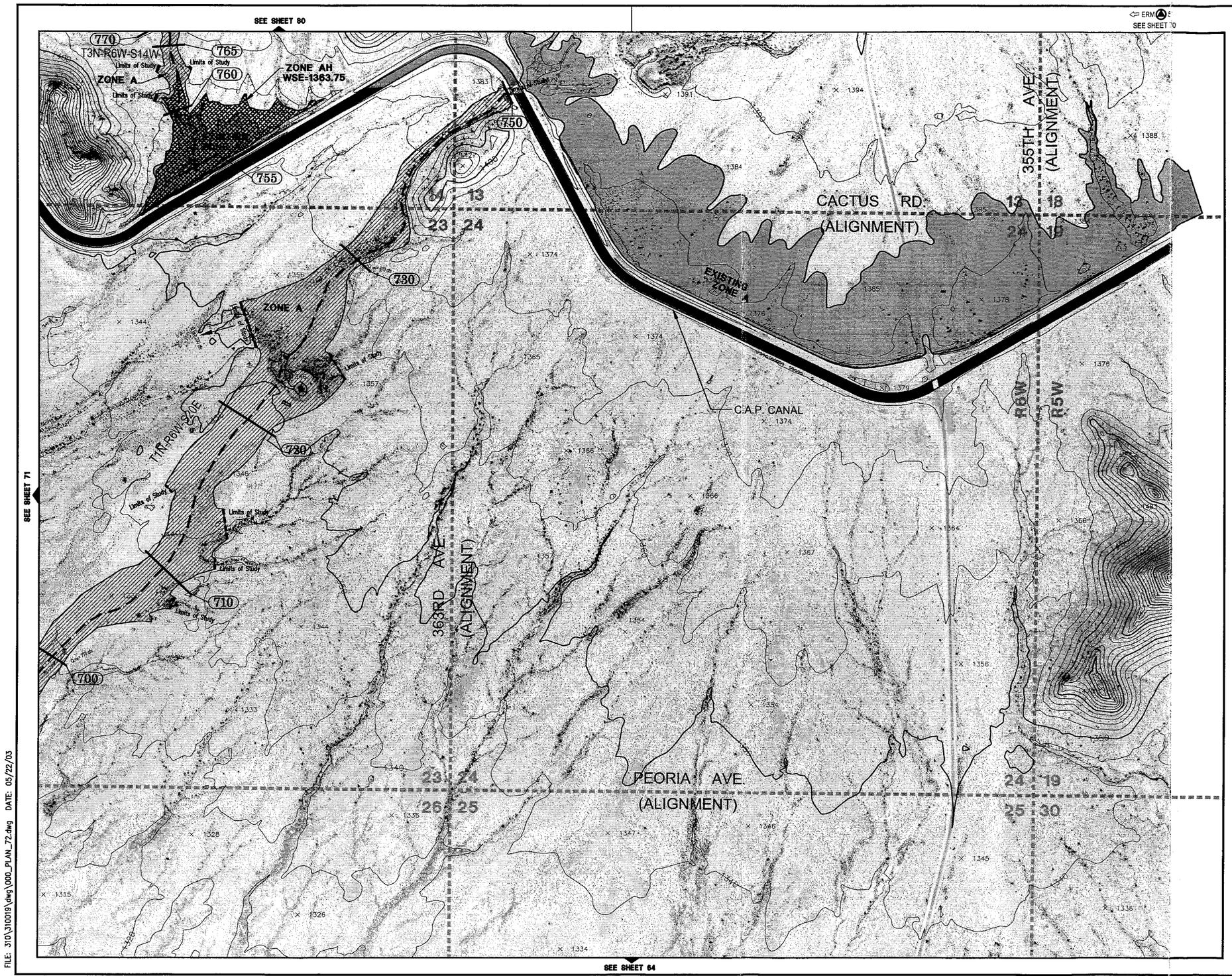
Entellus
3255 N. 44th Street Suite 135
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.0947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 71 OF 104

FILE: 310\310019\dwg\000_PLAN_71.dwg DATE: 09/02/04

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

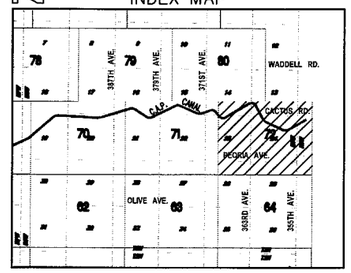
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-2379
Tel 602.344.2506
Fax 602.344.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

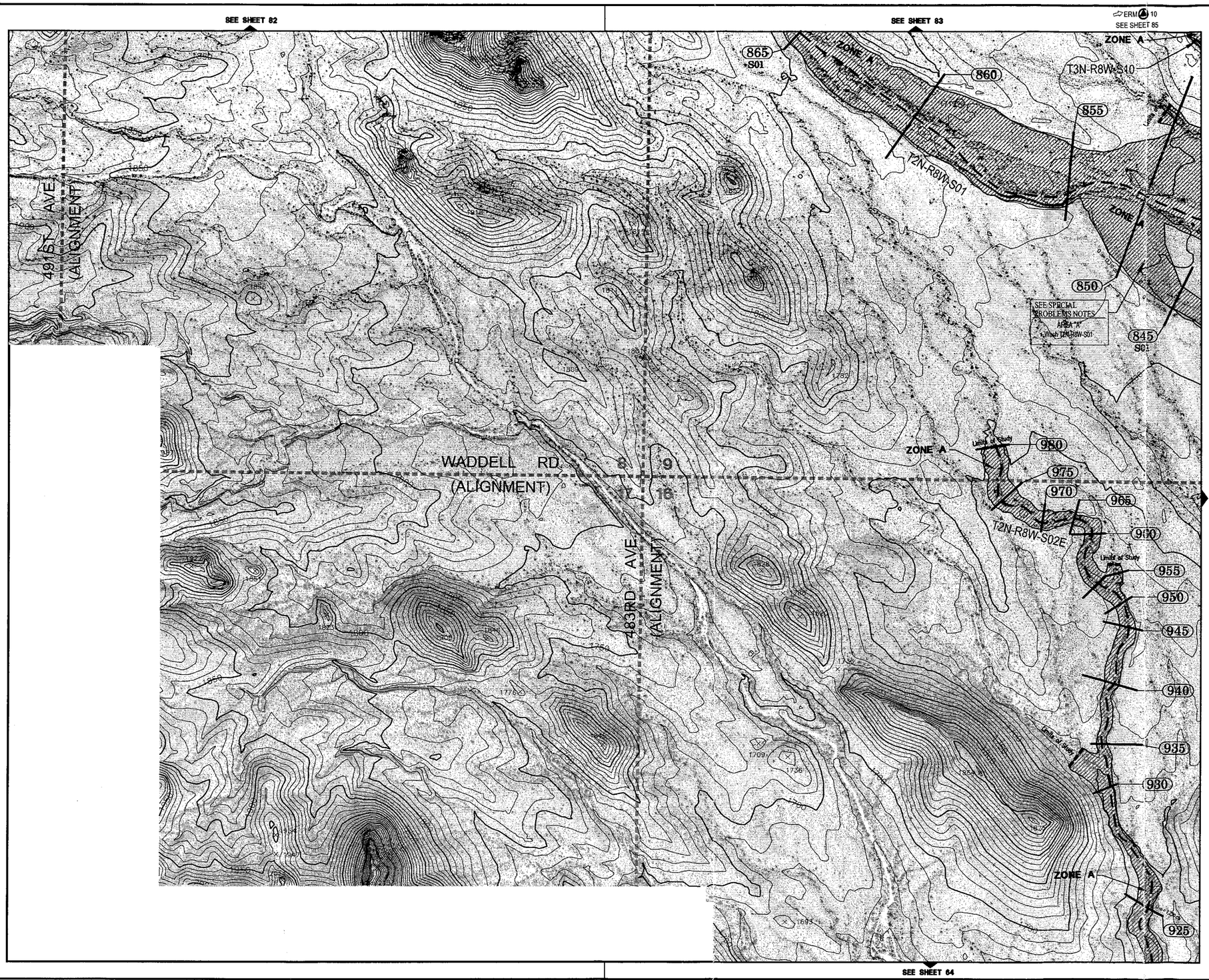
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_72.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

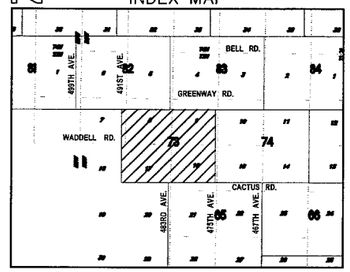
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 8, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.3500
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

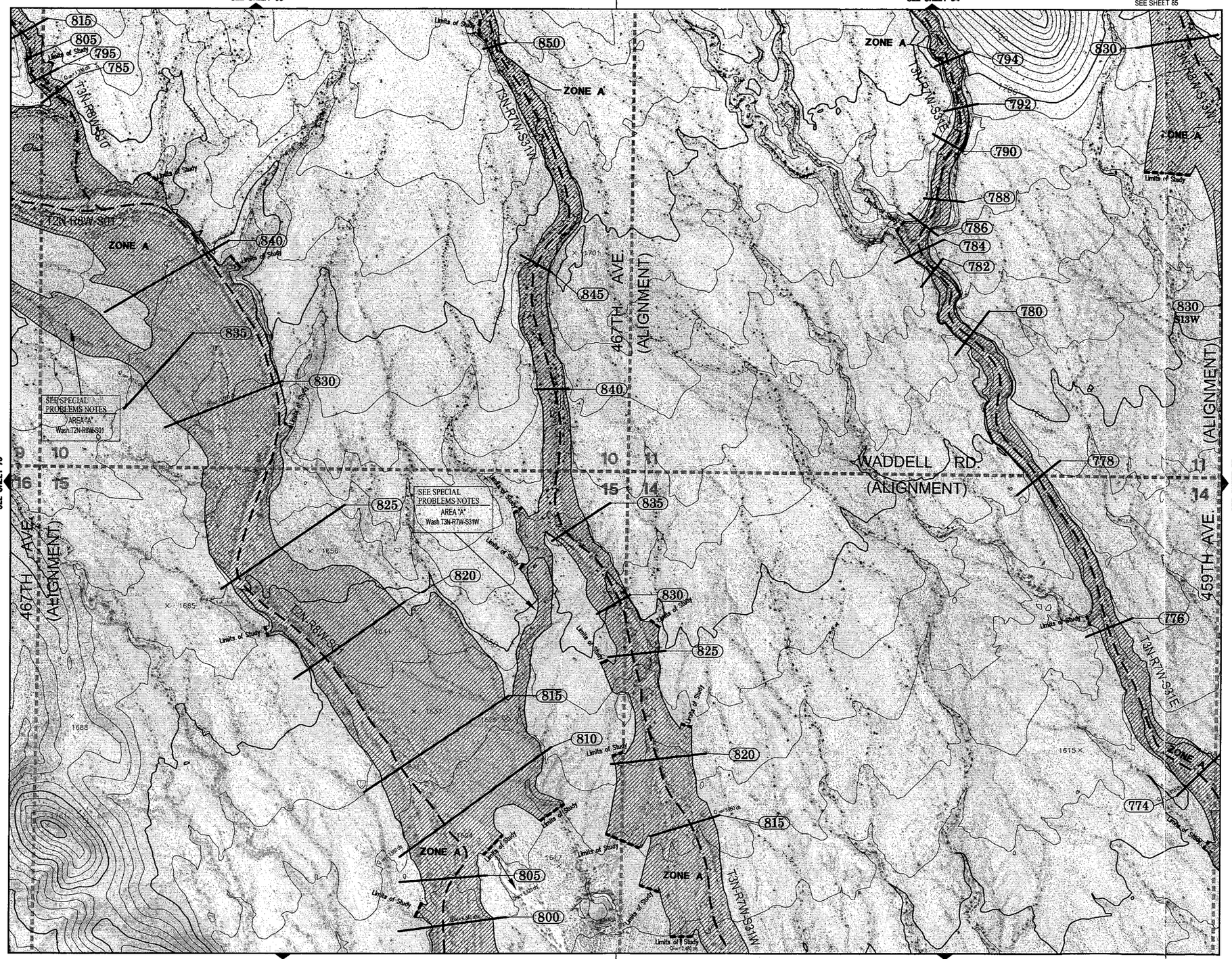
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 73 OF 104

FILE: 310\310019\dwg\000_PLAN_73.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

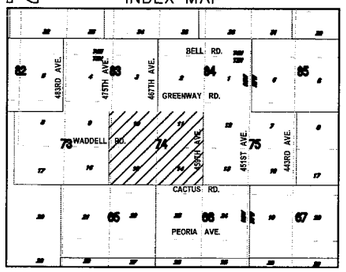
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GC03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GC03 1989. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

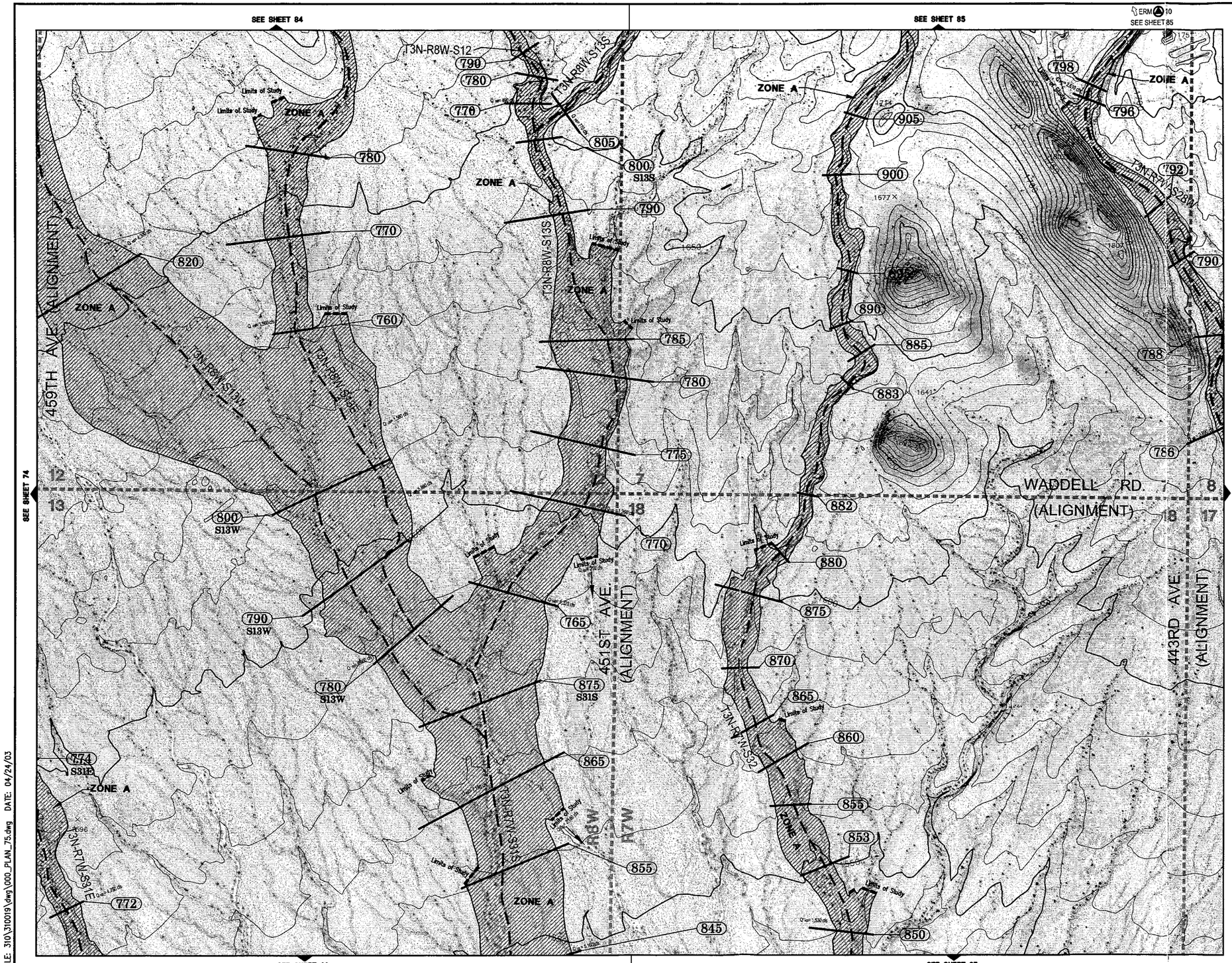
CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.244.2500
Fax 602.244.2047
E-mail www.entellus.com

	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN	AMG/UP	09/2002	
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:		DATE:	SHEET 74 OF 104

FILE: 310\310019\dwg\000_PLAN_74.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

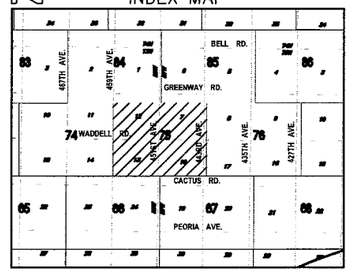
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-3279
Tel 602.344.2566
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

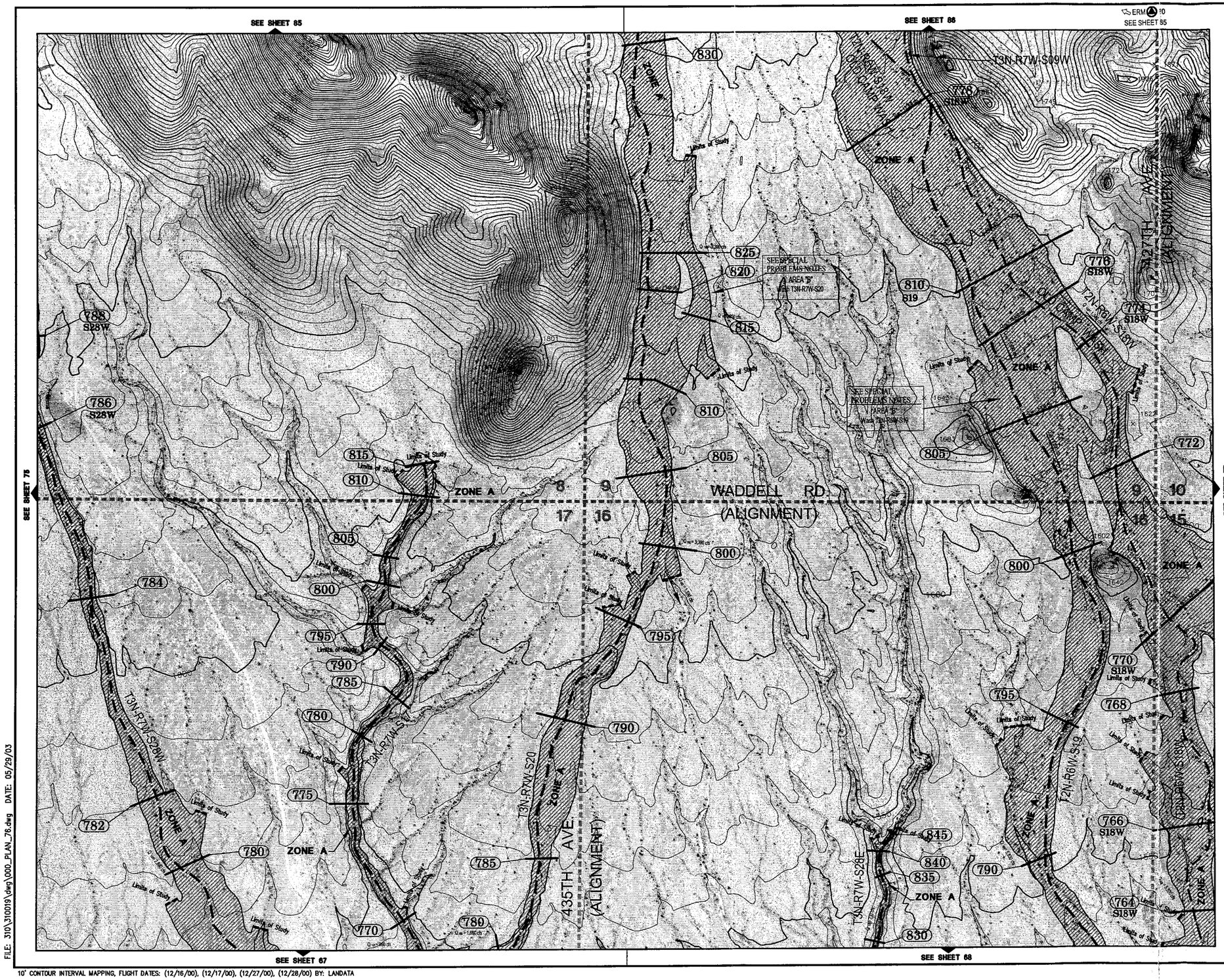
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_75.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_76.dwg DATE: 05/29/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

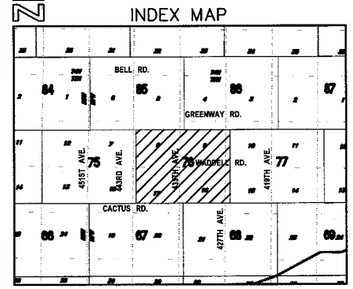
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.5505
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

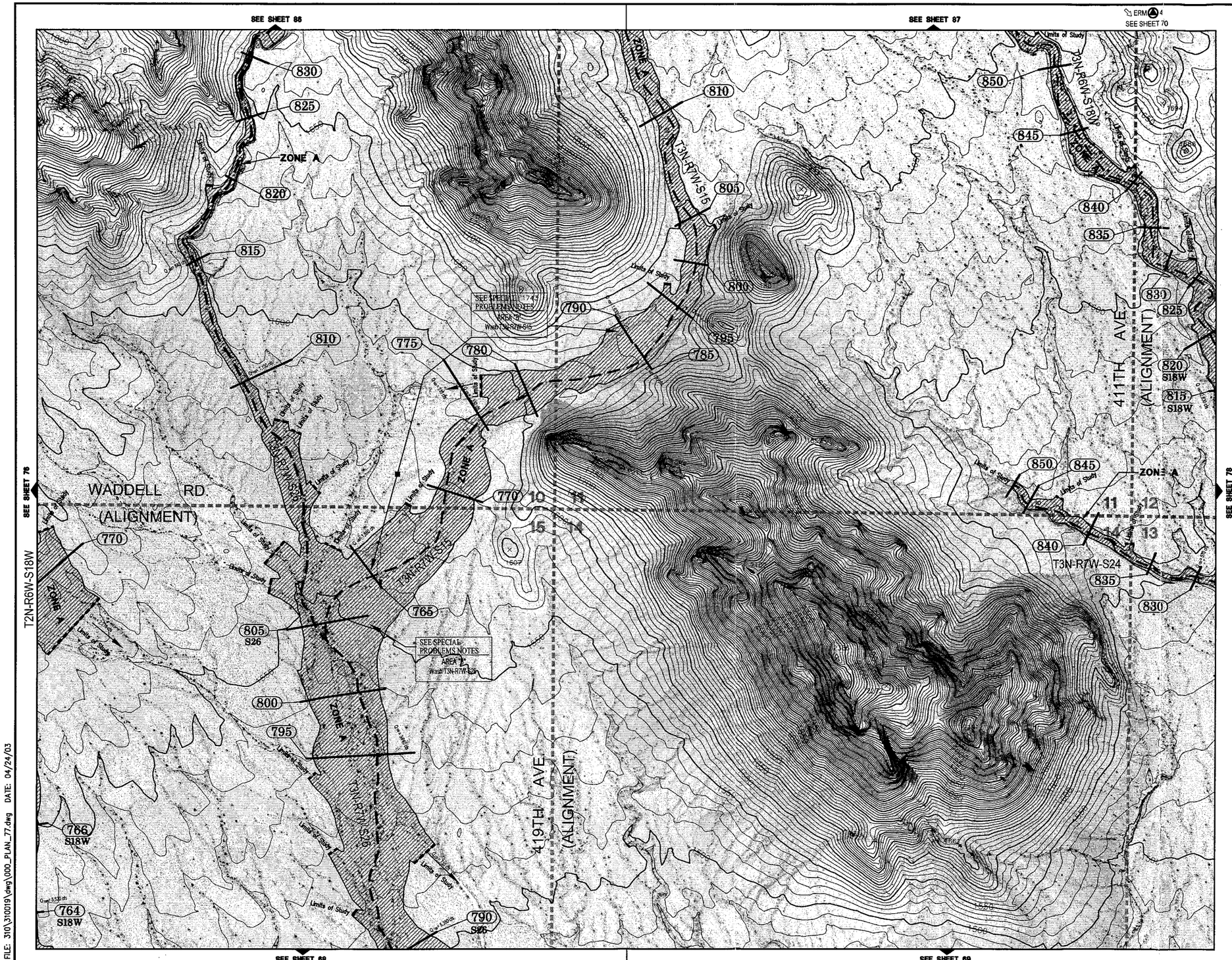
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

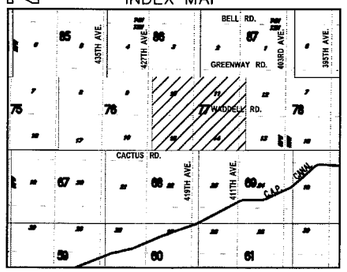
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
4	1388.44	U.S. Dept of Interior brass cap in concrete stop flume headwall, south side of CAP canal 4.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-2279
Tel 602.344.3566
Fax 602.344.3047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

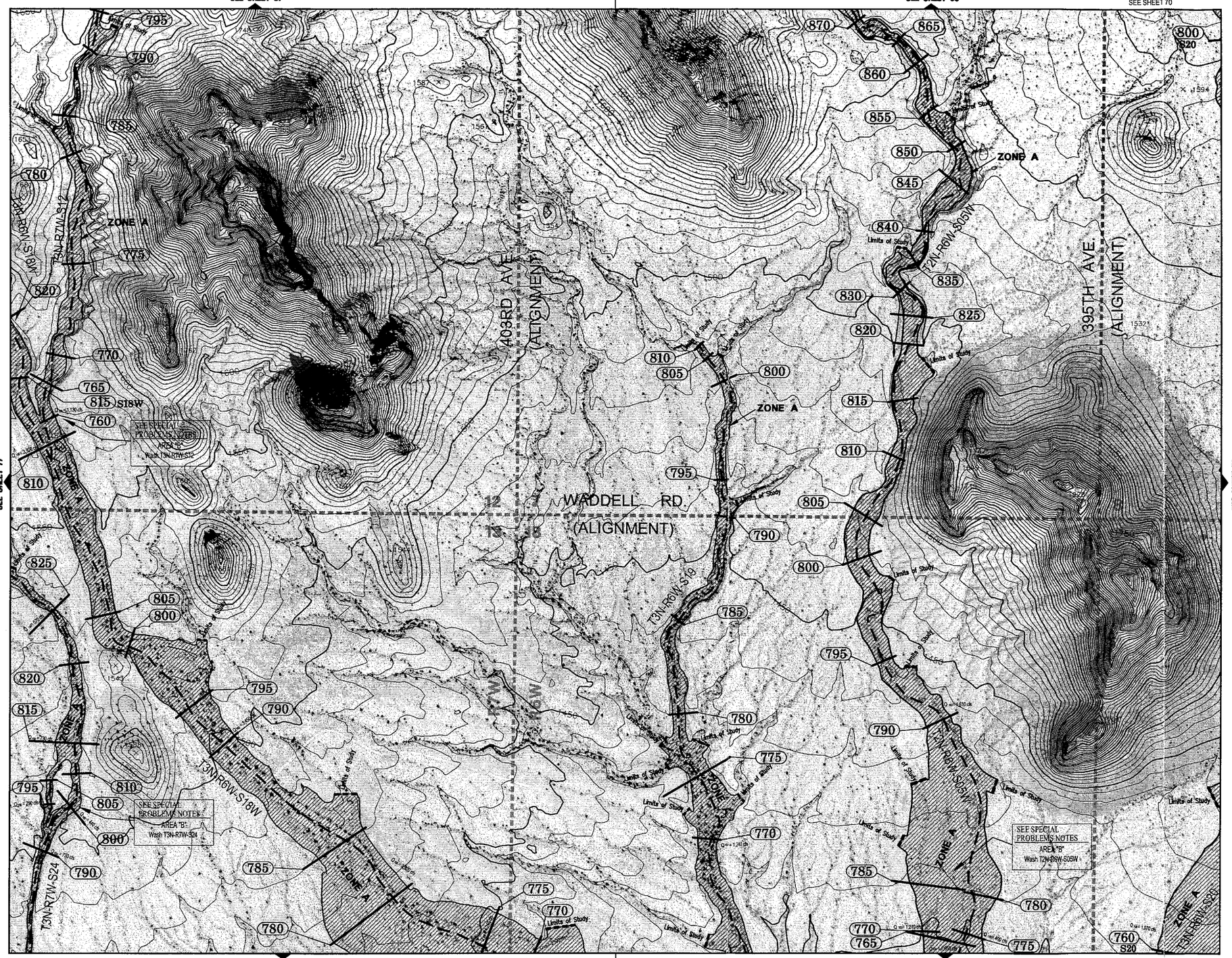
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 77 OF 104

