

SONOQUI WASH AT POWER RANCH  
Town of Gilbert, Maricopa County, Arizona

---

SUPPLEMENTAL  
TECHNICAL DATA NOTEBOOK

Wood, Patel, and Associates, Inc.

W/P # 001168.10



# Federal Emergency Management Agency

Washington, D.C. 20472

**APR 27 2006**

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

The Honorable Steve Berman  
Mayor, Town of Gilbert  
50 East Civic Center Drive  
Gilbert, AZ 85296

IN REPLY REFER TO:

Case No.: 05-09-A517P  
(Formerly Case No.: 05-09-2100517P)  
Community Name: Town of Gilbert, AZ  
Community No.: 040044  
Effective Date of  
This Revision: **AUG 18 2006**

Dear Mayor Berman:

The Flood Insurance Rate Map for your community has been revised by this Letter of Map Revision (LOMR). Please use the enclosed annotated map panel(s) revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals issued in your community. Please note that the case number referenced above was changed to accommodate our digital processing.

Additional documents are enclosed which provide information regarding this LOMR. Please see the List of Enclosures below to determine which documents are included. Other attachments specific to this request may be included as referenced in the Determination Document. If you have any questions regarding floodplain management regulations for your community or the National Flood Insurance Program (NFIP) in general, please contact the Consultation Coordination Officer for your community. If you have any technical questions regarding this LOMR, please contact the Director, Federal Insurance and Mitigation Division of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) in Oakland, California, at (510) 627-7175, or the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP). Additional information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Sincerely,

Michael B. Godesky, Project Engineer  
Engineering Management Section  
Mitigation Division

For: William R. Blanton Jr., CFM, Acting Chief  
Engineering Management Section  
Mitigation Division

List of Enclosures:

Letter of Map Revision Determination Document  
Annotated Flood Insurance Rate Map

cc: Mr. Mark Weiner  
Floodplain Manager  
Town of Gilbert

Mr. Tim S. Phillips, P.E.  
Chief Engineer and General Manager  
Flood Control District of Maricopa County

Mr. Ted Collins, CFM  
Principal Floodplain Administrator  
Flood Control District of Maricopa County

~~Mr. A. J. ...~~  
Principal  
Wood, Patel and Associates, Inc.

Mr. Brian Cosson, CFM  
NFIP Coordinator  
Office of Dam Safety and Flood Mitigation  
Arizona Department of Water Resources





# Federal Emergency Management Agency

Washington, D.C. 20472

## LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

### COMMUNITY INFORMATION

#### APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

#### COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance flood discharges computed in the FIS for your community without considering subsequent changes in watershed characteristics that could increase flood discharges. Future development of projects upstream could cause increased flood discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on flood discharges subsequent to the publication of the FIS report for your community and could, therefore, establish greater flood hazards in this area.

Your community must regulate all proposed floodplain development and ensure that permits required by Federal and/or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This revision has met our criteria for removing an area from the 1-percent-annual-chance floodplain to reflect the placement of fill. However, we encourage you to require that the lowest adjacent grade and lowest floor (including basement) of any structure placed within the subject area be elevated to or above the Base (1-percent-annual-chance) Flood Elevation.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

A handwritten signature in black ink, appearing to read "Michael B. Godesky".

Michael B. Godesky, Project Engineer  
Engineering Management Section  
Mitigation Division



Federal Emergency Management Agency  
Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Ms. Sally M. Ziolkowski  
Director, Federal Insurance and Mitigation Division  
Federal Emergency Management Agency, Region IX  
1111 Broadway Street, Suite 1200  
Oakland, CA 94607-4052  
(510) 627-7175

**STATUS OF THE COMMUNITY NFIP MAPS**

We will not physically revise and republish the FIRM for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

  
Michael B. Godesky, Project Engineer  
Engineering Management Section  
Mitigation Division



Federal Emergency Management Agency  
Washington, D.C. 20472

**LETTER OF MAP REVISION  
DETERMINATION DOCUMENT (CONTINUED)**

**COMMUNITY INFORMATION (CONTINUED)**

Since LOMR Case No. 04-09-1717P will be effective on August 17, 2006, this LOMR will be effective on August 18, 2006. Any requests to review or alter this determination should be made within 30 days and must be based on scientific or technical data.

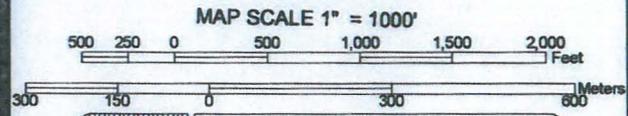
Because the increases and decreases in BFE are too small to change the whole-foot BFEs shown on the effective FIRM, they will not be published.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

  
Michael B. Godesky, Project Engineer  
Engineering Management Section  
Mitigation Division



- Legend**
- 1% annual chance (100-Year) Floodplain
  - 1% annual chance (100-Year) Floodway
  - 0.2% annual chance (500-Year) Floodplain



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2690H

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MARICOPA COUNTY,**  
**ARIZONA**  
**AND INCORPORATED AREAS**

**PANEL 2690 OF 4350**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	2690	H
GILBERT, TOWN OF	040044	2690	H
QUEEN CREEK, TOWN OF	040132	2690	H

**REVISED TO REFLECT LOMR**  
**DATED AUG 18 2006**

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER  
04013C2690H

MAP REVISED:  
SEPTEMBER 30, 2005

Federal Emergency Management Agency

FLOODING EFFECTS FROM SONOQUI WASH

FLOODING EFFECTS FROM SONOQUI WASH

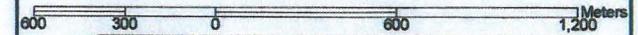
JOINS PANEL 3075

Legend

-  1% annual chance (100-Year) Floodplain
-  1% annual chance (100-Year) Floodway
-  0.2% annual chance (500-Year) Floodplain



MAP SCALE 1" = 2000'



PANEL 3075H

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MARICOPA COUNTY,**  
**ARIZONA**  
**AND INCORPORATED AREAS**

**PANEL 3075 OF 4350**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

**CONTAINS:**  
 COMMUNITY NUMBER PANEL SUFFIX  
 MARICOPA COUNTY 040037 3075 M  
 GILBERT, TOWN OF 040044 3075 M  
 QUEEN CREEK, TOWN OF 040132 3075 M  
**REVISED TO REFLECT LOMR**  
**DATED AUG 18 2006**

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

**MAP NUMBER**  
**04013C3075H**



**MAP REVISED:**  
**SEPTEMBER 30, 2005**

Federal Emergency Management Agency





NATIONAL FLOOD INSURANCE PROGRAM  
FEMA NATIONAL SERVICE PROVIDER

March 6, 2006

Mr. Ashok C. Patel, P.E., R.L.S.  
Wood, Patel and Associates, Inc.  
2051 West Northern Avenue  
Suite 100  
Phoenix, AZ 85021

IN REPLY REFER TO:  
Case No.: 05-09-A517P  
Community: Town of Gilbert, AZ  
Community No.: 040044

RECEIVED

MAR 9 2006

WOOD/PATEL

316-ACK

Dear Mr. Patel:

This responds to your request dated March 6, 2006, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Sonoqui Wash (Power Ranch)
Flooding Source:	Sonoqui Wash
FIRM Panel(s) Affected:	04013C3075 G

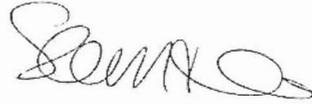
We have completed an inventory of the items you submitted. Our review of the submitted data indicates we have the minimum data required to perform a detailed technical review of your request. If additional data are required or if delays are encountered, we will inform you within 60 days of the date of this letter.

Please direct questions concerning your request to us at the address shown at the bottom of this page. For identification purposes, please include the case number referenced above on all correspondence.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627). If you

have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Craig Kennedy, CFM, who may be reached at (703) 960-8800, ext. 3091.

Sincerely,



Sheila M. Norlin, CFM  
National LOMC Manager  
Michael Baker Jr., Inc.

cc: Mr. Mark Weiner  
Floodplain Manager  
Town of Gilbert

Mr. Ted Collins, CFM  
Principal Floodplain Administrator  
Flood Control District of Maricopa County

Mr. Tim S. Phillips, P.E.  
Chief Engineer and General Manager  
Flood Control District of Maricopa County

Mr. Brian Cosson, CFM  
NFIP Coordinator  
Arizona Department of Water Resources



NATIONAL FLOOD INSURANCE PROGRAM  
FEMA NATIONAL SERVICE PROVIDER

2-  
FYI  
TRC

September 21, 2005

Mr. Ashok C. Patel, P.E., R.L.S.  
Wood, Patel and Associates, Inc.  
2051 West Northern Avenue  
Suite 100  
Phoenix, AZ 85021

IN REPLY REFER TO:  
Case No.: 05-09-2100517P  
Community: Town of Gilbert, AZ  
Community No.: 040044

316-ACK

Dear Mr. Patel:

This responds to your request dated September 16, 2005, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Sonoqui Wash (Power Ranch)
Flooding Source:	Sonoqui Wash
FIRM Panel(s) Affected:	04013C3075 G

We have completed an inventory of the items you submitted. Our review of the submitted data indicates we have the minimum data required to perform a detailed technical review of your request. If additional data are required or if delays are encountered, we will inform you within 60 days of the date of this letter.

Please direct questions concerning your request to us at the address shown at the bottom of this page. For identification purposes, please include the case number referenced above on all correspondence.

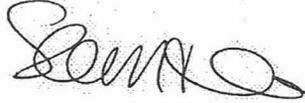
If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-877-336-2627).

3601 Eisenhower Avenue, Alexandria, VA 22304-6425 PH:1-877-FEMA MAP FX: 703.960.9125

The Mapping on Demand Team, under contract with the Federal Emergency Management Agency, is the National Service Provider for the National Flood Insurance Program

If you have specific questions concerning your request, please call the Revisions Coordinator for your State, Mr. Craig Kennedy, CFM, who may be reached at (703) 960-8800, ext. 3091.

Sincerely,



Sheila M. Norlin, CFM  
National LOMC Manager  
Michael Baker Jr., Inc.

cc: Mr. Mark Weiner  
Floodplain Manager  
Town of Gilbert

Mr. Ted Collins, CFM  
Principal Floodplain Administrator  
Flood Control District of Maricopa County

Mr. Tim S. Phillips, P.E.  
Chief Engineer and General Manager  
Flood Control District of Maricopa County

Mr. Brian Cosson, CFM  
NFIP Coordinator  
Arizona Department of Water Resources

**SONOQUI WASH AT POWER RANCH  
Town of Gilbert, Maricopa County, Arizona**

**SUPPLEMENTAL TECHNICAL DATA NOTEBOOK**

July 14, 2004  
WP #001168.10

*Submitted to:* **Federal Emergency Management Agency**  
Hazard Study Branch  
Technical Services Division  
500 C Street Southwest  
Washington, D.C. 20472  
Contact: Mr. Matthew Miller, Chief  
Phone: (202) 646-2746

*and*

**The Flood Control District of Maricopa County**  
2801 West Durango  
Phoenix, AZ 85009  
Phone: (602) 506-1501  
Fax: (602) 506-4601

*and*

**The Town of Gilbert**  
1205 South Gilbert Road  
Gilbert, AZ 85296  
Phone: (480) 503-6842

*Prepared for:* **Shea Communities/Sun Power LLC**  
4734 East Queen Creek Road  
Gilbert, AZ 85297  
Phone: (480) 988-5714  
Fax: (480) 988-0280

*Prepared by:* **Wood, Patel & Associates, Inc.**  
2051 West Northern Avenue, Suite 100  
Phoenix, AZ 85021  
Phone: (602) 335-8500  
Fax: (602) 335-8580



Engineer

Peer Reviewer

**TABLE OF CONTENTS**

1.0 INTRODUCTION ..... 1

2.0 STUDY DOCUMENTATION ABSTRACT / FEMA FORMS ..... 2

    2.1 Study Documentation Abstract ..... 2

    2.2 FEMA Forms ..... 2

        2.2.1 Form 1 – Overview and Concurrence Form ..... 2

        2.2.2 Form 2 – Riverine Hydrology and Hydraulics Form ..... 2

3.0 SURVEY AND MAPPING INFORMATION ..... 3

    3.1 Field Survey ..... 3

    3.2 Mapping ..... 3

        3.2.1 Hydrology Mapping ..... 3

        3.2.2 Hydraulic Mapping ..... 3

4.0 HYDROLOGY ..... 4

5.0 HYDRAULICS ..... 5

6.0 EROSION AND SEDIMENT TRANSPORT ..... 6

7.0 DRAFT FIS REPORT DATA ..... 7

8.0 REFERENCES ..... 8

**APPENDICES**

- Appendix A HEC-RAS Model Output at Revised Cross-Sections
- Appendix B Revised Work Study Maps (Sheets 3 and 4)
- Appendix C As-Built Grading Plans
- Appendix D Compaction Test Results

Y:\Wp\Reports\Hydrology\001168.10 SONOQUI WASH TDN.doc



## 1.0 INTRODUCTION

Wood, Patel and Associates, Inc. (Wood/Patel), has been contracted by Sunbelt to document grading and drainage improvements made on the Trilogy portion of Power Ranch. The grading consists of engineered fill placed adjacent to Sonoqui Wash, north of the Ocotillo Road alignment, between Power and Recker Roads within the Town of Gilbert.

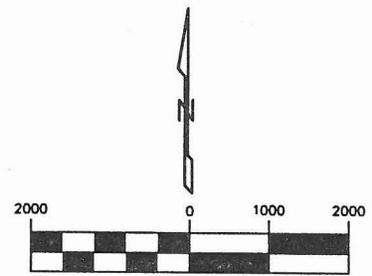
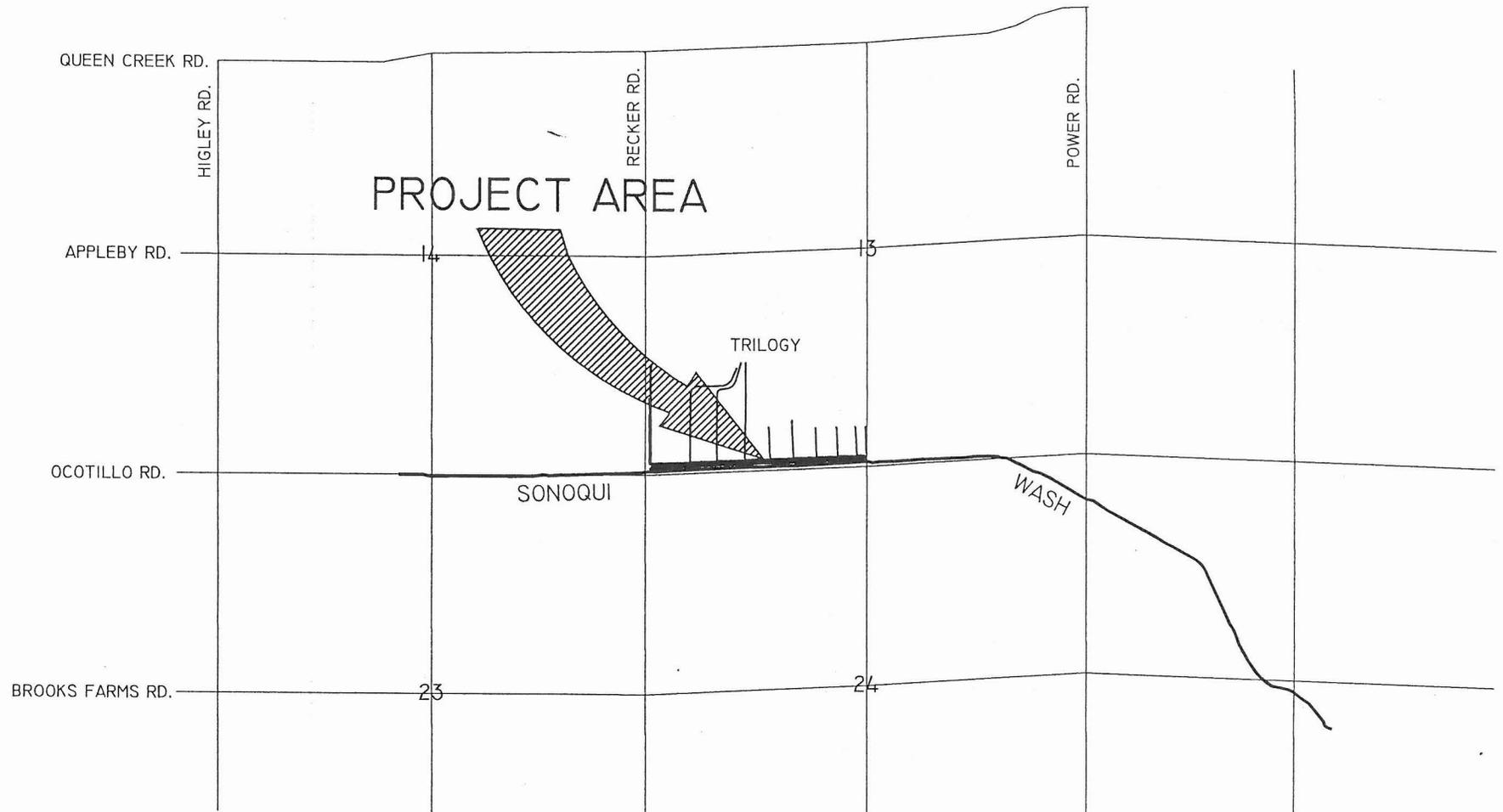
Sonoqui Wash is located in Maricopa County, within the Town of Queen Creek, the Town of Gilbert, and unincorporated areas of Maricopa County. This study includes the portion of Sonoqui Wash that lies within section 13, Township 2 South, Range 6 East of the Gila and Salt River Base Meridian (GSRM). Please see *Plate 1 – Vicinity Map*.

The Flood Control District of Maricopa County (FCDMC) has contracted Entellus Inc. to undertake a Flood Insurance Study (FIS) for Sonoqui Wash. This study consists of approximately seven (7) river miles of floodplain delineation for Sonoqui Wash. Entellus conducted hydraulic analyses and floodplain delineation as part of the FIS. The study was documented in the report *Sonoqui Wash Floodplain Re-Delineation Study Technical Data Notebook, Hydraulics Report* prepared by Entellus, Inc. in October 2003 (Reference 1).

The FIS was prepared using topographic mapping based on Aerial Photogrammetry taken in November 1997. Since the time of the topographic mapping, the development known as Trilogy has placed engineered fill between Power and Recker Roads, adjacent to Sonoqui Wash. This fill was placed in preparation of the proposed development. The engineered fill has been designed to be above the expected water surface in Sonoqui Wash.

The purpose of this report is to document the topographic and hydraulic changes that have occurred on the Trilogy property since the original mapping. This report is a Supplemental Technical Data Notebook (STDN) that contains modifications to the Sonoqui FIS to reflect the conditions as they exist today. This report contains revised HEC-RAS models and study work maps to reflect the current conditions of the Trilogy property.

It is the intent of this study to provide a revised Sheet 3 and 4 of 10 of the Entellus FIS work maps. In addition, a revised HEC-RAS model is provided in the Appendix for the area adjacent to Trilogy.



1 Inch = 2000 ft.

<p><b>SONOQUI WASH</b> <b>VICINITY MAP</b></p>	
<p>Wood, Patel &amp; Associates, Inc. 2051 West Northern, Suite 100 Phoenix, Arizona 85021 (602) 335-8500</p>	
<p>DRAWN BY: JLL</p>	<p><b>PLATE 1</b></p>
<p>W/P JOB NO: 001168.10</p>	

## 2.0 STUDY DOCUMENTATION ABSTRACT/ FEMA FORMS

### 2.1 STUDY DOCUMENTATION ABSTRACT

No new study documentation was produced for this project. Please refer to Entellus' study, (Reference 1).

### 2.2 FEMA FORMS

The purpose of this study is to update the Entellus FIS to reflect physical changes that have occurred since the preparation of the 1997 topographic mapping. The as-built Trilogy Mass Grading Plans represent the existing condition. Therefore, the FEMA MT-2 forms needed for this supplemental TDN are:

Form 1 – Overview and Concurrence Form

Form 2 – Riverine Hydrology and Hydraulics Form

#### 2.2.1 Form 1 – Overview and Concurrence Form

The attached "Overview and Concurrence Form" is provided per FEMA requirements for submittals. The basis for this request is improved data for topography.

#### 2.2.2 Form 2 – Riverine Hydrology and Hydraulics Form

The attached "Riverine Hydrology and Hydraulics Form" is provided per FEMA requirements for submittals. The basis for this request is improved data for topography.



**C. REVIEW FEE**

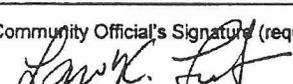
Has the review fee for the appropriate request category been included?	<input type="checkbox"/> Yes	Fee amount: \$ _____
	<input checked="" type="checkbox"/> No, Attach Explanation	
Please see the FEMA Web site at <a href="http://www.fema.gov/fhm/frm_fees.shtml">http://www.fema.gov/fhm/frm_fees.shtml</a> 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.

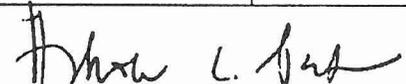
Name: Ashok C. Patel, P.E., R.L.S.	Company: Wood, Patel and Associates, Inc.	
Mailing Address: 2051 West Northern Ave. Suite 100 Phoenix, AZ 85021	Daytime Telephone No.: (602) 335-8500	Fax No.: (602) 335-8580
	E-Mail Address: <a href="mailto:apatel@woodpatel.com">apatel@woodpatel.com</a>	
Signature of Requester (required): 	Date: 7/14/04	

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: Lonnie Frost, Floodplain Manager	Telephone No.: (480) 503-6842	
Community Name: Town of Gilbert	Community Official's Signature (required): 	Date: 14 Jul 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: Ashok C. Patel, P.E., R.L.S.	License No.: 10512	Expiration Date: December, 2005
Company Name: Wood, Patel and Associates, Inc.	Telephone No.: (602) 335-8500	Fax No.: (602) 335-8580
Signature: 	Date: 7/14/04	

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

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



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: Sonoqui Wash  
**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)
----------	-------------------------	-----------	---------------

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/fhm/en\\_modl.shtml](http://www.fema.gov/fhm/en_modl.shtml).

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	Recker Road	1.219	1334.66*	1334.62
Upstream Limit	Power Road	1.611	1341.67*	1341.52

\* BASED ON ENTELLUS' MODEL

Hydraulic Method Used

Hydraulic Analysis HEC-RAS [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/fhm/frm\\_soft.shtm](http://www.fema.gov/fhm/frm_soft.shtm). 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: SONOKAIFP6-HAA.PRJ
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/fhm/en\\_modl.shtm](http://www.fema.gov/fhm/en_modl.shtm).

## 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.

### 3.0 SURVEY AND MAPPING INFORMATION

#### 3.1 Field Survey

Please refer to Entellus' report (Reference 1) for survey and aerial mapping information. No aerial topographic mapping was conducted by Wood/Patel. However, Wood/Patel performed field surveys to verify elevations of the engineered fill within the bounds of Trilogy.

#### 3.2 Mapping

##### 3.2.1 Hydrology Mapping

No additional hydrologic mapping was conducted for this report.

##### 3.2.2 Hydraulic Mapping

The grading and fill topographic information for Trilogy was used to adjust the hydraulic model to reflect the current topography.

The grading for Trilogy is based on the Town of Gilbert datum ( $D_G$ ), while the aforementioned FIS was completed using the NAVD 88 datum ( $D_N$ ). A field survey was performed on the existing Elevation Reference Mark (ERM) using the Town of Gilbert datum.

Town of Gilbert datum (ERM 1326)  $D_G = 1326.41$

NAVD 88 datum (ERM 1326)  $D_N = 1328.32$

Therefore, 1.9 feet must be added to the Town of Gilbert datum ( $D_G$ ) to convert to the NAVD 88 datum ( $D_N$ ). This conversion was performed to prepare the revised HEC-RAS model and the revised work maps.

#### 4.0 HYDROLOGY

No new hydrologic calculations have been conducted for this study. Please refer to the Entellus report (Reference 1).

## 5.0 HYDRAULICS

Entellus Inc. assembled the original HEC-RAS model for Sonoqui Wash. Subsequently, Wood/Patel utilized the Entellus model as a base condition. The geometry of the cross-sections along the Trilogy reach was adjusted to reflect the as-built engineered fill for Power Ranch. All of the remaining modeling parameters such as Manning's "n" value, expansion and contraction coefficients, and bank stations remained the same as in the Entellus model. Please refer to the Entellus report (Reference 1) for this data.

Wood/Patel modified the HEC-RAS model using the as-built grading data as adjusted to reflect the datum difference. The cross-sections were adjusted to reflect the existing fill added to the Trilogy site. The revised HEC-RAS model was compared to the base (Entellus) HEC-RAS model to verify that the engineered fill did not have an adverse effect on the water surface. The conclusion was that the grading changes in the Trilogy area did not raise the water surface and slightly lowered the water surface at several cross-sections.

Please see Appendix A for the HEC-RAS model, cross-sections, and data tables for a comparison of Entellus' original results and Wood/Patels' adjusted geometry results.

Entellus prepared work study maps at a scale of 1" = 200 feet with 2 foot contour intervals. The maps include hydraulic data such as cross-section locations, floodplain, and base flood elevations. Please refer to the Entellus report (Reference 1) for the maps. The work study maps have been revised to reflect the as-built grading conditions. The revised work study maps have been included in Appendix B.

The as-built grading plans for Trilogy are included in Appendix C. In addition, compaction test results for the engineered fill are included in Appendix D.

## 6.0 EROSION AND SEDIMENT TRANSPORT

No erosion or sediment transport modeling was conducted for this report.

## 7.0 DRAFT FIS REPORT DATA

Please refer to the Entellus report (Reference 1) for the Draft FIS Data, which includes summaries of discharges, annotated Flood Insurance Rate Maps (FIRMS) and Flood Profiles.

## 8.0 REFERENCES

1. Entellus, Inc., *Sonoqui Wash Floodplain Re-Delineation Study, Technical Data Notebook, Hydraulics Report, Contract FCD 2002C033-2*, November 2003

**APPENDIX A**

**HEC-RAS Model Output at Revised Cross-Sections**

## Water Surface Elevation Comparison

**Location: Sonoqui Wash, Gilbert, AZ**  
Trilogy - Power Ranch

Cross-Section #	Entellus Elevation <sup>1</sup> (ft)	Wood/Patel Elevation <sup>2</sup> (ft)	Difference <sup>3</sup> (ft)
1.883	1346.44	1346.44	0.00
1.791	1345.20	1345.20	0.00
1.741	1344.52	1344.52	0.00
1.732	1343.99	1344.00	0.01
1.722	1343.60	1343.56	-0.04
1.611	1341.66	1341.52	-0.14
1.519	1340.07	1339.93	-0.14
1.454	1338.70	1338.62	-0.08
1.453	1338.67	1338.59	-0.08
1.446	1338.56	1338.49	-0.07
1.369	1336.93	1336.91	-0.02
1.278	1335.73	1335.72	-0.01
1.231	1335.14	1335.15	0.01
1.219	1334.66	1334.62	-0.04
1.2	1334.06	1334.06	0.00
1.155	1333.12	1333.12	0.00

Note: 1) Entellus HEC-RAS water surface elevation (base model).

