FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY
2801 W. Durango
PHOENIX, AZ 85009

Anderson-Nelson, Inc.

TOWN OF FOUNTAIN HILLS

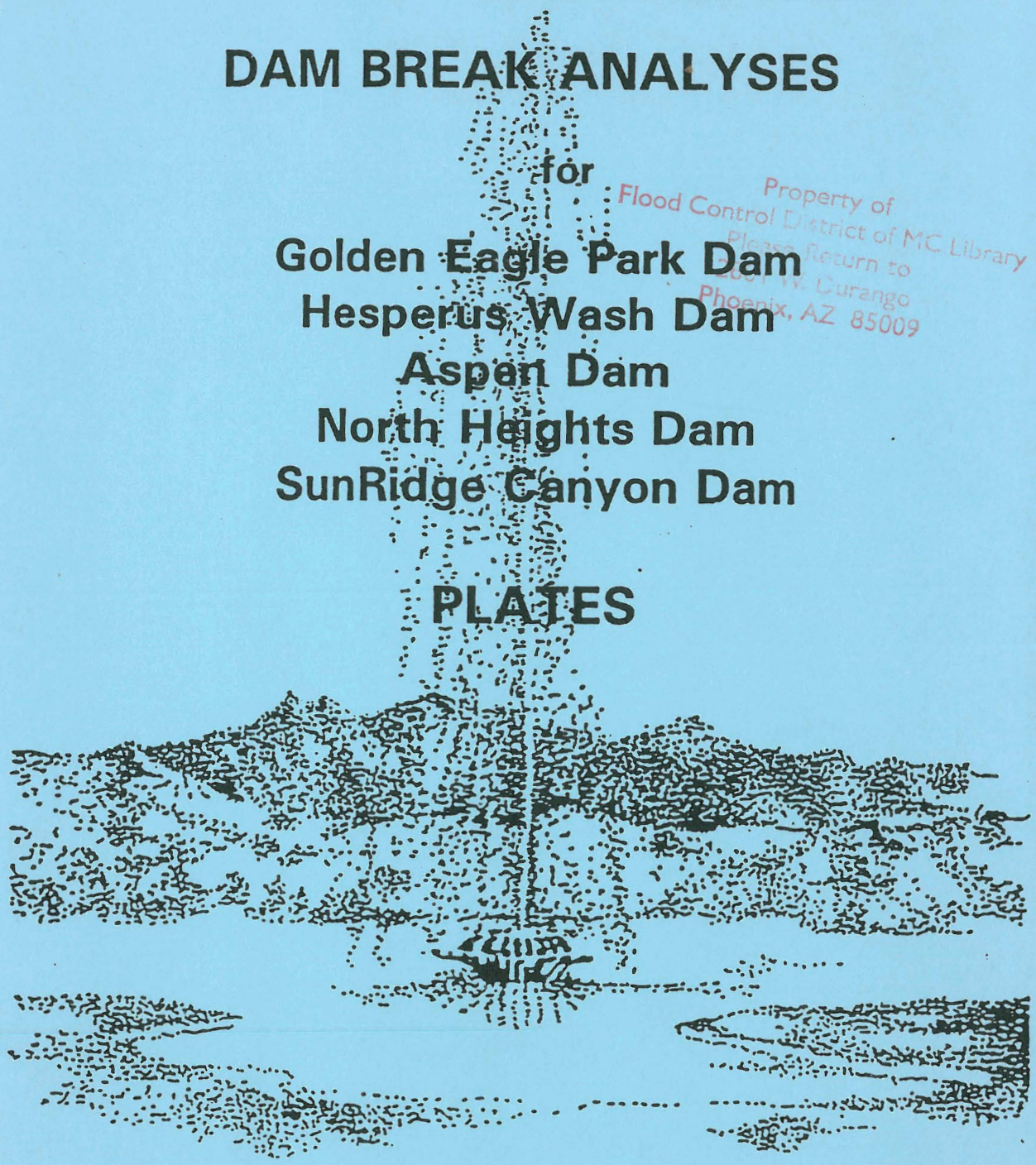
DAM BREAK ANALYSES

for

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

Golden Eagle Park Dam
Hesperus Wash Dam
Aspen Dam
North Heights Dam
SunRidge Canyon Dam

PLATES



George V. Sabol Consulting Engineers, Inc.