FILE: 310\310019\dwg\000_PLAN_77.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_78.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

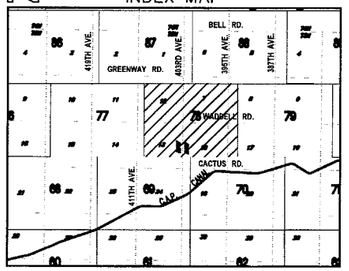
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
4	1388.44	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 4.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-2279
Tel 602.244.2566
Fax 602.244.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

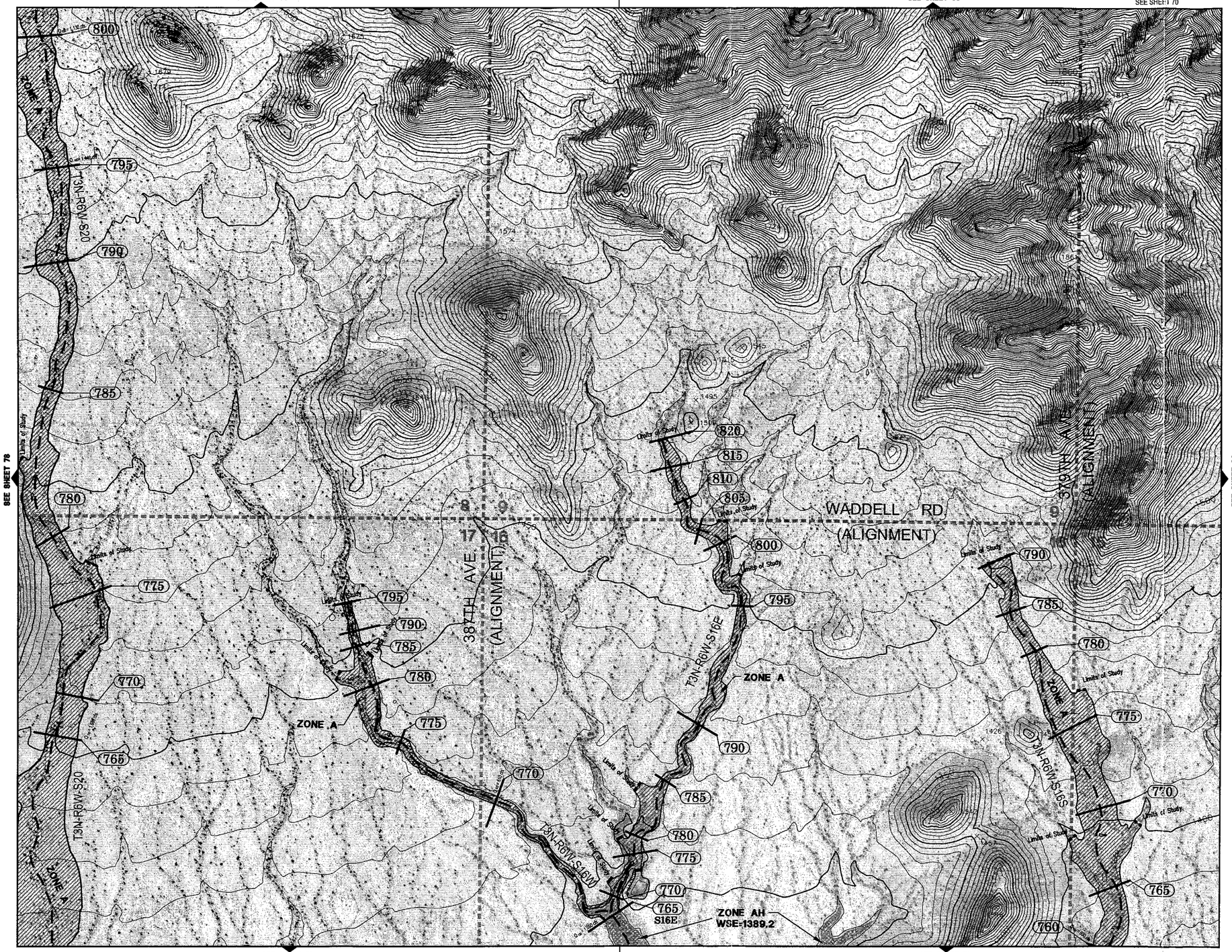
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

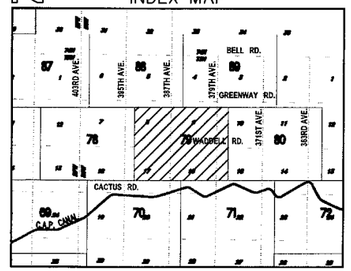
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

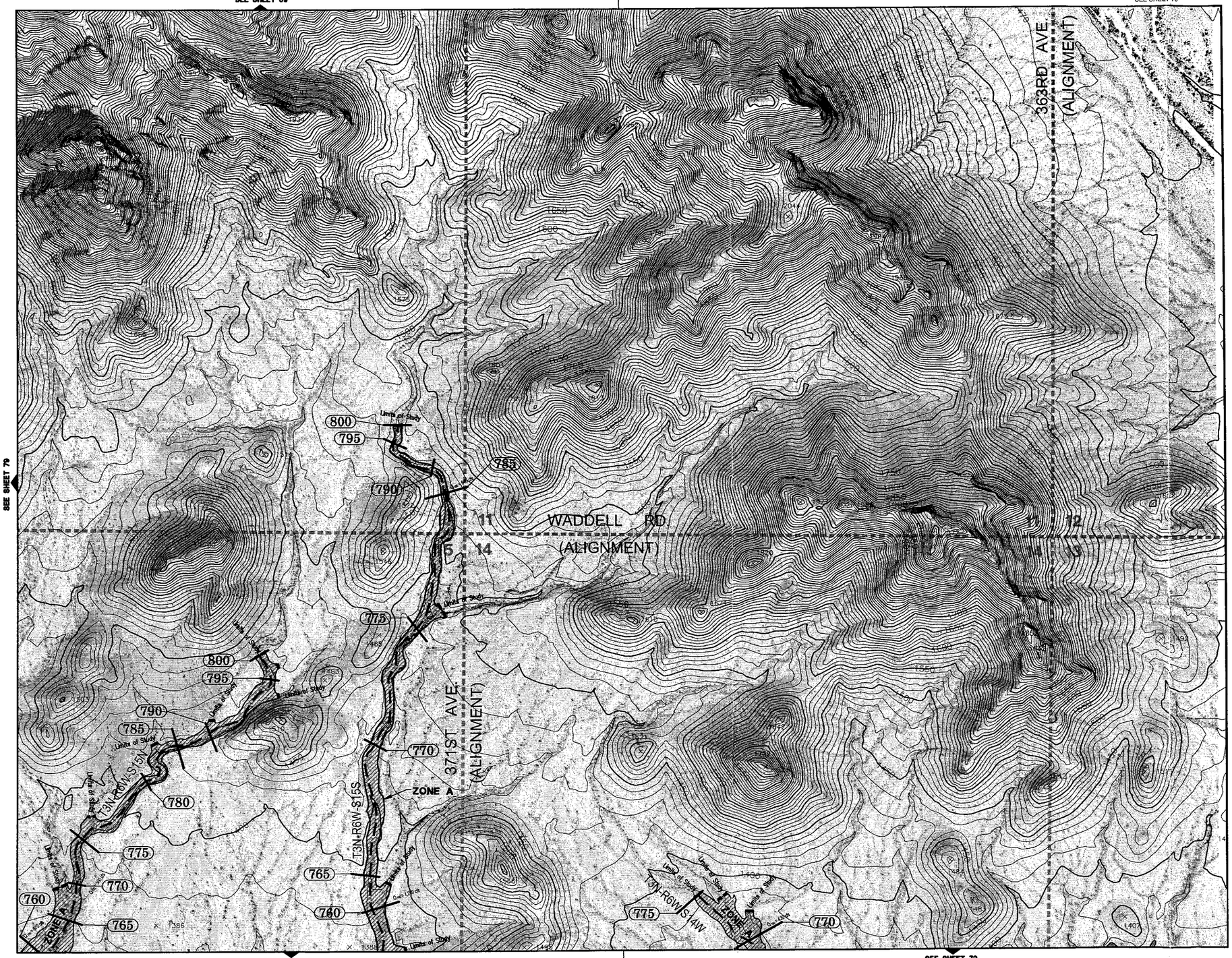
CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-3279
Tel 602.344.3556
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:		DATE:	SHEET 79 OF 104

FILE: 310\310019\dwg\000_PLAN_79.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 5
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

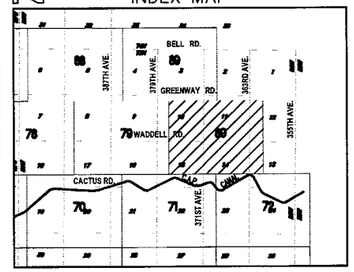
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

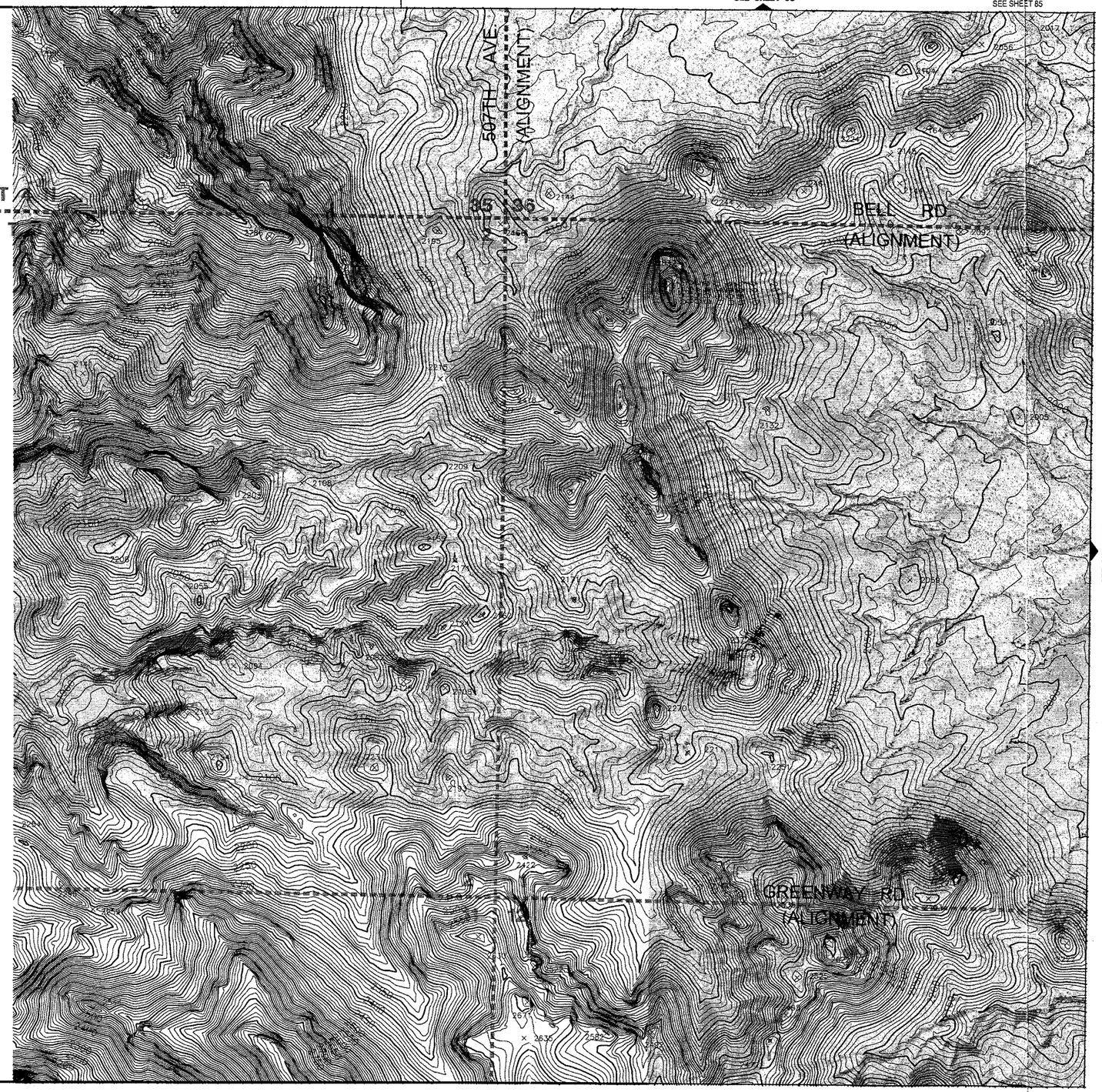
CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-2279
Tel 602.344.2666
Fax 602.344.2947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:		DATE:	SHEET 80 OF 104

FILE: 310\310019\dwg\000_PLAN_80.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

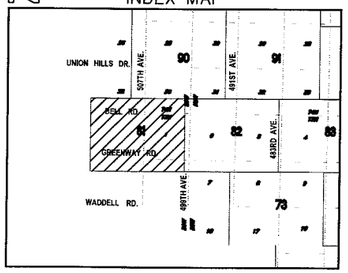
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

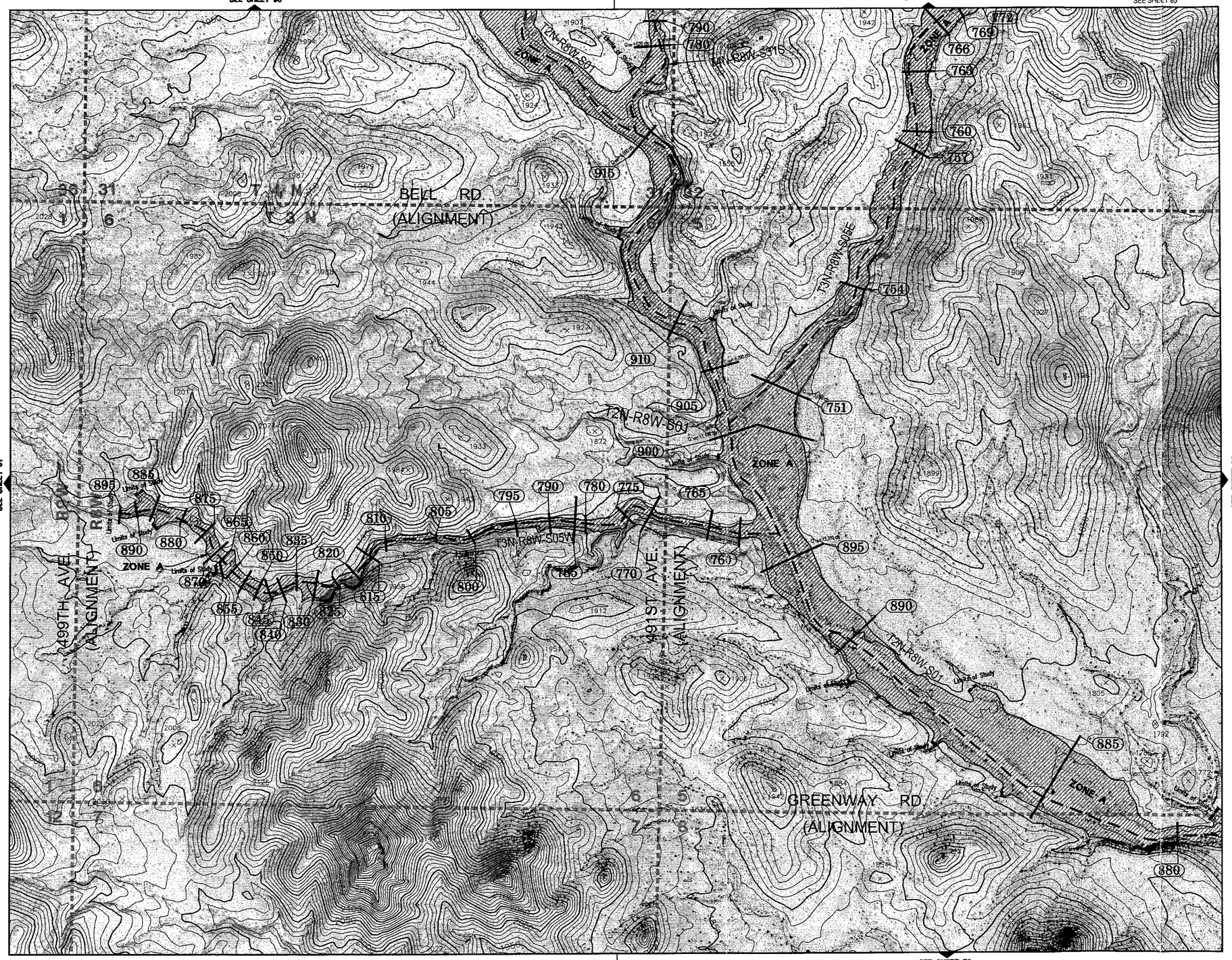
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 81 OF 104

FILE: 310\310019\dwg\000_PLAN_81.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

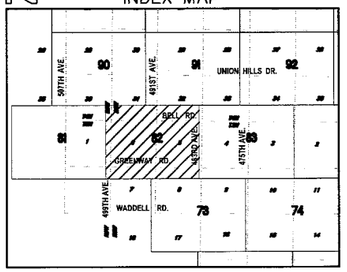
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GD4CS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3270
Tel 602.344.3555
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

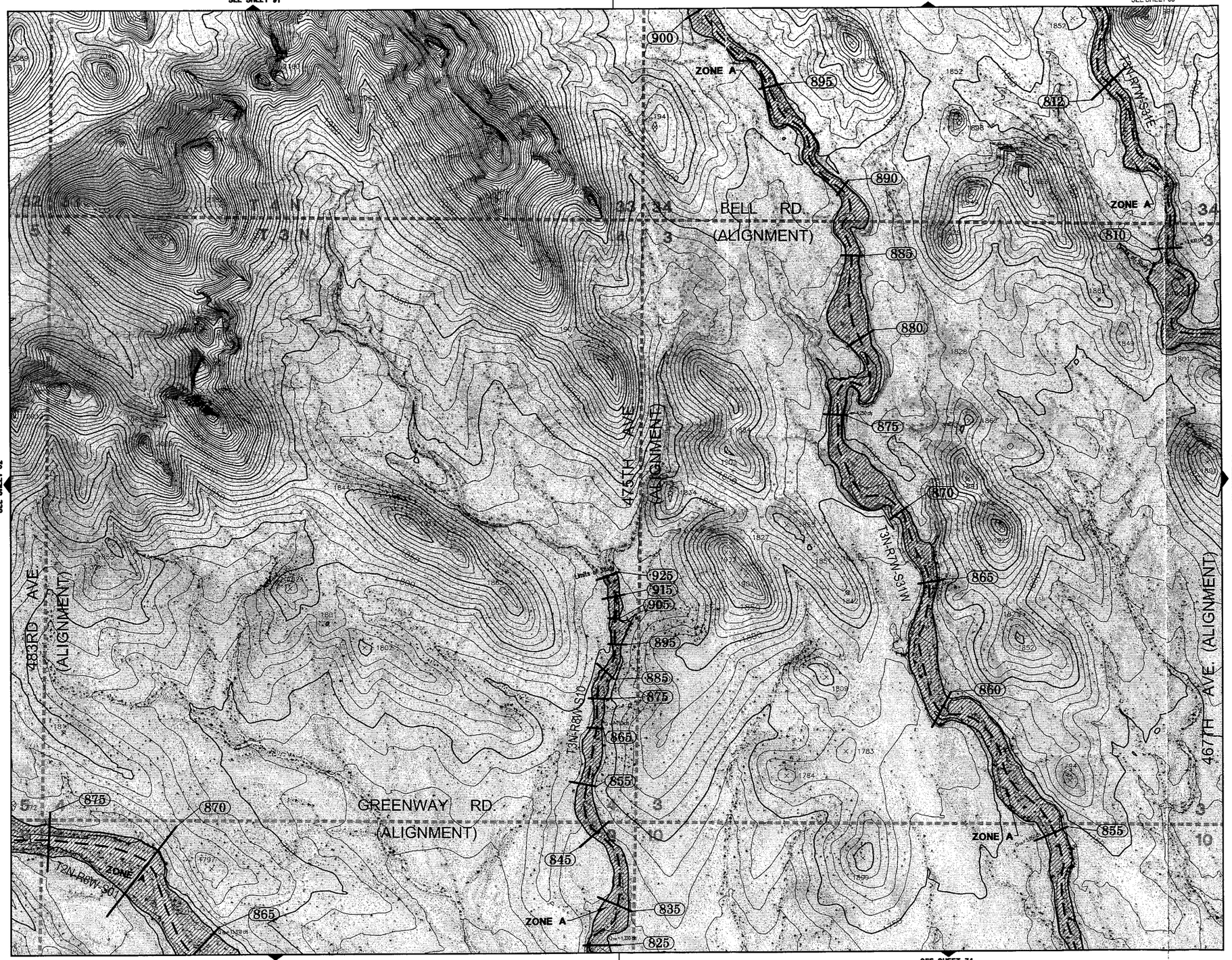
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_82.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

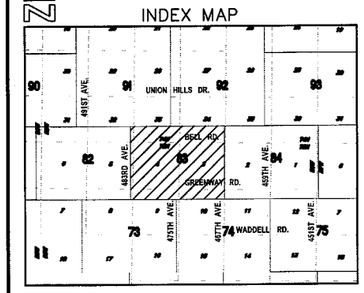
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4C03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4C03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

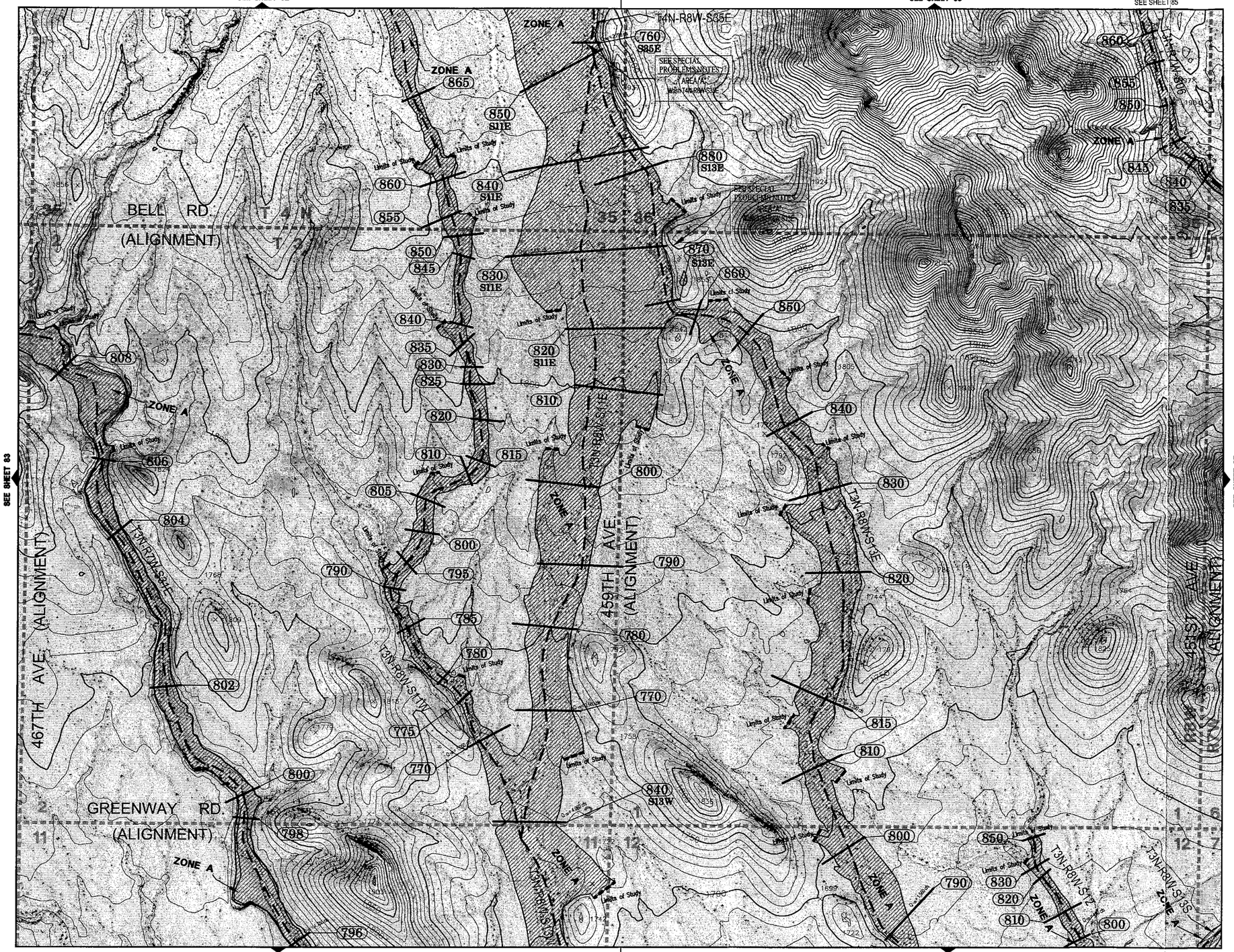
Entellus™
2855 N. 44th Street Suite 125
Phoenix, AZ 85008.2570
Tel 602.344.2556
Fax 602.344.5047
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/JP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 83 OF 104

FILE: 310\310019\dwg\000_PLAN_83.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

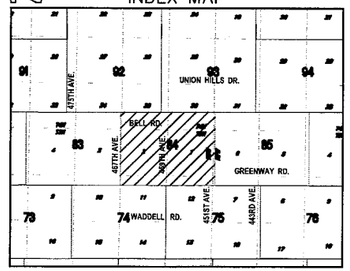
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
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Phoenix, AZ 85008-3279
Tel 602.344.2666
Fax 602.344.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