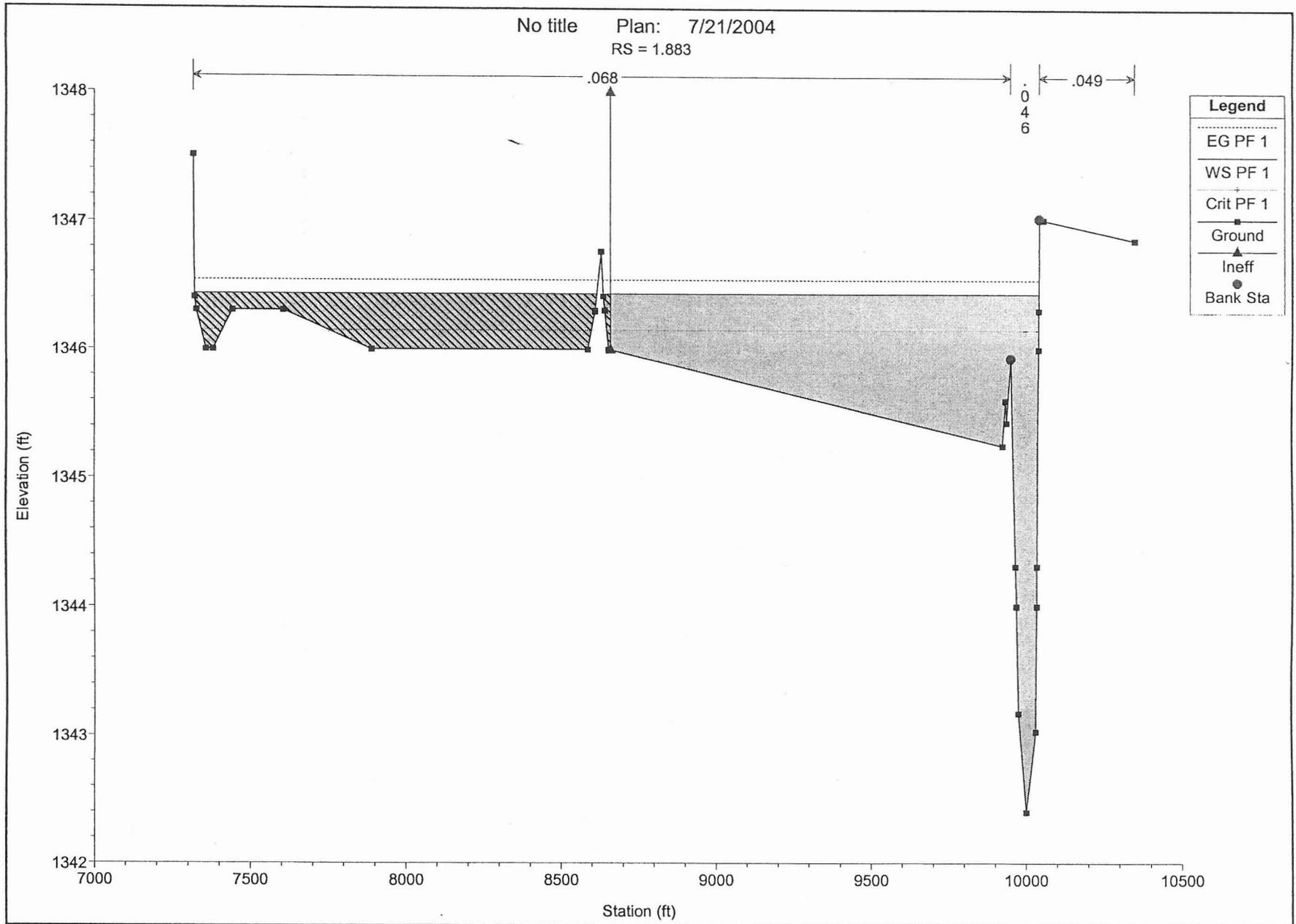
2) Wood/Patel HEC-RAS water surface elevation (post placement of engineered fill).

3) Negative differences equate to a net decrease in water surface elevation, while positive differences equate to a net increase in water surface elevation.

HEC-RAS Plan: River: Reach #1 Reach: Reach #1 Profile: PF 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach #1	1.883	PF 1	2100.00	1342.40	1346.44	1346.15	1346.55	0.003072	3.68	1322.17	2699.66	0.38
Reach #1	1.791	PF 1	2100.00	1341.20	1345.20	1344.70	1345.25	0.002287	2.75	1595.07	2711.64	0.31
Reach #1	1.741	PF 1	2100.00	1340.45	1344.52	1344.06	1344.56	0.002918	2.90	1527.59	2690.87	0.35
Reach #1	1.732	PF 1	2100.00	1340.86	1344.00	1344.00	1344.25	0.020565	6.09	797.53	1392.92	0.87
Reach #1	1.722	PF 1	2100.00	1340.57	1343.56	1343.15	1343.61	0.005359	3.31	1300.98	2653.25	0.45
Reach #1	1.611	PF 1	2100.00	1338.03	1341.52	1340.87	1341.57	0.002417	2.75	1573.30	2813.38	0.32
Reach #1	1.519	PF 1	2100.00	1335.96	1339.93	1339.63	1340.04	0.004204	3.81	1275.97	2907.82	0.43
Reach #1	1.454	PF 1	2100.00	1334.85	1338.62	1338.25	1338.69	0.003632	3.40	1461.17	2834.88	0.39
Reach #1	1.453	PF 1	2100.00	1334.82	1338.59	1338.20	1338.66	0.003517	3.34	1482.01	2855.82	0.39
Reach #1	1.446	PF 1	2100.00	1334.63	1338.49	1338.03	1338.55	0.003137	3.11	1547.52	2887.10	0.36
Reach #1	1.369	PF 1	2100.00	1333.96	1336.91	1336.60	1336.95	0.004923	2.88	1450.70	2832.84	0.42
Reach #1	1.278	PF 1	2100.00	1332.46	1335.72	1334.90	1335.74	0.001517	1.61	2183.93	2725.36	0.23
Reach #1	1.231	PF 1	2100.00	1331.38	1335.15	1334.72	1335.18	0.003568	2.91	1663.67	2531.44	0.37
Reach #1	1.219	PF 1	2100.00	1331.23	1334.62	1334.62	1334.82	0.021645	6.52	894.84	2420.17	0.90
Reach #1	1.2	PF 1	2100.00	1331.09	1334.06	1333.48	1334.08	0.002574	1.96	1874.75	2722.57	0.30
Reach #1	1.155	PF 1	2100.00	1329.84	1333.12	1332.55	1333.14	0.002734	2.13	1842.70	3250.14	0.31

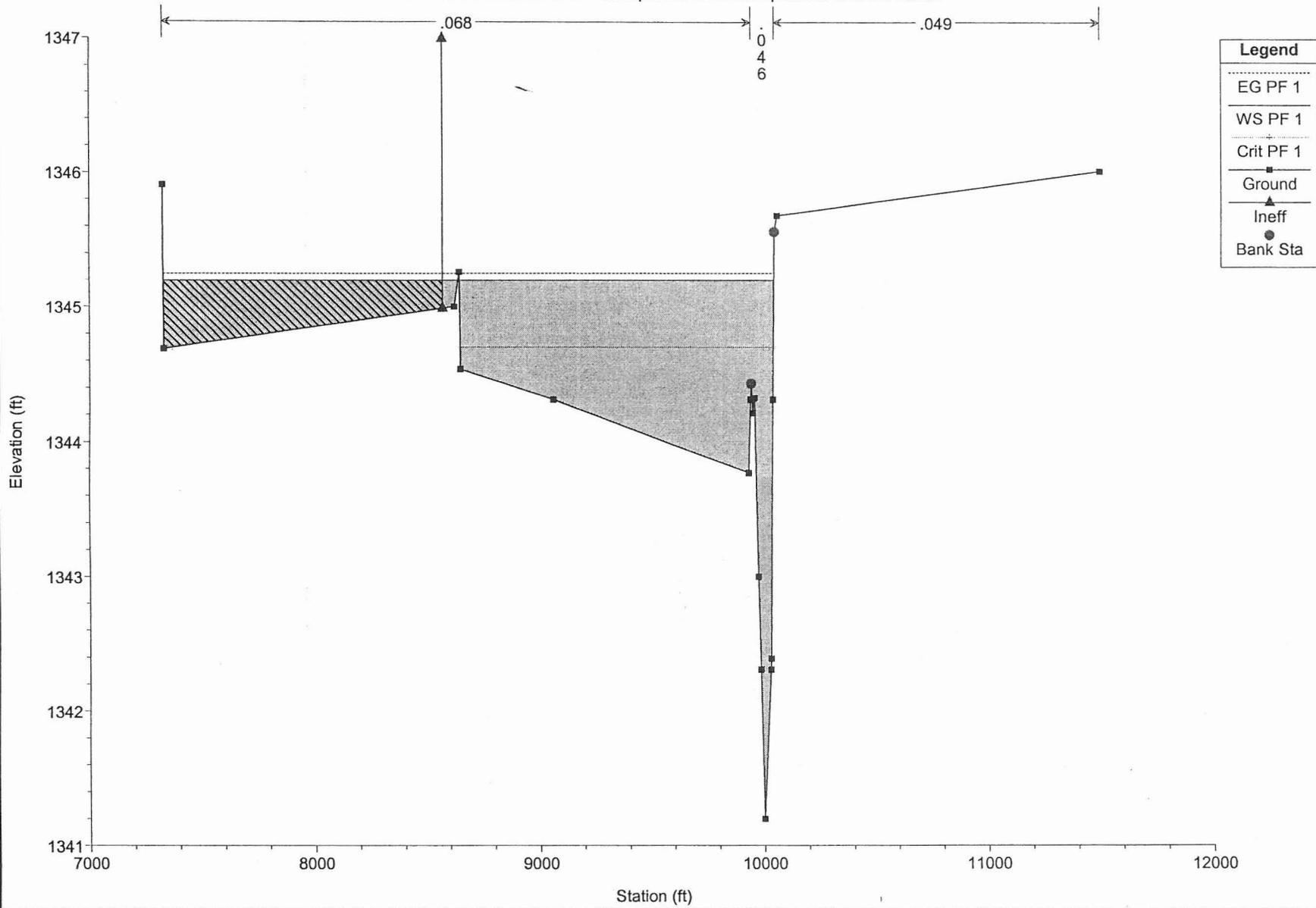
UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



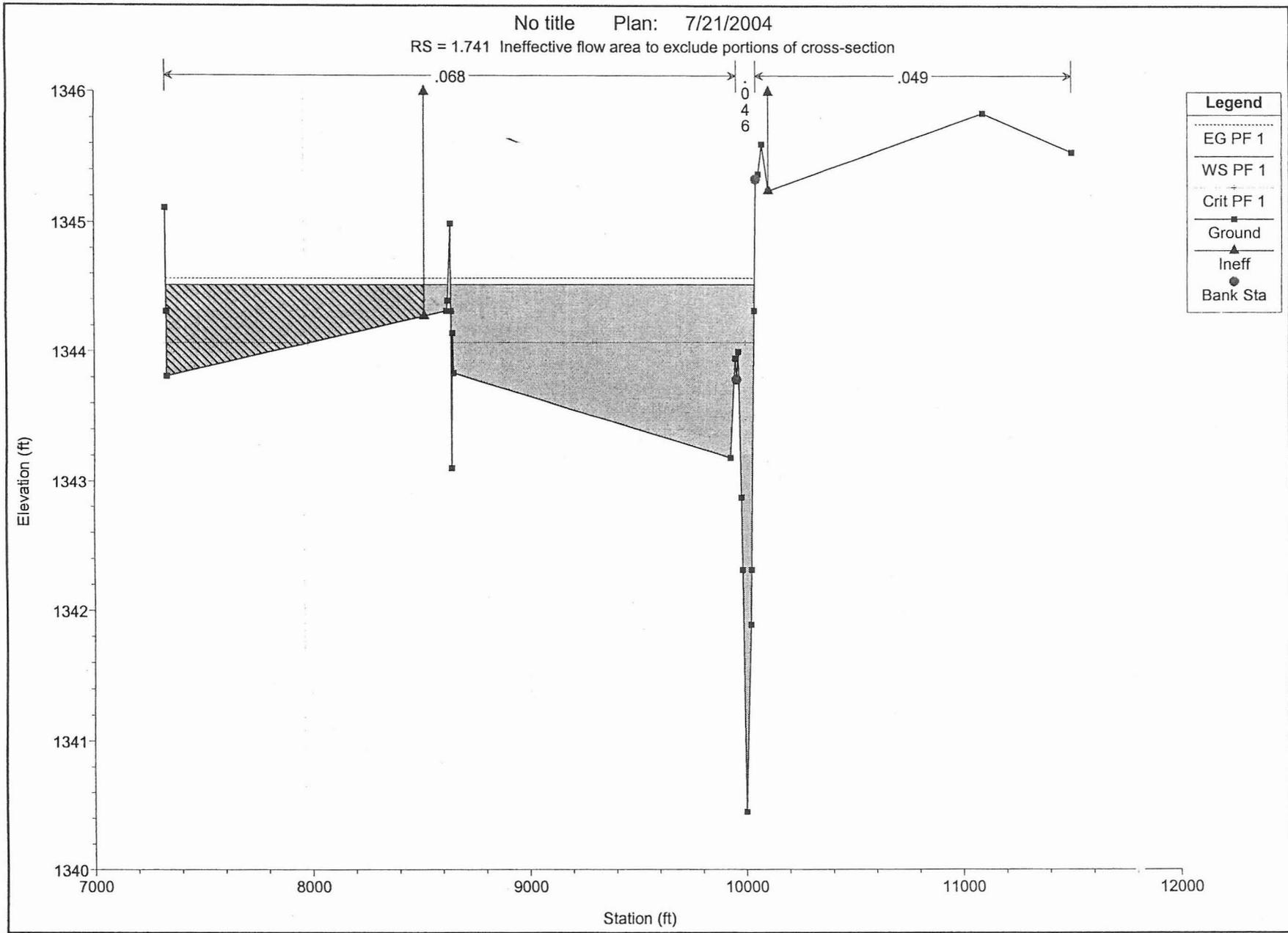
UPDATED HEC-RAS MODEL, JULY, 2004, WOOD/PATEL

No title Plan: 7/21/2004

RS = 1.791 Ineffective flow area placed to exclude portions of cross-section

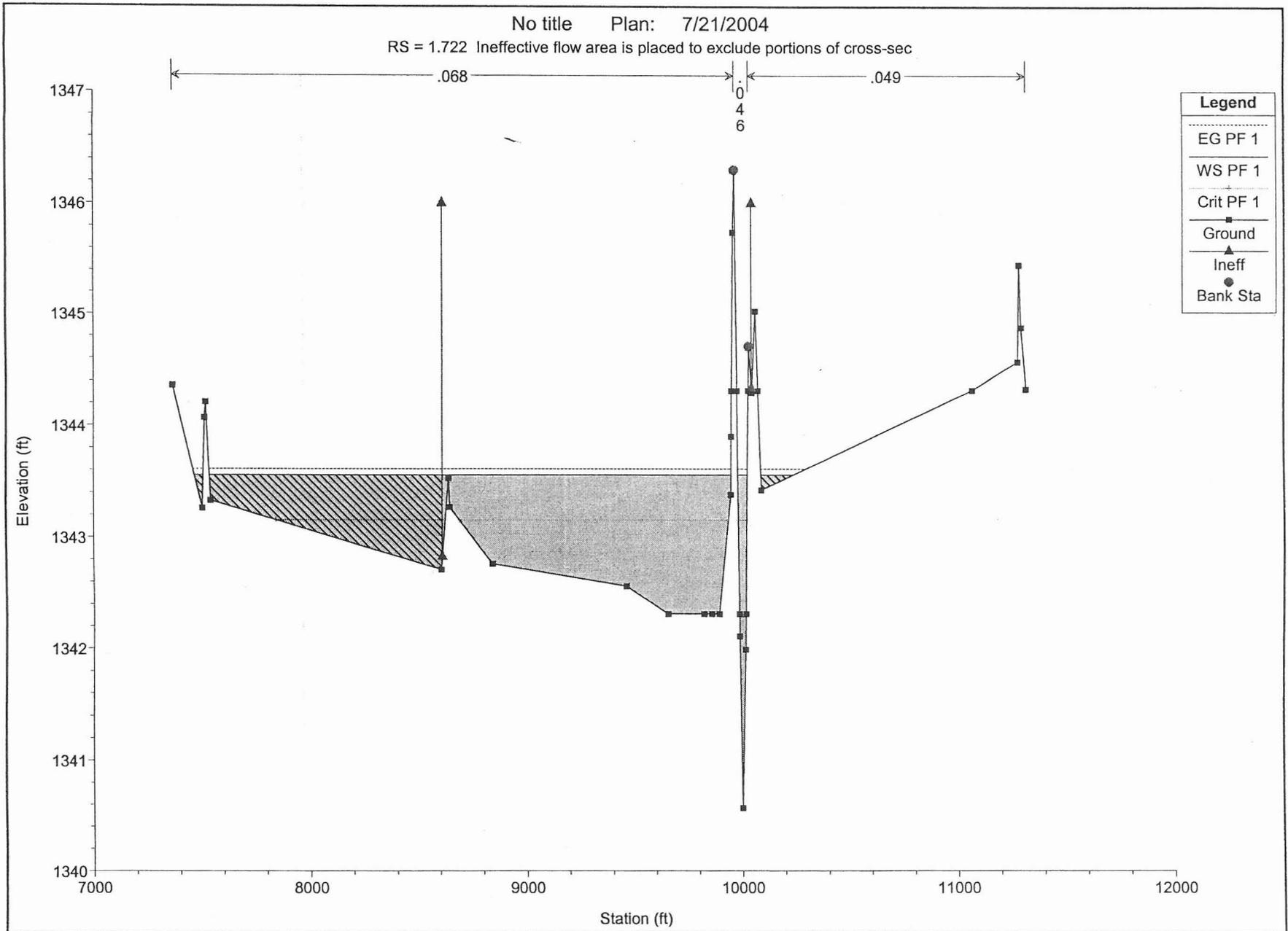


UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



UPDATED HECRAS MODEL, JULY 2004, WOOD/PATEL



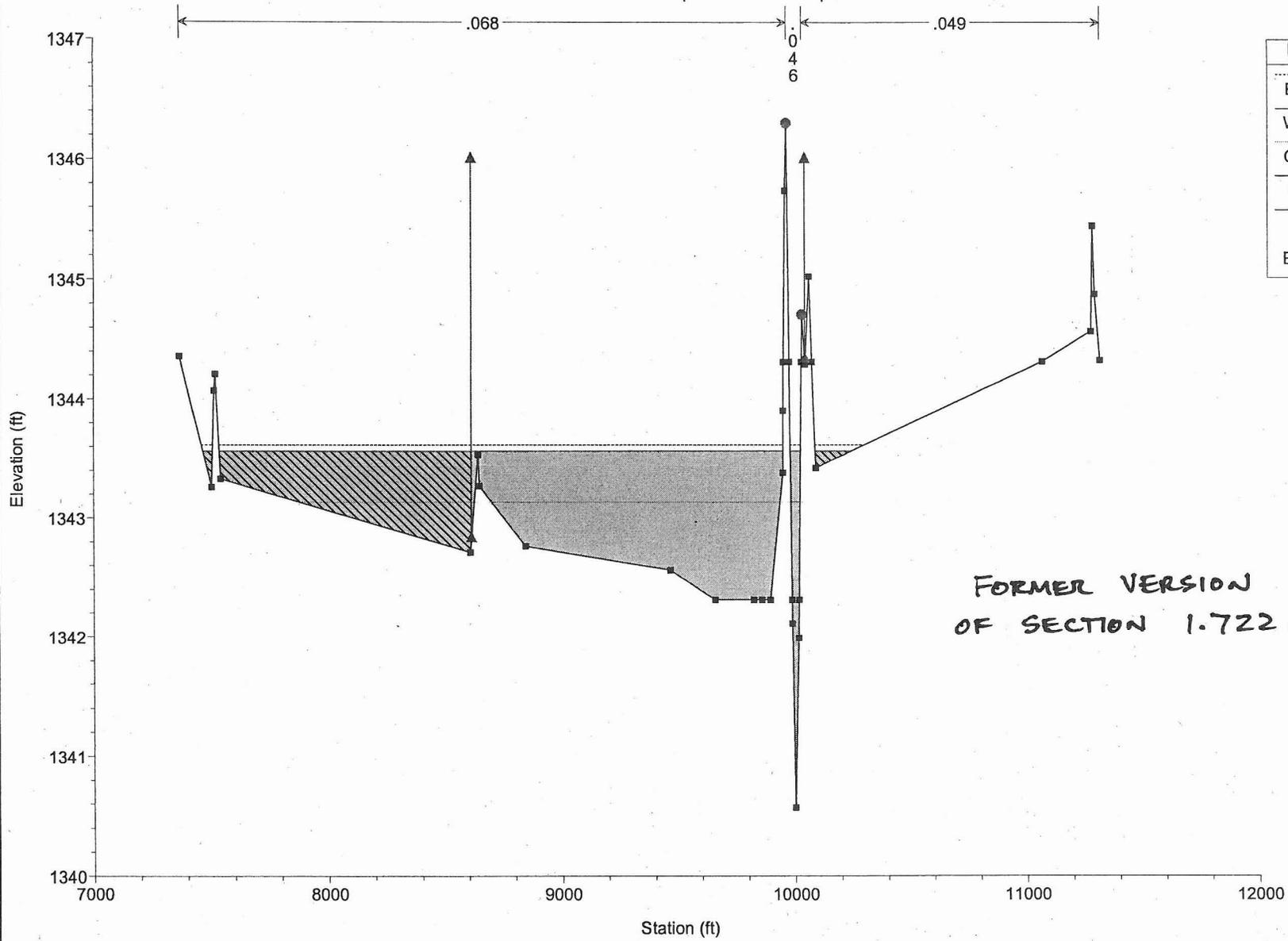


SUPERSEDED

UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL

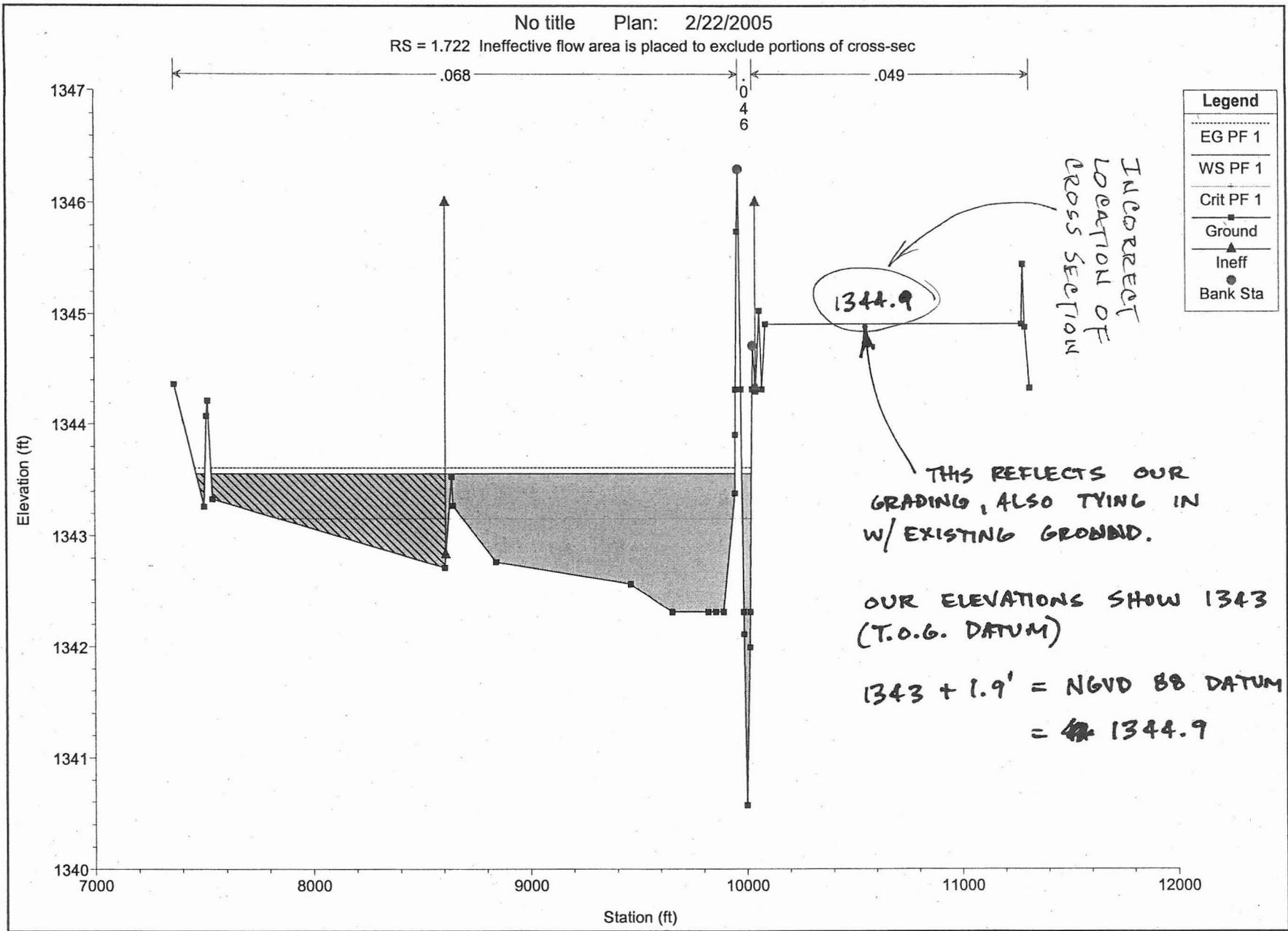
No title Plan: 7/14/2004

RS = 1.722 Ineffective flow area is placed to exclude portions of cross-sec



Legend	
.....	EG PF 1
————	WS PF 1
———●———	Crit PF 1
———■———	Ground
———▲———	Ineff
———●———	Bank Sta