Scottsdale, Arizona

JANUARY 1996

TOWN OF FOUNTAIN HILLS
MAY 30 1996
ENGINEERING DEPARTMENT

TABLE OF CONTENTS

PLATES

1 Flood inundation in Hesperus/Balboa Wash from Hesperus Wash Dam break

2 Flood inundation in Hesperus/Balboa Wash from Hesperus Wash Dam break

3 Flood inundation in Hesperus/Balboa Wash from Hesperus Wash Dam break

4 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break

5 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break

6 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break plus inflow from Hesperus Wash Dam spillway release

7 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break plus inflow from Hesperus Wash Dam spillway release

8 Flood inundation in Ashbrook Wash from Aspen Dam break

9 Flood inundation in Bristol Wash from North Heights Dam break

10 Flood inundation in Cloudburst Wash from SunRidge Canyon Dam break

11 Flood inundation in Cloudburst Wash from SunRidge Canyon Dam break

TABLE OF CONTENTS

PLATES

1 Flood inundation in Hesperus/Balboa Wash from Hesperus Wash Dam break

2 Flood inundation in Hesperus/Balboa Wash from Hesperus Wash Dam break

3 Flood inundation in Hesperus/Balboa Wash from Hesperus Wash Dam break

4 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break

5 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break

6 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break plus inflow from Hesperus Wash Dam spillway release

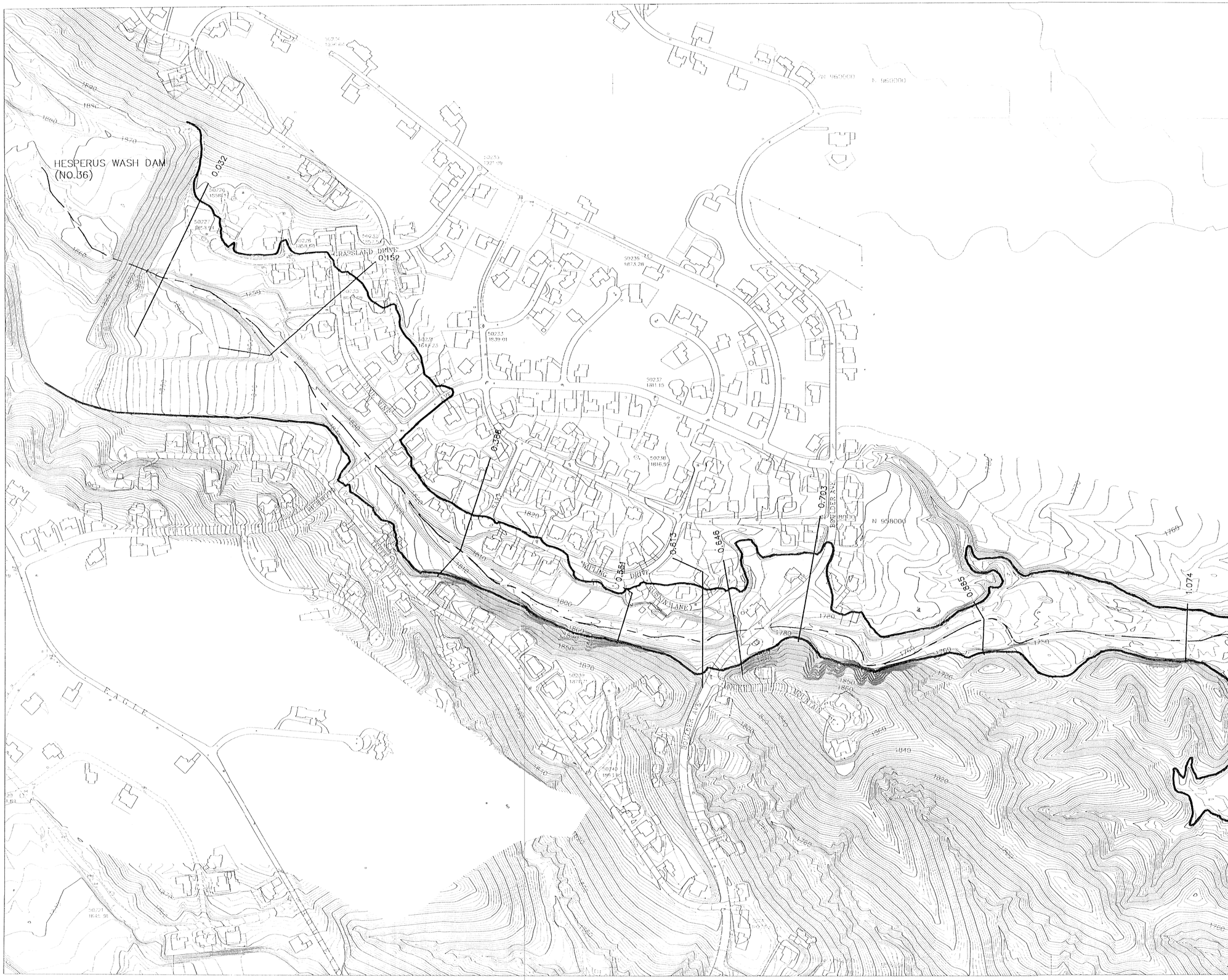
7 Flood inundation in Ashbrook Wash from Golden Eagle Park Dam break plus inflow from Hesperus Wash Dam spillway release

8 Flood inundation in Ashbrook Wash from Aspen Dam break

9 Flood inundation in Bristol Wash from North Heights Dam break

10 Flood inundation in Cloudburst Wash from SunRidge Canyon Dam break

11 Flood inundation in Cloudburst Wash from SunRidge Canyon Dam break



ANDERSON–NELSON, Inc.