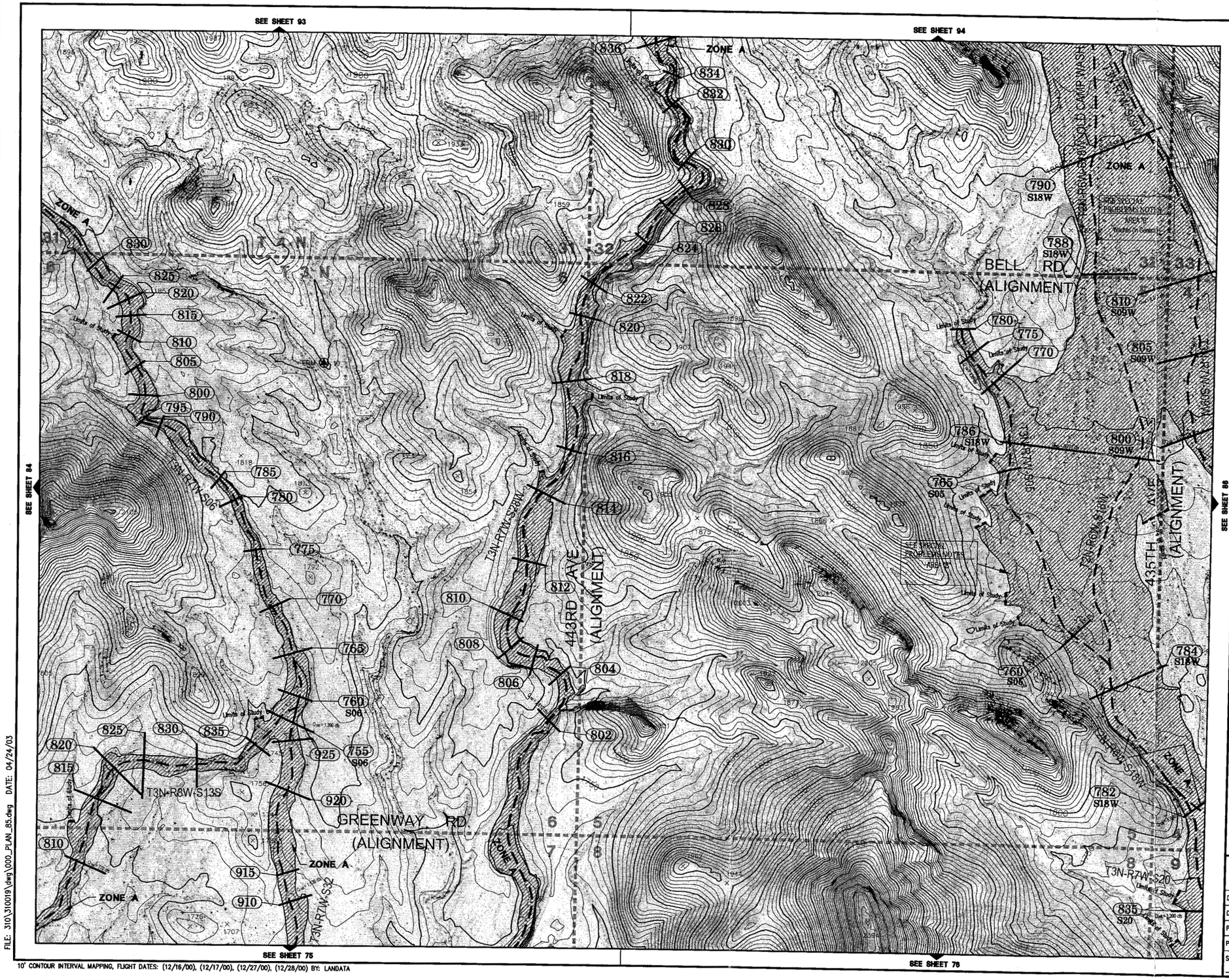
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_B4.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

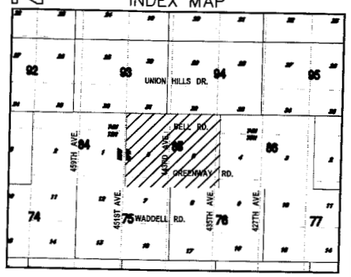
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.2066
Fax 602.244.2047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

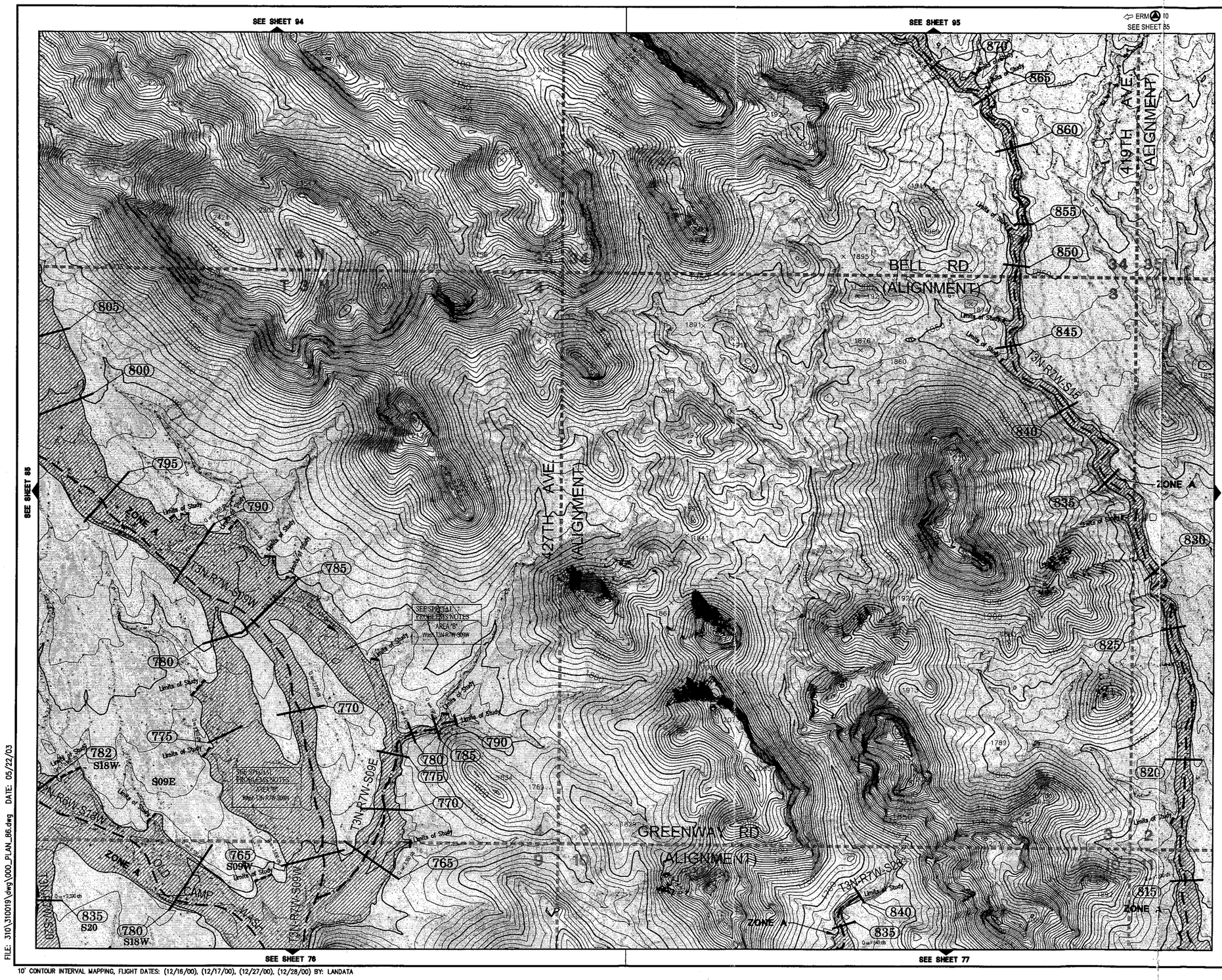
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_85.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

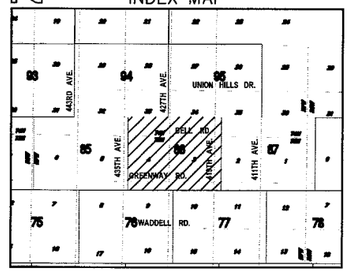
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2855 N. 44th Street Suite 125
Phoenix, AZ. 85008-2079
Tel 602.344.2500
Fax 602.344.8047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

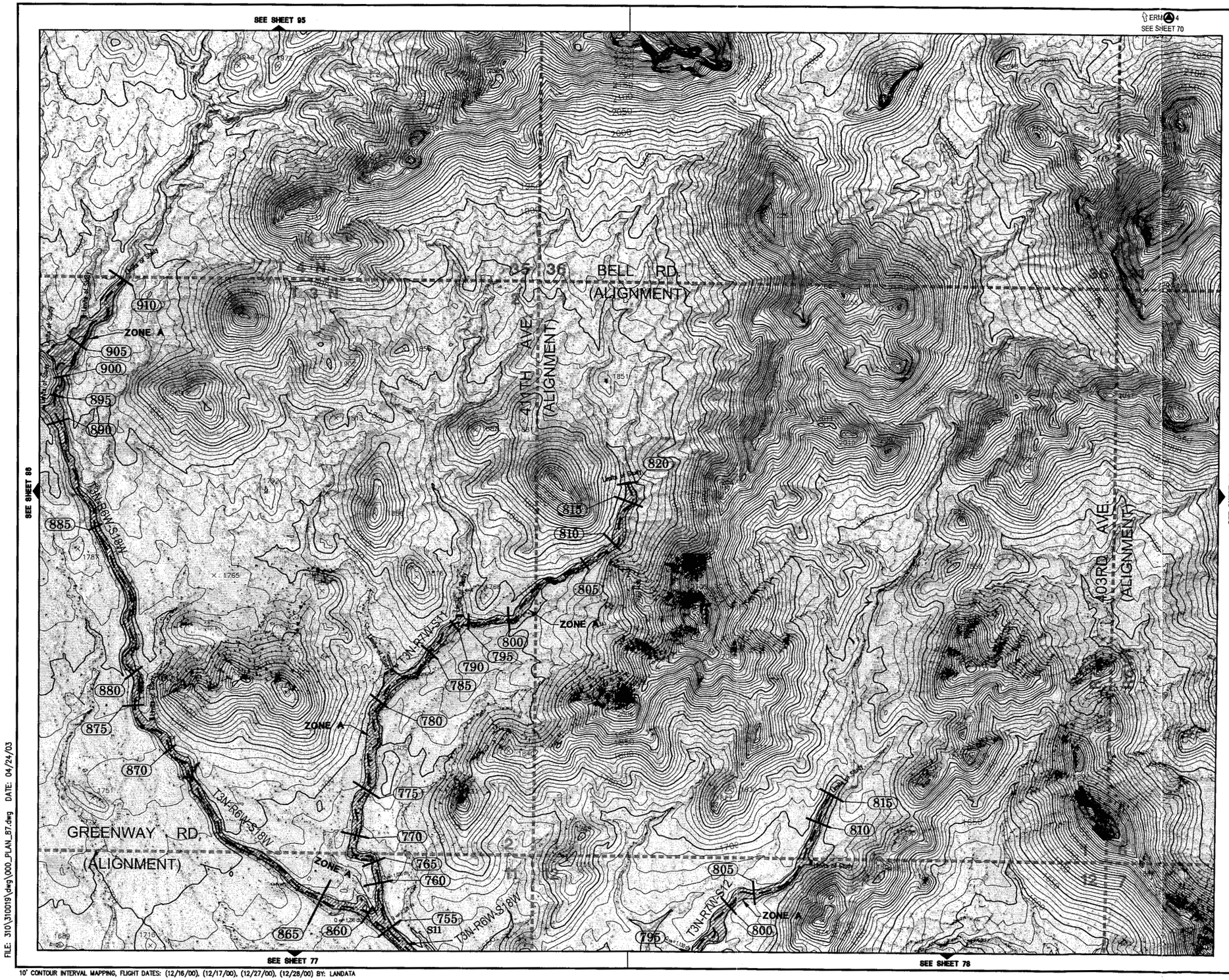
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_B6.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

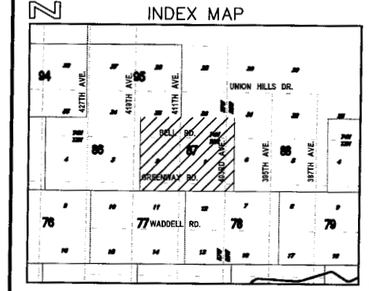
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
4	1388.44	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 4.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-2279
Tel 602.344.3500
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

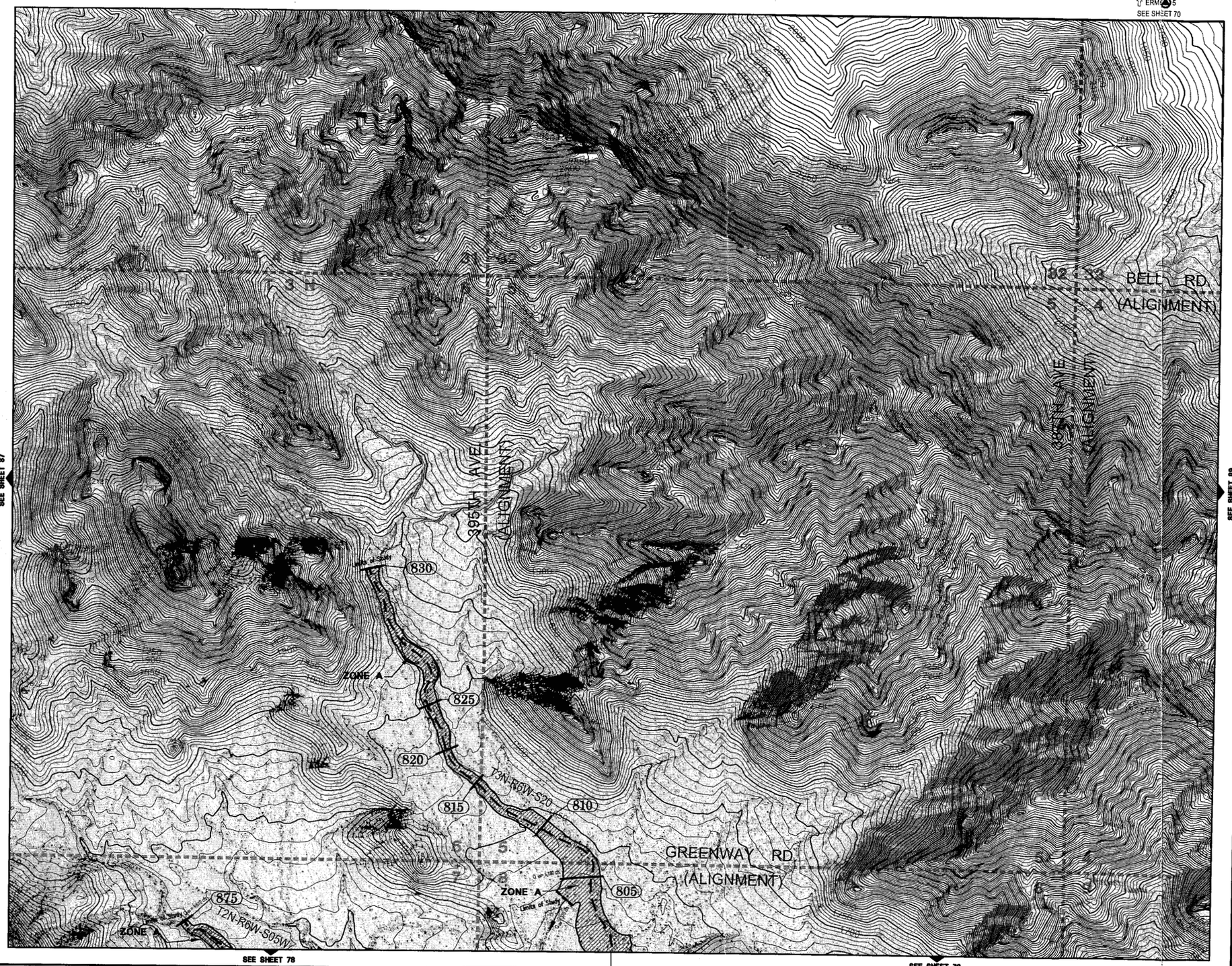
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_87.dwg DATE: 04/24/03



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

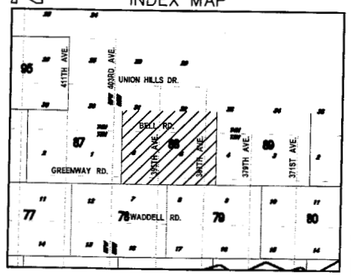
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.2666
Fax 602.344.2647
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

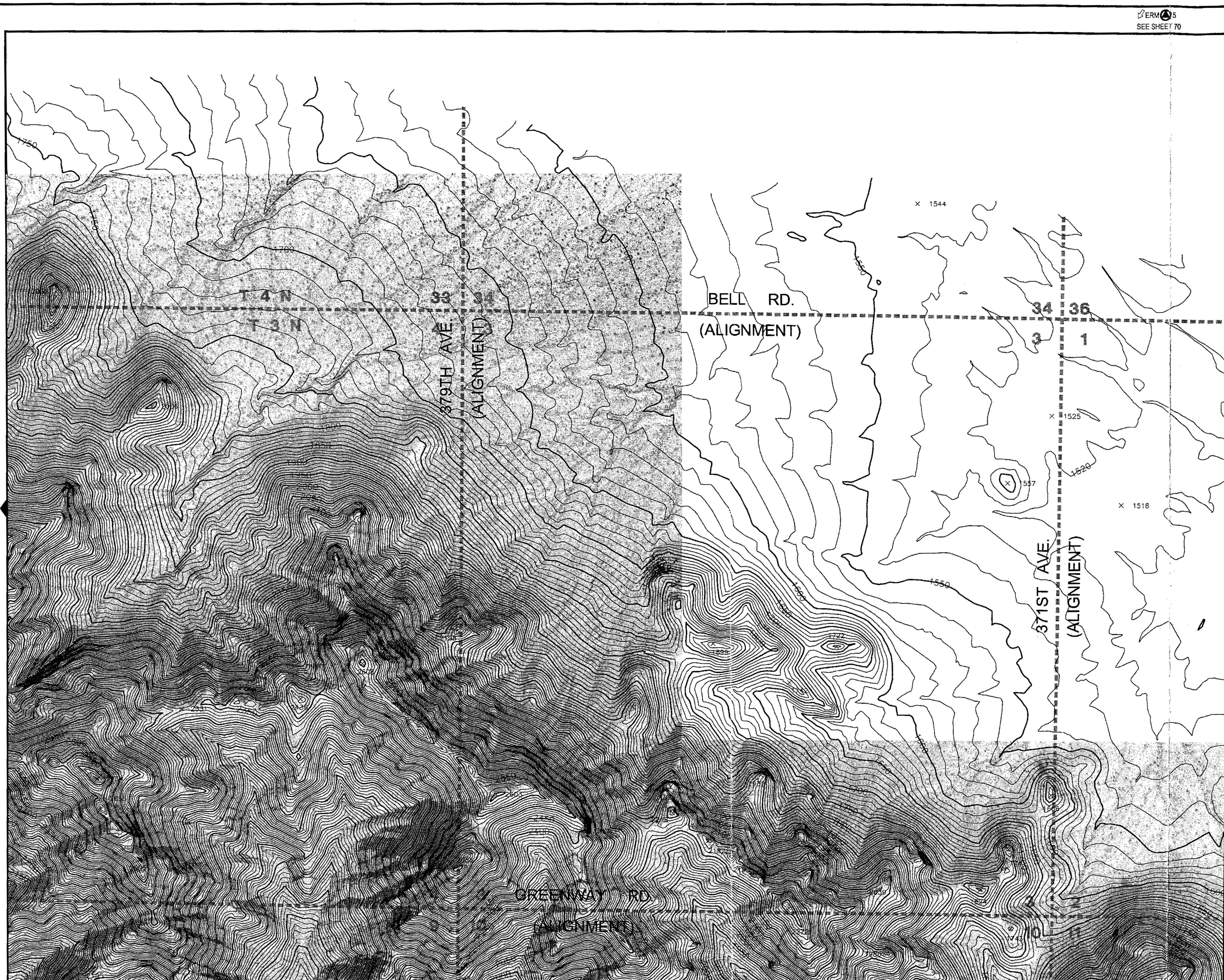
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_88.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



SEE SHEET 88

SEE SHEET 79

SEE SHEET 80

FILE: 310\310019\dwg\000_PLAN_89.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

ELEVATION REFERENCE MARKS

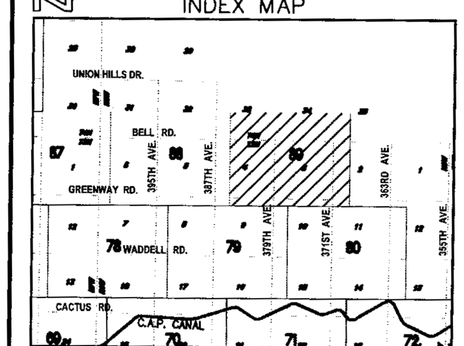
NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
5	1385.78	U.S. Dept of Interior brass cap in concrete atop flume headwall, south side of CAP canal 3.3 miles west of 355th Avenue.

NOTES

N

INDEX MAP



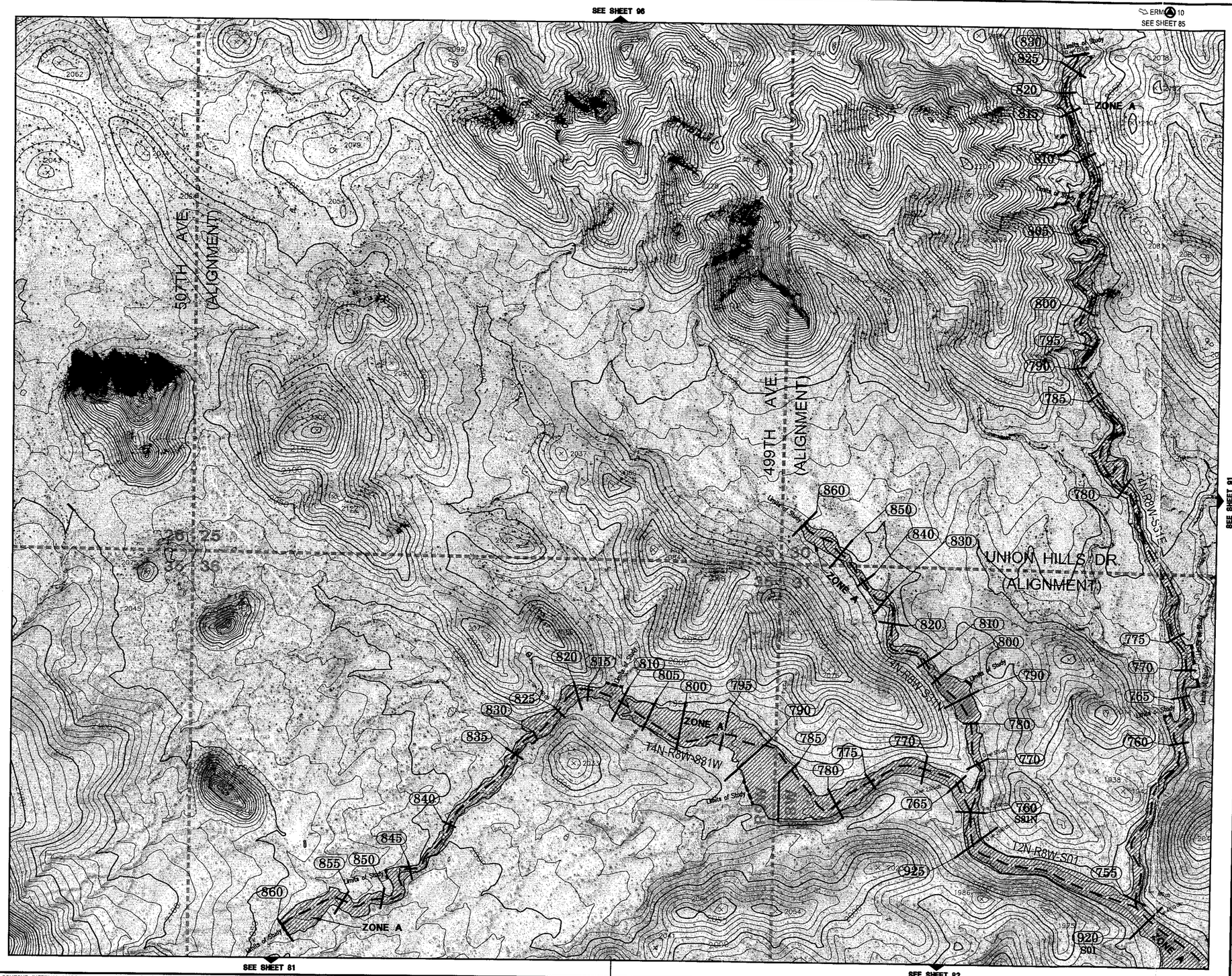
400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
3255 N. 44th Street Suite 135
Phoenix, AZ 85008.3279
Tel 602.244.2566
Fax 602.244.8947
E-mail www.entellus.com

	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY: DATE:			SHEET 89 OF 104



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_90.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

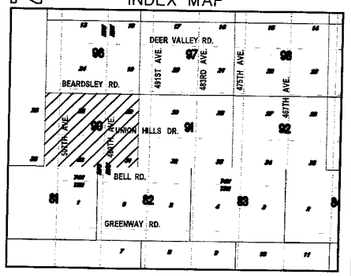
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.3535
Fax 602.244.9047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

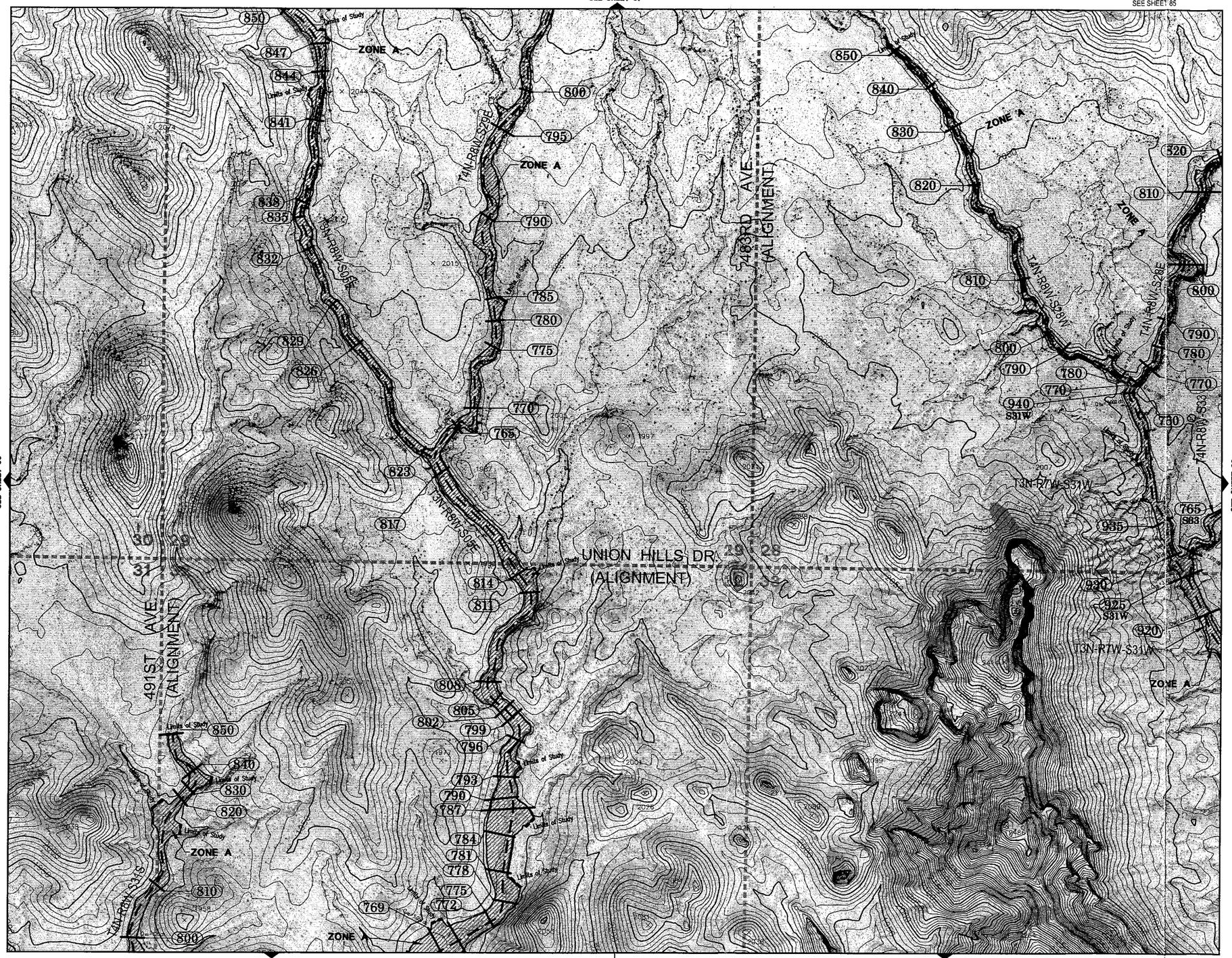
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100–YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100–YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