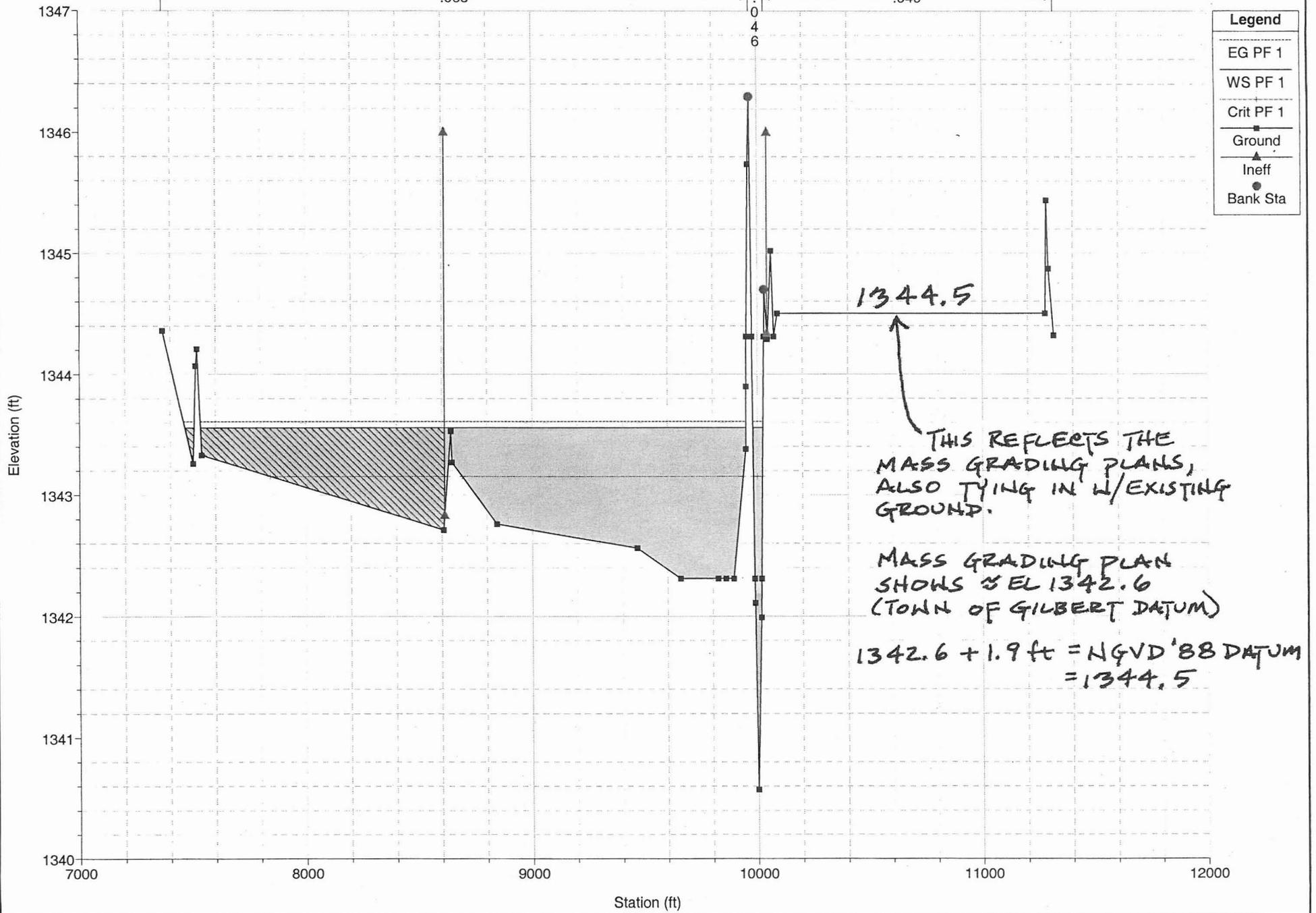
SUPERSEDED



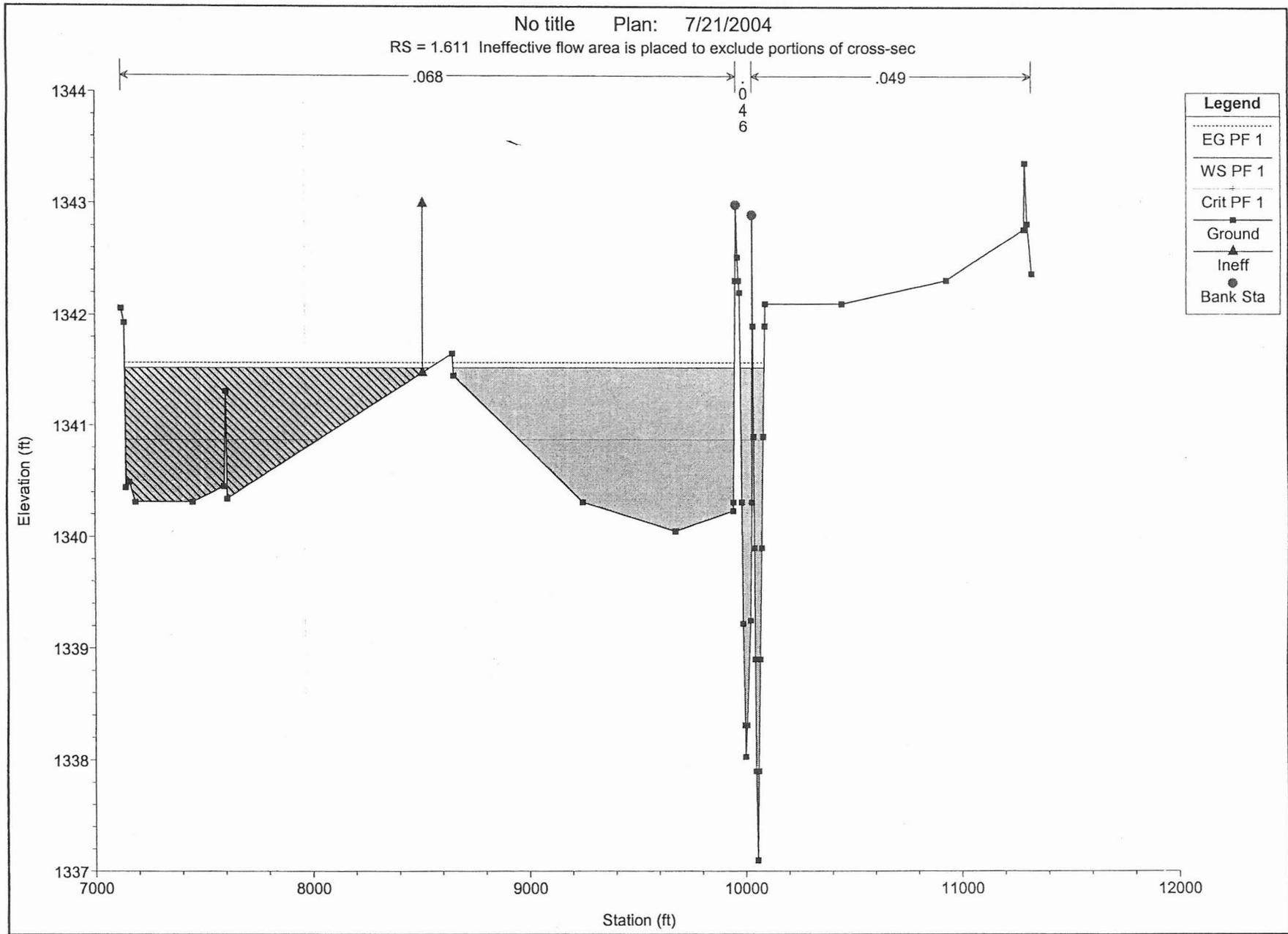
2/22/05 HEC-RAS

No title F 3/2/2005

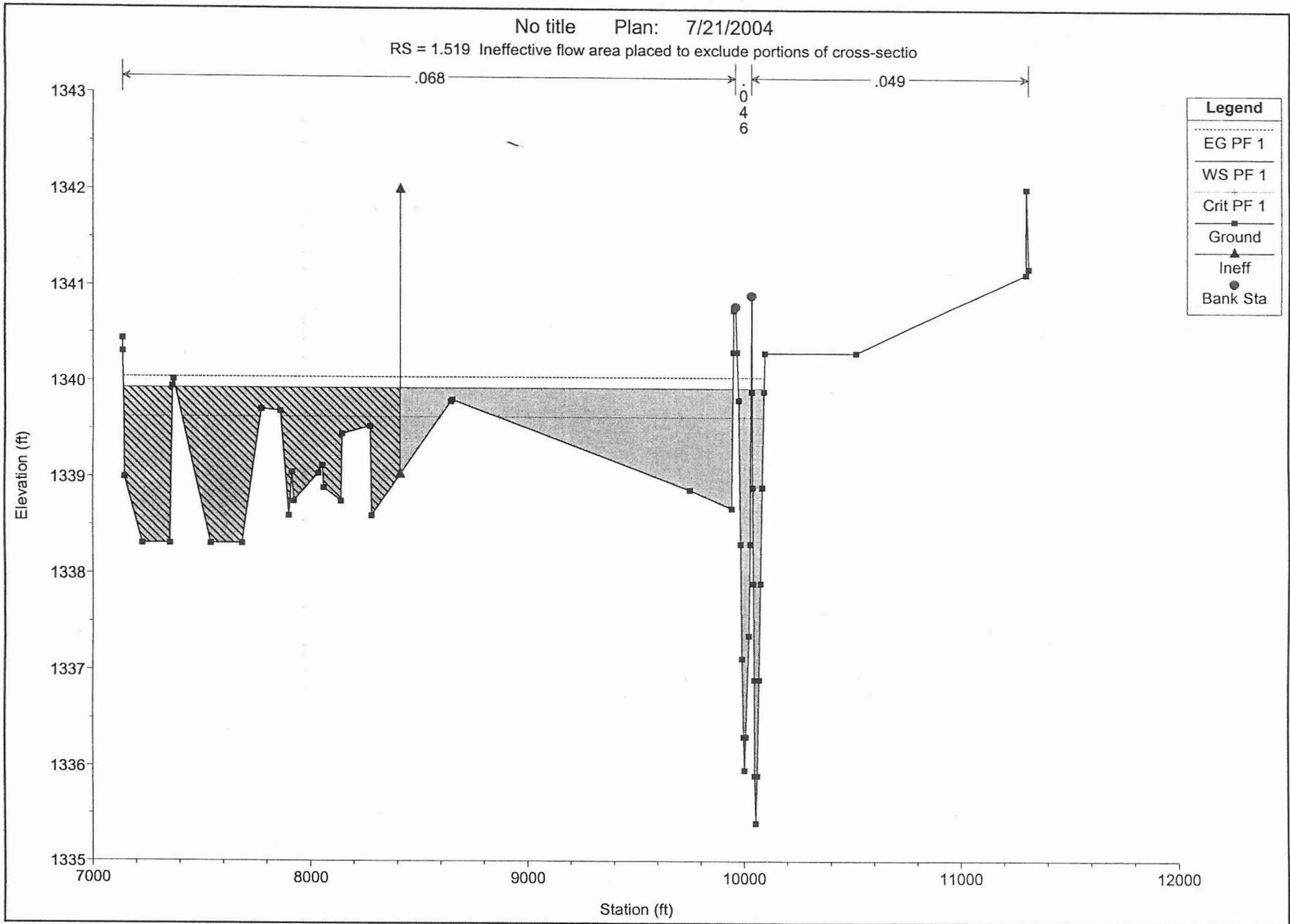
River = Reach #1 Reach = Reach #1 RS = 1.722 Ineffective flow area is placed to exclude portions of cross-section



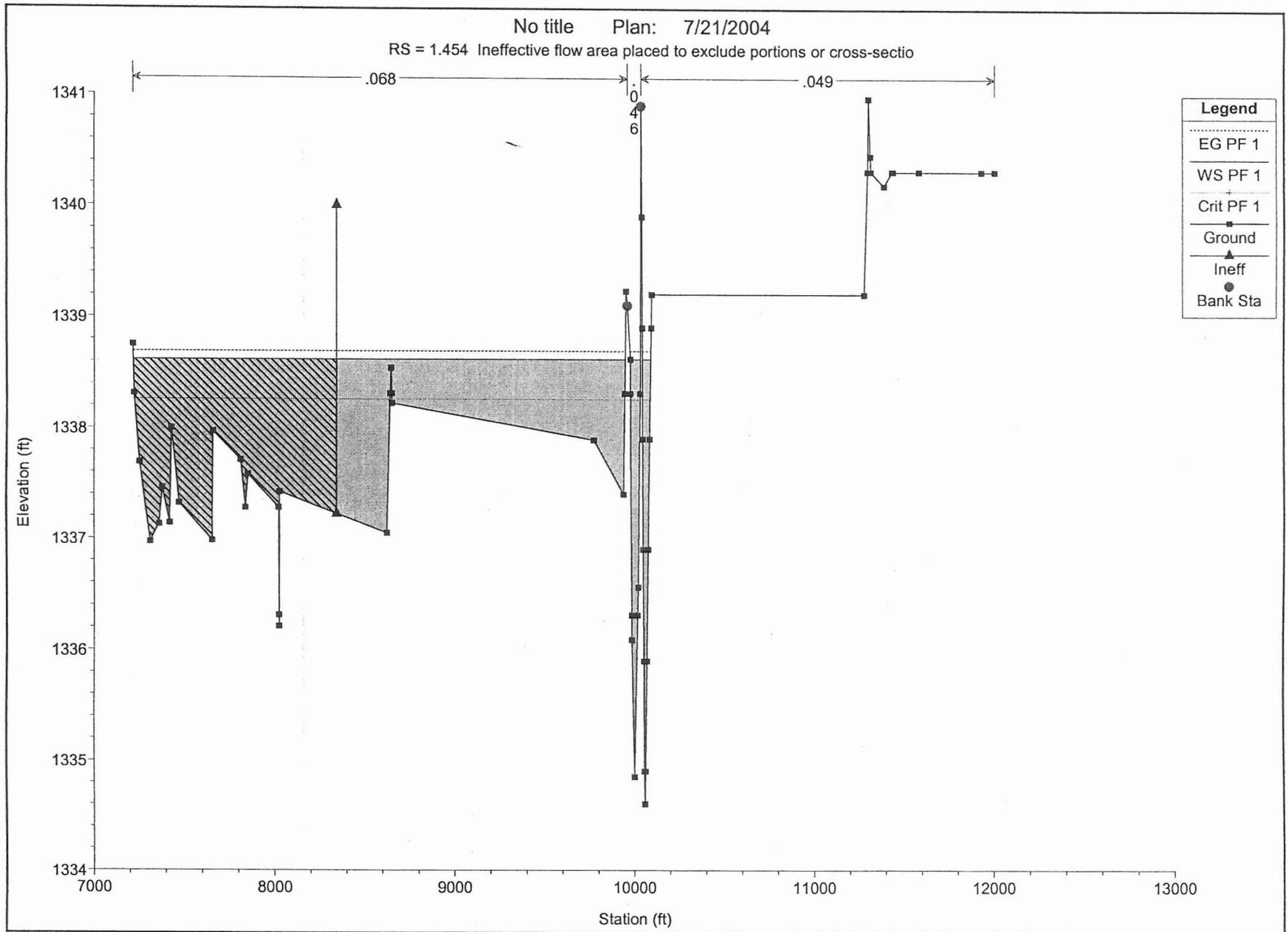
3/2/05 HEC-RAS



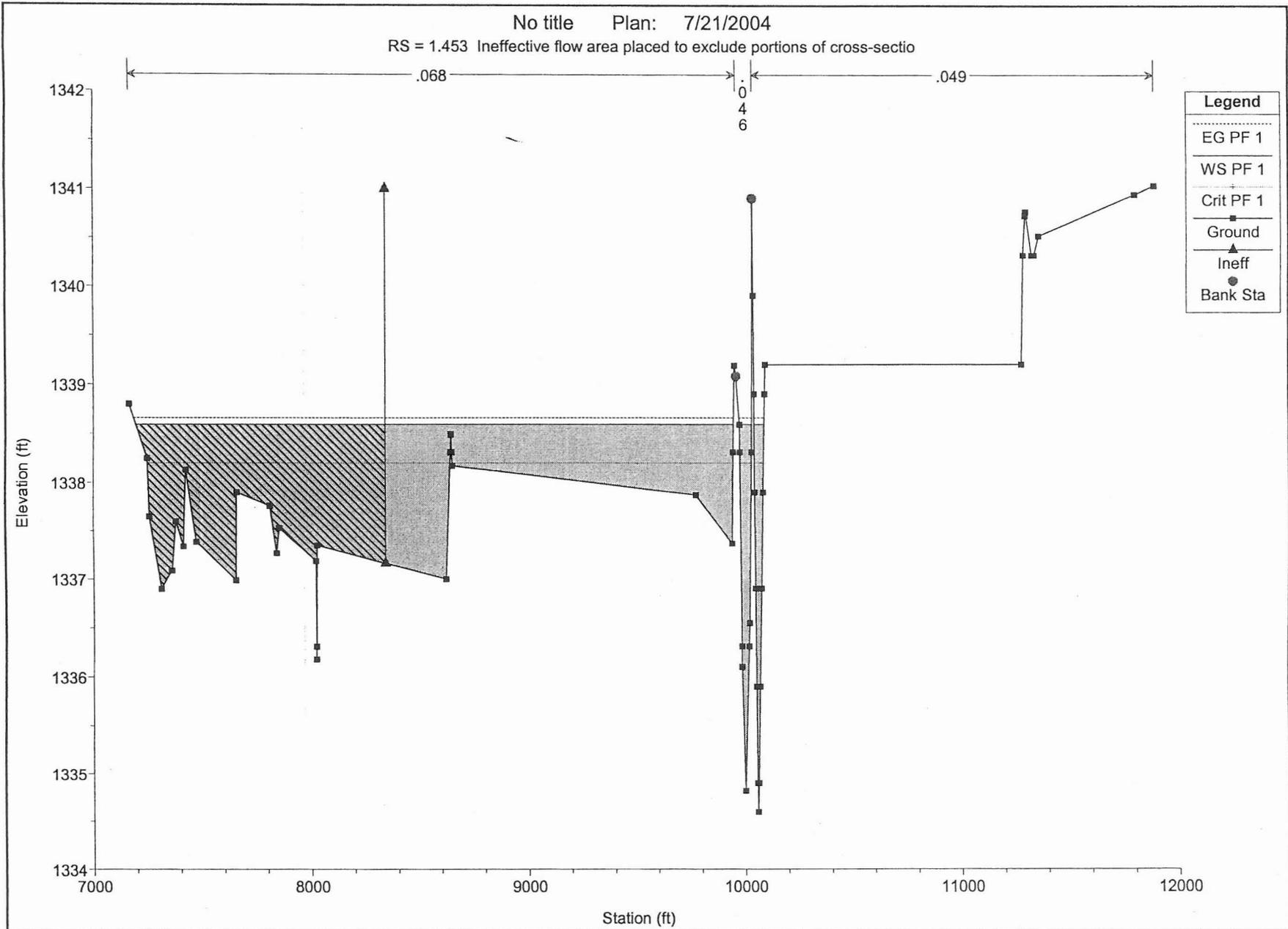
UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