FOUNTAIN HILLS
DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	0.885
ELEVATION REFERENCE MARK	6–C
CORPORATE LIMITS	Corporate Limits
SECTION LINE	Section Boundary

ELEVATION REFERENCE MARKS

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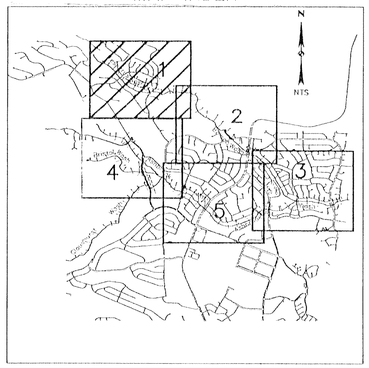
NOTES

Registered Professional Engineer (Civil)
CERTIFICATE NO. 17928
GEORGE V. SABOL
Date Signed 12-18-96
ARIZONA, U.S.A.

MAP INDEX



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

George V. Sabol Consulting Engineers, Inc.

PLATE 1		Flood Inundation In Hesperus/Balboa Wash From Hesperus Wash Dam Break
ANALYSIS	BY CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 1

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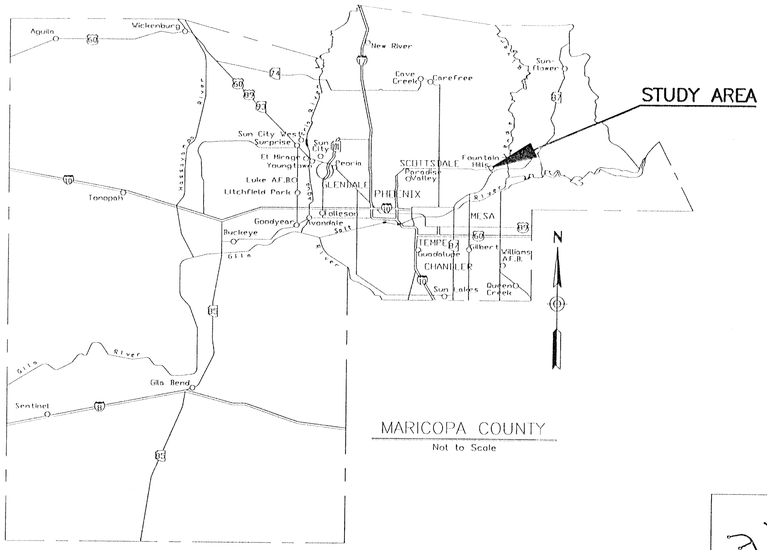
Date: 1/18/96

ANDERSON-NELSON, Inc.
FOUNTAIN HILLS
DAM BREAK ANALYSIS



LOCATION MAP

DATUM

HORIZONTAL: North American Datum of 1983
VERTICAL: National Geodetic Vertical Datum of 1929

Datum Note: There is Another set of topographic maps in use by the Town of Fountain Hills, on local datum. This other set of mapping was also prepared by Kenney Aerial Mapping, at same scale and flight date as this mapping;

Elevation Equation:

NGVD 1929 = Local Datum −1.26 feet

[Source: Anderson-Nelson Inc.
Letter dated 8-24-92]

PLATE INDEX

Plates 1-3: Hesperus Wash & Balboa Wash, Downstream Of Hesperus Wash Dam (no.36)
Plates 4-6: Ashbrook Wash, Downstream Of Golden Eagle Park Dam (no.4)
Plate 8: Ashbrook Wash, Downstream Of Aspen Dam (no.6)

Note: Plates 7,9,10 & 11 Are From Different Mapping Sources.

STUDY AREA MAP AND SHEET INDEX

SHEET INDEX

Sheet 1-5 Flood Inundation Maps

AERIAL MAPPING

Kenney Aerial Mapping
1130 W. Fillmore
Phoenix, Arizona 85007 (602) 258-6471

KAM JOB # 910804-1
FLIGHT DATE: August 29, 1991
CONTOUR INTERVAL: 2 Feet

GROUND CONTROL

Anderson-Nelson, Inc.
4441 E. McDowell Road
Phoenix, Arizona 85008 (602) 273-1850

ADDITIONAL SURVEY

Alcocer Land Surveyors
3501 N. 16th Street, Suite C
Phoenix, Arizona 85016 (602) 263-7846

INUNDATION MAPPING

George V. Sabol Consulting Engineers, Inc.
7950 E. Acoma Drive, Suite 211
Scottsdale, Arizona 85260-6962 (602) 483-3368

LEGEND

Dam Location
Sheet Limits
Sheet Number 5
Study Wash

Registered Professional Engineer (Civil)
CERTIFICATE NO. 17928
GEORGE V. SABOL
Date Signed 1-7-98
ARIZONA, U.S.A.