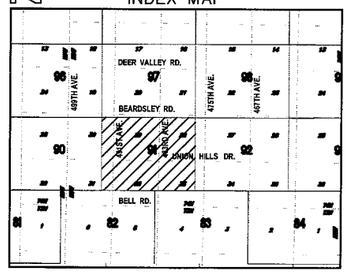
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-5279
Tel 602.344.2505
Fax 602.344.9047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

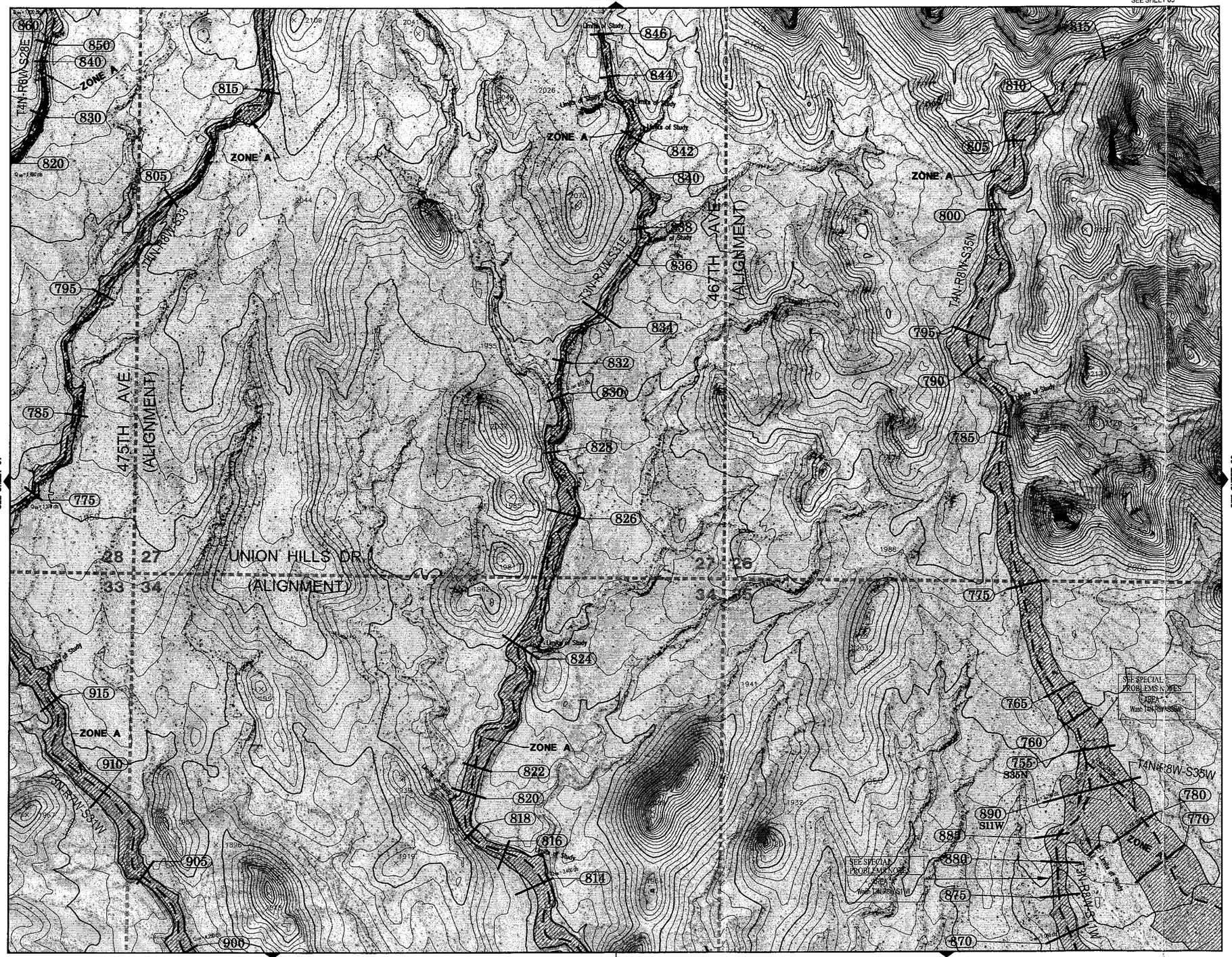
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_91.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

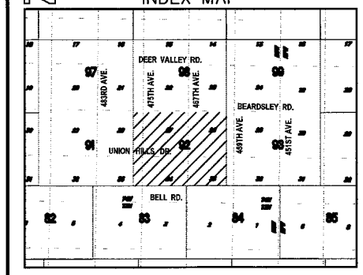
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GD4CS Station 4G03. Located in Sec. 6, T-3-N, R-1-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3500
Fax 602.344.3547
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

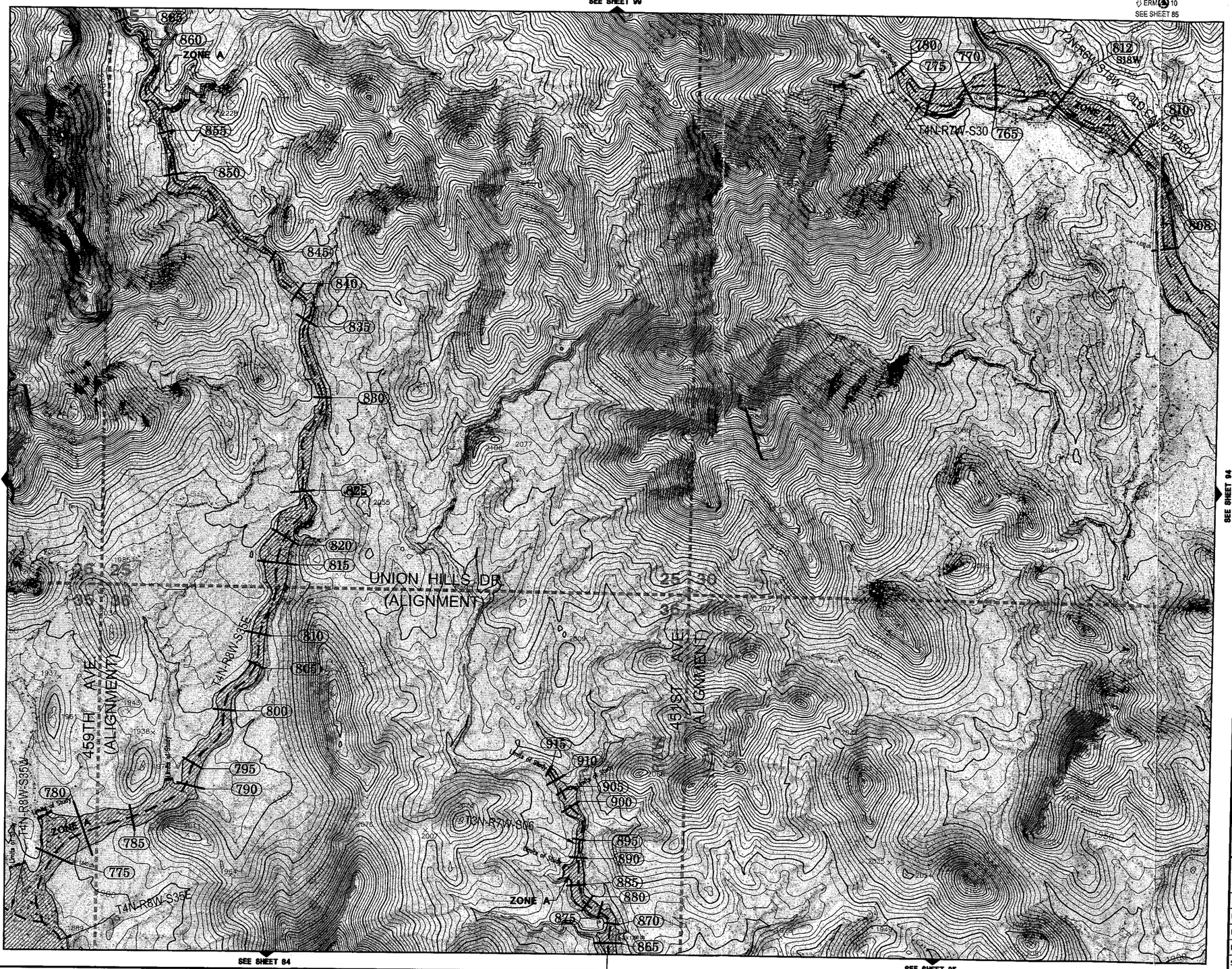
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_92.dwg DATE: 05/29/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FILE: 310\310019\dwg\000_PLAN_93.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

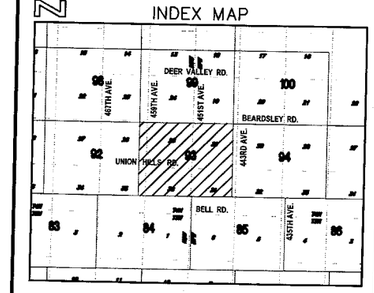
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N) continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2279
Tel 602.344.3566
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

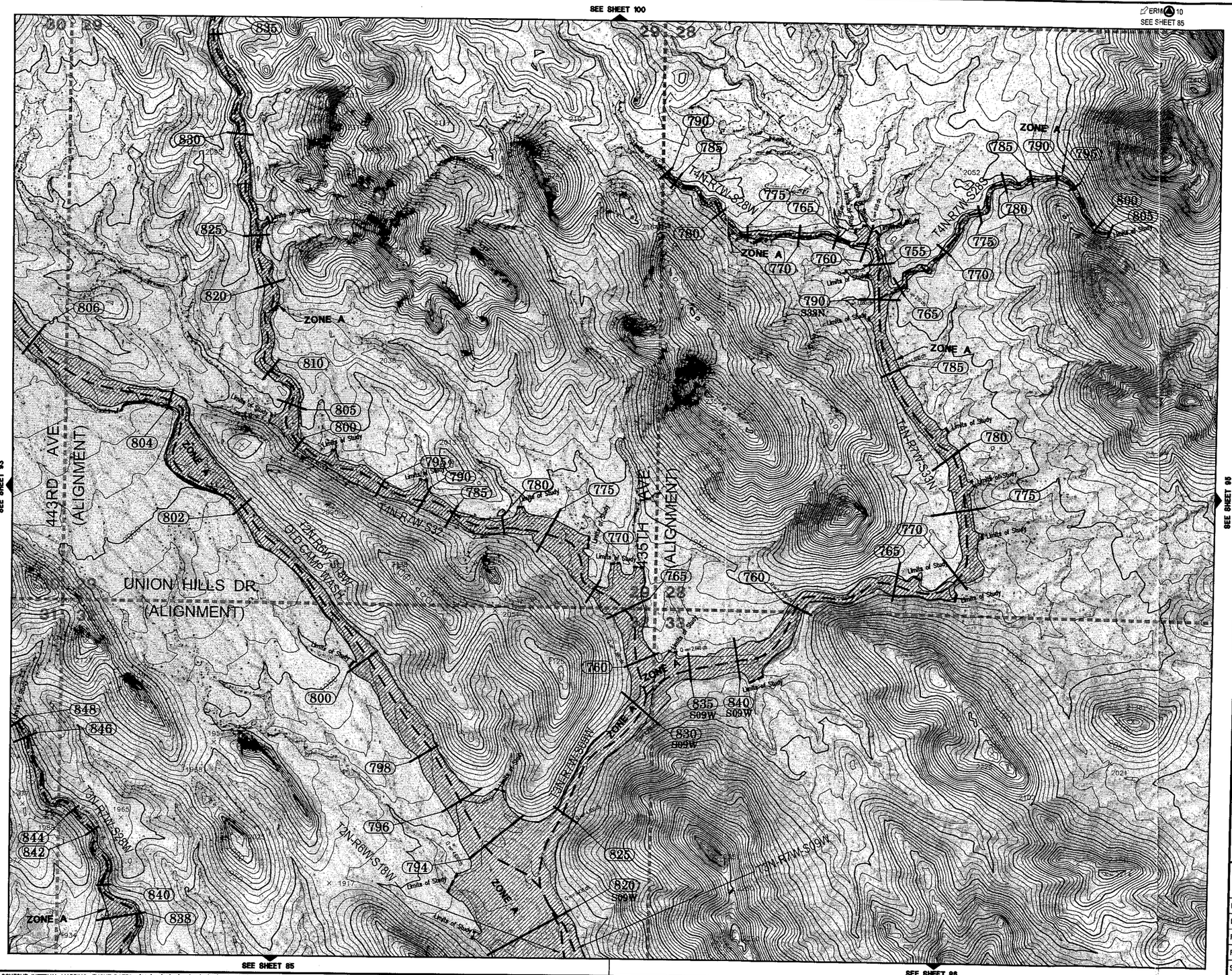
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SUBMITTED BY: DATE:



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

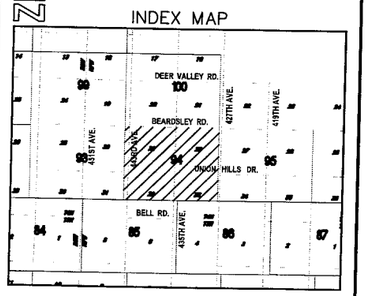
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 135
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.8947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

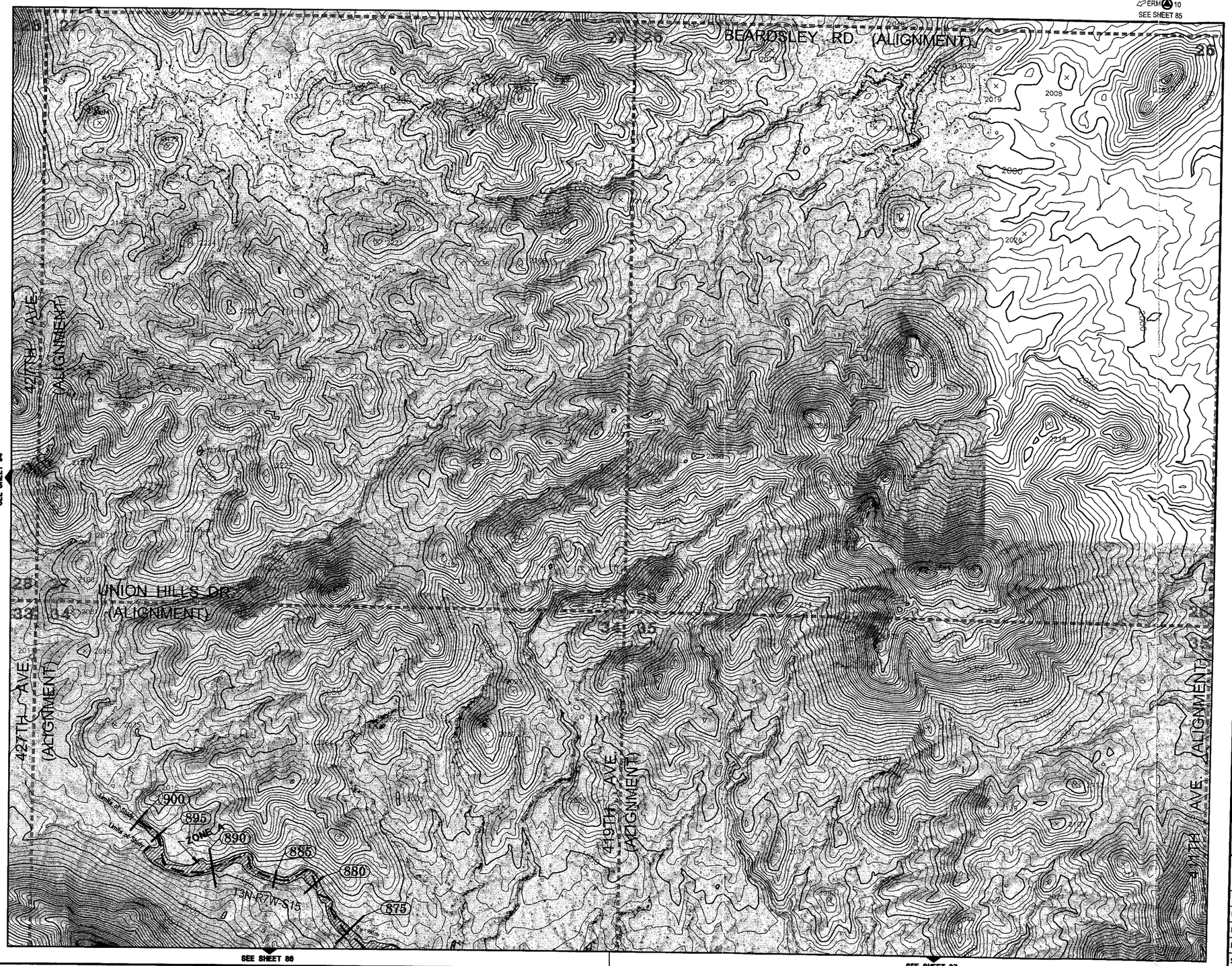
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_94.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN____.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

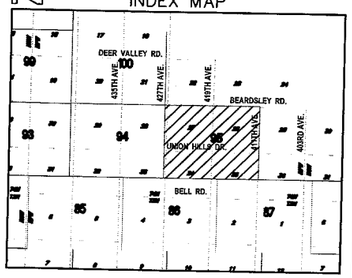
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1998. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 135
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

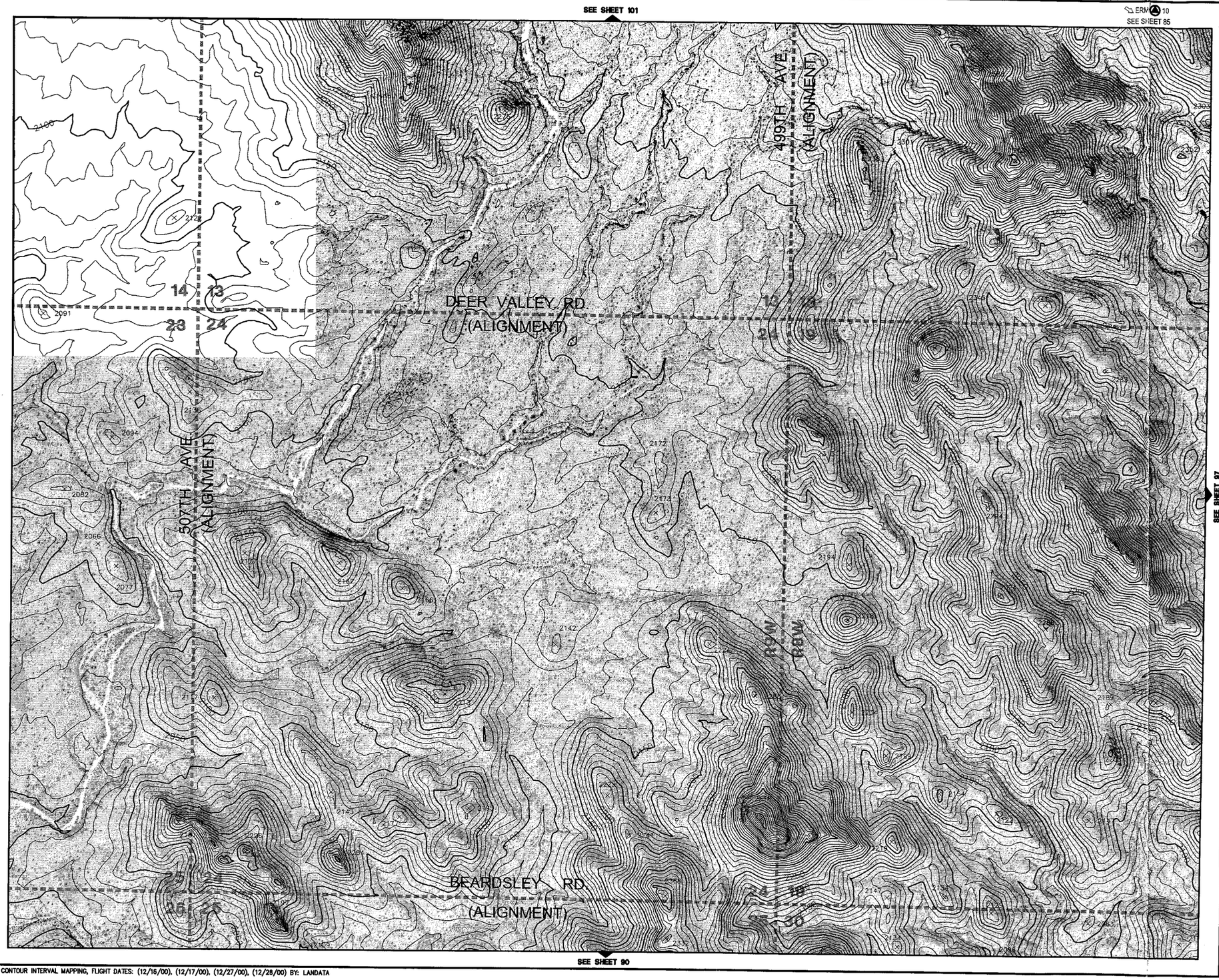
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_96.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

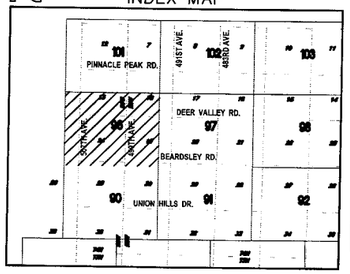
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GC03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GC03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.244.2505
Fax 602.244.8047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

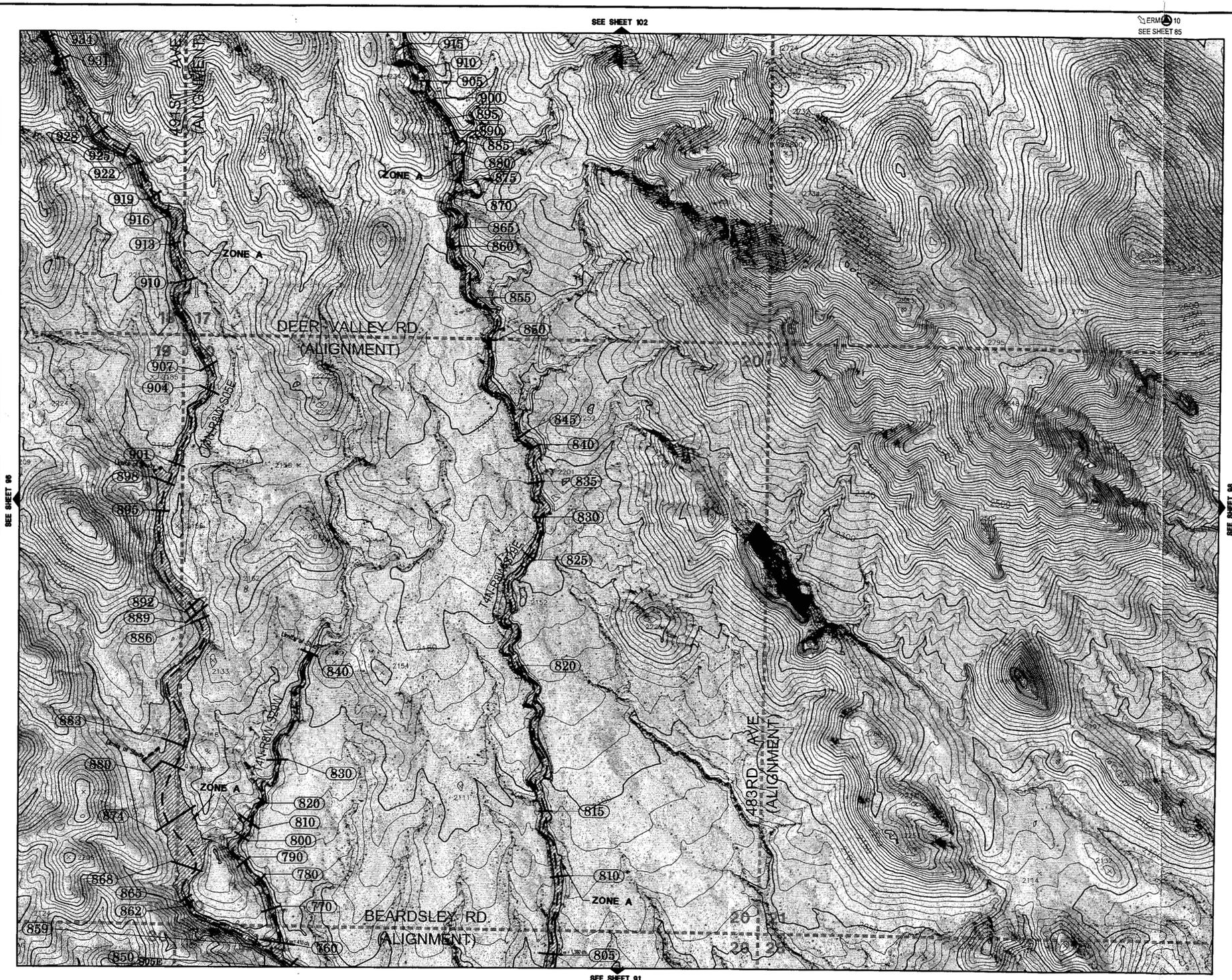
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

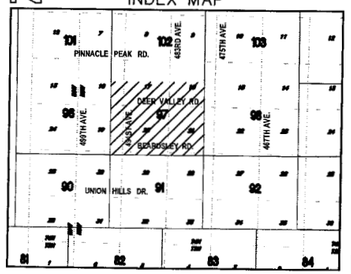
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1992. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3279
Tel 602.344.3566
Fax 602.344.3947
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

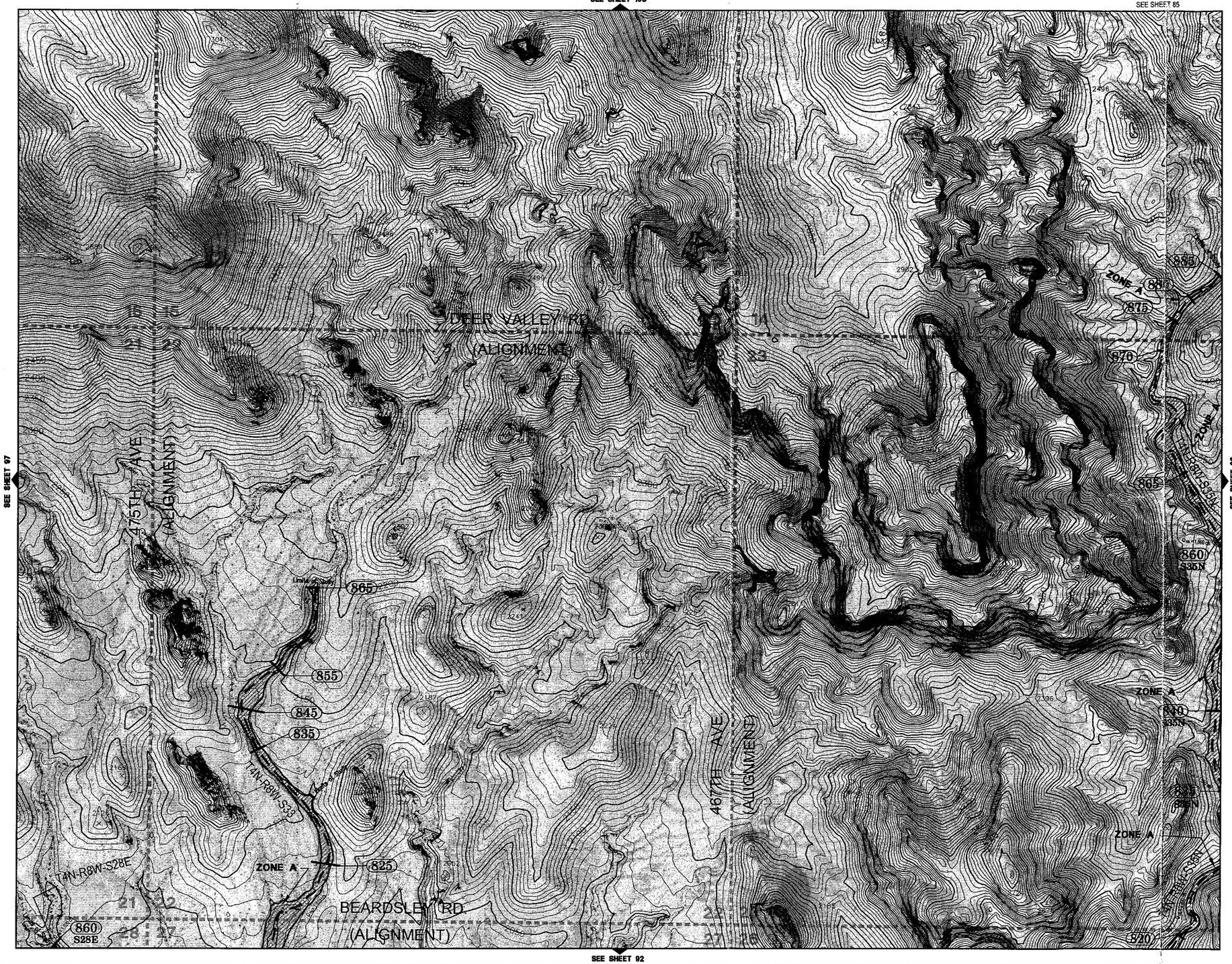
RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