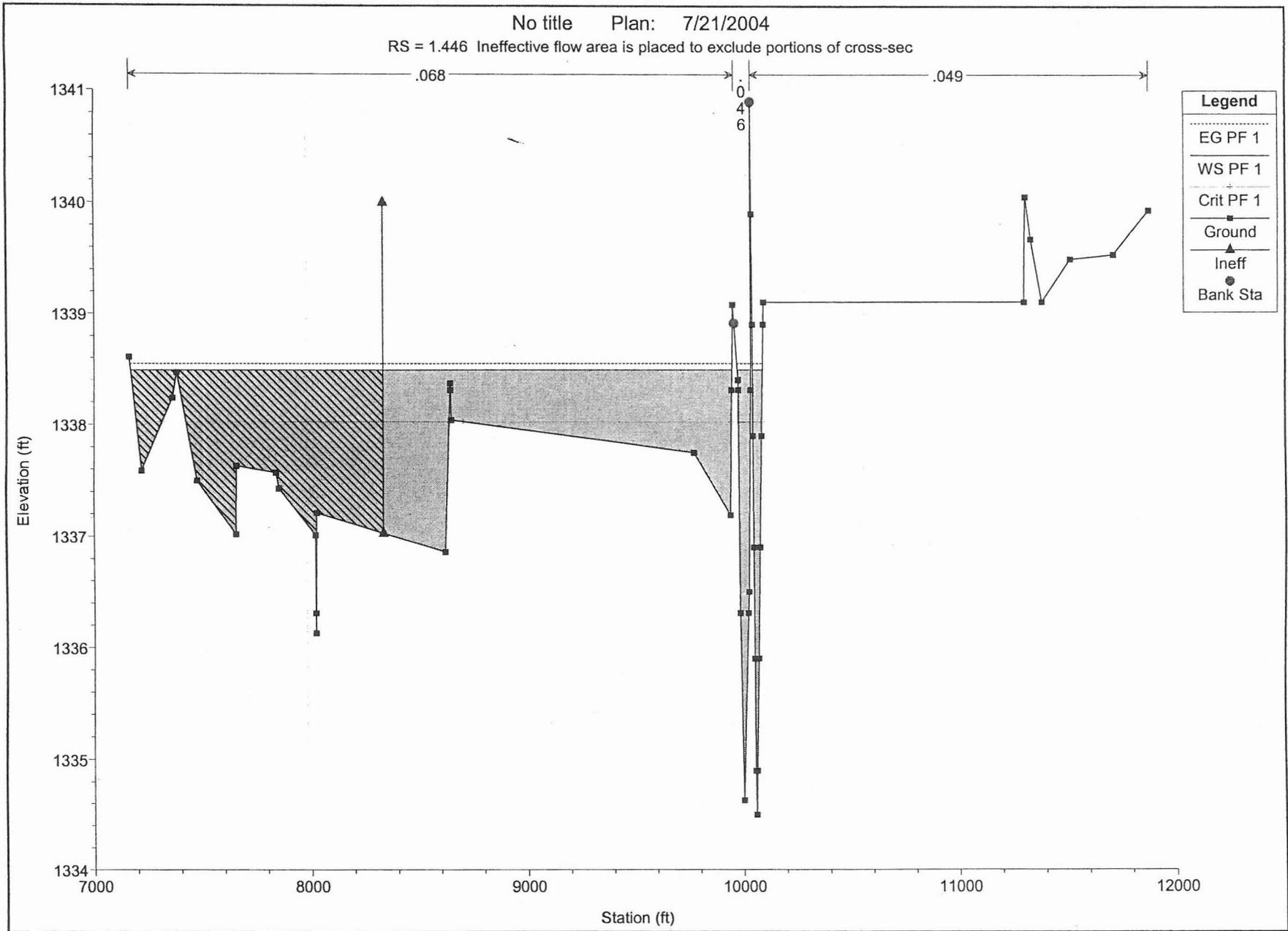
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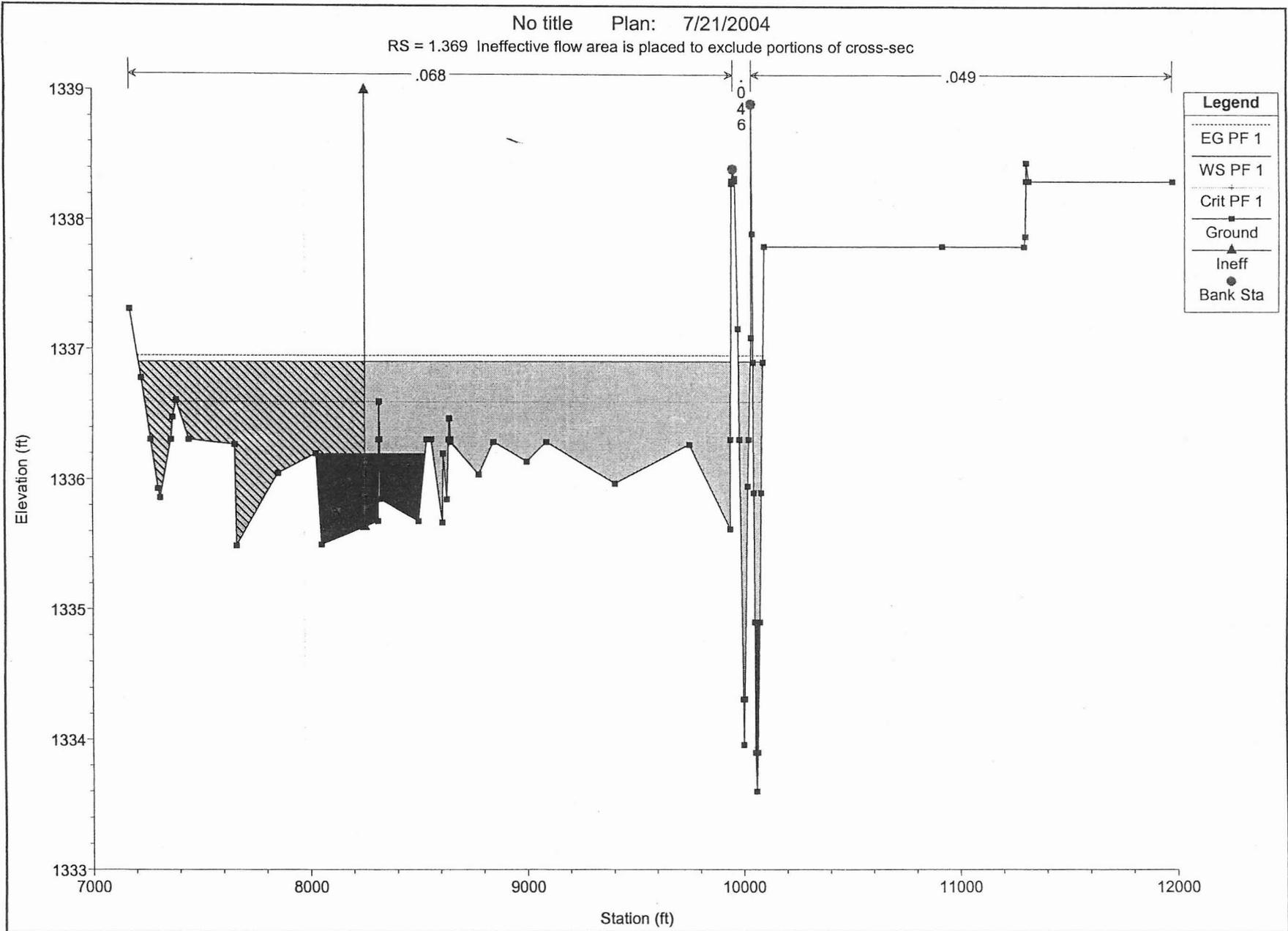
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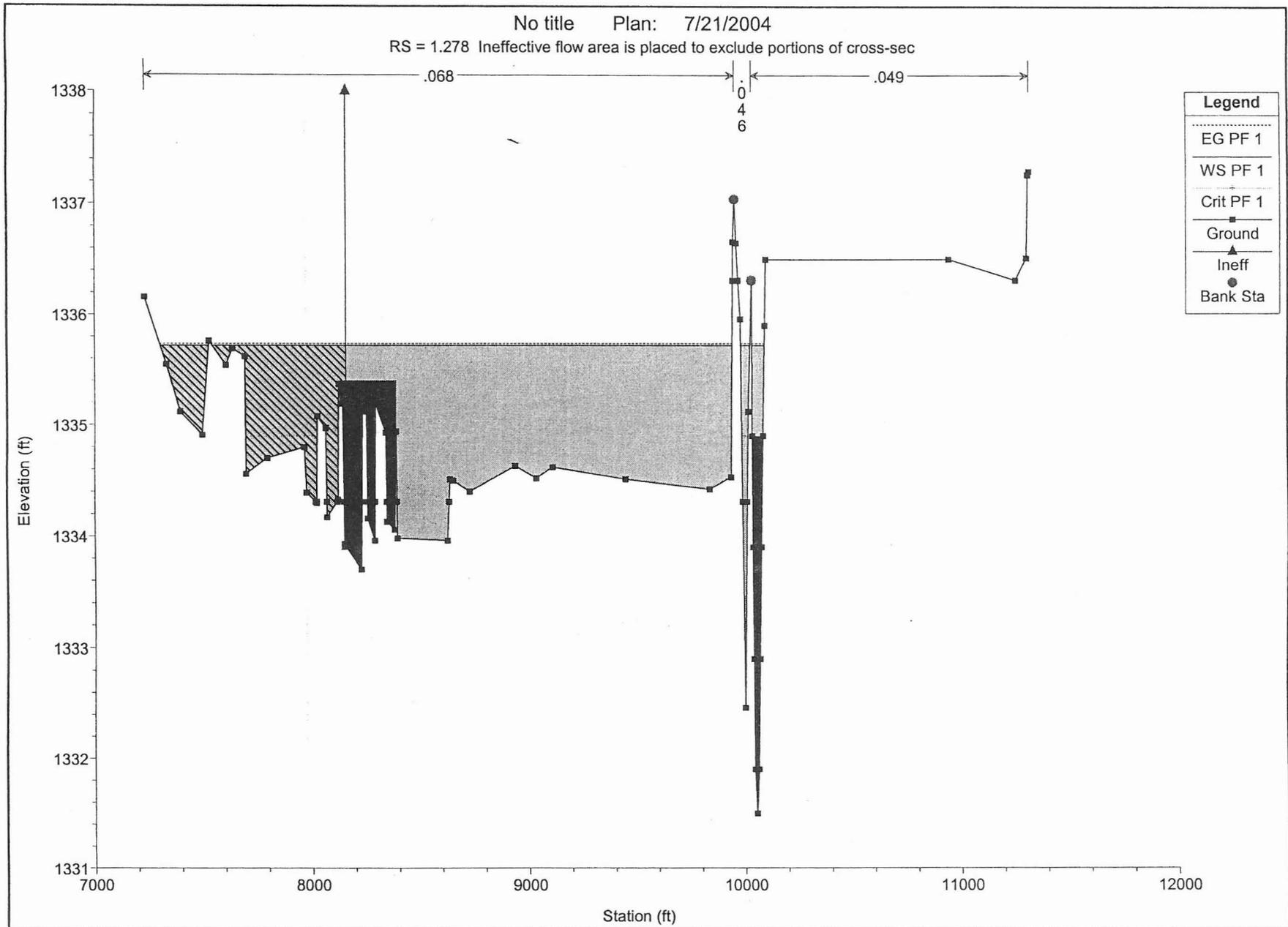
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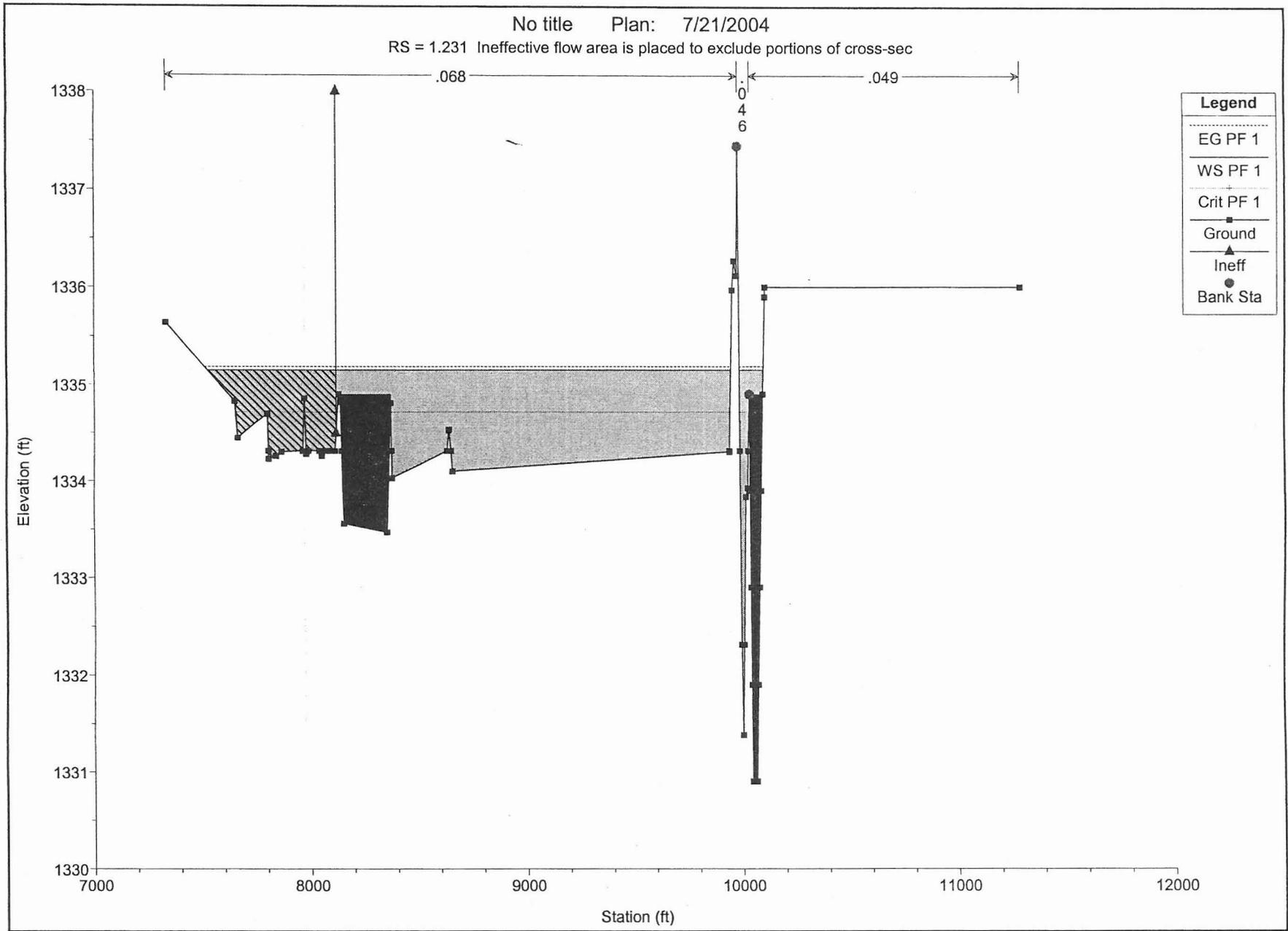
UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



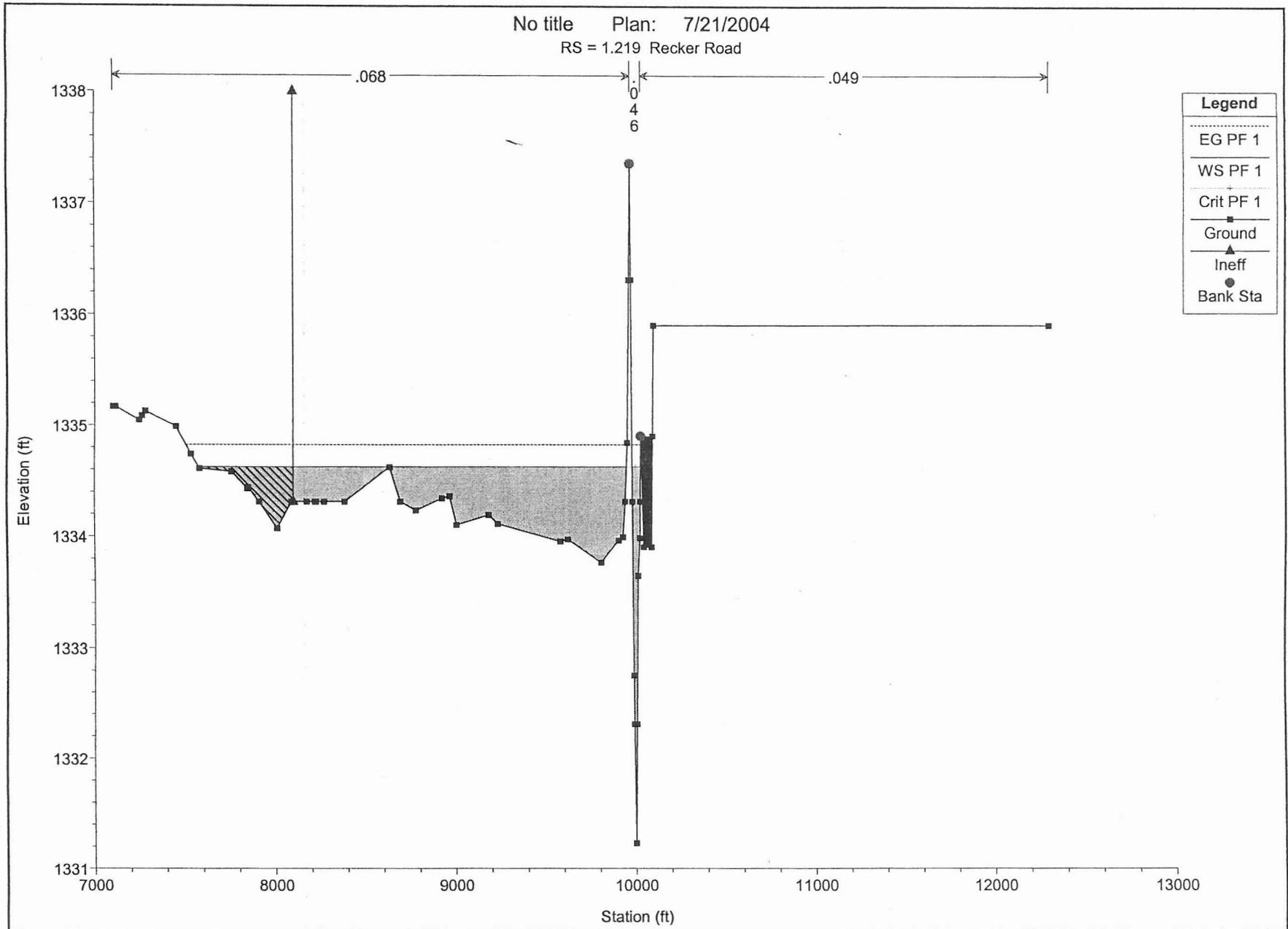
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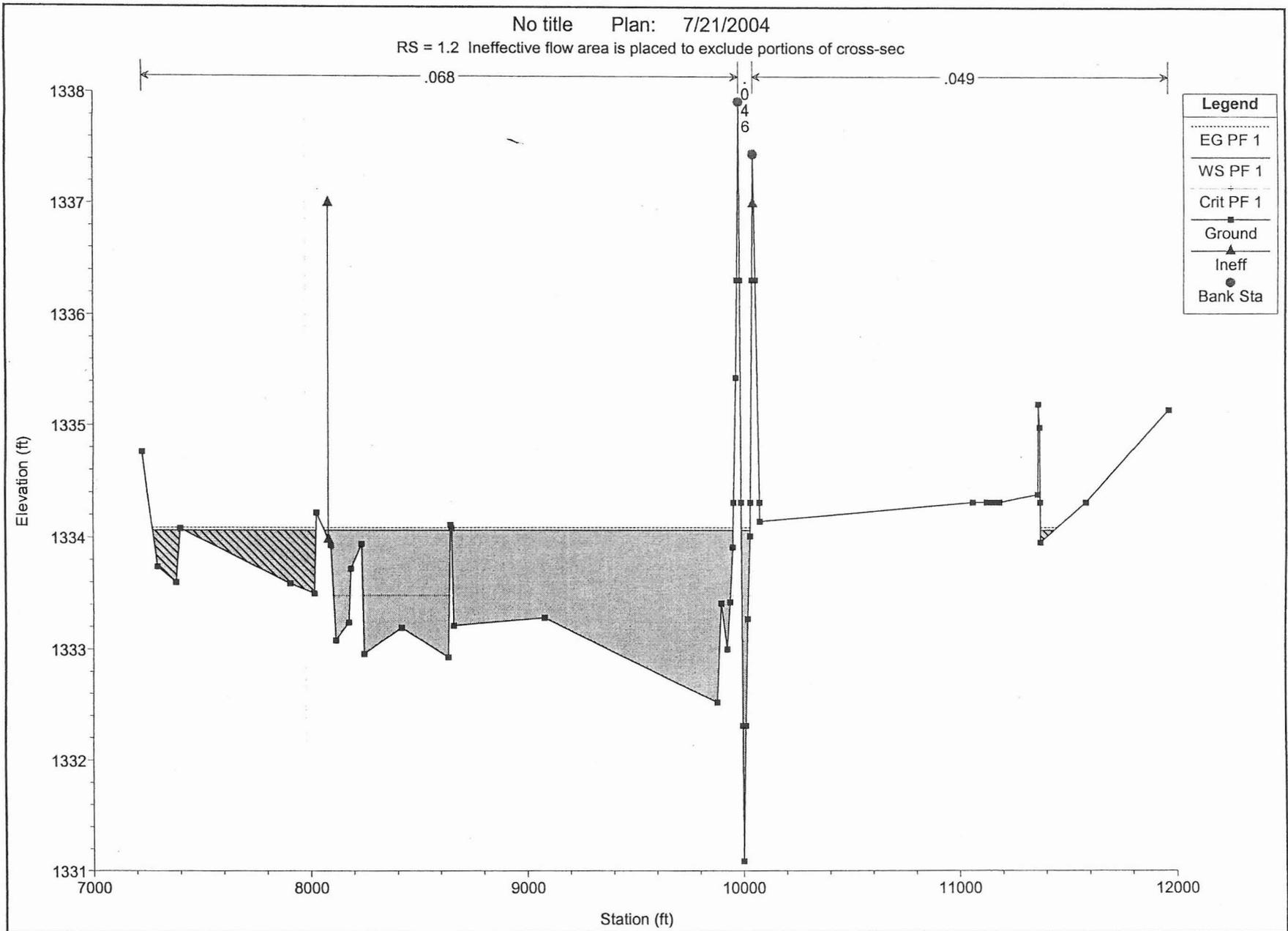
UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



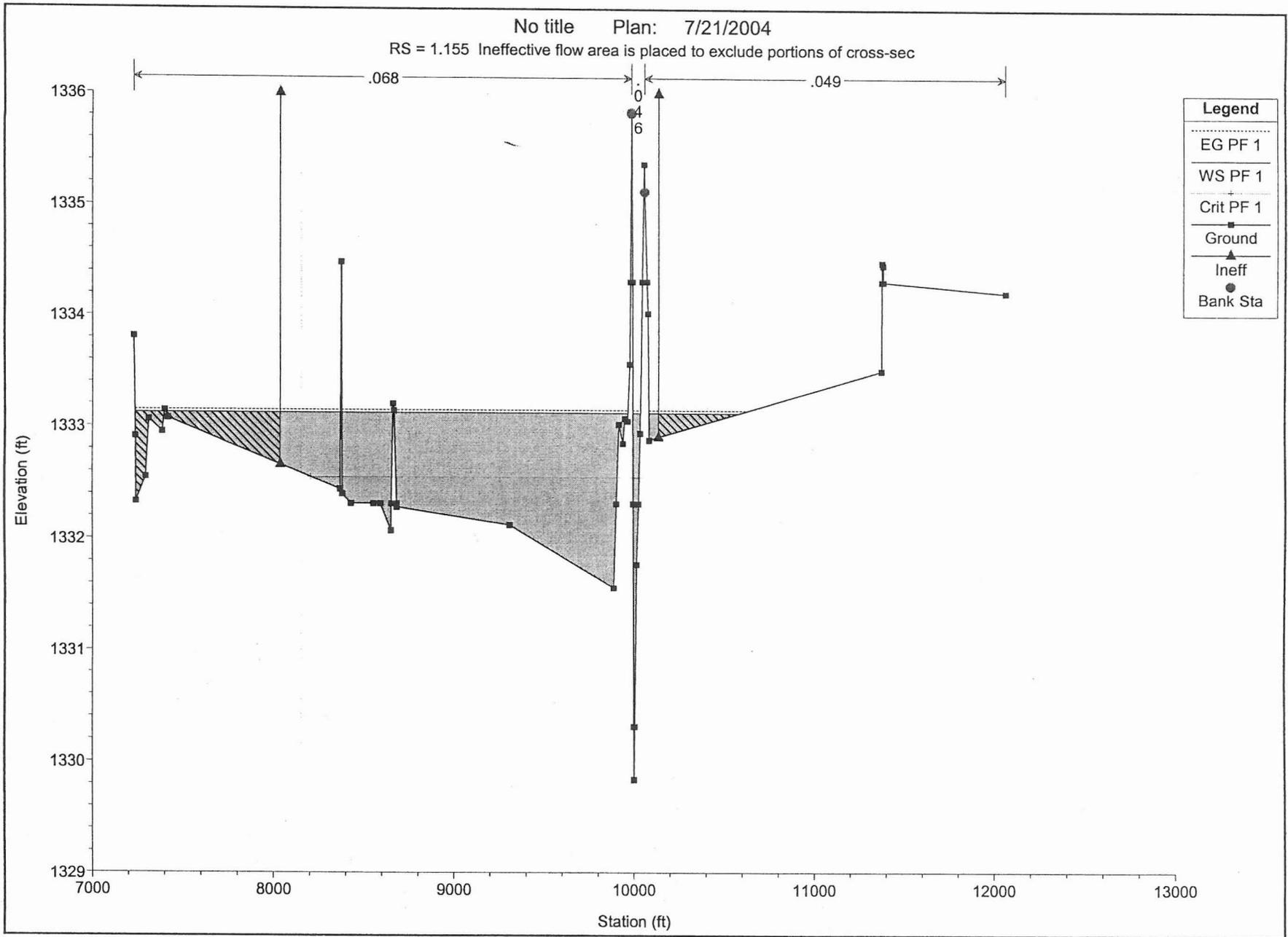
UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL



UPDATED HEC-RAS MODEL, JULY 2004, WOOD/PATEL

**APPENDIX B**

**Revised Work Study Maps (Sheets 3 and 4)**



MATCH SHEET 3 OF 10



MATCH SHEET 5 OF 10

**FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY  
SONOQUI WASH.  
FLOODPLAIN DELINEATION  
CONTRACT NO. FCD 2002C033-2**

**LEGEND**

- ZONE AE
- ZONE A
- ZONE A01
- ZONE A02
- ZONE X (SHADED)
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION
- ELEVATION REFERENCE MARK
- BASE FLOOD ELEVATIONS
- ZONE DESIGNATIONS **ZONE AE**
- SECTION LINE
- CORPORATE LIMITS: QUEEN CREEK LIMIT AND GILBERT LIMIT
- COUNTY BOUNDARY
- LIMITS OF DETAILED STUDY
- LIMITS OF STUDY

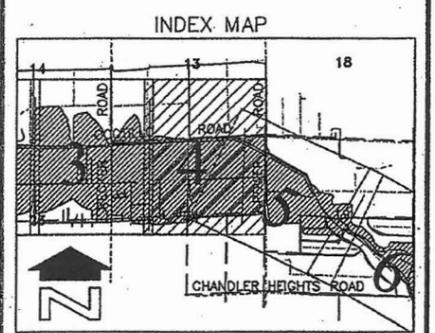
**ELEVATION REFERENCE MARKS**

NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1346	1348.40	MCHD Brass Cap in hand hole in Power Road, being the west 1/4 corner of Section 18, Township 2 South, Range 7 East.
1351	1353.65	Rebar in hand hole at the intersection of Brooks Farms Road and Power Road, being the west 1/4 corner of Section 19, Township 2 South, Range 7 East.

**NOTES**

SHEET 4: TOWNSHIP 2 SOUTH, RANGE 6 EAST



200' 0' 200' 400'  
SCALE: 1" = 200'  
CONTOUR INTERVAL = 2 FEET

**Entellus** 2555 N. 44th Street - Suite 155  
Phoenix, AZ 85018-5879  
Tel: 602.344.2558  
Fax: 602.344.8947  
E-mail: www.entellus.com

DESIGN	BY AMG	DATE 9/03	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	9/03	RECOMMENDED BY: DATE
PLANS	KBA/RJR	11/03	APPROVED BY: DATE
PLANS CHK.	HAA	11/03	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:			SHEET 4 of 10

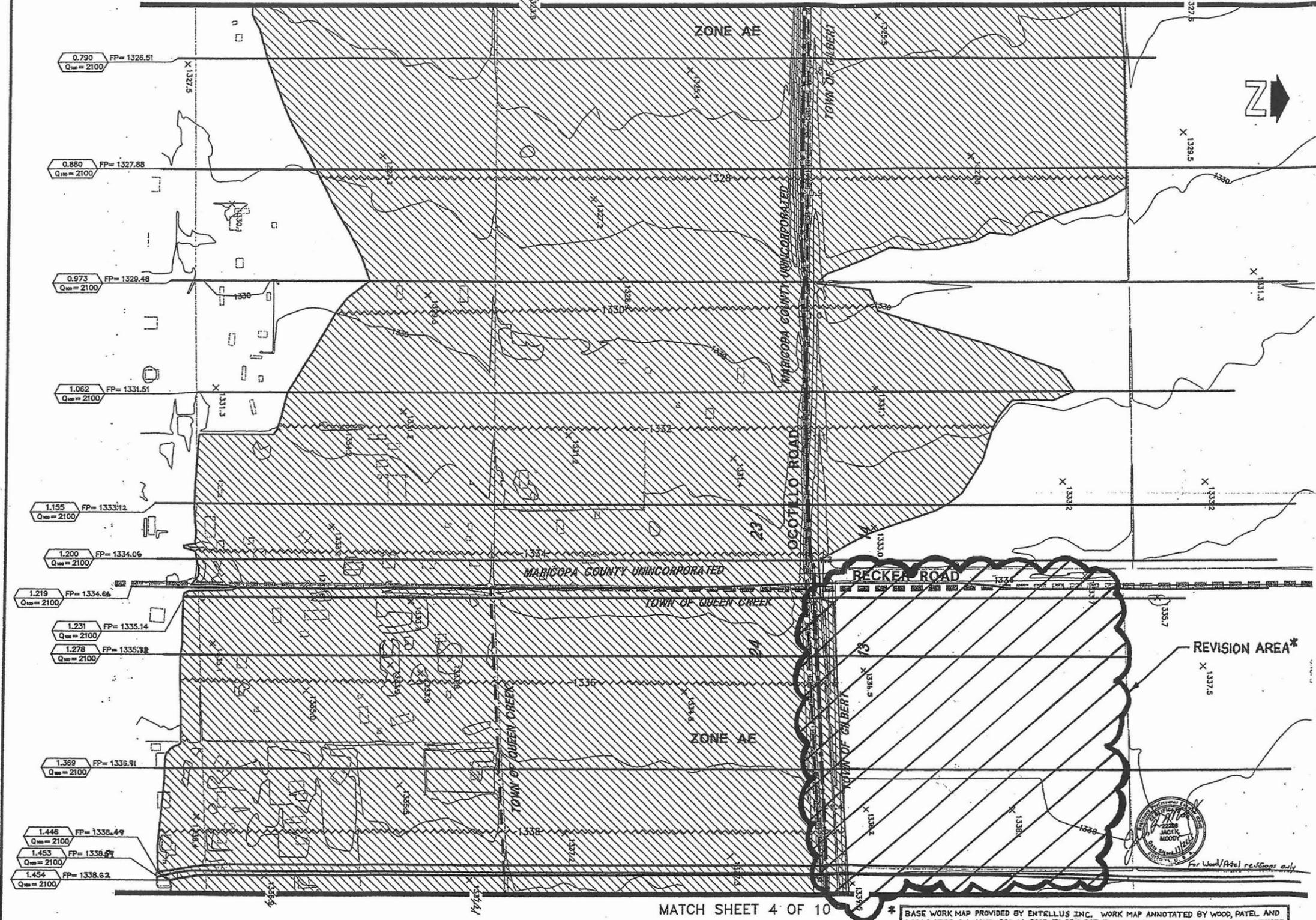
BASE WORK MAP PROVIDED BY ENTELLUS INC. WORK MAP ANNOTATED BY WOOD, PATEL AND ASSOCIATES ON NOVEMBER 26, 2003 TO REFLECT ENGINEERED FILL PLACED BETWEEN RECKER ROAD AND POWER ROAD NORTH OF COTILLO ROAD.



For Wood/Patel revisions only

A:\310\310001\Final\entellus\Draw\plan\_02.dwg DATE: 11/19/03

MATCH SHEET 2 OF 10



MATCH SHEET 4 OF 10

**FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY**  
SONOQUI WASH  
FLOODPLAIN DELINEATION  
CONTRACT NO. FCD 2002C033-2

**LEGEND**

- ZONE AE
- ZONE A
- ZONE AO1
- ZONE AO2
- ZONE X (SHADED)
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION
- ELEVATION REFERENCE MARK
- BASE FLOOD ELEVATIONS
- ZONE DESIGNATIONS **ZONE AE**
- SECTION LINE
- CORPORATE LIMITS: QUEEN CREEK LIMIT AND GILBERT LIMIT
- COUNTY BOUNDARY
- LIMITS OF DETAILED STUDY
- LIMITS OF STUDY

**ELEVATION REFERENCE MARKS**

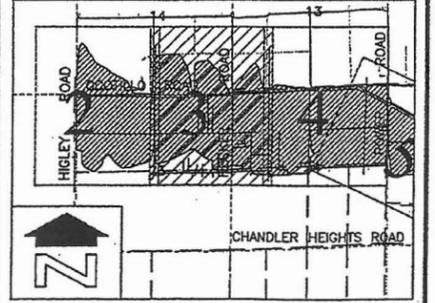
NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1315	1318.09	ADOT Brass Cap in hand hole at Higley Road crossing of Sonoqui Wash, being on the northwest corner of Section 23, Township 2 South, Range 6 East.
1316	1318.66	ADOT Brass Cap in hand hole in Higley Road, being the west 1/4 corner of Section 23, Township 2 South, Range 6 East.
1326	1328.32	ADOT Brass Cap in hand hole in Higley Road, being the west 1/4 corner of Section 14, Township 2 South, Range 6 East.