George V. Sabol Consulting Engineers, Inc.		
COVER SHEET		Flood Inundation Map Index
ANALYSIS	BY CCC	
DRAFTING	LKF	
REVIEW	GVS	
TOPOGRAPHY MAP- KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 1

Dwg. Name: E:\P\83\ACAD\ORIGINAL\COVER.DWG
Date: 1-19-98

ANDERSON–NELSON, Inc.

FOUNTAIN HILLS
DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	0.885
ELEVATION REFERENCE MARK	6–C
CORPORATE LIMITS	Corporate Limits
SECTION LINE	Section Boundary

ELEVATION REFERENCE MARKS

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NOTES

Arizona Professional Engineer (Civil)
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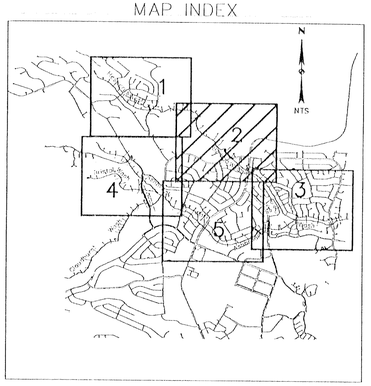
GEORGE V. SABOL
Date Signed 1/16/96
ARIZONA, U.S.A.

MAP INDEX



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

George V. Sabol Consulting Engineers, Inc.

PLATE 2		Flood Inundation In Hesperus/Balboa Wash From Hesperus Wash Dam Break
ANALYSIS	BY CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 2

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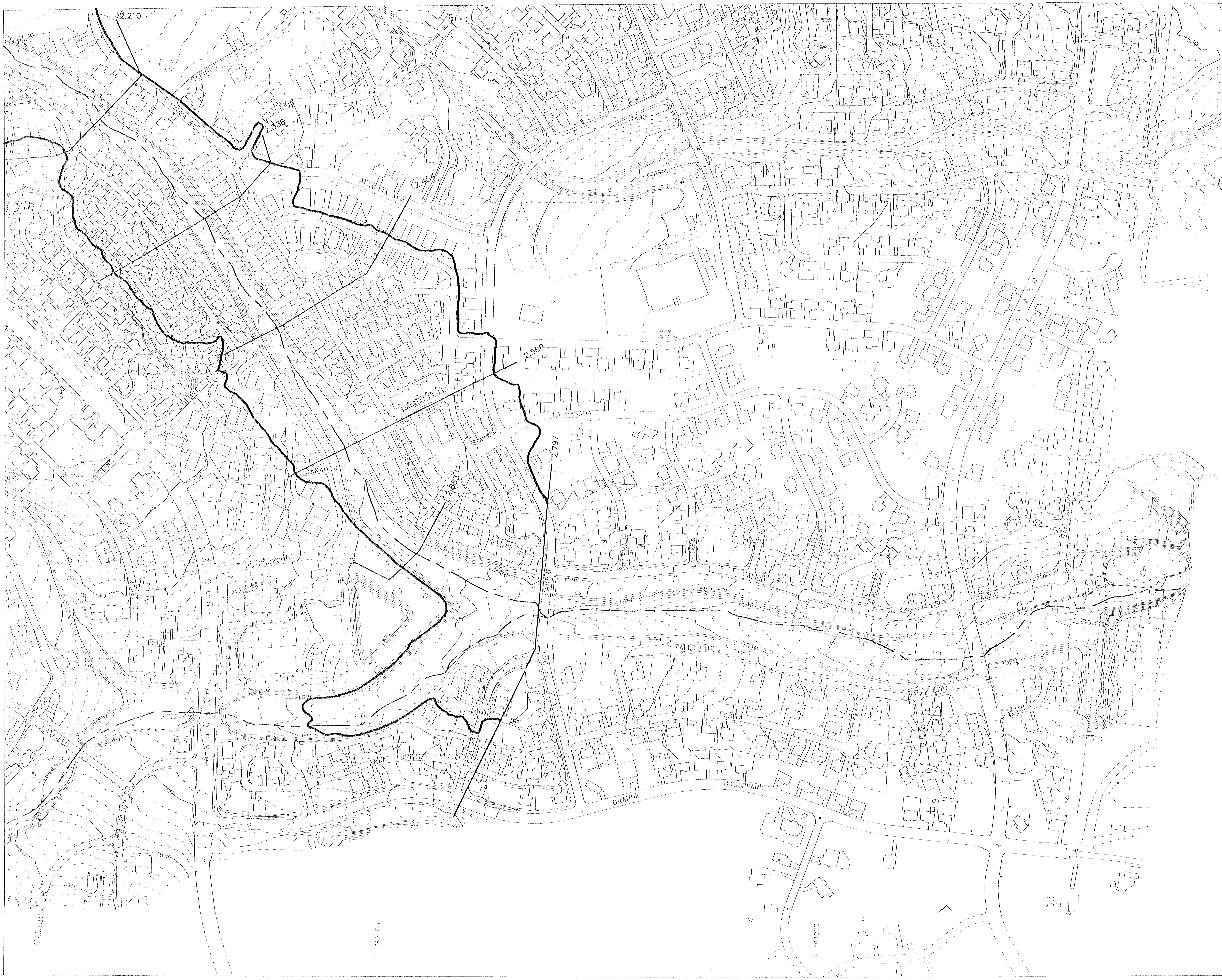