FILE: 310\310019\dwg\000_PLAN_97.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

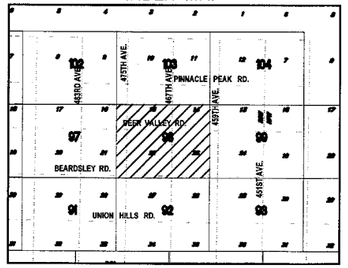
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to C48" aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-2379
Tel 602.244.3595
Fax 602.244.3647
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

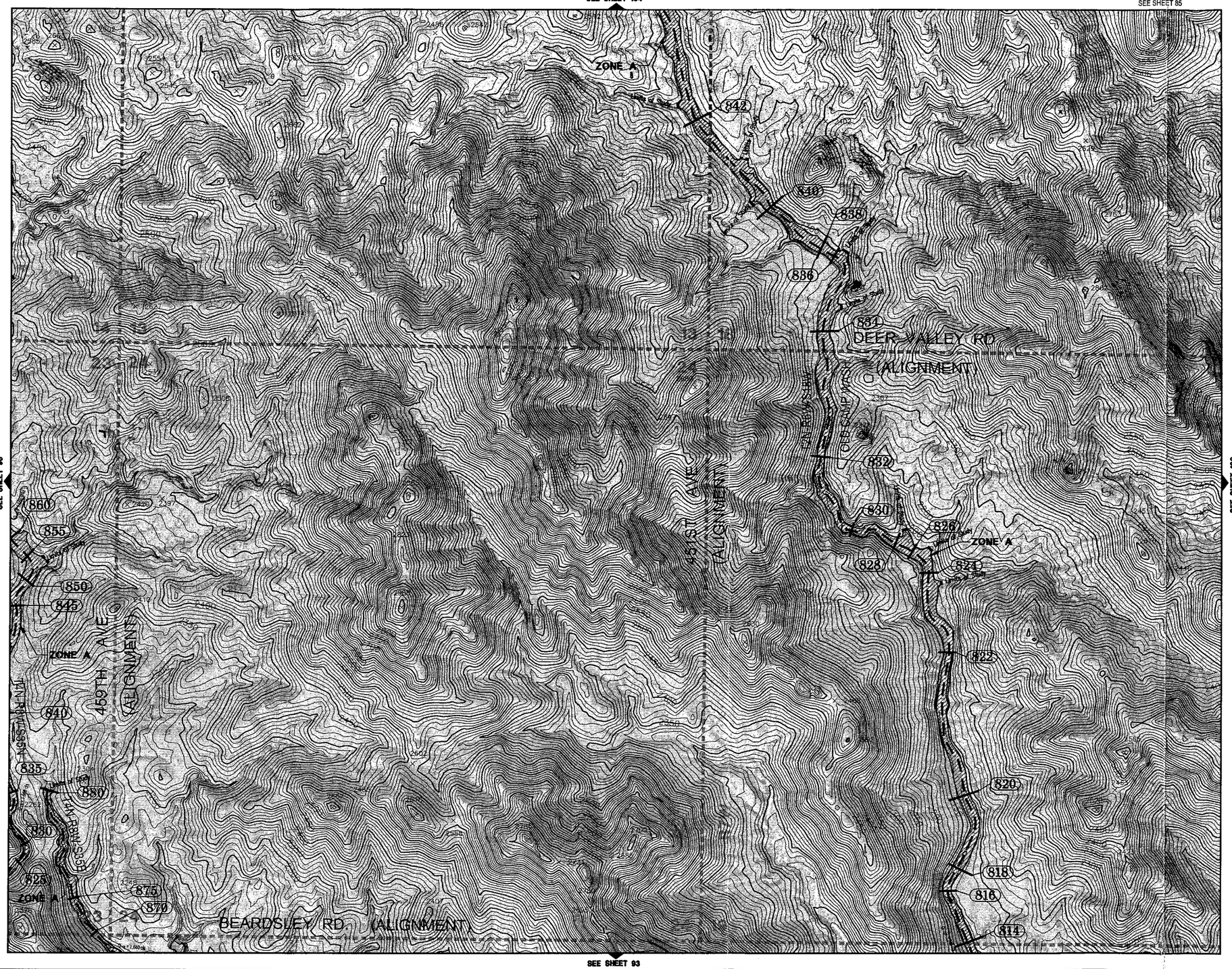
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 98 OF 104

FILE: 310\310019\dwg\000_PLAN_98.dwg DATE: 05/22/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_99.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

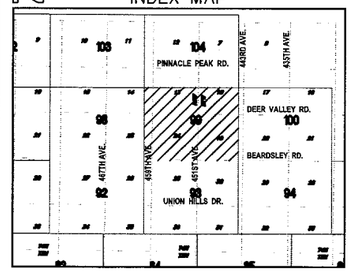
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus™
2355 N. 44th Street Suite 125
Phoenix, AZ 85008-3270
Tel 602.344.3566
Fax 602.344.3047
E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

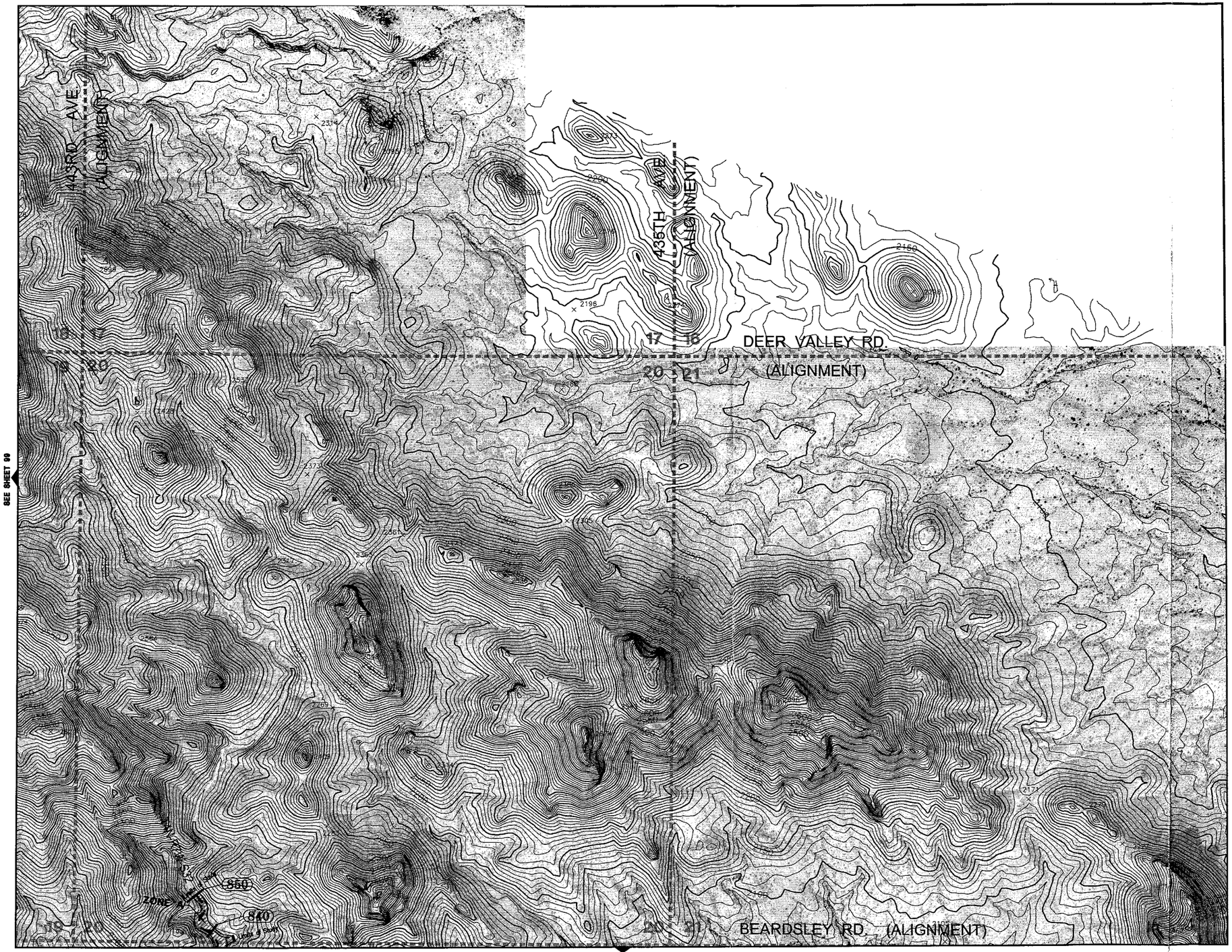
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FILE: 310\310019\dwg\000_PLAN_100.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

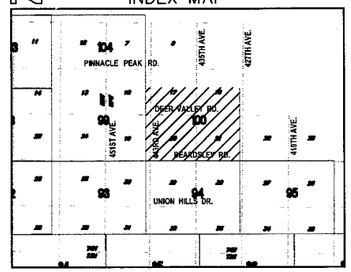
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GOACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2355 N. 44th Street Suite 125
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Tel 602.344.2566
Fax 602.344.8047
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	BY	DATE
DESIGN	AMG/JP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002

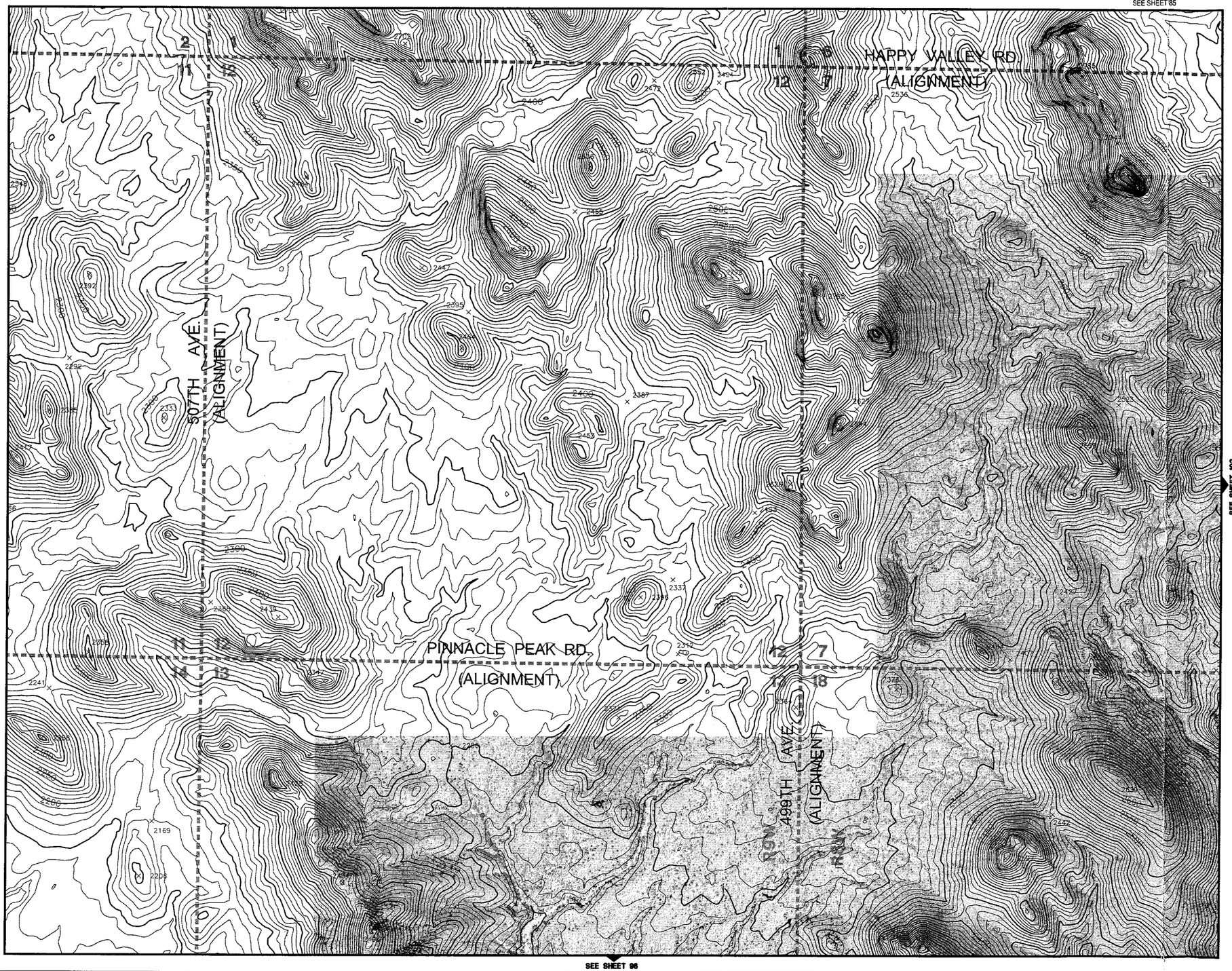
SUBMITTED BY: DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

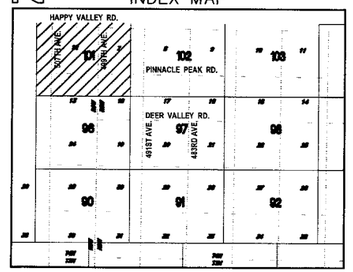
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1" = 400'

CONTOUR INTERVAL = 10 FEET

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Tel 602.344.3555
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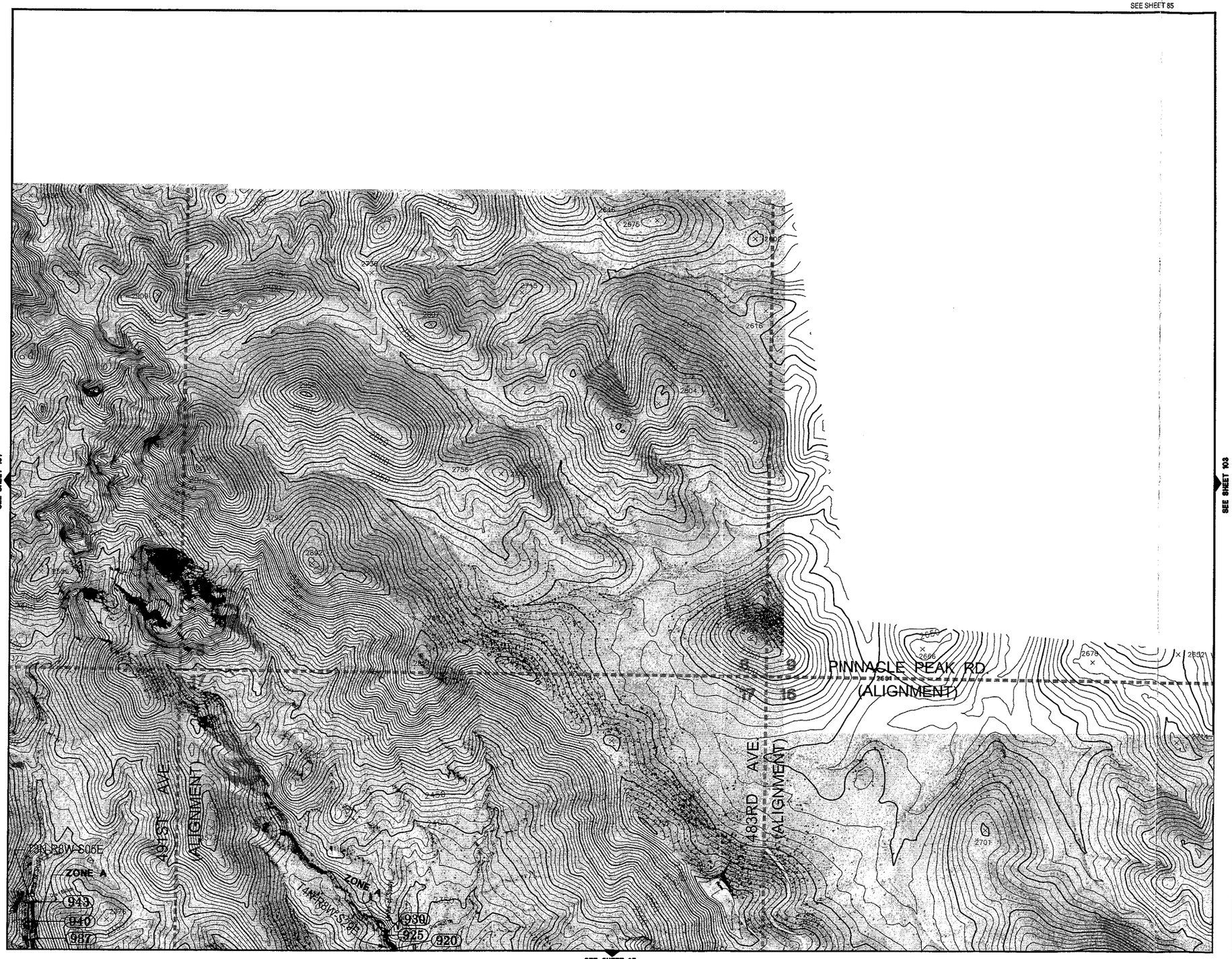
	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	RECOMMENDED BY: DATE
PLANS	GLT/KAB	09/2002	APPROVED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY: DATE:			SHEET 101 OF 104

FILE: 310\310019\dwg\000_PLAN_101.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

FILE: 310\310019\dwg\000_PLAN_102.dwg DATE: 04/24/03

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

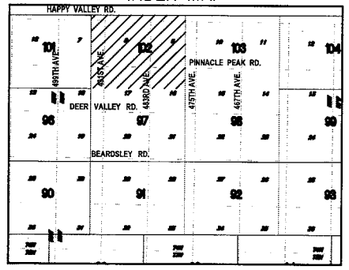
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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Phoenix, AZ 85008-3279
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Fax 602.344.5947
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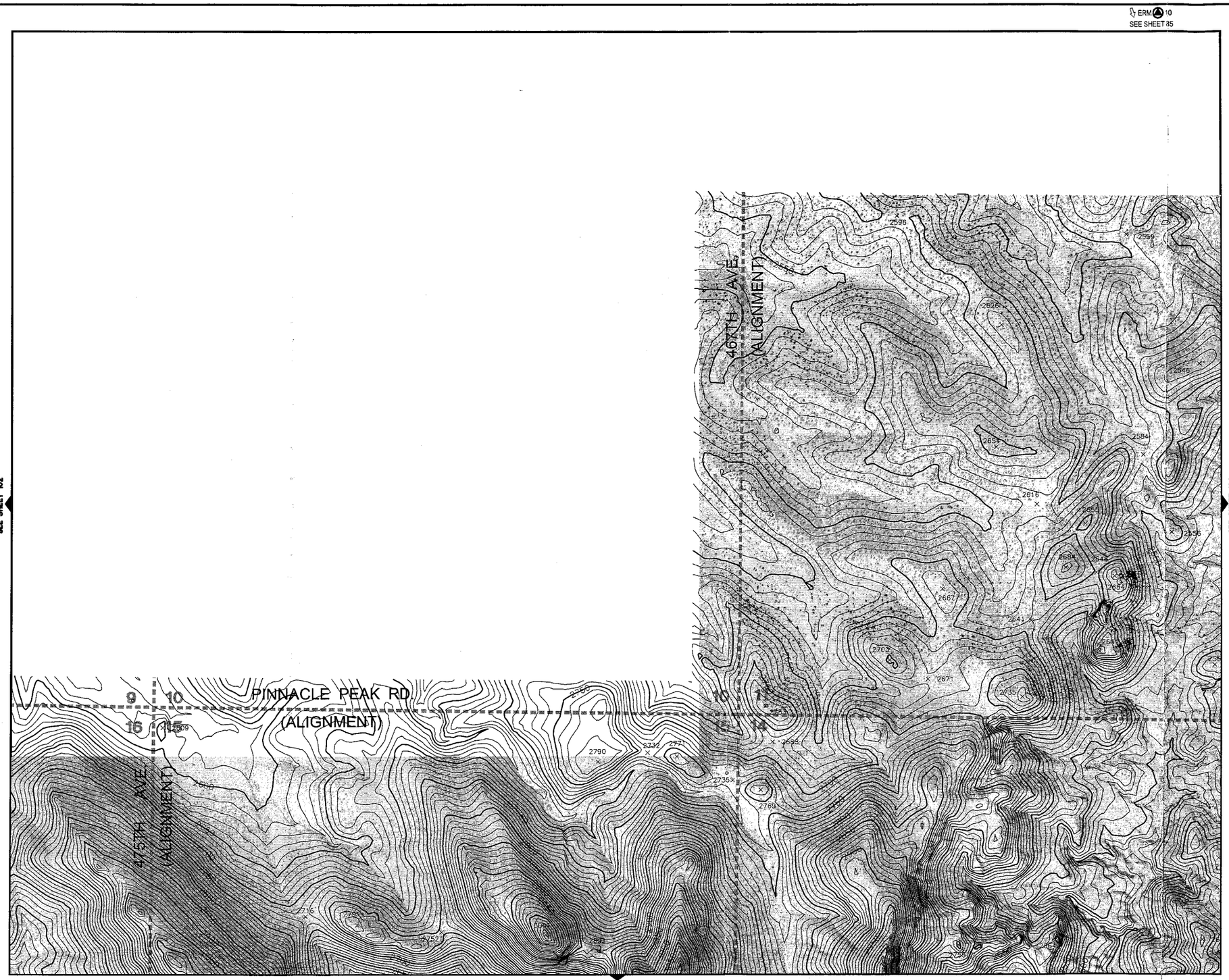
	BY	DATE	
DESIGN	AMG/UP	09/2002	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	09/2002	
PLANS	GLT/KAB	09/2002	RECOMMENDED BY: DATE
PLANS CHK.	HAA/SEK	10/2002	APPROVED BY: DATE
SUBMITTED BY: DATE:			CHIEF ENGINEER AND GENERAL MANAGER

SHEET 102 OF 104



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

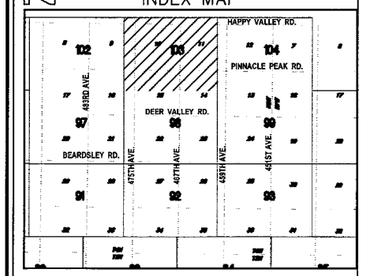
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4G03. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4G03 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 3.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

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Tel 602.344.3566
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	BY	DATE
DESIGN	AMG/UP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

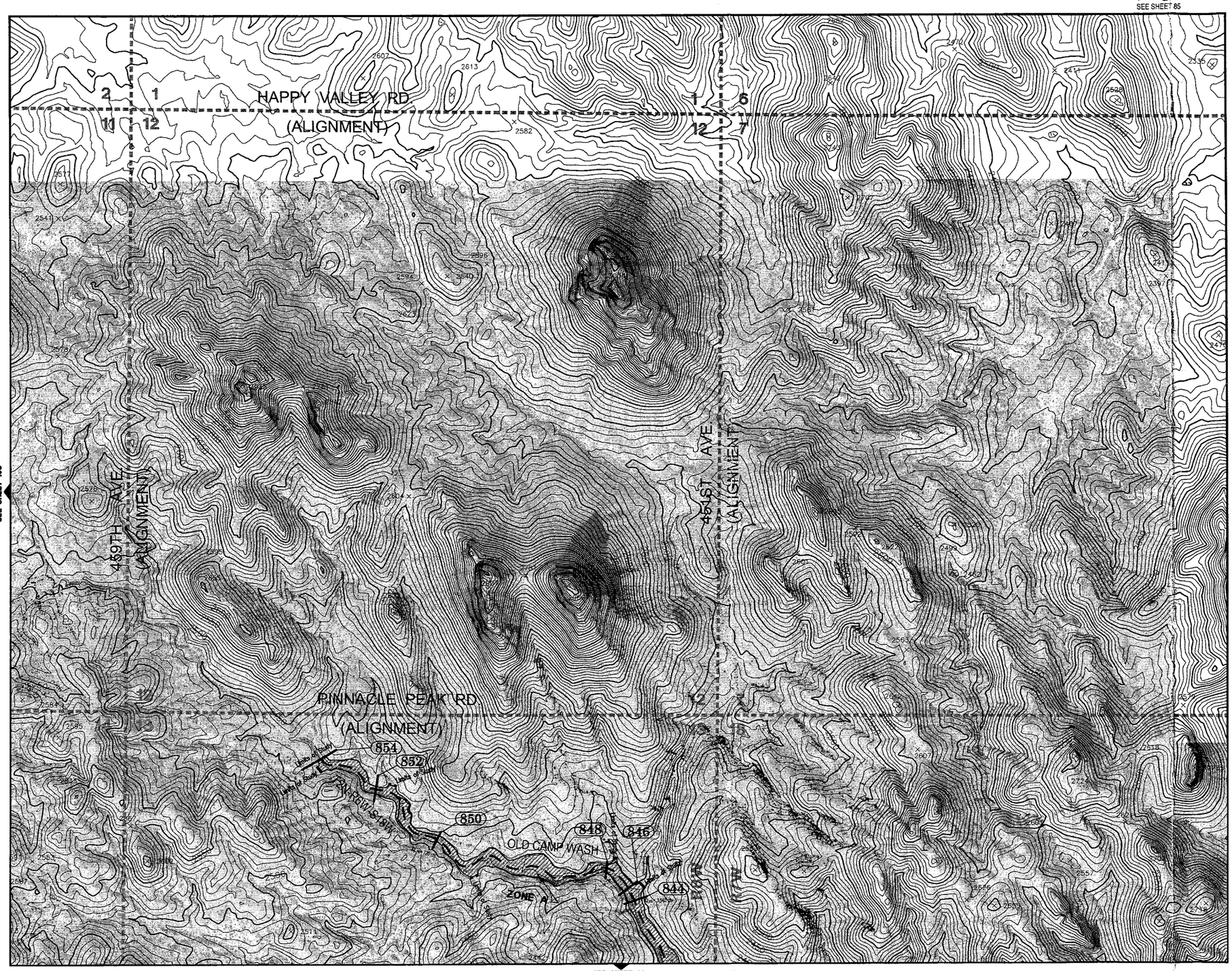
APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 103 OF 104

FILE: 310\310019\dwg\000_PLAN_103.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA



FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

PALO VERDE ZONE A FLOODPLAIN DELINEATION STUDY

CONTRACT F.C.D. 2000C021

LEGEND

100-YR APPROXIMATE ZONE A FLOODPLAIN BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	30
100-YEAR ZONE AH	
ELEVATION REFERENCE MARK	ERM 6
ZONE DESIGNATIONS	ZONE A
CORPORATE LIMITS	Corporate Limits
LIMITS OF STUDY	Limits of Study
SECTION LINES	
SECTION CORNER WITH SECTION NUMBERS	29 28 / 32 33
WASH I.D. LABEL	T1S-R5W-S22N
EXISTING ZONE A	
EXISTING FLOODPLAIN	
EXISTING FLOODWAY	
FLOW AT DOWNSTREAM CONCENTRATION POINT	Q_{100} = 850 cfs

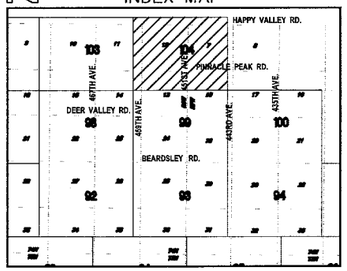
ELEVATION REFERENCE MARKS

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
10	1802.89	GDACS Station 4GO3. Located in Sec. 6, T-3-N, R-7-W. Aluminum cap atop stainless steel rod inside 5" PVC with aluminum cover stamped 4GO3 1999. From 411th Avenue and Bethany Home Road, W on Bethany Home Road for 1.5 miles to a dirt road, turn right (N), continue N-NW along dirt road for 3.2 miles to CAP aqueduct, cross bridge and continue NW along dirt road for 2.6 miles to fork in road, bear left and continue for 1.9 miles. Park vehicle and walk 30 feet west to described station.