**NOTES**

SHEET 3: TOWNSHIP 2 SOUTH, RANGE 6 EAST

**INDEX MAP**



200' 0' 200' 400'  
SCALE: 1" = 200'  
CONTOUR INTERVAL = 2 FEET

		2555 N. 44th Street Suite 125 Phoenix, AZ 85008-8279 Tel: 602-944-2556 Fax: 602-944-8847 E-mail: www.Entellus.com	
DESIGN	BY: AMG	DATE: 9/03	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	9/03	RECOMMENDED BY:
PLANS	KBA/RJR	11/03	APPROVED BY: DATE
PLANS CHK.	HAA	11/03	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:		DATE:	SHEET 3 of 10

\* BASE WORK MAP PROVIDED BY ENTELLUS INC. WORK MAP ANNOTATED BY WOOD, PATEL AND ASSOCIATES ON NOVEMBER 26, 2003 TO REFLECT ENGINEERED FILL PLACED BETWEEN BECKER ROAD AND POWER ROAD NORTH OF OCOTILLO ROAD.

RE: 3101010001.dwg DATE: 11/18/03

PLIGHT DATE 11-5-97. Revised: 06-06-03  
BY: AERIAL MAPPING COMPANY INC.

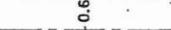
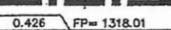
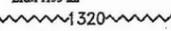
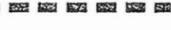
THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS  
1" = 200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY  
DATA PROVIDED BY COLLINS/PMA CONSULTING ENGINEERS, INC.

MATCH SHEET 3 OF 10

MATCH SHEET 5 OF 10

FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY  
SONOQUI WASH  
FLOODPLAIN DELINEATION  
CONTRACT NO. FCD 2002C033-2

LEGEND

- ZONE AE 
- ZONE A 
- ZONE AO1 
- ZONE AO2 
- ZONE X (SHADED) 
- HYDRAULIC BASE LINE WITH RIVER MILE 
- CROSS SECTION  0.426 FP= 1318.01  
Q<sub>100</sub> = 3920
- ELEVATION REFERENCE MARK  ERM 1153 Δ
- BASE FLOOD ELEVATIONS  1320
- ZONE DESIGNATIONS **ZONE AE**
- SECTION LINE 
- CORPORATE LIMITS: QUEEN CREEK LIMIT AND GILBERT LIMIT 
- COUNTY BOUNDARY 
- LIMITS OF DETAILED STUDY 
- LIMITS OF STUDY 

ELEVATION REFERENCE MARKS

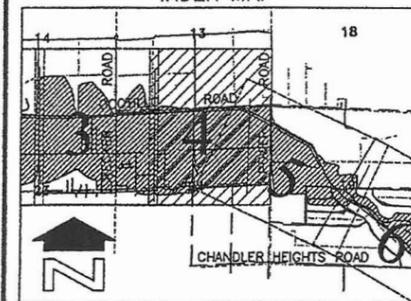
NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1346	1348.40	MCHD Brass Cap in hand hole in Power Road, being the west 1/4 corner of Section 18, Township 2 South, Range 7 East.
1351	1353.65	Rebar in hand hole at the intersection of Brooks Farms Road and Power Road, being the west 1/4 corner of Section 19, Township 2 South, Range 7 East.

NOTES

SHEET 4: TOWNSHIP 2 SOUTH, RANGE 6 EAST

INDEX MAP



200' 0' 200' 400'  
SCALE: 1" = 200'  
CONTOUR INTERVAL = 2 FEET

**Entellus**  
2255 N. 44th Street, Suite 135  
Phoenix, AZ 85008-8279  
Tel: 602.944.5556  
Fax: 602.944.8347  
E-mail: www.entellus.com

DESIGN	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	AMG	9/03	
PLANS	KBA/RJR	11/03	RECOMMENDED BY:
PLANS CHK.	HAA	11/03	APPROVED BY:
SUBMITTED BY:			DATE
			DATE

\* BASE WORK MAP PROVIDED BY ENTELLUS INC. WORK MAP ANNOTATED BY WOOD, PATEL AND ASSOCIATES ON NOVEMBER 26, 2003 TO REFLECT ENGINEERED FILL PLACED BETWEEN RECKER ROAD AND POWER ROAD NORTH OF OCOTILLO ROAD.



For Wood/Patel revision only

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS  
1" = 200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY  
DATA PROVIDED BY COLLINS/PMA CONSULTING ENGINEERS, INC.

R:\101310001\Final... 11/18/03

FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY  
SONOQUI WASH  
FLOODPLAIN DELINEATION  
CONTRACT NO. FCD 2002C033-2

MATCH SHEET 2 OF 10



LEGEND

- ZONE AE
- ZONE A
- ZONE A01
- ZONE A02
- ZONE X (SHADED)
- HYDRAULIC BASE LINE WITH RIVER MILE
- CROSS SECTION
- ELEVATION REFERENCE MARK
- BASE FLOOD ELEVATIONS
- ZONE DESIGNATIONS **ZONE AE**
- SECTION LINE
- CORPORATE LIMITS: QUEEN CREEK LIMIT AND GILBERT LIMIT
- COUNTY BOUNDARY
- LIMITS OF DETAILED STUDY
- LIMITS OF STUDY

ELEVATION REFERENCE MARKS

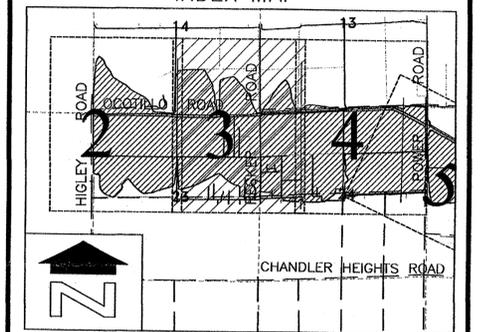
NOTE: ALL ELEVATIONS ARE BASED ON, NORTH AMERICAN VERTICAL DATUM OF 1988

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1315	1318.09	ADOT Brass Cap in hand hole at Higley Road crossing of Sonoqui Wash, being on the northwest corner of Section 23, Township 2 South, Range 6 East.
1316	1318.66	ADOT Brass Cap in hand hole in Higley Road, being the west 1/4 corner of Section 23, Township 2 South, Range 6 East.
1326	1328.32	ADOT Brass Cap in hand hole in Higley Road, being the west 1/4 corner of Section 14, Township 2 South, Range 6 East.

NOTES

SHEET 3: TOWNSHIP 2 SOUTH, RANGE 6 EAST

INDEX MAP



SCALE: 1" = 200'  
CONTOUR INTERVAL = 2 FEET

**Entellus**  
2255 N. 44th Street, Suite 125  
Phoenix, AZ 85008-2279  
Tel: 602.244.2656  
Fax: 602.244.8947  
E-mail: www.Entellus.com

DESIGN	BY	DATE	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA	9/03	RECOMMENDED BY: DATE
PLANS	KBA/RJR	11/03	APPROVED BY: DATE
PLANS CHK.	HAA	11/03	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:			SHEET 3 OF 10

BASE WORK MAP PROVIDED BY ENTELLUS INC. WORK MAP ANNOTATED BY WOOD, PATEL AND ASSOCIATES ON NOVEMBER 26, 2003 TO REFLECT ENGINEERED FILL PLACED BETWEEN RECKER ROAD AND POWER ROAD NORTH OF OCOTILLO ROAD.

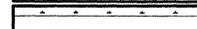
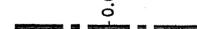
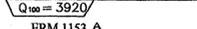
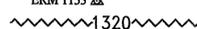
MATCH SHEET 4 OF 10

MATCH SHEET 3 OF 10

MATCH SHEET 5 OF 10

FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY  
SONOQUI WASH  
FLOODPLAIN DELINEATION  
CONTRACT NO. FCD 2002C033-2

LEGEND

- ZONE AE 
- ZONE A 
- ZONE A01 
- ZONE A02 
- ZONE X (SHADED) 
- HYDRAULIC BASE LINE WITH RIVER MILE 
- CROSS SECTION 
- ELEVATION REFERENCE MARK 
- BASE FLOOD ELEVATIONS 
- ZONE DESIGNATIONS **ZONE AE** 
- SECTION LINE 
- CORPORATE LIMITS: QUEEN CREEK LIMIT AND GILBERT LIMIT 
- COUNTY BOUNDARY 
- LIMITS OF DETAILED STUDY 
- LIMITS OF STUDY 

ELEVATION REFERENCE MARKS

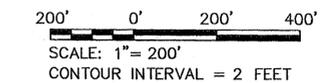
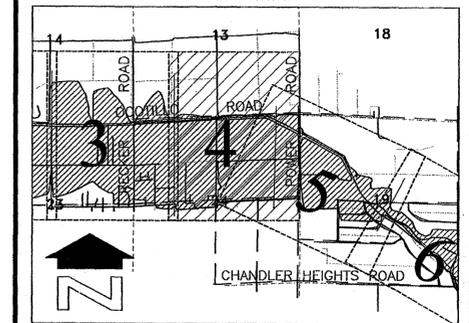
NOTE: ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988

I.D. NUMBER	ELEV. (FT)	DESCRIPTION/LOCATION
1346	1348.40	MCHD Brass Cap in hand hole in Power Road, being the west 1/4 corner of Section 18, Township 2 South, Range 7 East.
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NOTES

SHEET 4: TOWNSHIP 2 SOUTH, RANGE 6 EAST

INDEX MAP



BASE WORK MAP PROVIDED BY ENTELLUS INC. WORK MAP ANNOTATED BY WOOD, PATEL AND ASSOCIATES ON NOVEMBER 26, 2003 TO REFLECT ENGINEERED FILL PLACED BETWEEN RECKER ROAD AND POWER ROAD NORTH OF OCOTILLO ROAD.



For Wood/Patel revisions only

 2255 N. 44th Street Suite 125 Phoenix, AZ 85008-3279 Tel 602.244.2566 Fax 602.244.0947 E-mail www.Entellus.com		
DESIGN	BY AMG DATE 9/03	FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
DESIGN CHK.	HAA 9/03	RECOMMENDED BY: DATE
PLANS	KBA/RJR 11/03	APPROVED BY: DATE
PLANS CHK.	HAA 11/03	CHIEF ENGINEER AND GENERAL MANAGER
SUBMITTED BY:	DATE:	SHEET 4 OF 10

THIS MAP WAS PREPARED BY PHOTOGRAMMETRIC METHODS TO NATIONAL MAP ACCURACY STANDARDS 1" = 200' HORIZONTAL SCALE AND 2' CONTOUR INTERVALS AND BASED ON GROUND CONTROL SURVEY DATA PROVIDED BY COLLINS/PINA CONSULTING ENGINEERS, INC.

R:\310\310001\Final-CD\Hydraulics\Drawn\plan\_02.dwg DATE: 11/18/03

FLIGHT DATE 11-5-97. Revised : 06-06-03  
BY: AERIAL MAPPING COMPANY INC.

**APEENDIX C**

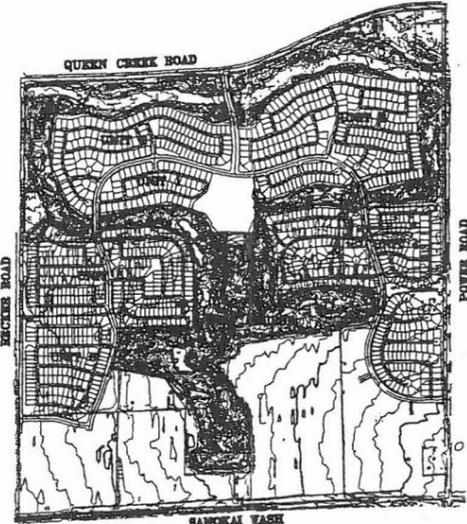
**As-Built Grading Plans**

**ENGINEERS NOTES**

- MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THESE PLANS IN THEIR ENTIRETY.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE MAG STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTALS THEREOF PER THE TOWN OF GILBERT UNLESS SPECIFIED OTHERWISE. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTALS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY USED DURING CONSTRUCTION UNLESS SPECIFICALLY ADDRESSED.
- THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THESE PLANS.
- THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
- A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL FOR BLUE STAKE (602-263-1100) 48 HOURS PRIOR TO ANY EXCAVATION. SALT RIVER PROJECT IS NOT WITH BLUE STAKE AND MUST BE CONTACTED SEPARATELY.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- ALL GRADING, EXCAVATION, PAVING, TRENCHING, PIPE BEDDING, AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS. SOILS REPORT AND PAVEMENT DESIGN WERE PREPARED BY CONSTRUCTION, INSPECTION & TESTING CO. PROJECT NO. G00-0444V, DATED MARCH 31ST 1999.
- THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND THE CONTRACTOR TO COORDINATE THE PLACEMENT OF DRIVEWAYS TO AVOID CONFLICT WITH UTILITY LOCATIONS.
- THE CONTRACTOR SHALL COORDINATE INTERRUPTION OF S.R.P. FACILITIES WITH THE S.R.P. AREA WATER MASTER.
- CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE RELOCATION OF POWER POLES AND OTHER UTILITIES.
- THE CONTRACTOR SHALL ADJUST ALL VALVES, MANHOLES, CLEANOUTS, ETC., BOTH NEW AND OLD TO FINISH PAVEMENT GRADE PER STANDARD DETAILS.
- THE CONTRACTOR SHALL BE REQUIRED TO INSTALL A NIGHT TIE-IN FOR ANY NEW WATERLINE THAT WILL AFFECT EXISTING SERVICE SUFFICIENT TO WARRANT SAME IN THE OPINION OF THE TOWN OFF-SITE INSPECTOR.
- ALL IMPROVEMENTS WITHIN THE RETENTION BASIN AND/OR ROADWAY SHALL BE IN ACCORDANCE WITH THE LATEST TOWN OF GILBERT PROCEDURES FOR DEVELOPERS AND ENGINEERS.
- ALL EXISTING DITCHES AND CANALS THAT ARE REMOVED SHALL BE BACKFILLED AND COMPACTED PER REQUIREMENTS OF GEOTECHNICAL REPORT.
- THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, & PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN & MATCHING, PRIOR TO COMMENCEMENT OF GRADING, PAVING, CURB & GUTTER, OR OTHER SURFACE CONSTRUCTION. SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE DESIGN INTENT REFLECTED ON THE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL NOTIFY THE OWNERS AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.

**TRILOGY**  
**MASS GRADING PLANS**  
**GILBERT, ARIZONA**  
 A PORTION OF SECTION 13, T.2S., R.6E.,  
 OF THE G.& S.R.M., MARICOPA COUNTY, ARIZONA

**SHEET INDEX**  
 1 COVER SHEET  
 2 NOTES AND INDEX MAP  
 3-7 GRADING SHEETS



**LEGEND**

---	PROJECT BOUNDARY
---	ROADWAY CENTERLINE
---	PROPOSED RIGHT-OF-WAY
---	VERTICAL CURB & GUTTER
---	ROLL CURB & GUTTER
---	PROPOSED CONTOUR
---	EXISTING CONTOUR

NOTE:  
 1.9 FEET IS TO BE ADDED TO ELEVATIONS ON THESE PLANS TO ARRIVE AT THE NGVD 88 DATUM.

**OWNER/DEVELOPER**

SHEA COMM./SUNPOWER LLC  
 4734 EAST QUEEN CREEK ROAD  
 GILBERT, ARIZONA 85297  
 PH: (480) 988-5714  
 FAX: (480) 988-0280  
 CONTACT: JOAN SCARBROUGH

**ENGINEER**

WOOD, PATEL & ASSOCIATES INC.  
 1855 N. STAPLEY DRIVE  
 MESA, ARIZONA 85203  
 CONTACT: MICHAEL T. YOUNG, P.E.  
 PHONE No. (480) 834-3300  
 FAX No. (480) 834-3320

**PUBLIC UTILITIES**

WATER TOWN OF GILBERT  
 SEWER TOWN OF GILBERT  
 ELECTRIC SALT RIVER PROJECT  
 TELEPHONE QWEST  
 GAS SOUTHWEST GAS  
 WASTE DISPOSAL TOWN OF GILBERT

**BENCHMARK**

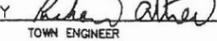
GLO BRASS CAP IN HANDHOLE @  
 INTERSECTION OF POWER ROAD AND  
 RITTENHOUSE ROAD  
 ELEVATION = 1332.63  
 (TOWN OF GILBERT DATUM)

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY THAT THE "AS-BUILT" MEASUREMENTS AS SHOWN OR NOTED HERE ON WERE MADE BY MYSELF OR UNDER MY SUPERVISION AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SIGNATURE:   
 SEAL: 

**APPROVAL**

BY:  DATE 4-22-03  
 TOWN ENGINEER

**RELATED PROJECTS FOR REFERENCE**

- TRILOGY UNIT 4 IMPROVEMENTS PLANS W/P PLAN # 001270
- TRILOGY UNIT 5A IMPROVEMENTS PLANS T.O.G. # ENG 2002-00758
- TRILOGY UNIT 5 IMPROVEMENTS PLANS T.O.G. # ENG 2002-0659
- TRILOGY UNIT 6 IMPROVEMENTS PLANS W/P PLAN # 011406
- TRILOGY RECKER ROAD INFRASTRUCTURE PLANS W/P PLAN # 011396

**UTILITY NOTES**

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES AND THE WORK CONTAINED IN THESE PLANS HAS BEEN APPROVED BY THESE COMPANIES WITHIN THEIR AREA OF INTEREST. THE SIZE AND LOCATIONS, AS SHOWN, OF THE GAS, TELEPHONE AND POWER LINES, AND CONNECTIONS AGREE WITH THE INFORMATION CONTAINED IN THE UTILITY COMPANY RECORDS. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY /COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

**UTILITIES**

SALT RIVER POWER DISTRICT	VINCE FEATHERLY COMPANY REPRESENTATIVE CONTACTED	DATE
SRVWA	BOB MAURER COMPANY REPRESENTATIVE CONTACTED	DATE
QWEST COMMUNICATIONS	LINDA SALAS COMPANY REPRESENTATIVE CONTACTED	DATE
SOUTHWEST GAS COMPANY	DOMINIQUE MITCHELL COMPANY REPRESENTATIVE CONTACTED	DATE
COX COMMUNICATIONS	WILLIAM WRIGHT COMPANY REPRESENTATIVE CONTACTED	DATE

**GENERAL NOTES:**

- AVIGATION EASEMENTS, IN A FORM ACCEPTABLE TO THE TOWN, SHALL BE EXECUTED BEFORE A BUILDING PERMIT MAY BE ISSUED.
- THIS PROPERTY, DUE TO ITS PROXIMITY TO WILLIAMS GATEWAY AIRPORT, IS LIKELY TO EXPERIENCE AIRCRAFT OVERFLIGHTS, WHICH COULD GENERATE NOISE LEVELS WHICH MAY BE OF CONCERN TO SOME INDIVIDUALS.
- THE CONSTRUCTION, ALTERATION, MOVING, PARTIAL DEMOLITION, REPAIR AND USE OF ANY BUILDING OR STRUCTURE SHALL COMPLY WITH THE SOUND ATTENUATION STANDARDS, AS REFERENCED IN THE WRPS APPENDIX. IN ORDER TO ACHIEVE AN EXTERIOR TO INTERIOR NOISE LEVEL REDUCTION (NLR) OF 20 DECIBELS, SOME FLEXIBILITY MAY BE ACHIEVED, AS REFERENCED IN SECTION 105 OF THE 1991 UNIFORM BUILDING CODE (UBC).
- IN ACCORDANCE WITH AAC R18-4-119, ALL MATERIALS ADDED AFTER JANUARY 1, 1993 WHICH MAY COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM TO NATIONAL SANITATION FOUNDATION STANDARDS 60 AND 61.

NOTE  
 ANY ALTERATIONS TO THESE PLANS WITHOUT PRIOR REVIEW AND APPROVAL BY THE TOWN ENGINEER WILL VOID THIS ORIGINAL APPROVAL



**EARTHWORK QUANTITIES**

FILL (RAW) 92,816 C.Y.  
 CUT (RAW) 20,499 C.Y.

QUANTITIES ARE IN PLACE ESTIMATES. NO SHRINK OR SWELL IS ASSUMED. NO GROUND LOSS IS INCLUDED.



TRILOGY  
 MASS GRADING PLANS  
 COVER SHEET



**WOOD/PATEL**  
 CIVIL ENGINEERS  
 HYDROLOGISTS  
 LAND SURVEYORS  
 1855 N. Stapley Drive  
 Mesa, AZ 85203  
 Phone: (480) 834-3300  
 Fax: (480) 834-3320  
 woodpatel.com

ENGINEER M. YOUNG  
 DESIGNER P. HAAS  
 CAD TECHNICIAN K. WICKOW  
 SCALE (HORIZONTAL) N/A  
 SCALE (VERTICAL) N/A  
 DATE 04/16/03  
 JOB NUMBER 021535  
 SHEET 1 OF 7

VERSION	DATE	DESCRIPTION	REVISION	DATE	DESCRIPTION
1	03/27/03	FIRST SUBMITTAL TO TOWN OF GILBERT			
2	04/09/03	BID SET OF PLANS			
3	04/16/03	APPROVAL SUBMITTAL			