ANDERSON–NELSON, Inc.

FOUNTAIN HILLS
DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
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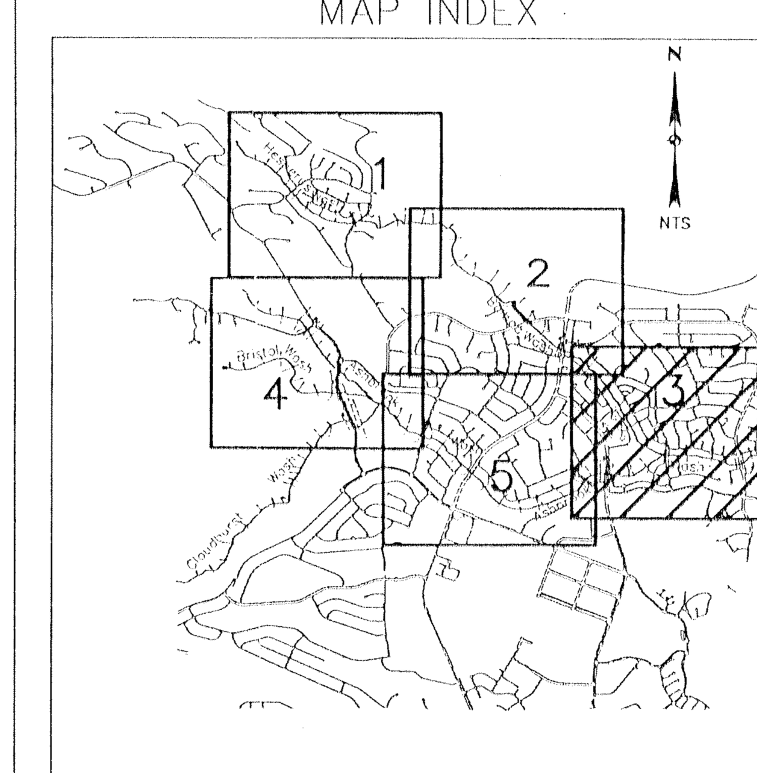
NOTES

Registered Professional Engineer (Civil)
CERTIFICATE NO.
17928
GEORGE V.
SABOL
Date Signed 22 Jan 96
ARIZONA, U.S.A.

MAP INDEX



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

George V. Sabol Consulting Engineers, Inc.

PLATE 3		Flood Inundation In Hesperus/Balboa Wash From Hesperus Wash Dam Break
	BY	
ANALYSIS	CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 3

Dwg. Name: E:\P\83\ACAD\WORK\A_EXHIBIT.DWG
Date: 1/18/96

ANDERSON–NELSON, Inc.

FOUNTAIN HILLS
DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	0.885
ELEVATION REFERENCE MARK	6–C
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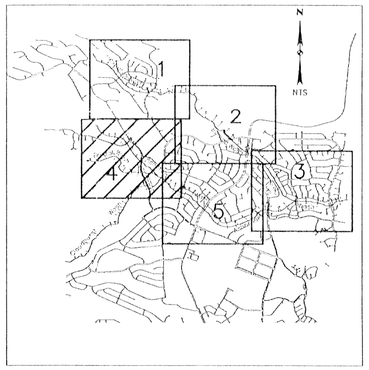
NOTES

Registered Professional Engineer
CERTIFICATE NO. 17928
GEORGE V. SABOL
Date Signed 1-18-96
ARIZONA, U.S.A.

MAP INDEX



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

George V. Sabol Consulting Engineers, Inc.

PLATE 4

Flood Inundation In Ashbrook Wash From Golden Eagle Park Dam Break

	BY
ANALYSIS	CCC
DRAFTING	LKF/MCG
REVIEW	GVS

TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY
PHOTOGRAPHY 29 AUG. 91

SHEET 4

Dwg. Name: E:\P\83\ACAD\WORK\A_EXHIBIT.DWG
Date: 1/18/96

ANDERSON–NELSON, Inc.