NOTES

INDEX MAP



400' 0' 400' 800'

SCALE: 1"= 400'

CONTOUR INTERVAL = 10 FEET

Entellus
2255 N. 44th Street Suite 125
Phoenix, AZ 85008-2579
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E-mail www.entellus.com

	BY	DATE
DESIGN	AMG/JP	09/2002
DESIGN CHK.	HAA	09/2002
PLANS	GLT/KAB	09/2002
PLANS CHK.	HAA/SEK	10/2002
SUBMITTED BY:		DATE:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

RECOMMENDED BY: DATE

APPROVED BY: DATE

CHIEF ENGINEER AND GENERAL MANAGER

SHEET 104 OF 104

FILE: 310\310019\dwg\000_PLAN_104.dwg DATE: 04/24/03

10' CONTOUR INTERVAL MAPPING, FLIGHT DATES: (12/16/00), (12/17/00), (12/27/00), (12/28/00) BY: LANDATA

SECTION 6: EROSION AND SEDIMENT TRANSPORT

Erosion and sediment control are not in the scope of work for this project. No significant signs of erosion were observed in the field.

SECTION 7: DRAFT FIS DATA

7.1 Summary of Discharges

The discharge summary is provided in **Table 7.1**. The washes for Area A and Areas C through F are in the order of upstream to downstream and for Area B they are in alphabetical order of the flooding source name.

Table 7.1

Summary of Discharges

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
AREA A			
T4N-R8W-S31W	Union Hills and 499th Ave.	1.039	1150
	Union Hills and 499th Ave.	1.452	1610
	Union Hills and 499th Ave.	1.820	2020
T4N-R8W-S31N	Union Hills and 499th Ave.	0.510	570
T4N-R8W-S31E	Beardsley Road	0.647	720
	Bell and 491st Ave.	1.698	1890
T4N-R8W-S31S	Bell and 491st Ave.	0.555	620
T4N-R8W-S29W	Beardsley and 491st Ave.	0.372	410
T4N-R8W-S29E	Deer Valley Road	0.563	620
	Union Hills Drive	1.241	1380

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T3N-R8W-S05E	Deer Valley and 491st Ave.	0.586	650
	Beardsley and 491st Ave.	1.201	1330
	Beardsley and 491st Ave.	1.438	1600
	Beardsley and 491st Ave.	1.501	1670
	Beardsley and 491st Ave.	1.874	2080
	Union Hills Drive	2.095	2330
	Union Hills Drive	3.336	3700
	Bell Road and 491st Ave.	4.550	5050
T3N-R8W-S05W	Greenway and 491st Ave.	1.240	1380
T3N-R8W-S10	Greenway and 475th Ave.	0.748	760
	Waddell and 475th Ave.	1.605	1330
T2N-R8W-S01	Union Hills and 499th Ave.	2.330	2590
	Bell and 491st Ave.	2.377	2640
	Bell and 491st Ave.	4.075	4520
	Bell and 491st Ave.	4.156	4610
	Bell and 491st Ave.	4.711	5230
	Bell and 491st Ave.	5.490	6090
	Bell and 491st Ave.	10.040	11140
	Greenway and 491st Ave.	10.353	11490
	Greenway and 491st Ave.	11.593	12870
	Waddell and 475th Ave.	13.274	13310
	Waddell and 475th Ave.	14.880	13490
	Cactus Road and 467th Ave.	15.719	13550
	Peoria and 467th Ave.	6.387	6480
	CAP Canal and 459th Ave.	7.161	6880
T2N-R8W-S02W	Olive and 475th Ave.	0.525	280
	CAP Canal and 467th Ave.	3.018	2310

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T2N-R8W-S02E	Peoria Ave. and 467th Ave.	1.327	1230
	Peoria Ave. and 467th Ave.	2.096	1700
	CAP Canal and 459th Ave.	3.078	2200
	CAP Canal and 459th Ave.	6.096	4500
T2N-R7W-S19W	CAP Canal and 459th Ave.	0.773	390
T2N-R7W-S20W	Peoria and 467th Ave.	7.209	7170
	Olive and 459th Ave.	7.338	7240
	CAP Canal and 451st Ave.	4.858	4570
T4N-R8W-S28W	Union Hills and 475th Ave.	0.939	870
T4N-R8W-S28E	Beardsley and 475th Ave.	0.453	503
	Beardsley and 475th Ave.	0.916	1020
	Union Hills and 475th Ave.	0.998	1090
T4N-R8W-S33	Union Hills and 475th Ave.	1.307	1370
T3N-R7W-S31W	Union Hills and 475th Ave.	1.937	1960
	Union Hills and 475th Ave.	2.139	2130
	Union Hills and 475th Ave.	3.446	3500
	Bell Rd. and 475th Ave.	4.162	4250
	Cactus Road and 467th Ave.	5.081	5050
	Peoria and 459th Ave.	3.623	3100
	Olive and 459th Ave.	4.061	3330
	Olive and 459th Ave.	9.844	9020
	Olive and 451st Ave.	10.189	9200
T3N-R7W-S31E	Beardsley and 467th Ave.	0.401	450
	Union Hills and 467th Ave.	0.725	810

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Union Hills and 467th Ave.	1.466	1630
	Bell and 467th Ave.	3.063	3400
	Cactus and 459th Ave.	4.794	4750
	Olive and 451st Ave.	5.589	4860
T2N-R7W-S20E	Olive and 451st Ave.	15.778	13250
	CAP Canal and 443rd Ave.	15.950	13270
T4N-R8W-S35N	Beardsley and 459th Ave.	1.496	1660
	Union Hills and 459th Ave.	2.058	2290
T4N-R8W-S35W	Union Hills and 459th Ave.	1.646	1830
	Bell and 459th Ave.	1.032	1150
T4N-R8W-S35E	Bell and 459th Ave.	1.474	1640
	Bell and 459th Ave.	2.462	2780
	Bell and 459th Ave.	2.487	2810
T3N-R8W-S11W	Union Hills and 459th Ave.	0.412	460
	Greenway and 459th Ave.	0.972	1050
T3N-R8W-S11E	Bell and 459th Ave.	1.890	2140
	Bell and 459th Ave.	2.549	2870
	Greenway and 459th Ave.	2.755	3010
T3N-R8W-S13W	Greenway and 459th Ave.	3.727	4050
	Waddell and 451st Ave.	4.129	4300
T3N-R8W-S13E	Bell and 459th Ave.	0.597	670
	Greenway and 459th Ave.	1.253	1210
	Waddell and 451st Ave.	1.796	1560

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T3N-R7W-S06	Greenway Road and 451st Ave.	1.323	1390
T3N-R8W-S12	Greenway and 451st Ave.	0.584	490
T3N-R8W-S13S	Greenway and 451st Ave.	0.529	560
	Greenway and 451st Ave.	0.741	770
	Greenway and 451st Ave.	1.325	1260
	Waddell and 451st Ave.	2.896	2610
	Waddell and 451st Ave.	3.445	2890
	Waddell and 451st Ave.	7.574	7180
T3N-R7W-S31S	Waddell and 451st Ave.	5.302	5030
	Peoria and 451st Ave	5.569	5160
	Peoria and 451st Ave	6.546	5720
	CAP Canal and 443rd Ave.	7.856	6390
	CAP Canal and 443rd Ave.	8.479	7010
T3N-R7W-S32	Greenway Road and 451st Ave.	0.794	830
	Cactus Road	1.846	1530
	Cactus Road	2.340	1880
	Peoria and 443rd Ave.	2.784	2110
	Peoria and 443rd Ave.	5.315	4390
	Olive and 443rd Ave.	4.132	3370
	Olive and 443rd Ave.	4.812	3720
	Olive and 443rd Ave.	6.141	4810
	CAP Canal and 443rd Ave.	6.522	5010
AREA B			
T1S-R6W-S29E (Winters Wash)	Peoria and 411th Ave.	1.405	1050

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T2N-R6W-S05W	Cactus and 395th Ave.	1.772	1610
	Cactus and 395th Ave.	1.847	1650
T2N-R6W-S18W	Pinnacle Peak and 451st Ave.	0.648	720
(Old Camp Wash)	Pinnacle Peak and 451st Ave.	0.940	1040
	Beardsley and 443rd Ave.	3.187	3540
	Beardsley and 443rd Ave.	3.763	4180
	Bell and 435th Ave.	4.344	4630
	Bell and 435th Ave.	8.672	9430
	Greenway and 435th Ave.	7.727	8340
	Greenway and 435th Ave.	8.217	8770
	Greenway and 435th Ave.	8.431	8960
	Greenway and 427th Ave.	5.833	6100
	Greenway and 427th Ave.	12.586	13130
	Waddell and 427th Ave.	7.300	7620
	Cactus and 427th Ave.	5.249	5440
	Cactus and 427th Ave.	5.397	5520
	Peoria and 419th Ave.	4.690	4520
T2N-R6W-S19	Greenway and 427th Ave.	5.412	5690
	Cactus and 427th Ave.	5.698	5830
	Peoria and 427th Ave.	5.856	5910
	Cap Canal and 427th Ave.	2.576	2450
T3N-R6W-S14W	CAP Canal and 363rd Ave.	0.452	420
T3N-R6W-S15N	Cactus and 379th Ave.	0.529	560
	Cactus and 379th Ave.	0.912	940
	CAP Canal and 379th Ave.	0.989	970
T3N-R6W-S15S	Waddell and 371st Ave.	0.577	640
	Waddell and 371st Ave.	0.951	1040

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	CAP Canal and 371st Ave.	1.219	1280
T3N-R6W-S16E	Cactus and 387th Ave.	1.013	850
T3N-R6W-S16S	CAP Canal and 379th Ave.	0.995	930
T3N-R6W-S16W	Cactus and 387th Ave.	0.817	610
	Cactus and 387th Ave.	1.830	1460
	CAP Canal and 387th Ave.	2.139	1660
T3N-R6W-S18W	Greenway and 411th Ave.	1.196	1290
	Greenway and 411th Ave.	2.174	2320
	Waddell and 411th Ave.	2.474	2630
	Waddell and 411th Ave.	3.521	3760
	Cactus and 403rd Ave.	3.745	3920
	Cactus and 403rd Ave.	3.397	3500
T3N-R6W-S19	Cactus and 403rd Ave.	1.652	1240
	Cactus and 403rd Ave.	5.049	4740
	CAP Canal and 403rd Ave.	5.333	4880
T3N-R6W-S20	Greenway and 395th Ave.	1.091	1180
	Greenway and 395th Ave.	1.071	1130
	Greenway and 395th Ave.	1.368	1440
	CAP Canal and 395th Ave.	1.760	1680
T3N-R6W-S21	CAP Canal and 387th Ave.	0.289	150
T3N-R7W-S05	Greenway and 435th Ave.	0.491	430
T3N-R7W-S09E	Greenway and 427th Ave.	0.167	190
	Greenway and 427th Ave.	0.382	410

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Greenway and 427th Ave.	3.140	3300
T3N-R7W-S09W	Union Hills and 435th Ave.	2.251	2500
	Union Hills and 435th Ave.	2.381	2640
	Union Hills and 435th Ave.	4.077	4530
	Bell and 435th Ave.	4.328	4800
	Bell and 435th Ave.	5.369	5930
	Greenway and 435th Ave.	5.545	6050
	Greenway and 427th Ave.	3.368	3650
	Greenway and 427th Ave.	6.508	6960
	Greenway and 427th Ave.	6.752	7130
T3N-R7W-S11	Greenway and 411th Ave.	0.978	1030
T3N-R7W-S12	Waddell and 411th Ave.	1.046	1130
T3N-R7W-S15	Bell and 419th Ave.	0.892	990
	Bell and 419th Ave.	1.064	1180
	Waddell and 419th Ave.	2.156	2330
	Waddell and 419th Ave.	1.744	1850
T3N-R7W-S17	Cactus Road and 435th Ave.	1.275	960
T3N-R7W-S20	Greenway and 435th Ave.	2.782	2960
	Waddell and 435th Ave.	3.264	3390
	Cactus and 435th Ave.	1.852	1860
	Cactus and 435th Ave.	3.128	2820
	Cactus and 435th Ave.	3.201	2850
T3N-R7W-S24	Waddell and 411th Ave.	0.760	570
	CAP Canal and 411th Ave.	1.066	730

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T3N-R7W-S26	Waddell and 427th Ave.	0.773	840
	Waddell and 419th Ave.	1.247	1150
	Waddell and 419th Ave.	3.756	3740
	Cactus and 419th Ave.	5.394	5360
	CAP Canal and 419th Ave.	5.760	5540
T3N-R7W-S28E	Cactus and 435th Ave.	0.459	230
	Cactus and 427th Ave.	0.698	360
	Cactus and 427th Ave.	2.410	2040
	CAP Canal and 427th Ave.	2.907	2290
T3N-R7W-S28W	Union Hills and 443rd Ave.	0.855	920
	Greenway and 443rd Ave.	2.668	2610
	Cactus and 435th Ave.	3.184	2890
	Cactus and 435th Ave.	4.952	4440
	Peoria and 435th Ave.	5.160	4550
	Peoria and 435th Ave.	5.359	4650
	CAP Canal and 427th Ave.	5.912	4930
T4N-R7W-S28S	Union Hills and 435th Ave.	0.191	210
T4N-R7W-S28W	Beardsley and 435th Ave.	0.351	390
T4N-R7W-S30	Beardsley and 443rd Ave.	0.577	640
T4N-R7W-S32	Union Hills and 435th Ave.	1.697	1880
T4N-R7W-S33N	Beardsley and 435th Ave.	0.207	230
	Beardsley and 435th Ave.	0.946	1050
	Union Hills and 435th Ave.	0.977	1080
	Union Hills and 435th Ave.	1.168	1300
	Union Hills and 435th Ave.	1.734	1930

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
AREA C			
T2N-R7W-S19W	Glendale Ave. and 459th Ave.	0.895	460
	Glendale Ave. and 459th Ave.	1.148	590
	Interstate 10 and 451st Ave.	1.997	1020
T2N-R7W-S19E	Interstate 10 and 451st Ave.	0.749	380
T2N-R7W-S18W	Interstate 10 and 451st Ave.	0.729	370
T2N-R7W-S07S	Glendale Ave. and 443rd Ave.	0.294	150
T2N-R7W-S07E	Glendale Ave. and 443rd Ave.	0.340	170
T2N-R7W-S18E	Glendale Ave. and 443rd Ave.	0.634	320
	Bethany Home Rd. and 443rd Ave.	0.689	350
T2N-R7W-S20W	Glendale Ave. and 451st Ave.	0.922	470
	Glendale Ave. and 451st Ave.	1.055	540
	Bethany Home Rd. and 443rd Ave.	1.393	710
	Bethany Home Rd. and 443rd Ave.	2.082	1060
	Camelback Rd. and 443rd Ave.	2.264	1160
	Camelback Rd. and 443rd Ave.	2.551	1300
	Interstate 10 and 443rd Ave.	2.611	1330
T2N-R7W-S20E	Glendale Ave. and 443rd Ave.	1.359	690
	Bethany Home Rd. and 443rd Ave.	1.500	770
	Interstate 10 and 435th Ave.	1.662	850
T2N-R7W-S27W	Bethany Home Rd. and 435th Ave.	0.658	340

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Bethany Home Rd. and 435th Ave.	0.861	440
	Camelback Rd. and 435th Ave.	1.103	560
	Interstate 10 and 427th Ave.	1.682	860
T2N-R7W-S15W	Bethany Home Rd. and 435th Ave.	0.508	260
	Bethany Home Rd. and 427th Ave.	1.097	560
	Bethany Home Rd. and 427th Ave.	1.398	710
T2N-R7W-S15E	Glendale Ave. and 435th Ave.	0.449	230
	Bethany Home Rd. and 427th Ave.	0.960	490
T2N-R7W-S26E	Bethany Home Rd. and 427th Ave.	2.358	1200
	Camelback Rd. and 419th Ave.	2.156	1100
	Interstate 10 and 411th Ave.	2.382	1220
T2N-R7W-S26W	Bethany Home Rd. and 427th Ave.	0.825	420
	Camelback Rd. and 419th Ave.	1.056	540
	Camelback Rd. and 419th Ave.	1.811	920
	Interstate 10 and 419th Ave.	1.923	980
T2N-R7W-S10	Northern Ave. and 427th Ave.	0.245	130
	Northern Ave. and 427th Ave.	0.447	230
	Glendale Ave. and 419th Ave.	1.174	600
	Bethany Home Rd. and 419th Ave.	2.039	1040
T2N-R7W-S25E	Glendale Ave. and 427th Ave.	1.485	760
	Bethany Home Rd. and 419th Ave.	1.985	1010
	Bethany Home Rd. and 419th Ave.	4.025	2050
	Camelback Rd. and 411th Ave.	4.684	2390
	Camelback Rd. and 411th Ave.	5.202	2650
	Interstate 10 and 403rd Ave.	5.677	2900

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T2N-R6W-S30W	Camelback Rd. and 411th Ave.	0.266	140
	Camelback Rd. and 411th Ave.	2.063	1050
	Interstate 10 and 403rd Ave.	2.567	1310
T2N-R7W-S02	Northern Ave. and 411th Ave.	0.706	360
T2N-R6W-S19	Northern Ave. and 419th Ave.	1.238	630
	Northern Ave. and 411th Ave.	1.521	780
	Glendale Ave. and 411th Ave.	2.056	1050
	Camelback Rd. and 403rd Ave.	2.812	1430
	Camelback Rd. and 403rd Ave.	3.234	1650
T2N-R6W-S18E	Northern Ave. and 403rd Ave.	0.768	390
	Bethany Home Rd. and 403rd Ave.	1.473	750
	Bethany Home Rd. and 403rd Ave.	2.498	1270
	Bethany Home Rd. and 403rd Ave.	2.875	1470
T2N-R6W-S18W	Northern Ave. and 411th Ave.	1.353	690
	Northern Ave. and 411th Ave.	2.059	1050
	Bethany Home Rd. and 403rd Ave.	2.831	1440
	Bethany Home Rd. and 403rd Ave.	5.706	2910
	Camelback Rd. and 403rd Ave.	5.947	3030
T1S-R6W-S29E	Peoria Ave. and 403rd Ave.	0.744	380
(WINTERS WASH)	Northern Ave. and 395th Ave.	0.842	430
	Northern Ave. and 395th Ave.	1.579	810
	Northern Ave. and 395th Ave.	1.798	920
	Northern Ave. and 395th Ave.	2.410	1230
	Glendale Ave. and 395th Ave.	2.479	1260
	Glendale Ave. and 395th Ave.	3.036	1550
	Bethany Home Rd. and 395th Ave.	3.437	1750
	Bethany Home Rd. and 395th Ave.	3.741	1910

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Camelback Rd. and 403rd Ave.	4.239	2160
	Camelback Rd. and 403rd Ave.	10.186	5200
	Camelback Rd. and 403rd Ave.	10.420	5310
	Camelback Rd. and 403rd Ave.	13.654	6960
	Indian School Rd. and 403rd Ave.	13.782	7030
	Interstate 10 and 403rd Ave.	13.942	7110
AREA D			
T2N-R6W-S22	Glendale Ave. and 379th Ave.	0.754	390
	Glendale Ave. and 379th Ave.	1.022	520
	Camelback Rd. and 379th Ave.	1.998	1020
T2N-R6W-S02	Olive Ave. and 363rd Ave.	0.302	150
	Olive Ave. and 363rd Ave.	0.722	420
	Northern Ave. and 371st Ave.	1.462	930
	Northern Ave. and 371st Ave.	1.792	1100
T3N-R6W-S27S	Peoria Ave. and 363rd Ave.	0.701	420
	Olive Ave. and 371st Ave.	1.159	720
T1N-R6W-20E	Cactus Rd. and 363rd Ave.	1.308	670
	Olive Ave. and 371st Ave.	1.508	770
	Olive Ave. and 371st Ave.	2.667	1490
	Northern Ave. and 371st Ave.	2.812	1570
	Northern Ave. and 371st Ave.	4.604	2660
	Glendale Ave. and 371st Ave.	5.001	2870
	Bethany Home Rd. and 379th Ave.	5.887	3320
	Bethany Home Rd. and 379th Ave.	6.489	3620
	Camelback Rd. and 379th Ave.	6.816	3790
	Camelback Rd. and 379th Ave.	8.814	4810

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Indian School Rd. and 379th Ave.	9.080	4950
	Interstate 10 and 379th Ave.	9.259	5040
T2N-R6W-S05S	Northern Ave. and 395th Ave.	0.618	320
	Northern Ave. and 395th Ave.	0.957	490
	Glendale Ave. and 395th Ave.	1.309	670
	Glendale Ave. and 395th Ave.	1.525	780
	Glendale Ave. and 387th Ave.	2.260	1150
T3N-R6W-S29	Peoria Ave. and 395th Ave.	0.179	90
	Olive Ave. and 387th Ave.	0.642	430
T3N-R6W-S33	Olive Ave. and 387th Ave.	0.566	490
	Olive Ave. and 387th Ave.	0.948	720
T3N-R6W-S21	Peoria Ave. and 387th Ave.	0.550	360
T2N-R6W-S05N	Peoria Ave. and 387th Ave.	0.462	300
	Olive Ave. and 387th Ave.	0.724	450
	Olive Ave. and 387th Ave.	1.672	1180
	Northern Ave. and 387th Ave.	2.271	1520
	Northern Ave. and 387th Ave.	2.571	1670
T2N-R6W-S05W	Olive Ave. and 387th Ave.	0.803	410
	Olive Ave. and 387th Ave.	1.445	830
	Northern Ave. and 387th Ave.	2.494	1370
	Northern Ave. and 387th Ave.	5.065	3040
	Northern Ave. and 387th Ave.	5.096	3050
T3N-R6W-S27W	Peoria Ave. and 379th Ave.	0.088	60
	Peoria Ave. and 379th Ave.	0.538	290
	Peoria Ave. and 379th Ave.	4.688	2400

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Peoria Ave. and 379th Ave.	4.839	2480
	Olive Ave. and 379th Ave.	4.873	2500
T2N-R6W-S05E	Cactus Rd. and 363rd Ave.	1.543	790
	Peoria Ave. and 371st Ave.	2.000	1020
	Peoria Ave. and 371st Ave.	2.734	1390
	Peoria Ave. and 371st Ave.	4.220	2150
	Olive Ave. and 379th Ave.	4.602	2350
	Olive Ave. and 379th Ave.	4.695	2400
	Olive Ave. and 379th Ave.	9.568	4890
	Northern Ave. and 387th Ave.	10.096	5160
	Northern Ave. and 387th Ave.	10.142	5190
	Northern Ave. and 387th Ave.	10.234	5230
T1N-R6W-S18	Northern Ave. and 387th Ave.	15.329	8290
	Northern Ave. and 387th Ave.	15.480	8360
	Northern Ave. and 387th Ave.	17.802	9550
	Bethany Home Rd. and 395th Ave.	18.813	10060
	Bethany Home Rd. and 395th Ave.	19.317	10320
	Camelback Rd. and 395th Ave.	20.299	10820
	Indian School Rd. and 395th Ave.	20.590	10970
	Indian School Rd. and 395th Ave.	8.792	4680
	Interstate 10 and 387th Ave.	8.924	4750
T2N-R6W-S27	Camelback Rd. and 363rd Ave.	0.209	110
	Thomas Rd.and 371st Ave.	0.740	380
T2N-R6W-S28	Glendale Ave. and 371st Ave.	0.550	280
	Bethany Home Rd. and 371st Ave.	0.977	500
	Bethany Home Rd. and 371st Ave.	1.813	920
	Camelback Rd. and 371st Ave.	2.023	1030
	Camelback Rd. and 371st Ave.	2.386	1220

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Indian School Rd. and 371st Ave.	1.016	520
	Interstate 10 and 379th Ave.	1.317	670
T1S-R6W-S27	Camelback Rd. and 371st Ave.	0.803	410
	Camelback Rd. and 371st Ave.	1.100	560
	Thomas Rd.and 371st Ave.	1.476	760
	Thomas Rd.and 371st Ave.	3.146	1610
	Thomas Rd.and 371st Ave.	3.886	1990
	Interstate 10 and 371st Ave.	3.990	2040
T3N-R6W-S21E	Peoria Ave. and 379th Ave.	4.199	2140
	Peoria Ave. and 379th Ave.	4.600	2350
AREA E			
T2N-R7W-S19W	Camelback Rd. and 451st Ave.	2.195	1120
T2N-R7W-S30N	Indian School Rd. and 443rd Ave.	0.899	640
T2N-R7W-S30S	Indian School Rd. and 443rd Ave.	0.208	210
T2N-R7W-S32W	Thomas Rd. and 435th Ave.	0.804	560
T2N-R7W-S32N	Thomas Rd. and 435th Ave.	1.918	980
T2N-R7W-S20W	Indian School Rd. and 435th Ave.	3.141	1600
T2N-R7W-S20E	Indian School Rd. and 435th Ave.	1.869	950
T2N-R7W-S29	Thomas Rd. and 435th Ave.	0.226	120

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T2N-R7W-S32E	Indian School Rd. and 435th Ave.	5.010	2560
	Indian School Rd. and 435th Ave.	5.399	2750
	Indian School Rd. and 435th Ave.	5.707	2910
	Thomas Rd. and 435th Ave.	5.941	3030
T2N-R7W-S33N	Thomas Rd. and 435th Ave.	0.658	450
T1N-R7W-S05	McDowell Rd. and 443rd Ave.	0.379	260
T2N-R7W-S32S	McDowell Rd. and 443rd Ave.	0.662	420
	McDowell Rd. and 443rd Ave.	1.040	680
	McDowell Rd. and 443rd Ave.	1.133	780
T2N-R7W-S33S	McDowell Rd. and 443rd Ave.	1.458	1180
	McDowell Rd. and 443rd Ave.	2.591	1960
	Thomas Rd. and 435th Ave.	2.672	2000
T2N-R7W-S34N	McDowell Rd. and 427th Ave.	0.939	590
T2N-R7W-S34S	McDowell Rd. and 427th Ave.	1.583	1090
T1N-R7W-S02	McDowell Rd. and 419th Ave.	0.839	680
T1N-R7W-S01	McDowell Rd. and 411th Ave.	2.485	2010
T1N-R6W-S07	Camelback Rd. and 451st Ave.	2.195	1120
	Indian School Rd. and 443rd Ave.	3.047	1580
	Indian School Rd. and 443rd Ave.	3.946	2220
	Indian School Rd. and 443rd Ave.	4.258	2450
	Indian School Rd. and 443rd Ave.	4.466	2650
	Thomas Rd. and 435th Ave.	4.987	2950
	Thomas Rd. and 435th Ave.	4.996	2960