ENG-2003-00547

**GRADING NOTES**

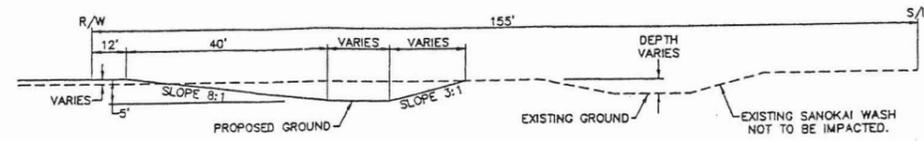
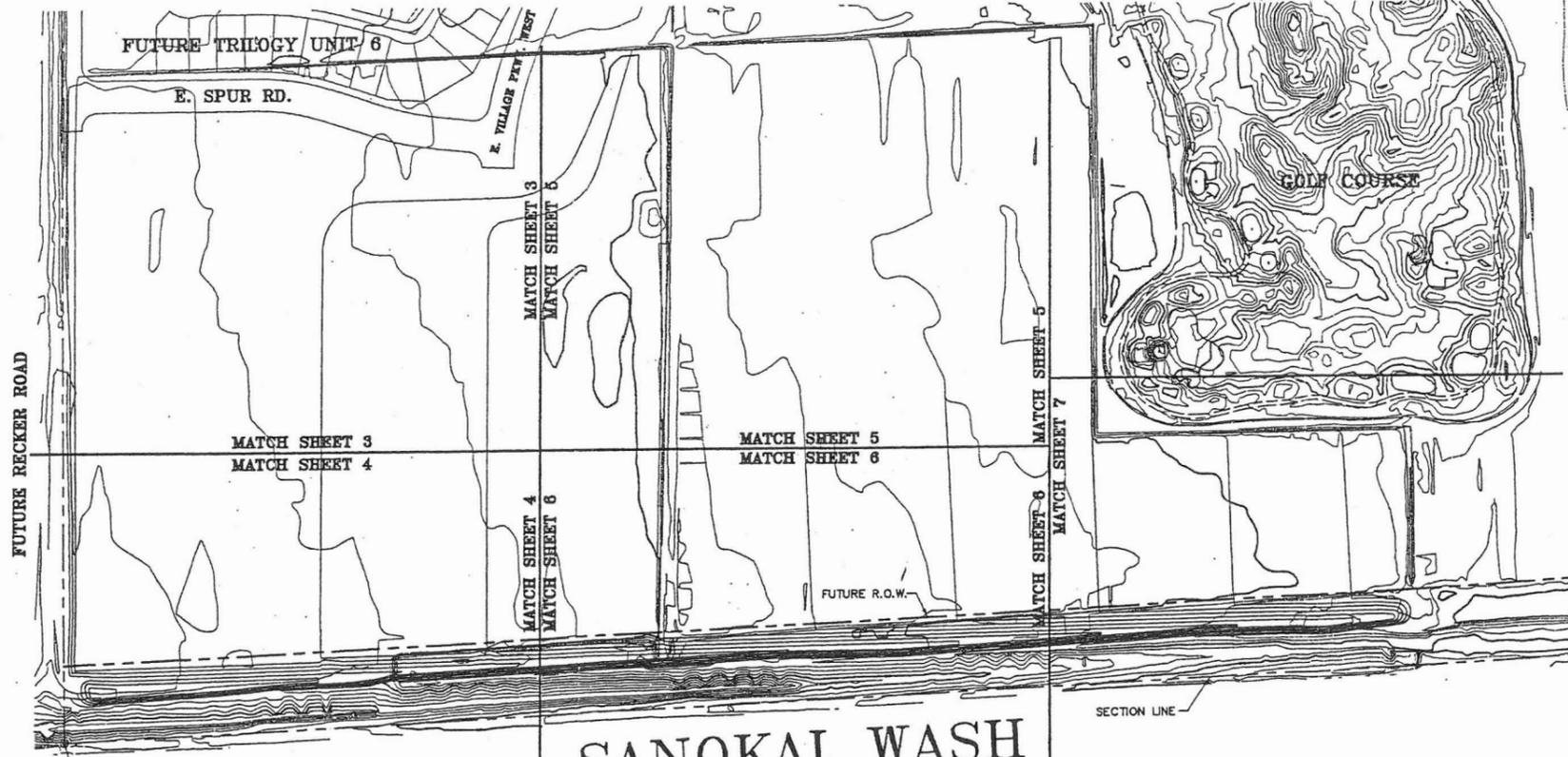
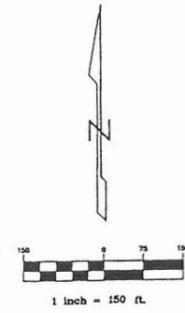
1. THE CONTRACTOR SHALL NOTIFY THE TOWN OF GILBERT ENGINEERING DEPARTMENT AT LEAST 24 HOURS IN ADVANCE OF ANY CONSTRUCTION FOR INSPECTION. 480-503-6000.
2. STAKING PAD AND/OR FINISH FLOOR ELEVATIONS IS THE RESPONSIBILITY OF THE DEVELOPER AND HIS ENGINEER.
3. DEVELOPER'S ENGINEER SHALL SUBMIT CERTIFICATION OF CONSTRUCTION BUILDING PAD ELEVATIONS PRIOR TO TOWN ACCEPTANCE OF PROJECT.
4. SOIL COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE TOWN ENGINEER'S OFFICE FOR BUILDING PADS WITH ONE FOOT (1') OR MORE FILL MATERIAL INDICATED.
5. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT HOMES FROM STORM RUNOFF MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY HOUSES.
6. A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION.
7. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOBSITE AT ALL TIMES. DEVIATION FROM THE PLAN MUST BE AN APPROVED PLAN.
8. EXCAVATION CONTRACTOR MUST GIVE LOCATION FOR WASTING EXCESS EXCAVATION AND A LETTER FROM THE OWNER GIVING PERMISSION FOR DUMPING PRIOR TO STARTING ONSITE CONSTRUCTION.
9. A THOROUGH ATTEMPT HAS BEEN MADE TO SHOW THE LOCATIONS OF ALL UNDERGROUND OBSTRUCTIONS AND UTILITY LINES IN THE WORK AREA. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OBSTRUCTIONS AND UTILITY LINES ENCOUNTERED DURING CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN THE AREA.
10. GRADING AND DRAINAGE PLAN APPROVAL INCLUDES: CONSTRUCTION OF ALL ONSITE SURFACE IMPROVEMENTS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN, INCLUDING BUT NOT LIMITED TO, RETENTION AREAS AND/OR OTHER DRAINAGE FACILITIES, DRAINAGE PATTERNS, WALLS, CURBING, ASPHALT PAVEMENT, AND BUILDING FLOOR ELEVATIONS.
11. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.
12. PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS, EARTHWORK QUANTITIES AND REQUIREMENTS OF THE WORK AND EXCESS OF DEFICIENCY IN EARTHWORK QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER/DEVELOPER OR ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.
13. THE ENGINEER WILL PERFORM FIELD SURVEYS FOR PAD ELEVATION CERTIFICATIONS UPON NOTIFICATION BY THE GRADING CONTRACTOR THAT THE PADS ARE COMPLETE AND READY FOR CERTIFICATION. IT IS UNDERSTOOD THAT THE CERTIFICATION PROVIDES ONLY A REPRESENTATIVE ELEVATION OF THE AVERAGE GRADE OF EACH LOT, BUILDING, OR UNIT PAD, AND SHALL NOT BE CONSTRUED TO INCLUDE YARD AND STREET SUBGRADE CERTIFICATION OR CERTIFICATION THAT THE ENTIRE PAD IS LEVEL. THAT IT WAS CONSTRUCTED IN THE DESIGNED LOCATION OR WAS GRADED TO THE CROSS-SECTION SET FORTH ON THE PLANS OR AS DESIGNATED IN THE SOILS REPORT.
14. THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL SURVEY STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OF IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.
15. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
16. THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
17. ALL RETENTION BASINS MUST DRAIN ANY STORM EVENT UP TO AND INCLUDING THE 50 YEAR STORM WITHIN 36 HOURS. OWNER(S) OF ANY BASIN FAILING TO MEET THIS REQUIREMENT MUST TAKE CORRECTIVE ACTION TO BRING THE BASIN INTO COMPLIANCE.
18. CLEARANCE FOR OCCUPATION OF ANY BUILDING IS DENIED UNTIL ALL GRADING AND DRAINAGE IMPROVEMENTS ARE COMPLETED.
19. ALL EARTHWORK CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD DETAILS AND/OR SPECIFICATIONS INCLUDING ANY SUPPLEMENTS THERETO AND THE SOILS REPORT AS PREPARED BY: CONSTRUCTION INSPECTION & TESTING COMPANY 2002 WEST NORTH LANE PHOENIX, ARIZONA 85027 PHONE: 602-264-5938.
20. CONTRACTOR SHALL COMPLY WITH THE PROVISION FOR TRAFFIC CONTROL AND BARRICADING AS PER CITY OF PHOENIX "TRAFFIC BARRICADE MANUAL".
21. ALL IMPROVEMENTS WITHIN THE RETENTION BASIN AND/OR ROADWAY PARKWAYS SHALL BE IN ACCORDANCE WITH THE LATEST TOWN OF GILBERT PROCEDURES FOR DEVELOPERS AND ENGINEERS.
22. A ROUGH GRADE PERMIT IS REQUIRED, CONTRACTOR SHALL OBTAIN.
23. A GRADING PERMIT IS REQUIRED APPLICATIONS FOR GRADING PERMITS MUST HAVE A PHOTO COPY OF THE MARICOPA COUNTY DUST CONTROL PERMIT ATTACHED TO THE COMPLETED FORM. CONTRACTOR SHALL OBTAIN.
24. CONTRACTOR IS ADVISED THAT AN EXCAVATION AND DIRT MOVING PERMIT IS REQUIRED BY THE MARICOPA COUNTY HEALTH DEPARTMENT AND THE TOWN OF GILBERT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THIS PERMIT AND COMPLY WITH ITS REQUIREMENTS.

**GRADING NOTES (CONT.)**

25. STORM WATER POLLUTION PREVENTION PLAN FOR NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM, REFER TO NOTICE OF INTENT FOR SPECIFIC OPERATOR.
26. ALL DRYWELLS SHOWN ON THIS PROJECT SHALL BE MAINTAINED BY THE OWNER(S) AND ARE TO BE REPLACED BY THE OWNER(S) WHEN THEY CEASE TO DRAIN THE SURFACE WATER IN A 36-HOUR PERIOD. REGULAR MAINTENANCE OF THE DRYWELL SITTING CHAMBER IS REQUIRED TO ACHIEVE THE BEST OPERATION OF THE DRYWELL.

**NOTES**

THESE PLANS ARE SUBJECT TO THE INTERPRETATION OF INTENT BY THE ENGINEER. ALL QUESTIONS REGARDING THESE PLANS SHALL BE PRESENTED TO THE ENGINEER. ANYONE WHO TAKES UPON HIMSELF THE INTERPRETATION OF THE DRAWINGS OR MAKES REVISIONS TO SAME WITHOUT CONFERRING WITH THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE CONSEQUENCES THEREOF.



**SANOKAI WASH/TRILOGY MASS GRADING CROSS-SECTION A-A**

NOTE:  
1.9 FEET IS TO BE ADDED TO ELEVATIONS ON THESE PLANS TO ARRIVE AT THE NGVD 88 DATUM.

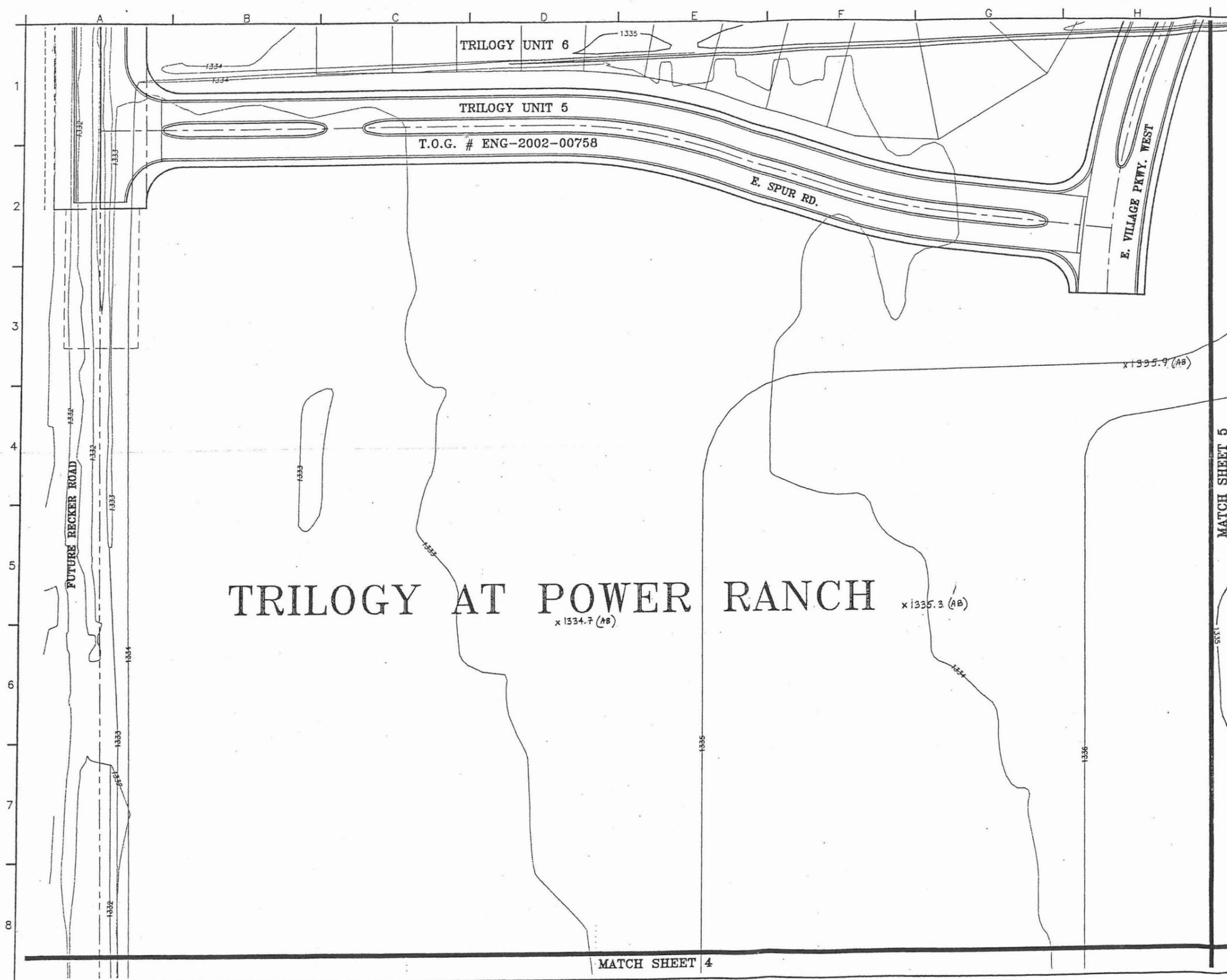


**TRILOGY**  
MASS GRADING PLANS  
NOTES AND INDEX MAP



**WOOD/PATEL**  
CIVIL ENGINEERS  
HYDROLOGISTS  
LAND SURVEYORS  
1855 N. Stapley Drive  
Mesa, AZ 85203  
Phone: (480) 834-3300  
Fax: (480) 834-3320  
woodpatel.com

ENGINEER: M. YOUNG  
DESIGNER: P. HAAS  
CAD TECHNICIAN: K. MICKOW  
SCALE (HORIZONTAL): N/A  
SCALE (VERTICAL): N/A  
DATE: 04/16/03  
JOB NUMBER: 021535  
SHEET: 2 OF 7  
ENC-2003-00587



# TRILOGY AT POWER RANCH

TRILOGY UNIT 6

TRILOGY UNIT 5

T.O.G. # ENG-2002-00758

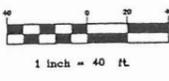
E. SPUR RD.

E. VILLAGE PKWY. WEST

FUTURE RECKER ROAD

MATCH SHEET 5

MATCH SHEET 4



TRILOGY  
MASS GRADING PLANS  
GRADING PLAN



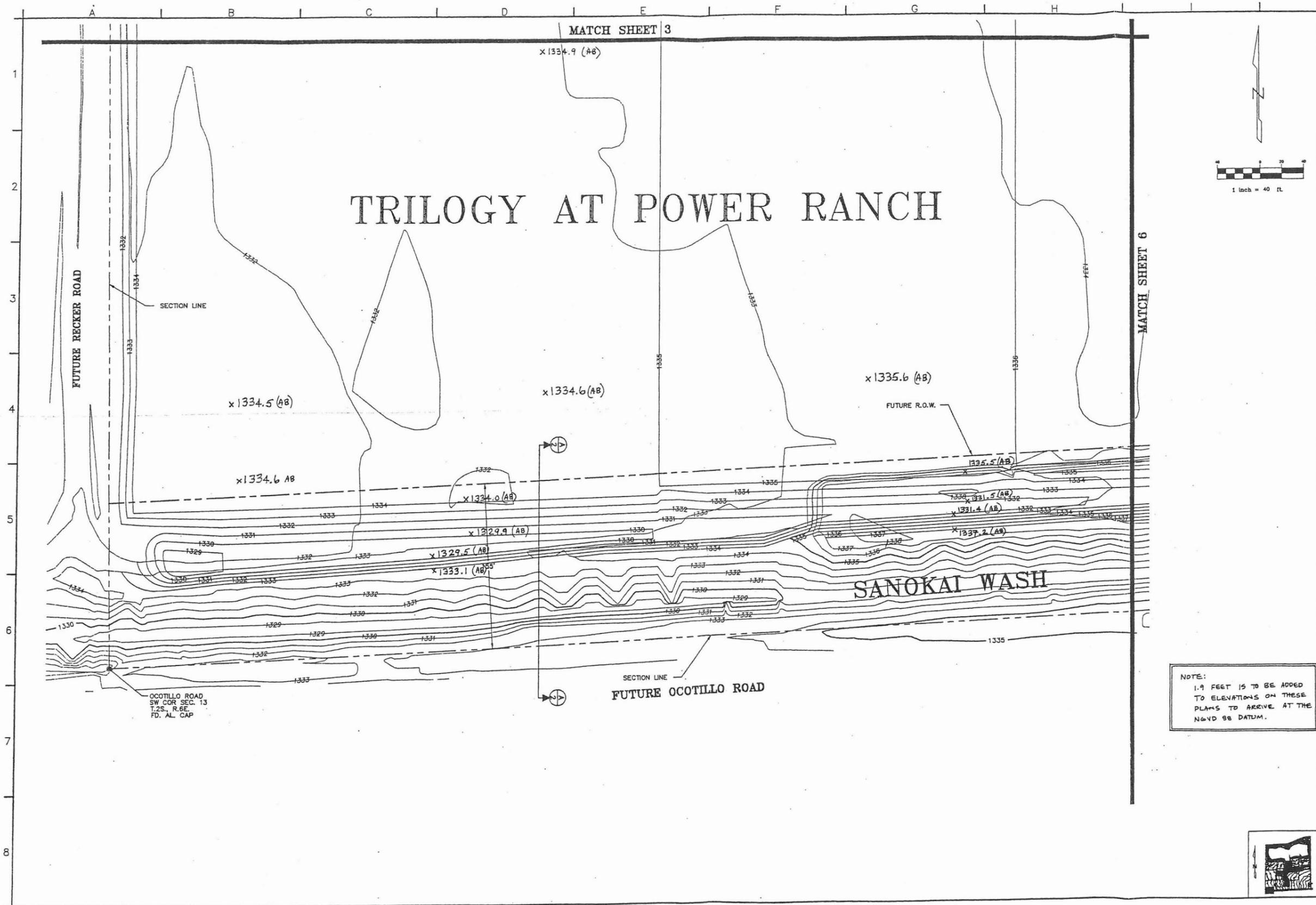
**WOOD/PATEL**  
CIVIL ENGINEERS  
HYDROLOGISTS  
LAND SURVEYORS  
1865 N. Stapley Drive  
Mesa, AZ 85203  
Phone: (480) 834-3300  
Fax: (480) 834-3320  
woodpatel.com

NOTE:  
1.9 FEET IS TO BE  
ADDED TO ELEVATIONS ON  
THESE PLANS TO ARRIVE  
AT THE NAVD 88 DATUM.

ENGINEER M. YOUNG  
DESIGNER P. HAAS  
CAD TECHNICIAN K. MICKOW  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A  
DATE 04/16/03  
JOB NUMBER 021533  
SHEET 3 OF 7



ENG-2003-00547



**TRIOLOGY**  
 MASS GRADING PLANS  
 GRADING PLAN



**WOOD/PATEL**  
 CIVIL ENGINEERS  
 HYDROLOGISTS  
 LAND SURVEYORS  
 1866 N. Stapley Drive  
 Mesa, AZ 85205  
 Phone (480) 834-3300  
 Fax (480) 834-3320  
 woodpatel.com

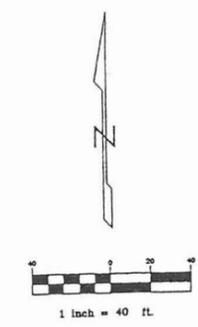
ENGINEER **M. YOUNG**  
 DESIGNER **P. HAAS**  
 CAD TECHNICIAN **K. MICKOW**  
 SCALE (HORIZONTAL) 1" = 40'  
 SCALE (VERTICAL) N/A

DATE 04/16/03  
 JOB NUMBER 021535  
 SHEET 4 OF 7

NOTE:  
 1.9 FEET IS TO BE ADDED  
 TO ELEVATIONS ON THESE  
 PLANS TO ARRIVE AT THE  
 NGVD 88 DATUM.



ENG-2003-00547



# TRILOGY AT POWER RANCH

**TRILOGY**  
MASS GRADING PLANS  
GRADING PLAN



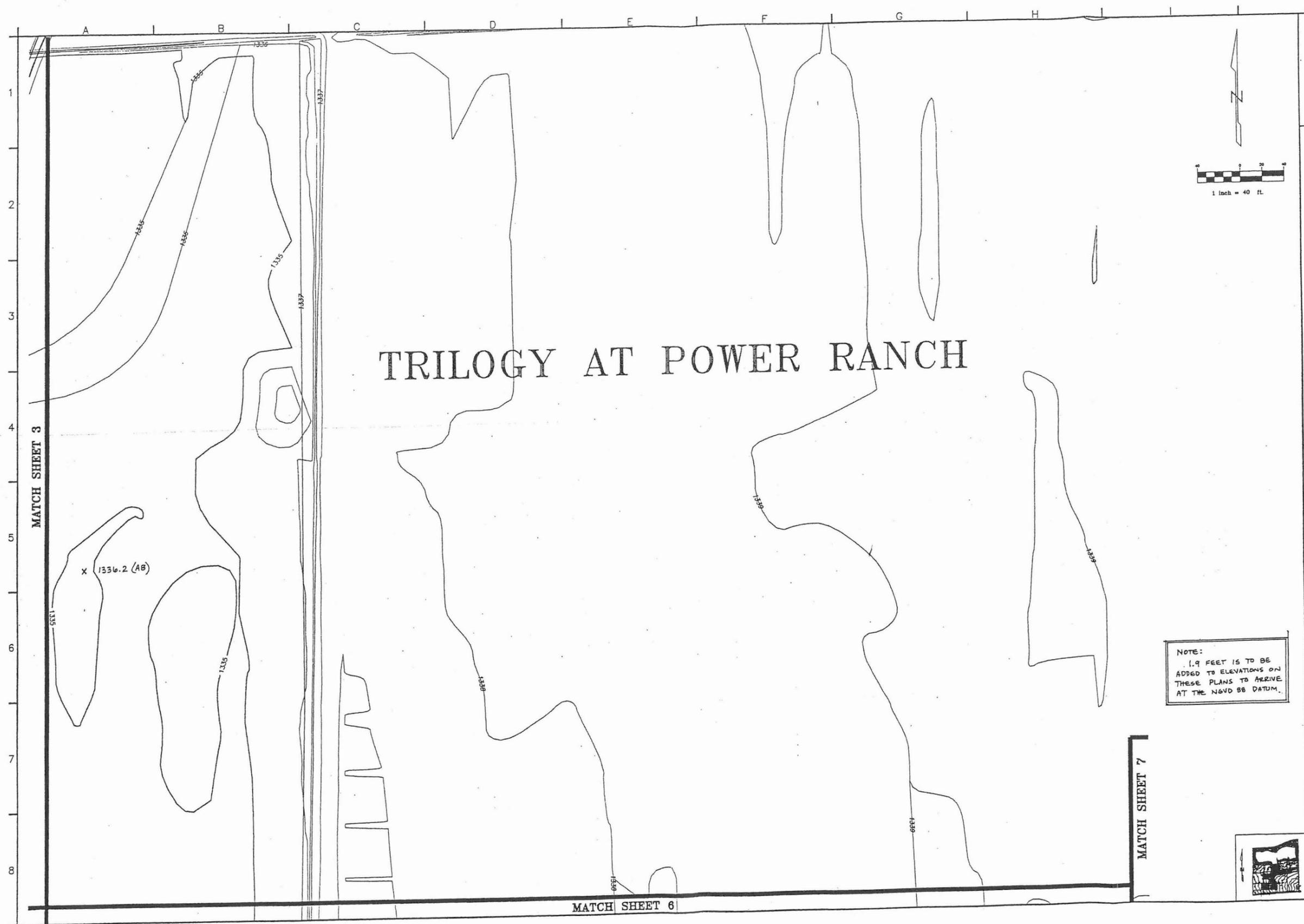
**NOTE:**  
1.9 FEET IS TO BE  
ADDED TO ELEVATIONS ON  
THESE PLANS TO ARRIVE  
AT THE NGVD 88 DATUM.

**WOOD/PATEL**  
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woodpatel.com

ENGINEER M. YOUNG  
DESIGNER P. HAAS  
CAD TECHNICIAN K. MICKOW  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A  
DATE 04/16/03  
JOB NUMBER 021535  
SHEET 5 OF 7



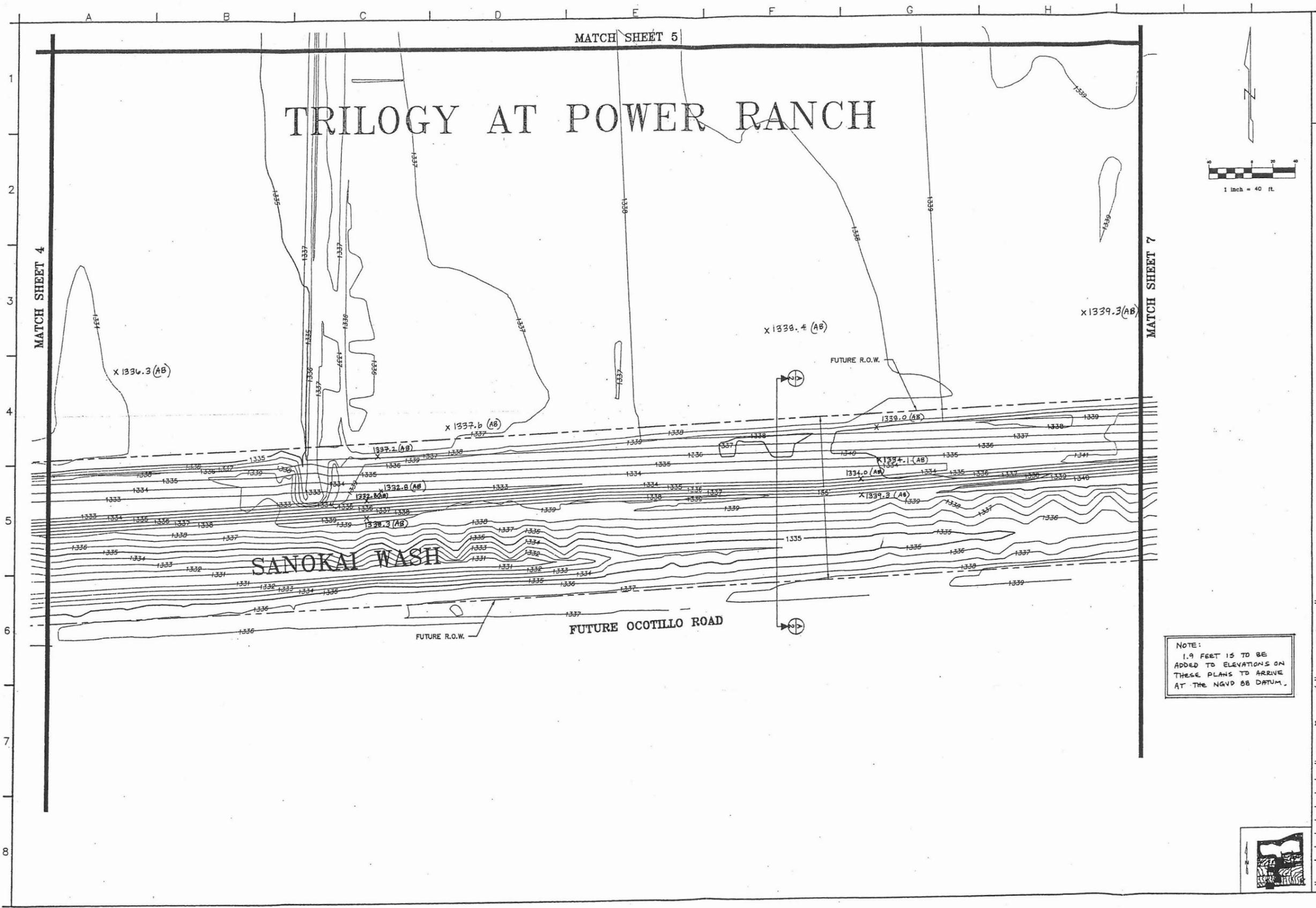
ENG-2003-00547



MATCH SHEET 3

MATCH SHEET 7

MATCH SHEET 6



**TRIOLOGY**  
**MASS GRADING PLANS**  
 GRADING PLAN

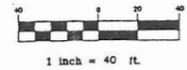


**WOOD/PATEL**  
 CIVIL ENGINEERS  
 HYDROLOGISTS  
 LAND SURVEYORS  
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 Phone: (480) 834-3300  
 Fax: (480) 834-3320  
 woodpatel.com

ENGINEER **M. YOUNG**  
 DESIGNER **P. HAAS**  
 CAD TECHNICIAN **K. MICKOW**  
 SCALE (HORIZONTAL) 1" = 40'  
 SCALE (VERTICAL) N/A

DATE 04/16/03  
 JOB NUMBER 021535  
 SHEET 6 OF 7

11021535.dwg 11:55 AM 04/16/03



NOTE:  
 1.9 FEET IS TO BE  
 ADDED TO ELEVATIONS ON  
 THESE PLANS TO ARRIVE  
 AT THE NGVD 88 DATUM.