FOUNTAIN HILLS
DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	0.885
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NOTES

Registered Professional Engineer
CERTIFICATE No. 17906
GEORGE V. SABOL
Date Signed 12 Jan 96
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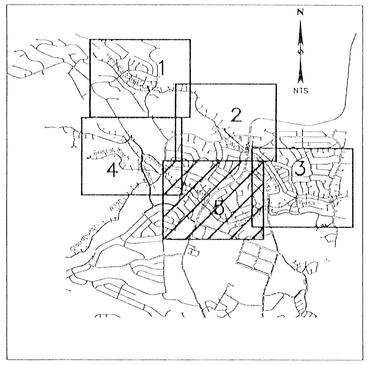
MAP INDEX



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

George V. Sabol Consulting Engineers, Inc.

PLATE 5		Flood Inundation In Ashbrook Wash From Golden Eagle Park Dam Break
ANALYSIS	BY CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 5

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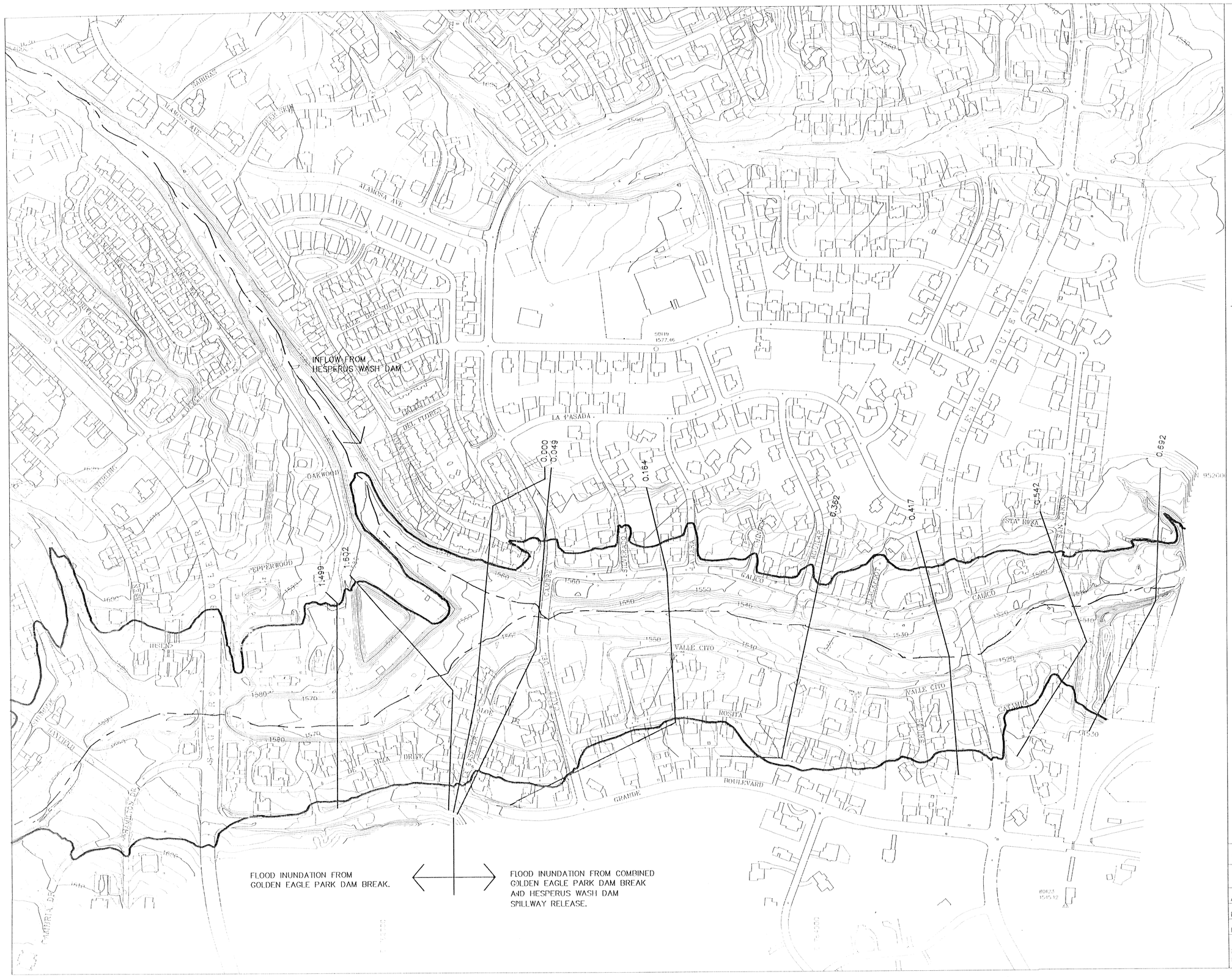
Date: 1/18/96



ANDERSON–NELSON, Inc.