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Thomas Rd. and 435th Ave.	5.800	3510
	Thomas Rd. and 435th Ave.	7.718	4490
	Thomas Rd. and 435th Ave.	13.659	7520
	Thomas Rd. and 435th Ave.	14.317	7970
	Thomas Rd. and 435th Ave.	16.990	9970
	McDowell Rd. and 427th Ave.	17.786	10380
	McDowell Rd. and 427th Ave.	18.724	10970
	McDowell Rd. and 427th Ave.	20.307	12060
	McDowell Rd. and 419th Ave.	20.799	12310
	McDowell Rd. and 419th Ave.	21.638	12990
	McDowell Rd. and 411th Ave.	22.226	13140
	McDowell Rd. and 411th Ave.	24.711	13430
	Buckeye Rd. and 395th Ave.	25.121	13450
T2N-R7W-S28	Thomas Rd. and 427th Ave.	0.253	130
T2N-R7W-S34W	Indian School Rd. and 435th Ave.	0.477	240
	Thomas Rd. and 427th Ave.	0.856	440
	Thomas Rd. and 427th Ave.	1.109	570
	Thomas Rd. and 427th Ave.	1.361	690
T2N-R7W-S27W	Indian School Rd. and 427th Ave.	1.994	1020
T2N-R7W-S27E	Indian School Rd. and 427th Ave.	1.156	590
	Thomas Rd. and 419th Ave.	1.709	870
T2N-R7W-S34E	Indian School Rd. and 427th Ave.	0.863	440
	Thomas Rd. and 419th Ave.	1.216	620
T2N-R7W-S26W	Indian School Rd. and 419th Ave.	2.169	1110
		0.018	10
	Thomas Rd. and 411th Ave.	1.192	610

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T2N-R7W-S26E	Thomas Rd. and 411th Ave.	2.904	1480
T2N-R7W-S36W	McDowell Rd. and 411th Ave.	0.538	280
T2N-R7W-S36E	Thomas Rd. and 411th Ave.	1.221	620
	Thomas Rd. and 411th Ave.	4.126	2100
	McDowell Rd. and 411th Ave.	4.802	2450
	McDowell Rd. and 411th Ave.	5.341	2720
	McDowell Rd. and 411th Ave.	5.367	2740
T2N-R6W-S31S	Indian School Rd. and 435th Ave.	0.346	180
	Thomas Rd. and 427th Ave.	0.675	340
	Thomas Rd. and 419th Ave.	2.035	1040
	Thomas Rd. and 419th Ave.	2.084	1060
	Thomas Rd. and 419th Ave.	3.794	1940
	Thomas Rd. and 419th Ave.	3.846	1960
	Thomas Rd. and 419th Ave.	5.062	2580
	McDowell Rd. and 411th Ave.	6.537	3330
	McDowell Rd. and 411th Ave.	7.875	4020
	McDowell Rd. and 411th Ave.	13.243	6750
	McDowell Rd. and 403rd Ave.	14.138	7210
T2N-R7W-S25E	Indian School Rd. and 403rd Ave.	5.632	2870
T2N-R7W-S25S	Thomas Rd. and 403rd Ave.	0.837	430
T2N-R6W-S31N	Thomas Rd. and 403rd Ave.	1.944	990
T2N-R6W-S32N	Thomas Rd. and 395th Ave.	13.772	7020
T2N-R6W-S32E	Thomas Rd. and 395th Ave.	0.702	360

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T1N-R6W-S18	Thomas Rd. and 395th Ave.	9.008	4590
	Thomas Rd. and 395th Ave.	22.780	11620
	Thomas Rd. and 395th Ave.	22.856	11660
	Thomas Rd. and 395th Ave.	23.558	12020
	McDowell Rd. and 395th Ave.	23.748	12110
	Van Buren St. and 395th Ave.	24.501	12500
	Buckeye Rd. and 395th Ave.	8.208	4190
T1N-R6W-S05W	Thomas Rd. and 387th Ave.	0.882	450
T1N-R6W-S05E	Thomas Rd. and 387th Ave.	3.568	1820
T2N-R6W-S33S	McDowell Rd. and 379th Ave.	2.297	1170
T1N-R6W-S17W	Lower Buckeye Rd. and 387th Ave.	0.335	170
T1N-R6W-S20E	McDowell Rd. and 379th Ave.	13.692	6980
	McDowell Rd. and 379th Ave.	15.988	8150
	Van Buren St. and 387th Ave.	16.434	8380
	Van Buren St. and 387th Ave.	5.428	2770
	Van Buren St. and 387th Ave.	21.862	11150
	Lower Buckeye Rd. and 387th Ave.	23.073	11840
	Lower Buckeye Rd. and 387th Ave.	24.725	12680
	Lower Buckeye Rd. and 387th Ave.	25.060	12850
	Lower Buckeye Rd. and 395th Ave.	25.151	12910
T1N-R6W-S17E	Van Buren St. and 379th Ave.	0.664	340
	Van Buren St. and 379th Ave.	0.815	420
	Buckeye Rd. and 387th Ave.	1.247	640
	Buckeye Rd. and 387th Ave.	1.470	750
	Buckeye Rd. and 387th Ave.	1.651	840

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T1N-R6W-S16	Lower Buckeye Rd. and 379th Ave.	0.555	280
T1S-R6W-S08	Lower Buckeye Rd. and 379th Ave.	0.827	420
	Lower Buckeye Rd. and 379th Ave.	1.382	710
	Lower Buckeye Rd. and 379th Ave.	1.906	1100
	Lower Buckeye Rd. and 379th Ave.	2.178	1240
T2N-R6W-S34	McDowell Rd. and 371st Ave.	0.901	460
T1N-R6W-S03E	Van Buren St. and 371st Ave.	0.451	230
T1N-R6W-S22N	Van Buren St. and 371st Ave.	0.444	230
T1N-R6W-S22E	Lower Buckeye Rd. and 371st Ave.	1.239	630
T1N-R6W-S27S	Broadway Rd. and 371st Ave.	0.296	180
T1N-R6W-S26	Broadway Rd. and 371st Ave.	1.334	680
T1S-R6W-S27	McDowell Rd. and 371st Ave.	4.145	2110
	McDowell Rd. and 371st Ave.	5.046	2570
	Van Buren St. and 371st Ave.	5.440	2770
	Van Buren St. and 371st Ave.	5.891	3000
	Lower Buckeye Rd. and 371st Ave.	6.335	3230
	Lower Buckeye Rd. and 371st Ave.	7.531	3840
	Lower Buckeye Rd. and 371st Ave.	7.732	3940
	Broadway Rd. and 371st Ave.	8.021	4090
	Broadway Rd. and 371st Ave.	9.260	4720
	Broadway Rd. and 371st Ave.	9.325	4760
	Broadway Rd. and 371st Ave.	9.621	4930
	Broadway Rd. and 371st Ave.	9.997	5140

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Broadway Rd. and 371st Ave.	11.331	5820
T1S-R6W-S29E	Indian School Rd. and 403rd Ave.	17.206	8780
	Indian School Rd. and 403rd Ave.	22.838	11650
	Thomas Rd. and 403rd Ave.	22.923	11690
	Thomas Rd. and 403rd Ave.	23.760	12120
	Thomas Rd. and 403rd Ave.	24.397	12440
	Thomas Rd. and 403rd Ave.	26.341	13170
	McDowell Rd. and 403rd Ave.	26.670	13190
	McDowell Rd. and 403rd Ave.	40.808	14060
	Buckeye Rd. and 395th Ave.	42.430	14140
	Buckeye Rd. and 395th Ave.	67.551	15340
	Buckeye Rd. and 395th Ave.	67.614	15340
	Buckeye Rd. and 395th Ave.	75.822	15590
	Lower Buckeye Rd. and 395th Ave.	75.994	15590
	Lower Buckeye Rd. and 395th Ave.	90.879	15850
	Lower Buckeye Rd. and 395th Ave.	91.395	15870
	Lower Buckeye Rd. and 395th Ave.	116.545	16460
	Lower Buckeye Rd. and 395th Ave.	116.755	16470
	Broadway Rd. and 395th Ave.	93.660	15930
	Broadway Rd. and 395th Ave.	101.226	16110
	Broadway Rd. and 395th Ave.	101.420	16120
T1N-R6W-S20W	Broadway Rd. and 395th Ave.	7.566	3860
T1N-R6W-S29	Buckeye Rd. and 403rd Ave.	1.455	1480
	Broadway Rd. and 395th Ave.	4.633	3870

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
AREA F			
T1N-R7W-S17	Buckeye Rd. and 435th Ave.	0.560	320
T1N-R7W-S21E	Lower Buckeye Rd. and 435th Ave.	0.408	310
T1N-R7W-S21W	Lower Buckeye rd. and 443rd Ave.	0.551	380
	Lower Buckeye Rd. and 435th Ave.	0.979	620
T1N-R7W-S28W	Buckeye Rd. and 435th Ave.	0.857	690
	Buckeye Rd. and 435th Ave.	1.417	1010
	Lower Buckeye Rd. and 435th Ave.	2.923	1870
	Lower Buckeye Rd. and 435th Ave.	3.331	2180
	Lower Buckeye Rd. and 435th Ave.	3.421	2220
	Lower Buckeye Rd. and 435th Ave.	4.400	2850
	Broadway Rd. and 427th Ave.	4.742	3020
T1N-R7W-S28E	Lower Buckeye Rd. and 427th Ave.	1.582	1090
	Broadway Rd. and 427th Ave.	2.853	2050
T1N-R7W-S26W	Broadway Rd. and 411th Ave.	0.895	670
T1N-R7W-S26E	Lower Buckeye Rd. and 411th Ave.	0.167	90
	Broadway Rd. and 411th Ave.	0.575	370
T1N-R7W-S35	Broadway Rd. and 411th Ave.	0.895	670
	Broadway Rd. and 411th Ave.	1.470	1040
	Southern Ave. and 411th Ave.	2.058	1510
T1N-R7W-S36	Southern Ave. and 411th Ave.	1.562	1170
	Southern Ave. and 411th Ave.	3.620	2690
	Southern Ave. and 411th Ave.	3.959	2960

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
T1S-R6W-S05S	Broadway Rd. and 427th Ave.	4.742	3020
	Broadway Rd. and 427th Ave.	7.595	5070
	Southern Ave. and 411th Ave.	8.330	5490
	Southern Ave. and 411th Ave.	12.289	8450
	Dobbins Rd. and 395th Ave.	13.539	9270
T1S-R6W-S05W	Dobbins Rd. and 395th Ave.	0.851	720
T1N-R6W-S30W	Broadway Rd. and 395th Ave.	0.261	130
	Broadway Rd. and 395th Ave.	1.751	1340
T1N-R6W-S30E	Broadway Rd. and 395th Ave.	1.340	880
T1S-R6W-S05E	Broadway Rd. and 395th Ave.	1.751	1340
	Broadway Rd. and 395th Ave.	3.091	2220
	Dobbins Rd. and 395th Ave.	5.021	3560
	Dobbins Rd. and 395th Ave.	5.873	4270
T1S-R6W-S05N	Lower Buckeye Rd. and 395th Ave.	23.404	11940
	Baseline Rd. and 387th Ave.	24.407	12450
T1S-R6W-S08	Broadway Rd. and 387th Ave.	2.178	1900
	Baseline Rd. and 387th Ave.	3.210	2430
	Baseline Rd. and 387th Ave.	3.501	2580
	Baseline Rd. and 387th Ave.	3.687	2720
	Baseline Rd. and 387th Ave.	28.094	13410
	Dobbins Rd. and 487th Ave.	28.187	13410
	Dobbins Rd. and 487th Ave.	29.502	13510
T1S-R6W-S29W	Ray Rd. and 387th Ave.	2.858	1460
	Ray Rd. and 387th Ave.	3.105	1580

Flooding Source and Area Location	Approximate Street Location	Drainage Area (sq. miles)	100 Year Discharge (cfs)
	Chandler Blvd. and 387th Ave.	2.812	1430
T1S-R6W-S29E	Dobbins Rd. and 395th Ave.	107.165	16320
(WINTERS WASH)	Dobbins Rd. and 395th Ave.	120.704	16700
	Dobbins Rd. and 395th Ave.	126.577	16860
	Dobbins Rd. and 387th Ave.	126.795	16860
	Dobbins Rd. and 387th Ave.	126.833	16860
	Dobbins Rd. and 387th Ave.	156.335	17390
	Ray Rd. and 387th Ave.	157.602	17410
	Ray Rd. and 387th Ave.	158.006	17410
	Chandler Blvd. and 387th Ave.	158.031	17410
T1S-R6W-S28N	Narramore Rd. and 395th Ave.	3.469	1770
	Chandler Blvd. and 387th Ave.	4.597	2350
	Chandler Blvd. and 387th Ave.	7.409	3780
	Chandler Blvd. and 387th Ave.	165.440	17530
	Chandler Blvd. and 387th Ave.	165.690	17530
T1S-R6W-S27	Dobbins Rd. and 371st Ave.	12.425	6380
	Dobbins Rd. and 371st Ave.	13.110	6790
	Elliot Rd. and 379th Ave.	18.771	9840
	Ray Rd. and 379th Ave.	21.908	11540
T1S-R6W-S22W	Ray Rd. and 371st Ave.	2.427	1310
T1S-R6W-S23	Ray Rd. and 371st Ave.	2.093	1070

7.2 Floodway Data

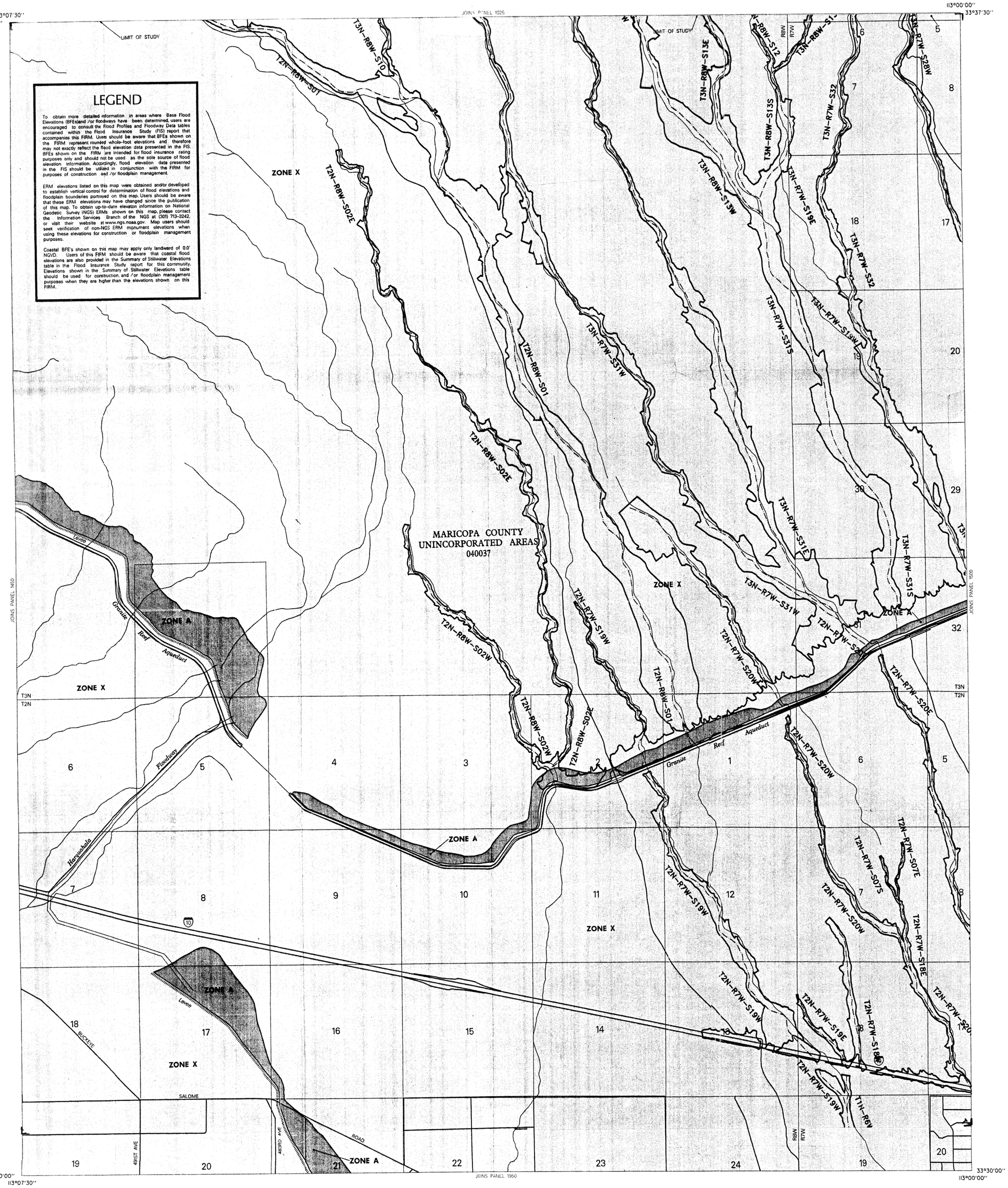
Floodway data is not required for approximate methodology.

7.3 Annotated Flood Insurance Maps

The most recent Flood Insurance Rate Maps (FIRMS) have been annotated with the delineated wash's thalwegs and approximate floodplain. The applicable panels are 1475, 2450, 1525, 1500, 2000, 1950, 2475, 1975, 1050, and 1025. They have been included in the pocket at the end of the section except for panels 1975, 1050, and 1025, since they are not available.

7.4 Flood Profiles

Flood profiles are not required for approximate methodology.



LEGEND

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and /or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations and therefore may not exactly reflect the flood elevation data presented in the FIS. BFEs shown on the FIRM are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and /or floodplain management.

ERM elevations listed on this map were obtained and/or developed to establish vertical control for determination of flood elevations and floodplain boundaries portrayed on this map. Users should be aware that these ERM elevations may have changed since the publication of this map. To obtain up-to-date elevaton information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

Coastal BFE's shown on this map may apply only landward of 0.0' NGVD. Users of this FIFM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and /or floodplain management purposes when they are higher than the elevations shown on this FIRM.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 — Identified 1990 — Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × — Elevation Reference Mark

• M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

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

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

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 120 inch.

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

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

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

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

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

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 29, 1989

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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

APPROXIMATE SCALE IN FEET
2000 0 2000

MAP ROOM 1475

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

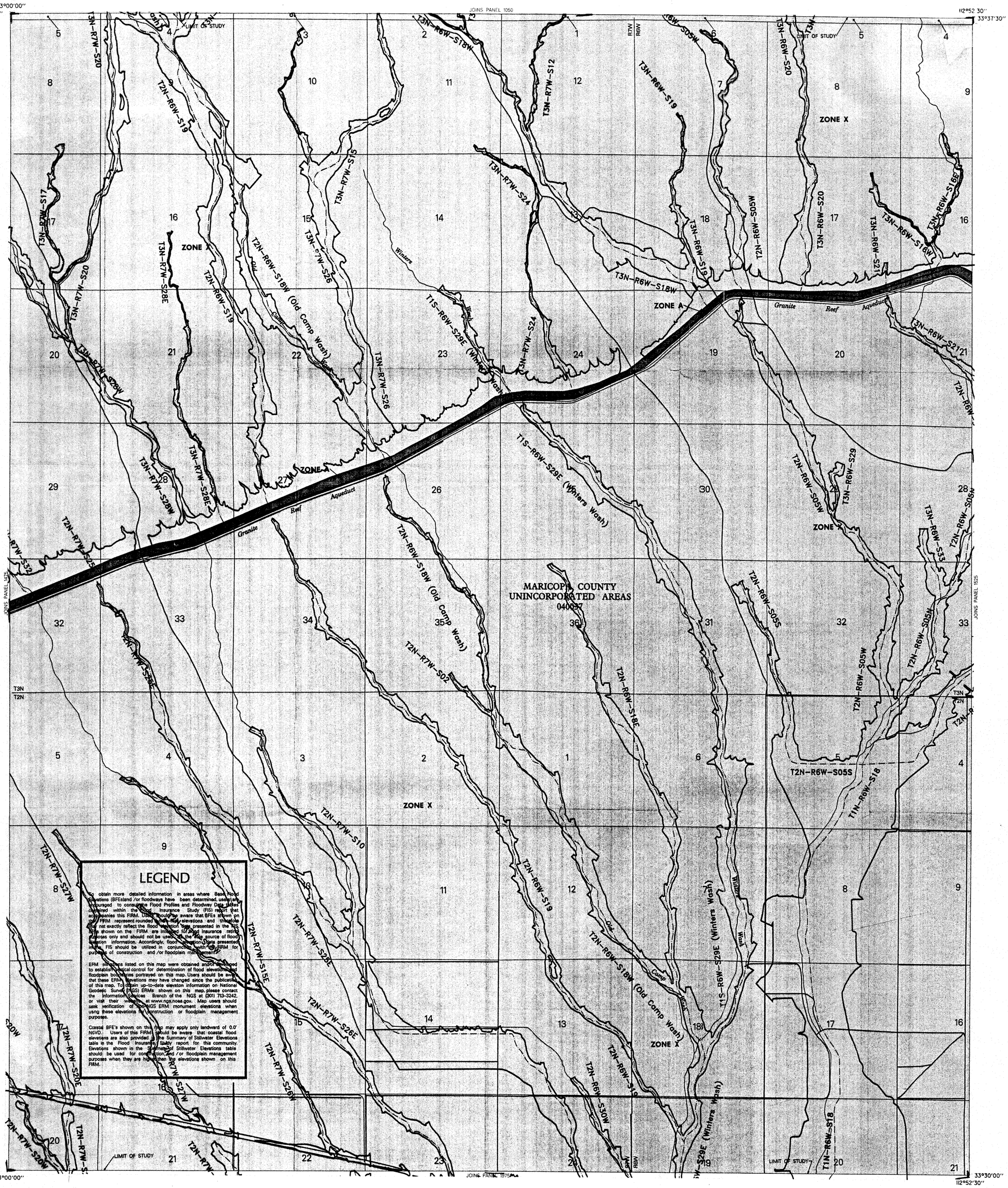
PANEL 1475 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY UNINCORPORATED AREAS	040037	1475	F

MAP NUMBER
04013C1475 F

MAP REVISED:
JULY 19, 2001

Federal Emergency Management Agency



LEGEND

To obtain more detailed information in areas where Base Flood Elevations (BFEs)and /or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded to the nearest elevations and therefore may not exactly reflect the flood elevation data presented in the FIS. Base shown on the FIRM are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and /or floodplain management.

ERM elevations listed on this map were obtained and/or established to establish vertical control for determination of flood elevations and floodplain boundaries portrayed on this map. Users should be aware that these ERM elevations may have changed since the publication of this map. To obtain up-to-date elevation information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

Coastal BFE's shown on this map may apply only landward of 0.0' NGVD. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and /or floodplain management purposes when they are higher than the elevations shown on this FIRM.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × — Elevation Reference Mark

● M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

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

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

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 120 inch.

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

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

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

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

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

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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

APPROXIMATE SCALE IN FEET
2000 0 2000

MAPROOM 1500E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY,
ARIZONA AND
INCORPORATED AREAS

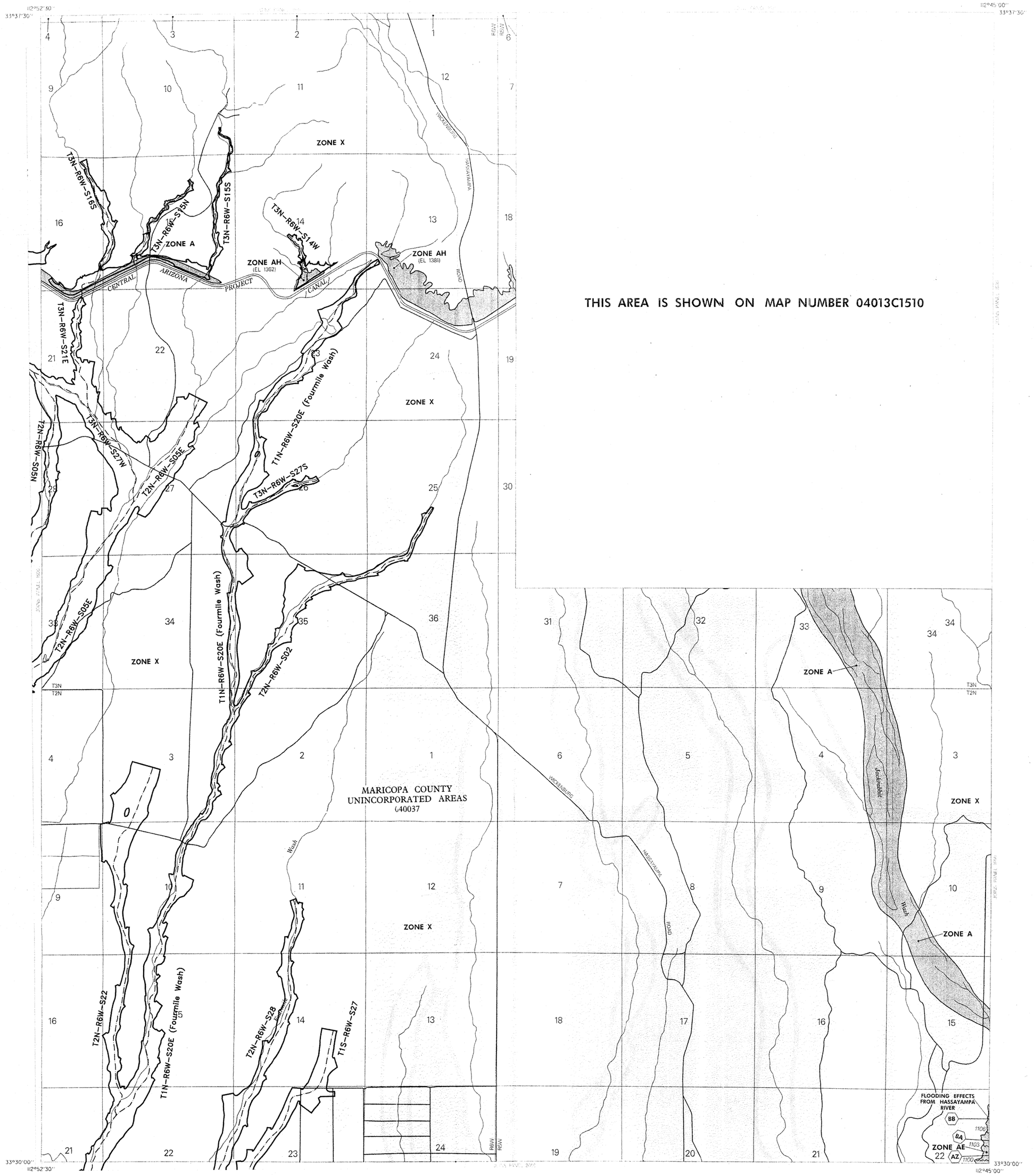
PANEL 1500 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	1500	E

MAP NUMBER
04013C1500 E

MAP REVISED:
JULY 19, 2001

Federal Emergency Management Agency



THIS AREA IS SHOWN ON MAP NUMBER 04013C1510

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A — No base flood elevations determined.

ZONE AE — Base flood elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X — Areas determined to be outside the 500-year floodplain.

ZONE D — Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Coastal Barrier Resource System Area — Otherwise Protected Area

Coastal barrier resource system areas are delineated on federal maps under the Coastal Barrier Improvement Act of 1990.

Corporate Boundary

Jurisdiction Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones and Boundary Dividing Areas of Different Flooding Mechanisms, Different Flood Depths, Different Velocities, Different Flood Hazards, or Different Base Flood Elevations

513

D — D

EL 987

RM7

BM5

97°07'30", 32°22'30"

River Mile

Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection

NOTES

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all buildings and structures subject to flooding. Flood Hazard Areas, Base Flood Elevations, and Floodways should be consulted for more detailed data on BFEs, and for any information or regulations pertaining to flood hazards that may not properly pertain to immediate proximity.

Areas of Special Flood Hazard (Flood Zones A, AE, AH, AO, AR, A1-A99, V, VE, and X-shaded) may be protected by flood control structures.

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

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

Elevations and flood hazard areas were computed at cross sections and interpolated between cross sections. The flood profiles are based on hydraulic models and are rounded to the nearest 0.1 foot.

Elevations shown are current as of the date of this map. For future use, should contact appropriate community officials to determine if community maps have undergone subsequent revisions.

This map does not represent approximate boundaries of Coastal Barrier Resource System units and of Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (P. 101-591).