ENG-2003-00547

A B C D E F G H I J

1  
2  
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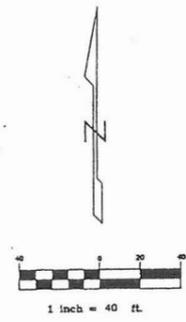
MATCH SHEET 4  
MATCH SHEET 6

# GOLF COURSE

# TRILOGY AT POWER RANCH

## SANOKAI WASH

FUTURE R.O.W.  
FUTURE OCOTILLO ROAD



**TRILOGY**  
MASS GRADING PLANS  
GRADING PLAN



NOTE:  
1.9 FEET IS TO BE  
ADDED TO ELEVATIONS  
ON THESE PLANS TO  
ARRIVE AT THE NGVD 85  
DATUM.

**WOOD/PATEL**  
CIVIL ENGINEERS  
HYDROLOGISTS  
LAND SURVEYORS  
1856 N. Stapley Drive  
Mesa, AZ 85203  
Phone (480) 834-3300  
Fax (480) 834-3320  
woodpatel.com

ENGINEER M. YOUNG  
DESIGNER P. HAAS  
CAD TECHNICIAN K. MICKLOW  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A  
DATE 04/16/03  
JOB NUMBER 021535  
SHEET 7 OF 7



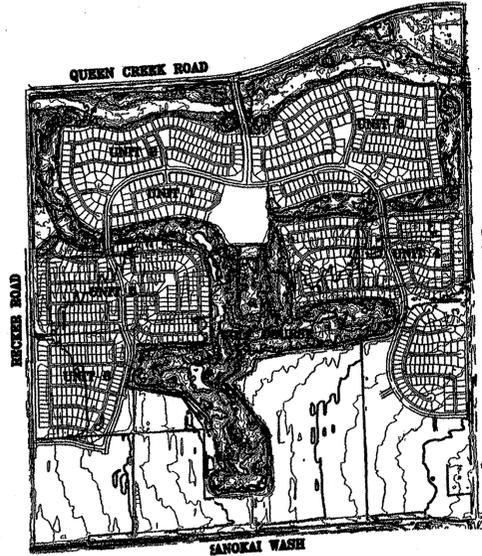
ENC-2003-00547

**ENGINEERS NOTES**

- MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THESE PLANS IN THEIR ENTIRETY.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE MAG STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTALS THEREOF PER THE TOWN OF GILBERT UNLESS SPECIFIED OTHERWISE. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTALS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY USED DURING CONSTRUCTION UNLESS SPECIFICALLY ADDRESSED.
- THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THESE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THESE PLANS.
- THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
- A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL FOR BLUE STAKE (602-263-1100) 48 HOURS PRIOR TO ANY EXCAVATION. SALT RIVER PROJECT IS NOT WITH BLUE STAKE AND MUST BE CONTACTED SEPARATELY.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- ALL GRADING, EXCAVATION, PAVING, TRENCHING, PIPE BEDDING, AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS. SOILS REPORT AND PAVEMENT DESIGN WERE PREPARED BY CONSTRUCTION, INSPECTION & TESTING CO. PROJECT NO. G00-0444V, DATED MARCH 31ST 1999.
- THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND THE CONTRACTOR TO COORDINATE THE PLACEMENT OF DRIVEWAYS TO AVOID CONFLICT WITH UTILITY LOCATIONS.
- THE CONTRACTOR SHALL COORDINATE INTERRUPTION OF S.R.P. FACILITIES WITH THE S.R.P. AREA WATER MASTER.
- CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE RELOCATION OF POWER POLES AND OTHER UTILITIES.
- THE CONTRACTOR SHALL ADJUST ALL VALVES, MANHOLES, CLEANOUTS, ETC., BOTH NEW AND OLD TO FINISH PAVEMENT GRADE PER STANDARD DETAILS.
- THE CONTRACTOR SHALL BE REQUIRED TO INSTALL A NIGHT TIE-IN FOR ANY NEW WATERLINE THAT WILL AFFECT EXISTING SERVICE SUFFICIENT TO WARRANT SAME IN THE OPINION OF THE TOWN OFF-SITE INSPECTOR.
- ALL IMPROVEMENTS WITHIN THE RETENTION BASIN AND/OR ROADWAY SHALL BE IN ACCORDANCE WITH THE LATEST TOWN OF GILBERT PROCEDURES FOR DEVELOPERS AND ENGINEERS.
- ALL EXISTING DITCHES AND CANALS THAT ARE REMOVED SHALL BE BACKFILLED AND COMPACTED PER REQUIREMENTS OF GEOTECHNICAL REPORT.
- THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, & PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN & MATCHING. PRIOR TO COMMENCEMENT OF GRADING, PAVING, CURB & GUTTER, OR OTHER SURFACE CONSTRUCTION, SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE DESIGN INTENT REFLECTED ON THE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL NOTIFY THE OWNERS AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.

**TRILOGY**  
**MASS GRADING PLANS**  
**GILBERT, ARIZONA**  
 A PORTION OF SECTION 13, T.2S., R.6E.,  
 OF THE G.& S.R.M., MARICOPA COUNTY, ARIZONA

**SHEET INDEX**  
 1 COVER SHEET  
 2 NOTES AND INDEX MAP  
 3-7 GRADING SHEETS



**LEGEND**

—	PROJECT BOUNDARY
—	ROADWAY CENTERLINE
---	PROPOSED RIGHT-OF-WAY
==	VERTICAL CURB & GUTTER
==	ROLL CURB & GUTTER
---	PROPOSED CONTOUR
---	EXISTING CONTOUR

**NOTE:**  
 1.9 FEET IS TO BE ADDED  
 TO ELEVATIONS ON THESE  
 PLANS TO ARRIVE AT THE  
 NGVD 88 DATUM.

**OWNER/DEVELOPER**

SHEA COMM./SUNPOWER LLC  
 4734 EAST QUEEN CREEK ROAD  
 GILBERT, ARIZONA 85297  
 PH: (480) 988-5714  
 FAX: (480) 988-0280  
 CONTACT: JOAN SCARBROUGH

**ENGINEER**

WOOD, PATEL & ASSOCIATES INC.  
 1855 N. STAPLEY DRIVE  
 MESA, ARIZONA 85203  
 CONTACT: MICHAEL T. YOUNG, P.E.  
 PHONE No. (480) 834-3300  
 FAX No. (480) 834-3320

**PUBLIC UTILITIES**

WATER	TOWN OF GILBERT
SEWER	TOWN OF GILBERT
ELECTRIC	SALT RIVER PROJECT
TELEPHONE	QUEST
GAS	SOUTHWEST GAS
WASTE DISPOSAL	TOWN OF GILBERT

**BENCHMARK**

GLO BRASS CAP IN HANDHOLE @  
 INTERSECTION OF POWER ROAD AND  
 RITTENHOUSE ROAD  
 ELEVATION = 1332.63  
 (TOWN OF GILBERT DATUM)

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY THAT THE "AS-BUILT"  
 MEASUREMENTS AS SHOWN OR NOTED  
 HERE ON WERE MADE BY MYSELF OR  
 UNDER MY SUPERVISION AND ARE COR-  
 RECT TO THE BEST OF MY KNOWLEDGE  
 AND BELIEF.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_  
 SEAL

**RELATED PROJECTS FOR REFERENCE**

- \* TRILOGY UNIT 4 IMPROVEMENTS PLANS W/P PLAN # 001270
- \* TRILOGY UNIT 5A IMPROVEMENTS PLANS T.O.G. # ENG 2002-00758
- \* TRILOGY UNIT 5 IMPROVEMENTS PLANS T.O.G. # ENG 2002-0659
- \* TRILOGY UNIT 6 IMPROVEMENTS PLANS W/P PLAN # 011406
- \* TRILOGY RECKER ROAD INFRASTRUCTURE PLANS W/P PLAN # 011396

**UTILITY NOTES**

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES AND THE WORK CONTAINED IN THESE PLANS HAS BEEN APPROVED BY THESE COMPANIES WITHIN THEIR AREA OF INTEREST. THE SIZE AND LOCATIONS, AS SHOWN, OF THE GAS, TELEPHONE AND POWER LINES, AND CONNECTIONS AGREE WITH THE INFORMATION CONTAINED IN THE UTILITY COMPANY RECORDS. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

**UTILITIES**

SALT RIVER POWER DISTRICT	VINCE FEATHERLY COMPANY REPRESENTATIVE CONTACTED	DATE
SRVWA	BOB MAURER COMPANY REPRESENTATIVE CONTACTED	DATE
QWEST COMMUNICATIONS	LINDA SALAS COMPANY REPRESENTATIVE CONTACTED	DATE
SOUTHWEST GAS COMPANY	DOMINIQUE MITCHELL COMPANY REPRESENTATIVE CONTACTED	DATE
COX COMMUNICATIONS	WILLIAM WRIGHT COMPANY REPRESENTATIVE CONTACTED	DATE

**APPROVAL**

BY Richard Alford DATE 4-22-03  
 TOWN ENGINEER

**GENERAL NOTES:**

- AVIGATION EASEMENTS, IN A FORM ACCEPTABLE TO THE TOWN, SHALL BE EXECUTED BEFORE A BUILDING PERMIT MAY BE ISSUED.
- THIS PROPERTY, DUE TO ITS PROXIMITY TO WILLIAMS GATEWAY AIRPORT, IS LIKELY TO EXPERIENCE AIRCRAFT OVERFLIGHTS, WHICH COULD GENERATE NOISE LEVELS WHICH MAY BE OF CONCERN TO SOME INDIVIDUALS.
- THE CONSTRUCTION, ALTERATION, MOVING, PARTIAL DEMOLITION, REPAIR AND USE OF ANY BUILDING OR STRUCTURE SHALL COMPLY WITH THE SOUND ATTENUATION STANDARDS, AS REFERENCED IN THE WRPS APPENDIX, IN ORDER TO ACHIEVE AN EXTERIOR TO INTERIOR NOISE LEVEL REDUCTION (NLR) OF 2 DECIBELS. SOME FLEXIBILITY MAY BE ACHIEVED, AS REFERENCED IN SECTION 105 OF THE 1991 UNIFORM BUILDING CODE (UBC).
- IN ACCORDANCE WITH AAC R18-4-119, ALL MATERIALS ADDED AFTER JANUARY 1, 1993 WHICH MAY COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM TO NATIONAL SANITATION FOUNDATION STANDARDS 60 AND 61.

**NOTE**  
 ANY ALTERATIONS TO THESE  
 PLANS WITHOUT PRIOR REVIEW  
 AND APPROVAL BY THE TOWN  
 ENGINEER WILL VOID THIS ORIGINAL  
 APPROVAL



**EARTHWORK QUANTITIES**  
 FILL (RAW) 92,816 C.Y.  
 CUT (RAW) 20,499 C.Y.

VERSION	DATE	DESCRIPTION	REVISION	DATE	DESCRIPTION
1	03/27/03	FIRST SUBMITTAL TO TOWN OF GILBERT			
2	04/09/03	BID SET OF PLANS			
3	04/16/03	APPROVAL SUBMITTAL			



**TRILOGY**  
**MASS GRADING PLANS**  
**COVER SHEET**



**WOOD/PATEL**  
 CIVIL ENGINEERS  
 HYDROLOGISTS  
 LAND SURVEYORS  
 1855 N. Stapley Drive  
 Mesa, AZ 85203  
 Phone: (480) 834-3300  
 Fax: (480) 834-3320  
 woodpatel.com

ENGINEER M. YOUNG  
 DESIGNER P. HAAS  
 CAD TECHNICIAN K. MICKOW  
 SCALE (HORIZONTAL) N/A  
 SCALE (VERTICAL) N/A  
 DATE 04/16/03  
 JOB NUMBER 021535  
 SHEET 1 OF 7

**GRADING NOTES**

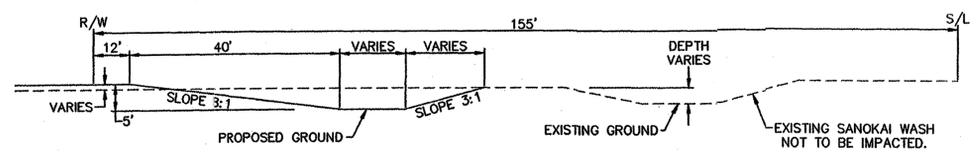
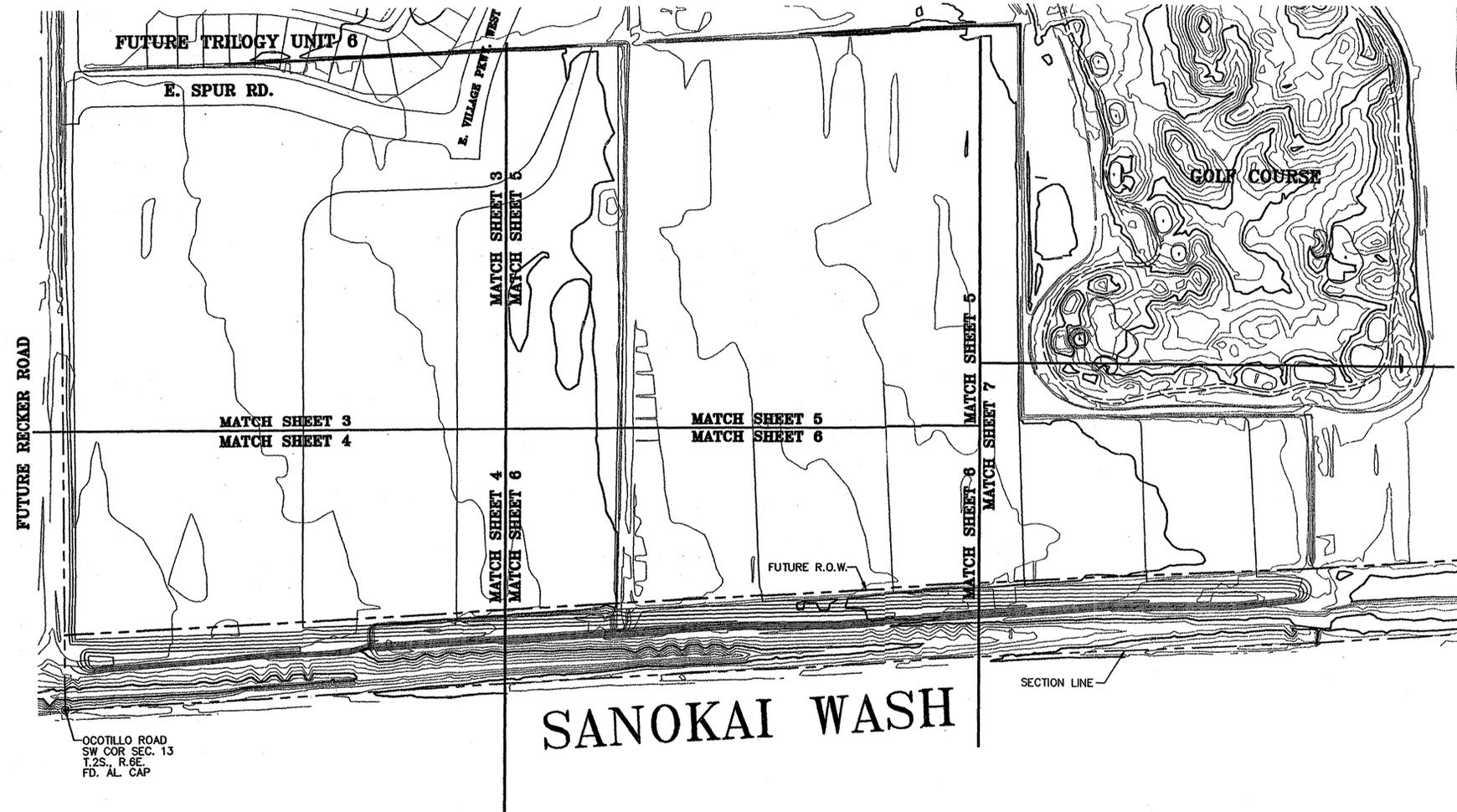
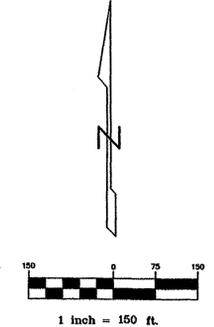
1. THE CONTRACTOR SHALL NOTIFY THE TOWN OF GILBERT ENGINEERING DEPARTMENT AT LEAST 24 HOURS IN ADVANCE OF ANY CONSTRUCTION FOR INSPECTION. 480-503-6000.
2. STAKING PAD AND/OR FINISH FLOOR ELEVATIONS IS THE RESPONSIBILITY OF THE DEVELOPER AND HIS ENGINEER.
3. DEVELOPER'S ENGINEER SHALL SUBMIT CERTIFICATION OF CONSTRUCTION BUILDING PAD ELEVATIONS PRIOR TO TOWN ACCEPTANCE OF PROJECT.
4. SOIL COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE TOWN ENGINEER'S OFFICE FOR BUILDING PADS WITH ONE FOOT (1') OR MORE FILL MATERIAL INDICATED.
5. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTOR DITCHES, PIPES, PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT HOMES FROM STORM RUNOFF MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY HOUSES.
6. A SEPARATE PERMIT IS NECESSARY FOR ANY OFFSITE CONSTRUCTION.
7. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOBSITE AT ALL TIMES, DEVIATION FROM THE PLAN MUST BE AN APPROVED PLAN.
8. EXCAVATION CONTRACTOR MUST GIVE LOCATION FOR WASTING EXCESS EXCAVATION AND A LETTER FROM THE OWNER GIVING PERMISSION FOR DUMPING PRIOR TO STARTING ONSITE CONSTRUCTION.
9. A THOROUGH ATTEMPT HAS BEEN MADE TO SHOW THE LOCATIONS OF ALL UNDERGROUND OBSTRUCTIONS AND UTILITY LINES IN THE WORK AREA. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OBSTRUCTIONS AND UTILITY LINES ENCOUNTERED DURING CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN THE AREA.
10. GRADING AND DRAINAGE PLAN APPROVAL INCLUDES: CONSTRUCTION OF ALL ONSITE SURFACE IMPROVEMENTS SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN INCLUDING BUT NOT LIMITED TO, RETENTION AREAS AND/OR OTHER DRAINAGE FACILITIES, DRAINAGE PATTERNS, WALLS, CURBING, ASPHALT PAVEMENT, AND BUILDING FLOOR ELEVATIONS.
11. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.
12. PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS, EARTHWORK QUANTITIES, AND REQUIREMENTS OF THE WORK AND EXCESS OF DEFICIENCY IN EARTHWORK QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER/DEVELOPER OR ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.
13. THE ENGINEER WILL PERFORM FIELD SURVEYS FOR PAD ELEVATION CERTIFICATIONS UPON NOTIFICATION BY THE GRADING CONTRACTOR THAT THE PADS ARE COMPLETE AND READY FOR CERTIFICATION. IT IS UNDERSTOOD THAT THE CERTIFICATION PROVIDES ONLY A REPRESENTATIVE ELEVATION OF THE AVERAGE GRADE OF EACH LOT, BUILDING, OR UNIT PAD, AND SHALL NOT BE CONSTRUED TO INCLUDE YARD AND STREET SUBGRADE CERTIFICATION OR CERTIFICATION THAT THE ENTIRE PAD IS LEVEL, THAT IT WAS CONSTRUCTED IN THE DESIGNED LOCATION OR WAS GRADED TO THE CROSS-SECTION SET FORTH ON THE PLANS OR AS DESIGNATED IN THE SOILS REPORT.
14. THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL SURVEY STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OF IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.
15. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
16. THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
17. ALL RETENTION BASINS MUST DRAIN ANY STORM EVENT UP TO AND INCLUDING THE 50 YEAR STORM WITHIN 36 HOURS. OWNER(S) OF ANY BASIN FAILING TO MEET THIS REQUIREMENT MUST TAKE CORRECTIVE ACTION TO BRING THE BASIN INTO COMPLIANCE.
18. CLEARANCE FOR OCCUPATION OF ANY BUILDING IS DENIED UNTIL ALL GRADING AND DRAINAGE IMPROVEMENTS ARE COMPLETED.
19. ALL EARTHWORK CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD DETAILS AND/OR SPECIFICATIONS INCLUDING ANY SUPPLEMENTS THEREIN AND THE SOILS REPORT AS PREPARED BY: CONSTRUCTION INSPECTION & TESTING COMPANY 2002 WEST NORTH LANE PHOENIX, ARIZONA 85027 PHONE: 602-264-5938.
20. CONTRACTOR SHALL COMPLY WITH THE PROVISION FOR TRAFFIC CONTROL AND BARRICADING AS PER CITY OF PHOENIX "TRAFFIC BARRICADE MANUAL".
21. ALL IMPROVEMENTS WITHIN THE RETENTION BASIN AND/OR ROADWAY PARKWAYS SHALL BE IN ACCORDANCE WITH THE LATEST TOWN OF GILBERT PROCEDURES FOR DEVELOPERS AND ENGINEERS.
22. A ROUGH GRADE PERMIT IS REQUIRED, CONTRACTOR SHALL OBTAIN.
23. A GRADING PERMIT IS REQUIRED APPLICATIONS FOR GRADING PERMITS MUST HAVE A PHOTO COPY OF THE MARICOPA COUNTY DUST CONTROL PERMIT ATTACHED TO THE COMPLETED FORM. CONTRACTOR SHALL OBTAIN.
24. CONTRACTOR IS ADVISED THAT AN EXCAVATION AND DIRT MOVING PERMIT IS REQUIRED BY THE MARICOPA COUNTY HEALTH DEPARTMENT AND THE TOWN OF GILBERT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THIS PERMIT AND COMPLY WITH ITS REQUIREMENTS.

**GRADING NOTES (CONT.)**

25. STORM WATER POLLUTION PREVENTION PLAN FOR NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM, REFER TO NOTICE OF INTENT FOR SPECIFIC OPERATOR.
26. ALL DRYWELLS SHOWN ON THIS PROJECT SHALL BE MAINTAINED BY THE OWNER(S) AND ARE TO BE REPLACED BY THE OWNER(S) WHEN THEY CEASE TO DRAIN THE SURFACE WATER IN A 36-HOUR PERIOD. REGULAR MAINTENANCE OF THE DRYWELL SITTING CHAMBER IS REQUIRED TO ACHIEVE THE BEST OPERATION OF THE DRYWELL.

**NOTES**

THESE PLANS ARE SUBJECT TO THE INTERPRETATION OF INTENT BY THE ENGINEER. ALL QUESTIONS REGARDING THESE PLANS SHALL BE PRESENTED TO THE ENGINEER. ANYONE WHO TAKES UPON HIMSELF THE INTERPRETATION OF THE DRAWINGS OR MAKES REVISIONS TO SAME WITHOUT CONFERRING WITH THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE CONSEQUENCES THEREOF.



**NOTE:**  
1.9 FEET IS TO BE ADDED TO ELEVATIONS ON THESE PLANS TO ARRIVE AT THE NGVD 88 DATUM.



**TRIOLOGY**  
MASS GRADING PLANS  
NOTES AND INDEX MAP



**WOOD/PATEL**  
CIVIL ENGINEERS  
HYDROLOGISTS  
LAND SURVEYORS  
1865 N. Stapley Drive  
Mesa, AZ 85208  
Phone: (480) 834-3300  
Fax: (480) 834-3320  
woodpatel.com

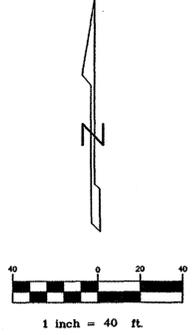
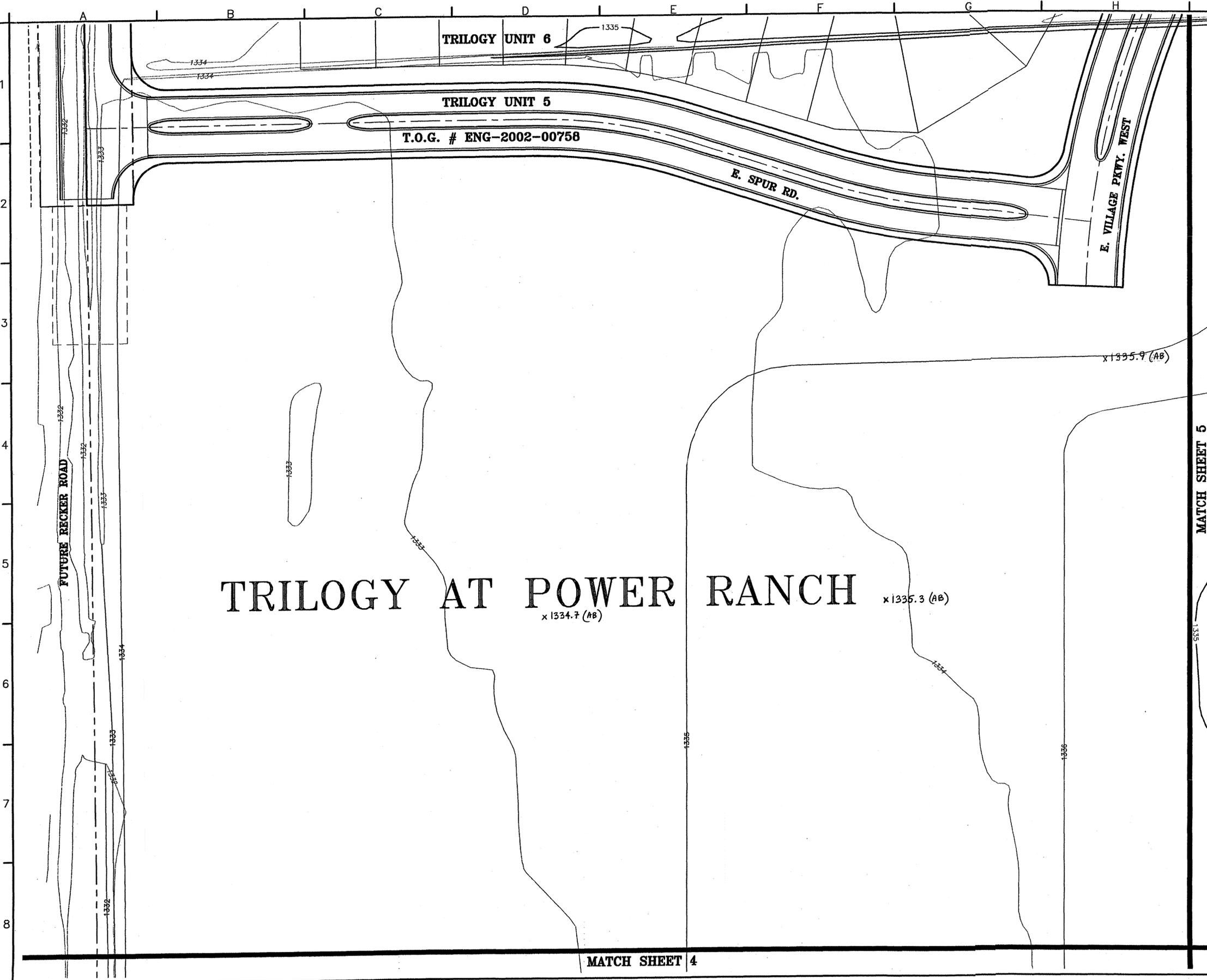
ENGINEER: M. YOUNG  
DESIGNER: P. HAAS  
CAD TECHNICIAN: K. MICKOW  
SCALE (HORIZONTAL): N/A  
SCALE (VERTICAL): N/A  
DATE: 04/16/03  
JOB NUMBER: 021535  
SHEET: 2 OF 7



**WOOD/PATEL**  
CIVIL ENGINEERS  
HYDROLOGISTS  
LAND SURVEYORS  
1856 N. Stapley Drive  
Mesa, AZ 85209  
Phone: (480) 834-3300  
Fax: (480) 834-3320  
woodpatel.com

ENGINEER *M. YOUNG*  
DESIGNER *P. HAAS*  
CAD TECHNICIAN *K. MICKOW*  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A

DATE 04/16/03  
JOB NUMBER 021535  
SHEET 3 OF 7  
#:\021535\MP\1535\_003\_02



NOTE:  
1.9 FEET IS TO BE  
ADDED TO ELEVATIONS ON  
THESE PLANS TO ARRIVE  
AT THE NGVD 88 DATUM.