FOUNTAIN HILLS DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	0.885
ELEVATION REFERENCE MARK	6–C
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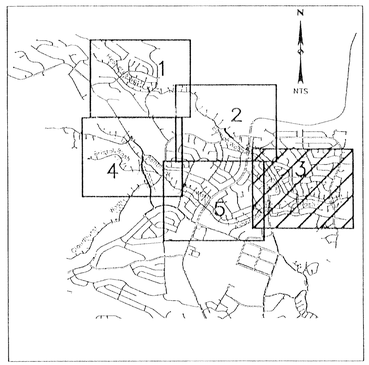
NOTES

Registered Professional Engineer
CERTIFICATE NO. 17926
GEORGE V. SABOL
Date Signed 1-9-96
ARIZONA, U.S.A.

MAP INDEX

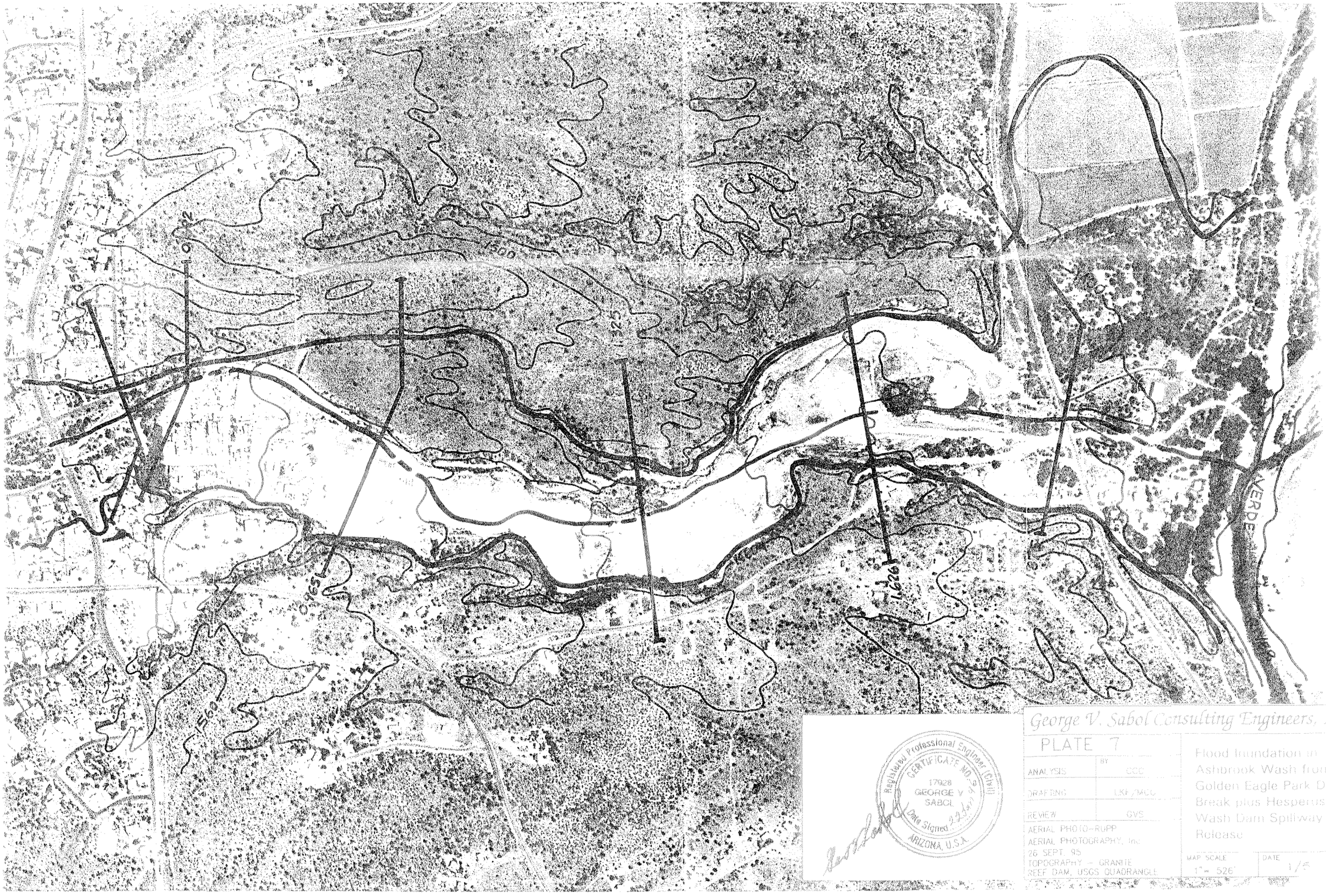


200 0' 200 400
SCALE: 1" = 200'
CONTOUR INTERVAL = 2' FEET

George V. Sabol Consulting Engineers, Inc.