For community map revision history prior to countywide mapping, see Section 8.1 of Volume 1 of the Flood Insurance Study Report.

For identical map panels, use the most recent date listed on the Panel Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP
APRIL 16, 1990

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 4, 1990 — DECEMBER 6, 1996

Map revised July 19, 2001 to update corporate limits to change zone flood elevations to add base flood elevations to add special flood hazard areas to change zone designations. To add floodway to add cross sections to reflect recent LOMRs to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact the National Flood Insurance Program at (800) 638-6620.

N

APPROXIMATE SCALE IN FEET
2000 0 2000

MAP ROOM 1525G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 1525 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY NUMBER
04013C PANEL 1525 G

MARICOPA COUNTY
UNINCORPORATED AREAS

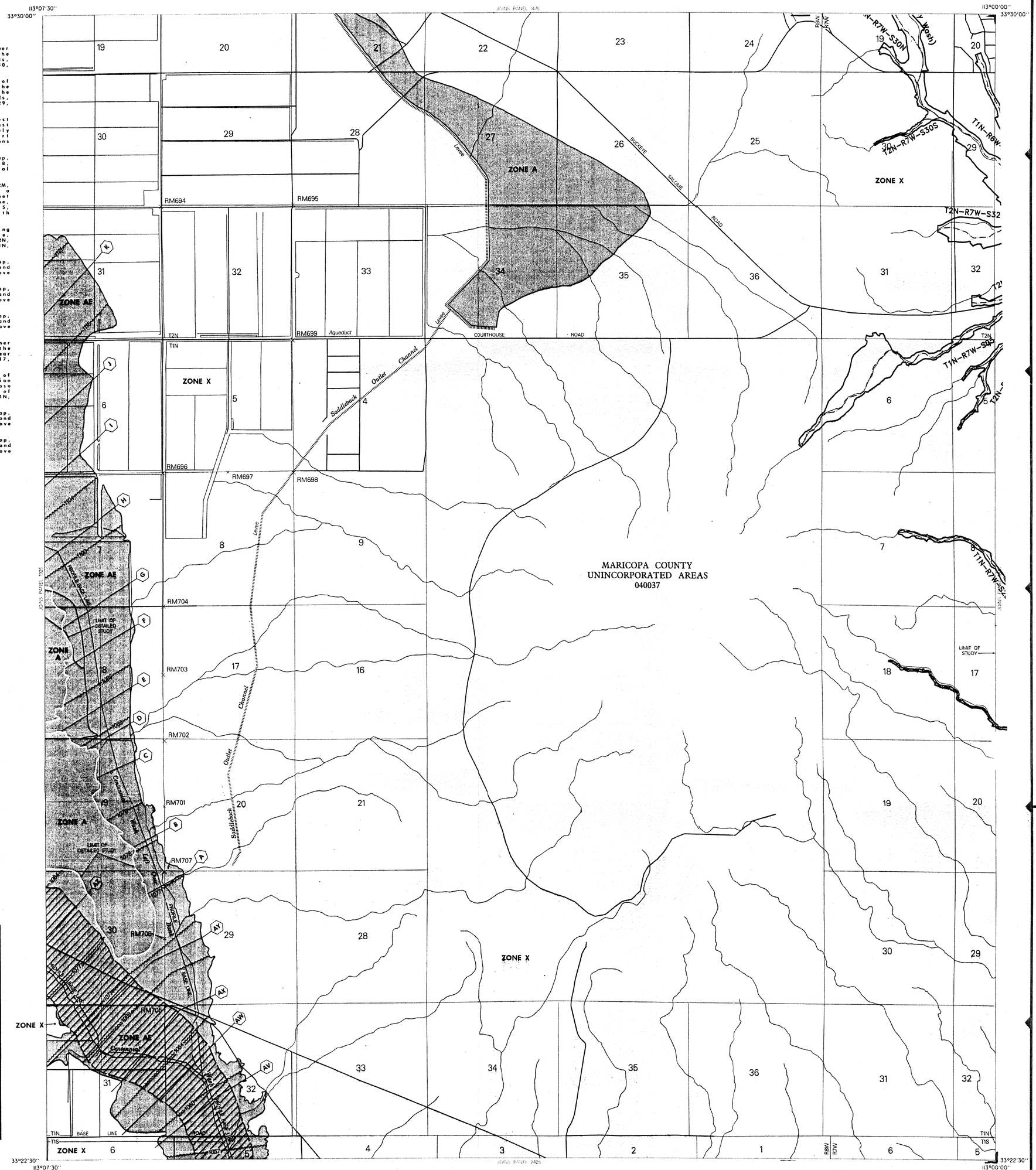
MAP NUMBER
04013C1525 G

MAP REVISED:
JULY 19, 2001

Federal Emergency Management Agency

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM694	1129.35	RR spike in south side of power pole, near northwest corner of the intersection of two dirt roads, near the corner of sections 29, 30, 31, and 32, T2N, R8W.
RM695	1148.32	Chiseled X cut at centerline of north end of canal located at the southeast corner of the intersection of two dirt roads, near the corner of sections 28, 29, 32, and 33, T2N, R8W.
RM696	1111.05	Chiseled X cut on southwest corner of a headwall on the east side of a dirt road, approximately 60 feet north of a gate on the dirt road, near the corner of sections 5, 6, 7, and 8, T1N, R8W.
RM697	1130.30	U.S. General Land Office brass cap, quarter corner of sections 5 and 8, T1N, R8W, 0.5 foot below natural ground.
RM698	1157.77	Aluminum capped pipe stamped ERM, located on south side of a drainageway approximately 30 feet west of a T in the fence line, near the corner of sections 4, 5, 8, and 9, T1N, R8W, flush with natural ground.
RM699	1140.84	Maricopa County Engineering Department brass cap in a handhole, corner of sections 32 and 33, T2N, R8W, and sections 4 and 5, T1N, R8W, 0.5 foot below pavement.
RM701	1086.61	U.S. General Land Office brass cap, quarter corner of sections 19 and 20, T1N, R8W, 0.2 foot above natural ground.
RM702	1094.72	U.S. General Land Office brass cap, corner of sections 17, 18, 19, and 20, T1N, R8W, 0.7 foot above natural ground.
RM703	1098.65	U.S. General Land Office brass cap, quarter corner of sections 17 and 18, T1N, R8W, 1.1 feet above natural ground.
RM704	1104.30	RR spike in northwest fence corner on southeast corner of the intersection of two dirt roads near the corner of sections 7, 8, 17, and 18, T1N, R8W.
RM705	1067.80	Chiseled X cut on north end of headwall at east end of irrigation canal, on south side of El Paso Natural Gas Line, near corner of sections 29, 30, 31, and 32, T1N, R8W.
RM706	1071.64	U.S. General Land Office brass cap, quarter corner of sections 29 and 30, T1N, R8W, 0.6 foot above natural ground.
RM707	1070.04	U.S. General Land Office brass cap, corner of sections 19, 20, 29, and 30, T1N, R8W, 0.5 foot above natural ground.



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified Prior | Identified Prior | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Elevation Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones and Boundary Dividing Areas of Different Coastal Base Flood Elevations within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 — Elevation Reference Mark

• M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27). Projection.

NOTES

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all plan limits. Features outside Special Flood Hazard Areas may be shown for reference and are compiled for more detailed datum. BFEs and other information on floodway delineations, prior to use of this map, for planning, purchase or construction purposes.

Areas of Special Flood Hazard (Regular Flood) include Zones A, AE, AH, AO, A99, V, VE, and V1-V30.

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

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

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Tables, Flood Profiles, Flood Boundary and Floodway Map.

Coastal limits shown are current as of the date of this map. Revisions should contact appropriate Hydrologic Engineering Laboratory to determine if coastal limits have changed subsequent to the issuance of this map.

This map may incorporate approximate coastal elevations from Coastal Flood Elevation Study Limits and not Otherwise Protected areas established under the Coastal Barrier Resources Act (P.L. 97-348).

For community map revision history prior to countywide mapping, see Section 6.2 of the Flood Insurance Study report.

For adjoining map panels, and base map sources and references, see Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP
APRIL 8, 1982

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 3, 1982

Map revised July 19, 2001 to update corporate limits, to change Base Flood elevations, to add Base Flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to reflect new topographic data, to update map format, to add cross sections, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

APPROXIMATE SCALE IN FEET
2000 0 2000

LEGEND

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations, and therefore may not exactly reflect the flood elevation data presented in the FIS. BFEs shown on this FIRM are provided for flood insurance rating purposes only, and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and floodplain management.

FIRM elevations based on this map were obtained and/or developed to establish vertical control for documentation of flood elevations and floodplain boundaries portrayed on this map. Users should be aware that these FIRM elevations may have changed since the publication of this map. To obtain up-to-date concrete information on National Geodetic Survey (NGS) FIRM elevations in this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS FIRM measurement elevations when using these elevations for construction or floodplain management purposes.

Coastal BFEs shown on this map may apply only landward of 0.0' NGVD. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and floodplain management purposes when they are higher than the elevations shown on this FIRM.

MAP ROOM 1950F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 1950 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX

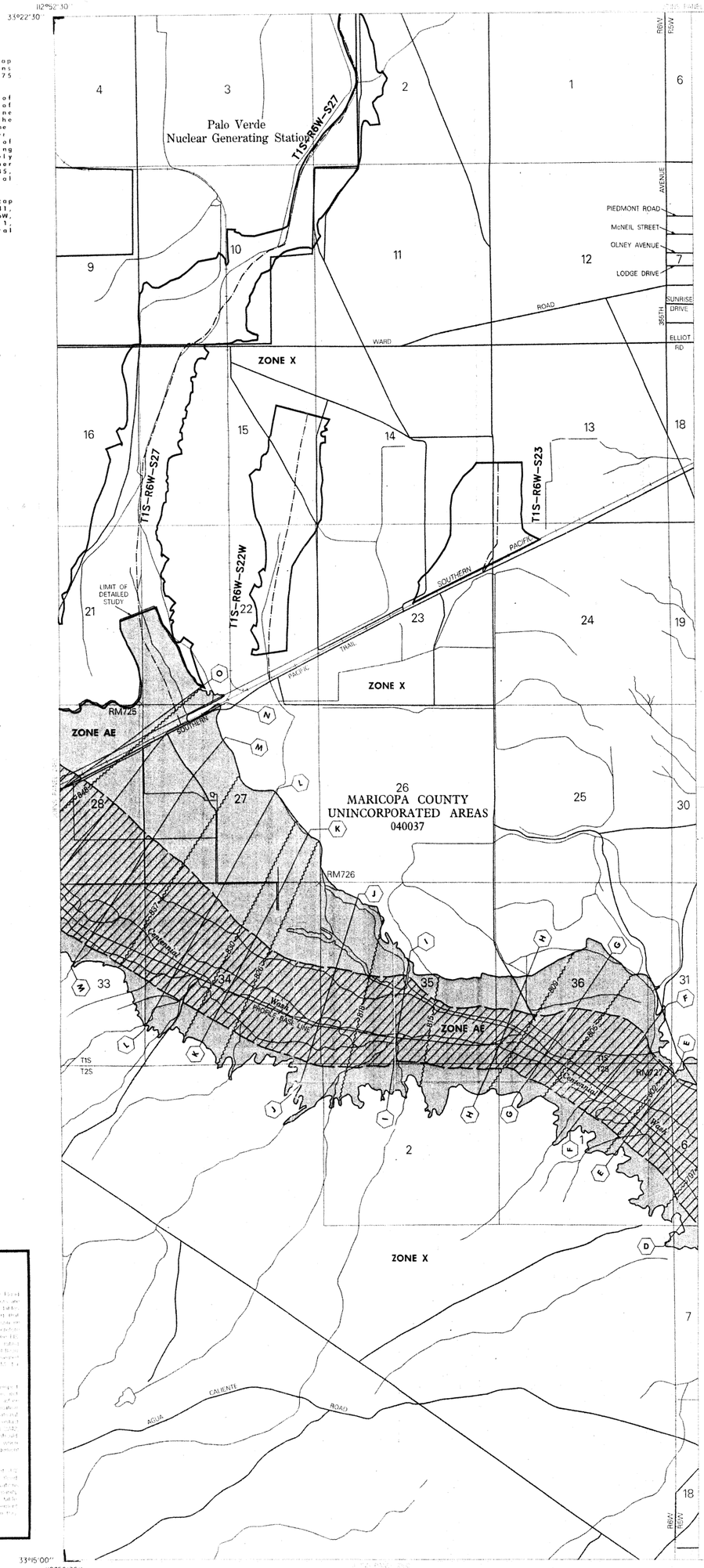
MAP NUMBER
04013C1950 F

MAP REVISED:
JULY 19, 2001

Federal Emergency Management Agency

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM725	850.54	U.S. General Land Office brass cap stamped 1914, corner of sections 21, 22, 27 and 28, T1S, R6W. 0.75 foot above natural ground.
RM726	826.83	Chiseled 2- by 2-inch + on top of 2.5-foot-diameter concrete base of a high voltage transmission line running north and south, on the northwest corner of H frame north side of concrete cylinder first H frame on north side of Centennial Wash before crossing wash edge to field, approximately 600 feet east of H-V49, at corner of sections 26, 27, 34, and 35, T1S, R6W. 0.8 foot above natural ground.
RM727	802.47	U.S. General Land Office brass cap stamped 1914, corner of section 31, T1S, R5W, section 36, T1S, R6W, section 6, T2S, R5W, and section 1, T2S, R6W. 1.15 feet above natural ground.



THIS AREA IS SHOWN ON MAP NUMBER 04013C2460

THIS AREA IS SHOWIN ON MAP NUMBER 04013C2470

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified Parks — Identified Parks — Otherwise Protected Areas

Coastal Barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform within Zone. See Map Index for Elevation Datum

RM7 — Elevation Reference Mark

• M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates, Based on North American Datum of 1927, NAD 27 Projection

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. This community map repository should be consulted for more detailed data on BFEs, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood), include Zones A, AE, AH, AO, A99, V, VE, and X (shaded).

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

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

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table (where floodway width is shown as 0.0) for exact floodway widths.

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

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and/or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (P.L. 101-591).

For community map revision history prior to countywide mapping, see Section 10.0 of the Flood Insurance Study Report.

For adjoining map panels and base map sources, see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP
APRIL 15, 1982

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 3, 1982

Map revised July 19, 2001 to update corporate limits, to change zone designations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

APPROXIMATE SCALE IN FEET
2000 0 2000

MAP ROOM 2475F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2475 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS
COMMUNITY — NUMBER — PANEL — SUFFIX
MARICOPA COUNTY UNINCORPORATED AREAS — 040037 — 2475 — F

MAP NUMBER 04013C2475 F

MAP REVISED: JULY 19, 2001

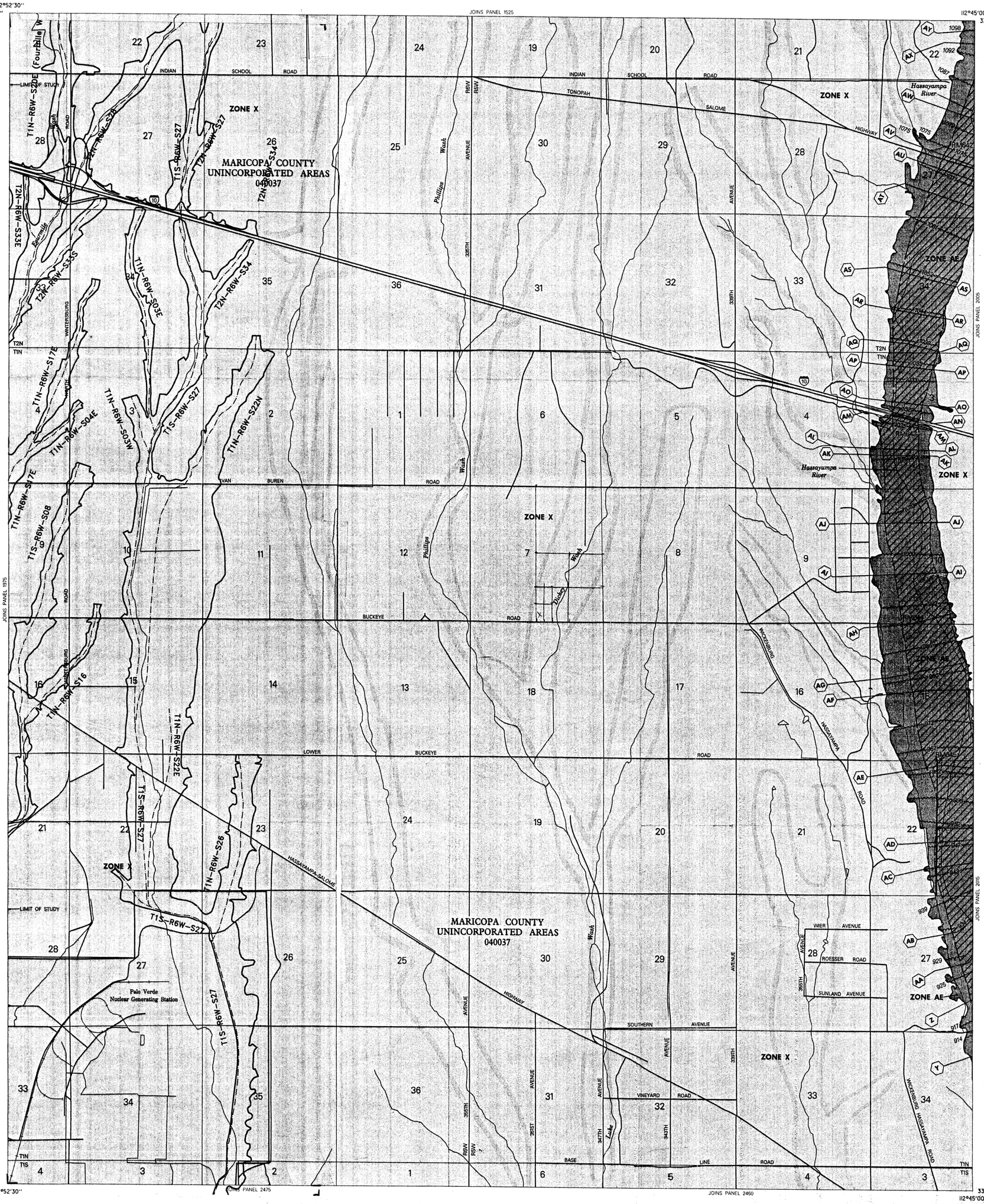
Federal Emergency Management Agency

LEGEND

[illegible]

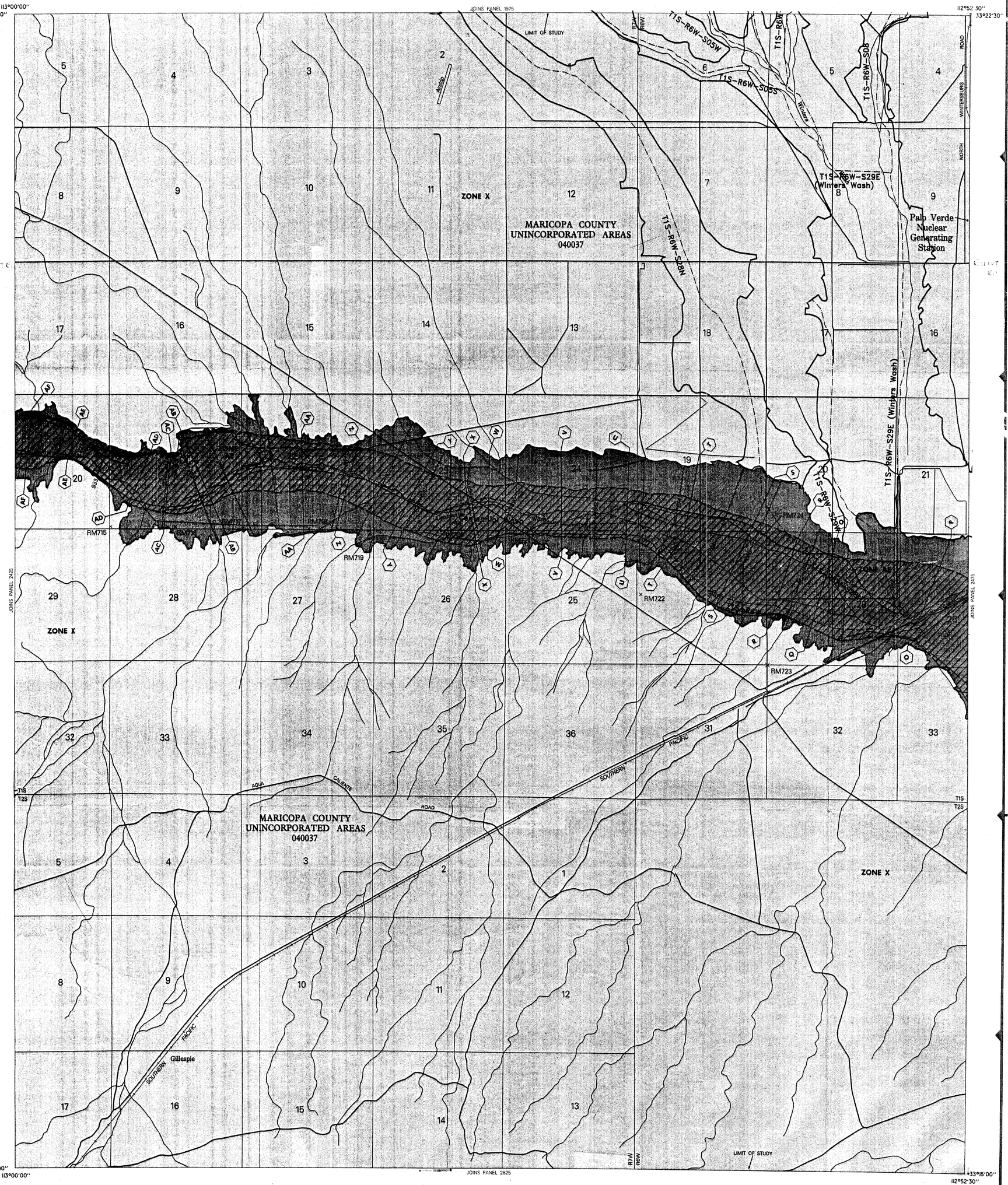
ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM642	1079.19	Aluminum rod in handwell, stamped NGS Vertical Control Mark V-475 1981, approximately 33 feet south of the centerline of Tonopah-Salome Highway and approximately 2.65 miles northwest of the intersection of Tonopah-Salome Highway and 307th Avenue (or Johnson Road) and approximately 1.55 miles southeast along the Tonopah-Salome Highway from the intersection of 339th Avenue and Indian School Road, where Indian School Road becomes Tonopah-Salome Road.
RM643	1041.39	Brass cap stamped Arizona Highway Department, El 1041.16, 1974, set on the west end of a 12- by 1- by 3-foot-high bridge abutment at the northeast corner of the I-10 bridge for eastbound traffic over the Hassayampa River.
RM644	990.75	Chiseled X on top of a 4-foot-diameter by 2-foot-high concrete base for the southeast leg of a high voltage transmission line tower in the south row of two rows of towers, on the west side of the Hassayampa River, from the corner of sections 15, 16, 21, and 22, T1N, R5W (located along the alignment of 331st Avenue and Lower Buckeye Road), 0.93 mile north along 331st Avenue to a dirt road, then 0.3 mile east on the dirt road through ranch property, then approximately 630 feet northeast on dirt power line service road to the towers.
RM645	961.33	Aluminum capped pin near quarter corner between sections 15 and 22, T1N, R5W, on west side of Hassayampa River, near southeast corner of farm field by old water tank.


112°52'30"
33°30'00"
JOINS PANEL 1525
112°45'00"
33°30'00"
JOINS PANEL 1975
JOINS PANEL 2015
JOINS PANEL 2475
JOINS PANEL 2450
33°22'30"
112°52'30"
33°22'30"
112°45'00"
LIMIT OF STUDY
ZONE X
MARICOPA COUNTY
UNINCORPORATED AREAS
040037
ZONE AE
Hassayampa River
Palo Verde
Nuclear Generating Station
INDIAN SCHOOL ROAD
TONOPAH SALOME HIGHWAY
HASSAYAMPA-SALOME HIGHWAY
LOWER BUCKEYE ROAD
VAN BUREN ROAD
BUCKEYE ROAD
SOUTHERN AVENUE
VINEYARD ROAD
BASE LINE ROAD
WIER AVENUE
ROESSER ROAD
SUNLAND AVENUE
WICKENBURG HASSAYAMPA ROAD
T1N-R6W-S20E (Fourbillie W)
T2N-R6W-S27
T1S-R6W-S27
T2N-R6W-S34
T2N-R6W-S33E
T2N-R6W-S33S
T1N-R6W-S04E
T1N-R6W-S03W
T1N-R6W-S22N
T1S-R6W-S08
T1N-R6W-S16
T1N-R6W-S22E
T1N-R6W-S26
T1S-R6W-S27
T1N-R6W-S17E
T1N-R6W-S20E
T1N-R6W-S33E
T1N-R6W-S03E
T1N-R6W-S34
T1N-R6W-S27
T1S-R6W-S22E
T1S-R6W-S27
T1S-R6W-S27
T1S-R6W-S27
T1S-R6W-S27
T1N-R6W-S27
T1N-R6W-S26
T1S-R6W-S27
T1S-R6W-S27
T1S-R6W-S27
T1S-R6W-S27

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM715	937.22	U.S. General Land Office brass cap, corner of sections 20, 21, 28, and 29, T1S, R7W, 0.8 foot above natural ground.
RM716	920.92	U.S. General Land Office brass cap, quarter corner of sections 21 and 28, T1S, R7W, 0.6 foot above natural ground.
RM717	920.03	Aluminum capped pipe stamped ERM, southeast corner of intersection of two dirt roads, near corner of sections 21, 22, 27, and 28, T1S, R7W.
RM718	911.50	U.S. General Land Office brass cap, quarter corner of sections 22 and 27, T1S, R7W, 0.8 foot above natural ground.
RM719	900.24	Aluminum capped pipe stamped ERM, approximately 50 feet north of southwest fence corner, near corner of sections 22, 23, 26, and 27, T1S, R7W [by T post painted orange].
RM720	892.88	U.S. General Land Office brass cap, quarter corner of sections 23 and 26, T1S, R7W, 0.3 foot above natural ground.
RM721	885.53	U.S. General Land Office brass cap, corner of sections 23, 24, 25, and 26, T1S, R7W, 0.1 foot above natural ground.
RM722	886.91	U.S. General Land Office brass cap, quarter corner of section 25, T1S, R7W, and section 30, T1S, R6W, 0.6 foot above natural ground.
RM723	872.05	Chiseled 2- by 2-inch + on top of southwest corner of 5.8- by 5.8- by 1.1-foot-high concrete pad for a pump, approximately 81 feet south and 54 feet east of a fence running north-south and west, near recorded location of the corner of sections 29, 30, 31, and 32, T1S, R6W.
RM724	862.30	U.S. General Land Office brass cap stamped 1914, corner of sections 19, 20, 29, and 30, T1S, R6W, 0.3 foot below natural ground.



LEGEND

To obtain more detailed information in areas where Base Flood Elevations (BFEs)and /or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations and therefore may not exactly reflect the flood elevation data presented in the FIS. BFEs shown on the FIRM are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and /or floodplain management.

ERM elevations listed on this map were obtained and/or developed to establish vertical control for determination of flood elevations and floodplain boundaries portrayed on this map. Users should be aware that these ERM elevations may have changed since the publication of this map. To obtain up-to-date elevaton information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

Coastal BFE's shown on this map may apply only landward of 0.0' NGVD. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and /or floodplain management purposes when they are higher than the elevations shown on this FIRM.

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × — Elevation Reference Mark

● M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

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

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

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

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

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

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

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

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

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

Map revised July 19, 2001 to update corporate limits, to change base flood elevations, to add base flood elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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

APPROXIMATE SCALE IN FEET
2000 0 2000

MAP ROOM 2450F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2450 OF 4350
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2450	F

MAP NUMBER
04013C2450 F

MAP REVISED:
JULY 19, 2001

Federal Emergency Management Agency