MATCH SHEET 4

MATCH SHEET 5

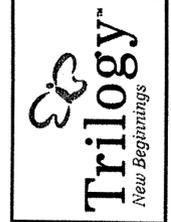
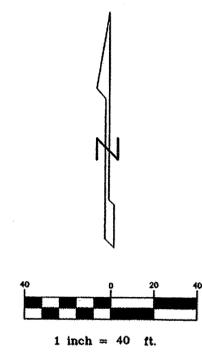
**TRILOGY AT POWER RANCH**

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ENG-2003-0054

MATCH SHEET 3

# TRILOGY AT POWER RANCH



**TRILOGY**  
MASS GRADING PLANS  
GRADING PLAN

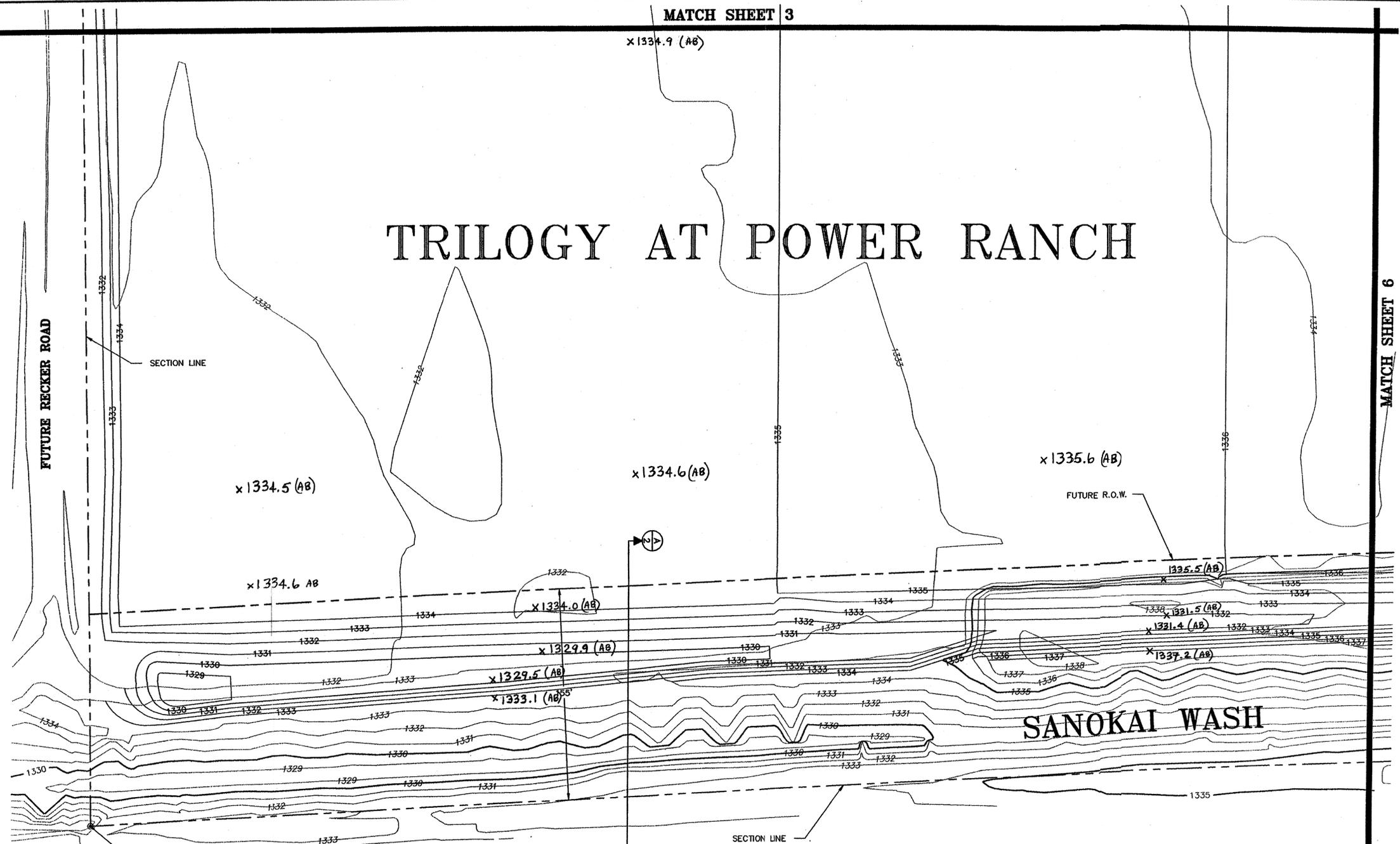
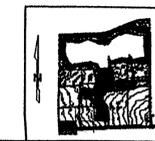


**WOOD/PATEL**  
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HYDROLOGISTS  
LAND SURVEYORS  
1855 N. Stapley Drive  
Mesa, AZ 85203  
Phone: (480) 834-3800  
Fax: (480) 834-3820  
woodpatel.com

ENGINEER M. YOUNG  
DESIGNER P. HAAS  
CAD TECHNICIAN K. MICKOW  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A  
DATE 04/16/03  
JOB NUMBER 021535  
SHEET 4 OF 7

RE: 1021535\MP\1535\_004.dwg

NOTE:  
1.9 FEET IS TO BE ADDED  
TO ELEVATIONS ON THESE  
PLANS TO ARRIVE AT THE  
NGVD 88 DATUM.



FUTURE RECKER ROAD

SECTION LINE

x 1334.5 (AB)

x 1334.6 (AB)

x 1335.6 (AB)

FUTURE R.O.W.

x 1334.6 AB

x 1334.0 (AB)

x 1329.9 (AB)

x 1329.5 (AB)

x 1333.1 (AB)

x 1331.4 (AB)

x 1337.2 (AB)

x 1331.5 (AB)

SECTION LINE  
FUTURE OCOTILLO ROAD

OCOTILLO ROAD  
SW COR SEC. 13  
T.2S., R.6E.  
FD. AL. CAP

MATCH SHEET 6

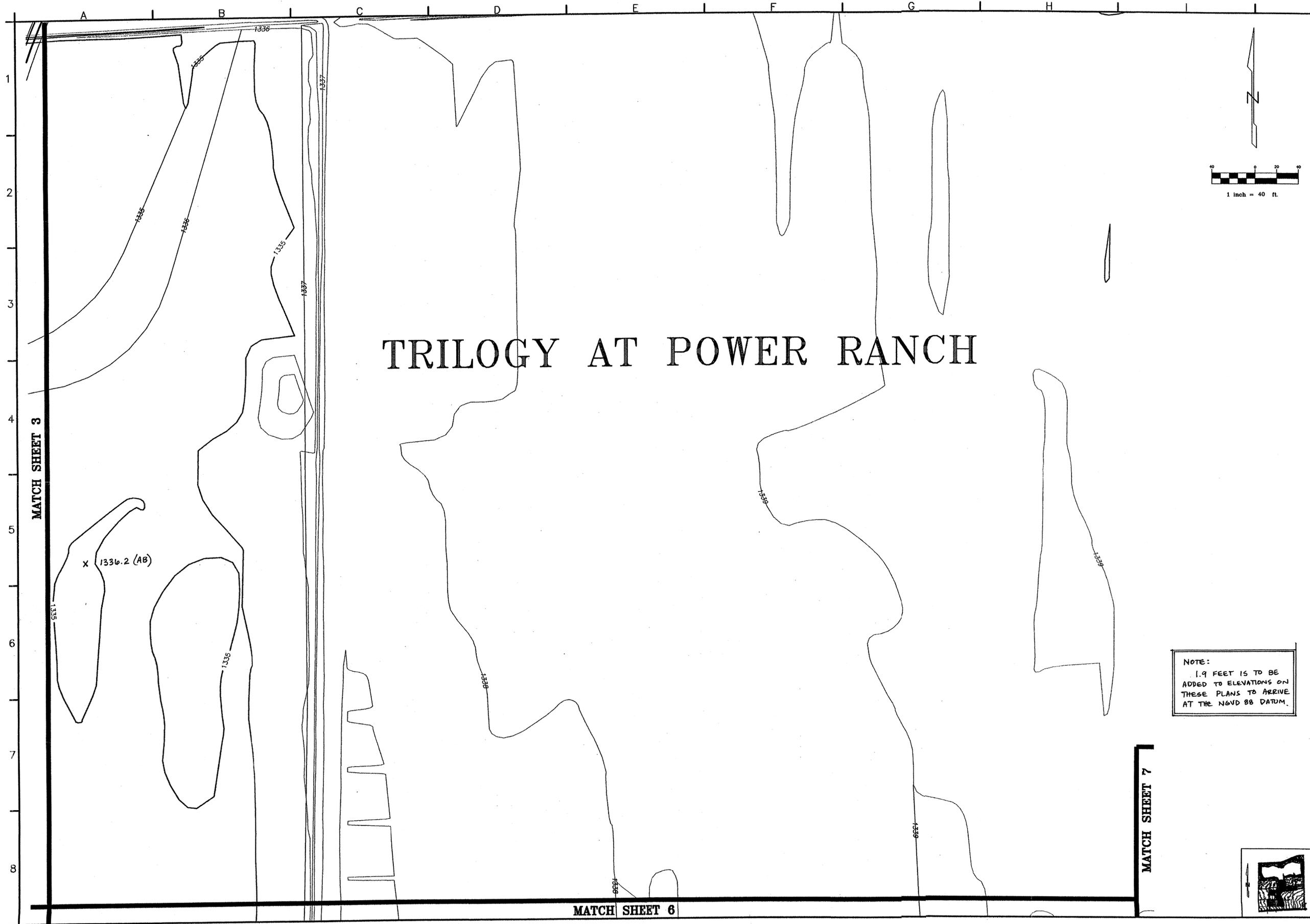
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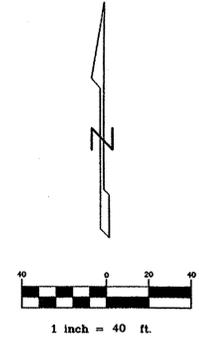
**WOOD/PATEL**  
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LAND SURVEYORS  
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Mesa, AZ 85203  
Phone: (480) 834-3300  
Fax: (480) 834-3320  
woodpatel.com

ENGINEER **M. YOUNG**  
DESIGNER **P. HAAS**  
CAD TECHNICIAN **K. MICKOW**  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A  
DATE 04/16/03  
JOB NUMBER 021535  
SHEET 5 OF 7

N:\021535\WP\1535\_005\_00



# TRIOLOGY AT POWER RANCH



**NOTE:**  
1.9 FEET IS TO BE  
ADDED TO ELEVATIONS ON  
THESE PLANS TO ARRIVE  
AT THE NGVD 88 DATUM.



MATCH SHEET 3

MATCH SHEET 7

MATCH SHEET 6

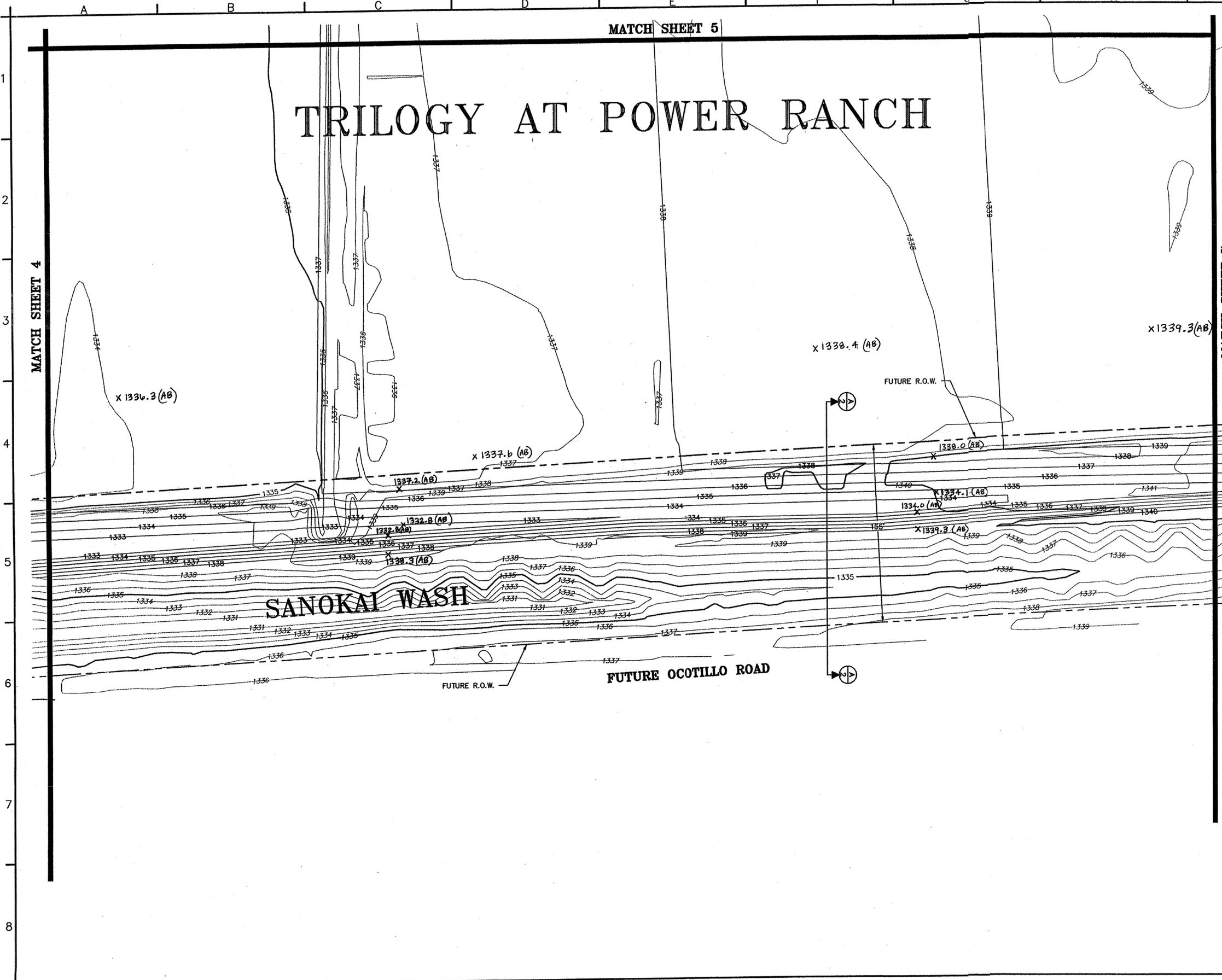
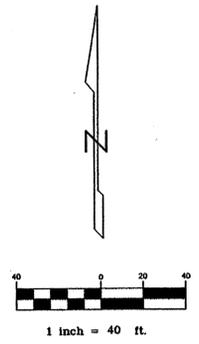
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MATCH SHEET 5

# TRILOGY AT POWER RANCH

MATCH SHEET 4

MATCH SHEET 7



NOTE:  
1.9 FEET IS TO BE  
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AT THE NGVD 88 DATUM.



TRILOGY  
MASS GRADING PLANS  
GRADING PLAN



**WOOD/PATEL**

CIVIL ENGINEERS  
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woodpatel.com

ENGINEER  
DESIGNER

M. YOUNG  
P. HAAS

CAD TECHNICIAN  
K. MICKOW

SCALE (HORIZONTAL)  
1" = 40'

SCALE (VERTICAL)  
N/A

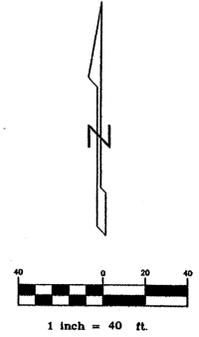
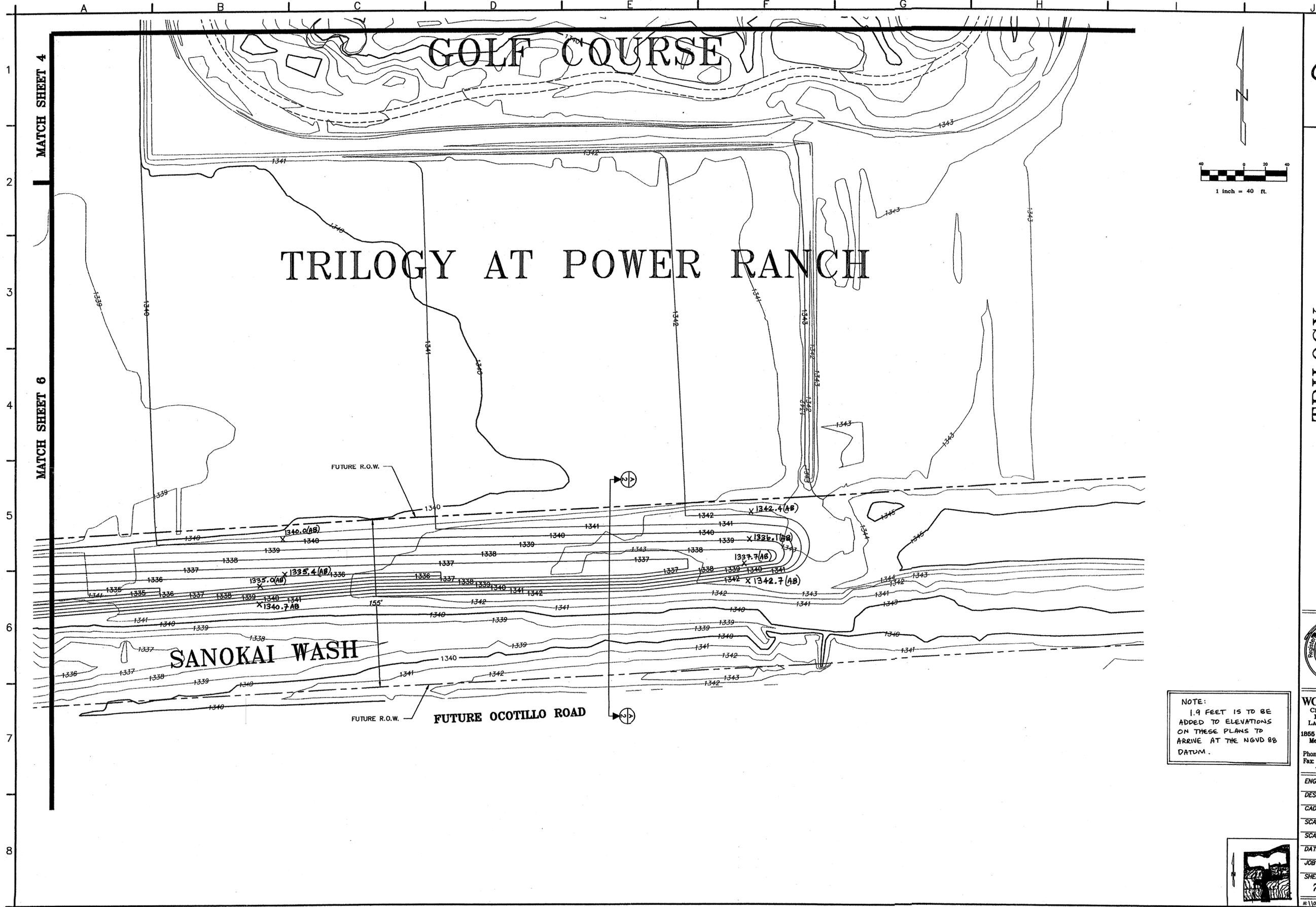
DATE  
04/16/03

JOB NUMBER  
021535

SHEET  
6 OF 7

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ENG-2003-00547



**Trilogy**  
New Beginnings

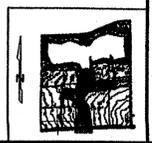
**TRIOLOGY**  
MASS GRADING PLANS  
GRADING PLAN



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CAD TECHNICIAN K. MICKOW  
SCALE (HORIZONTAL) 1" = 40'  
SCALE (VERTICAL) N/A  
DATE 04/16/03  
JOB NUMBER 021535  
SHEET 7 OF 7  
W:\021535\MP\1535\_007\_00

NOTE:  
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ARRIVE AT THE NGVD 88  
DATUM.

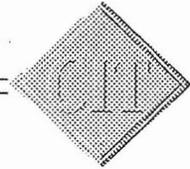


ENG-2003-0054

**APPENDIX D**

**Compaction Test Results**

# CONSTRUCTION INSPECTION & TESTING CO.



2137 WEST 7TH STREET  
TEMPE, ARIZONA 85281-7227  
(480)446-9876 FAX (480)446-7580

## FIELD DENSITY TEST RESULTS

C.I.T. Job # 56061  
Client Shea Comm/Sunpower, LLC  
Project Trilogy, Unit 7 (Job #56061)  
Location NEC, Higley Road & Ocotillo Road  
City/County Gilbert Contractor Rumco  
Material Native & Import Sampled by Jack Quarry

### MASS GRADE

<u>Date</u>	<u>Gridline #</u>	<u>Location</u>	<u>% Moisture</u>	<u>Dry Density (PCF)</u>	<u>% Compaction</u>
8/21/2003	4154	1' Bel.f.g.	16.5	110.0	96.0
8/23/2003	4146	1' Bel.f.g.	14.9	109.6	95.6
8/26/2003	4012	Subgrade	16.3	110.4	96.8
9/2/2003	4154	Grade	16.0	108.8	95.4
9/8/2003	4022	2' Bel.f.g.	22.6	97.2	99.2
9/8/2003	4012	2' Bel.f.g.	20.9	93.9	95.8

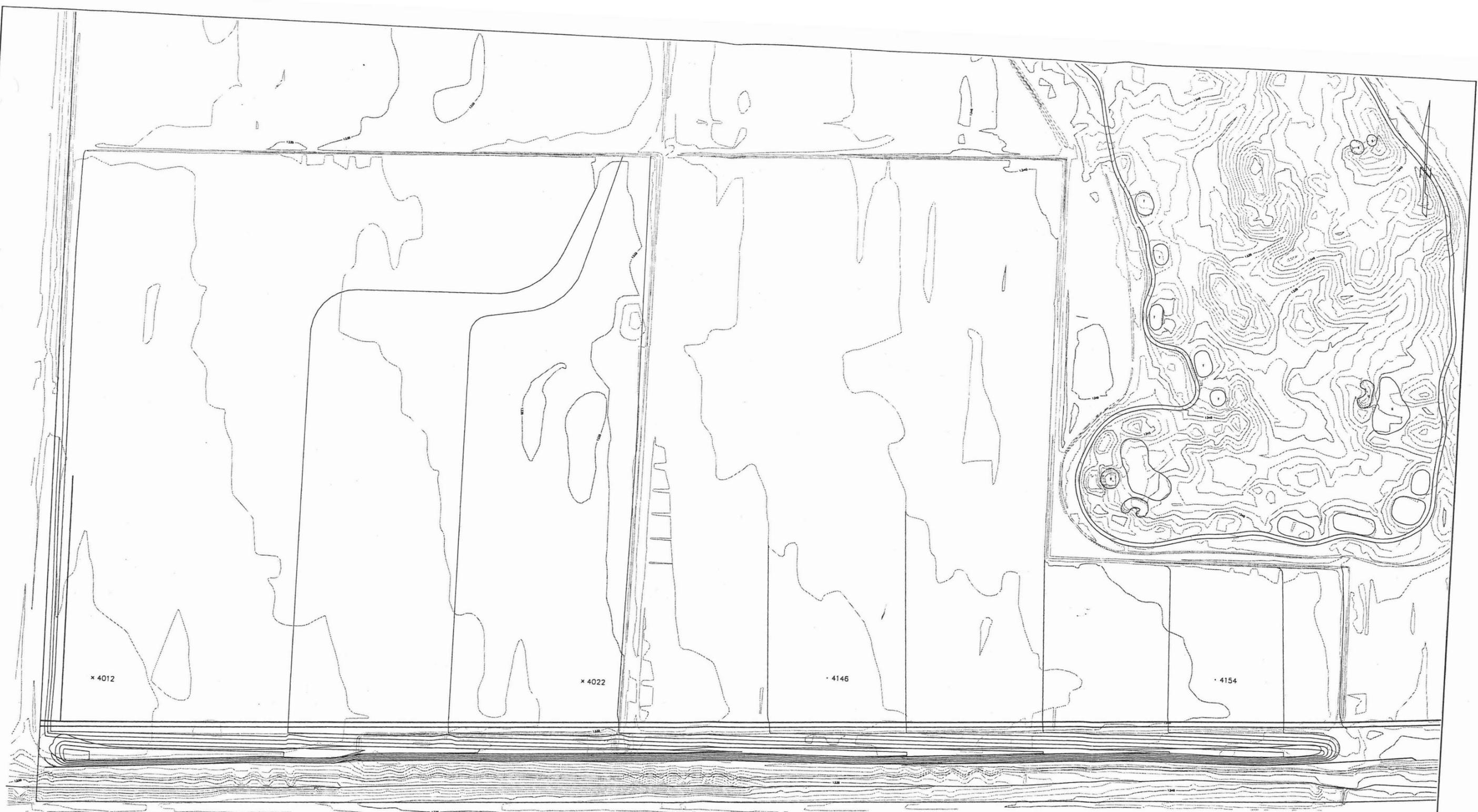
The above tests are based on a maximum dry density of:

114.6 pcf @ 14.6% optimum moisture content

114.0 pcf @ 14.9% optimum moisture content

98.0 pcf @ 22.4% optimum moisture content

John B. Ritter, P.E.



WOOD/PATEL  
TRILOGY POINT EXHIBIT  
(#001168)