PLATE 6		Flood Inundation In Ashbrook Wash From Golden Eagle Park Dam Break Plus Inflow From Hesperus Wash Dam Spillway Release
ANALYSIS	BY CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 3

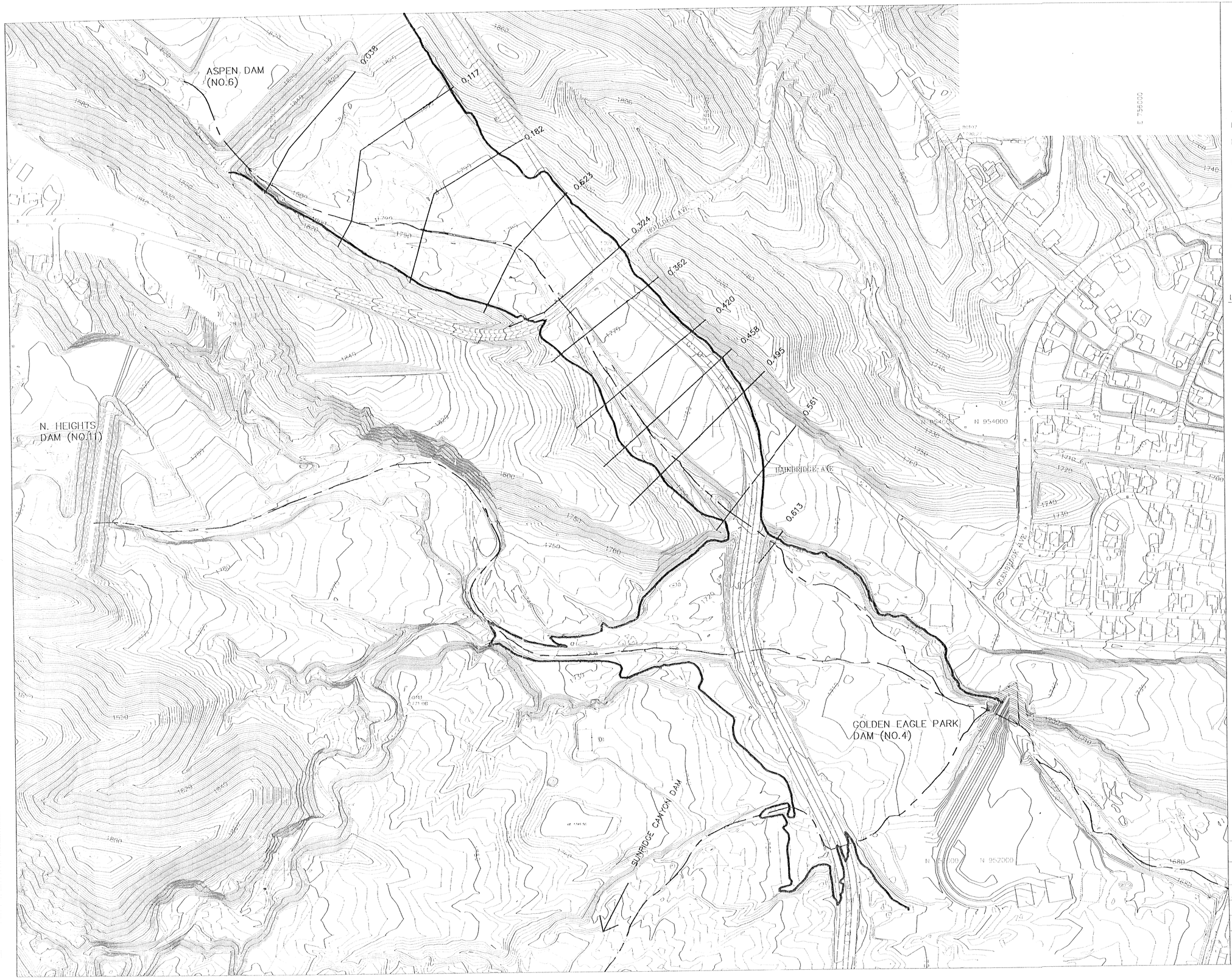
Dwg. Name: E:\P\83\ACAD\WORK\A_EXHIBIT.DWG
Date: 1/18/96



George V. Sabol Consulting Engineers, I

PLATE 7

ANALYSIS	BY CCC	Flood Inundation in Ashbrook Wash from Golden Eagle Park Da Break plus Hesperus Wash Dam Spillway Release
DRAFTING	LKF/MCC	
REVIEW	GVS	
AERIAL PHOTO–RUPP AERIAL PHOTOGRAPHY, Inc 26 SEPT. 95 TOPOGRAPHY – GRANITE REEF DAM, USGS QUADRANGLE	MAP SCALE 1" = 526'	DATE 1/5



ANDERSON–NELSON, Inc.

FOUNTAIN HILLS
DAM BREAK ANALYSIS

LEGEND

INUNDATION BOUNDARY	
HYDRAULIC BASE LINE	
CROSS SECTION	0.885
ELEVATION REFERENCE MARK	6–C
CORPORATE LIMITS	Corporate Limits
SECTION LINE	Section Boundary

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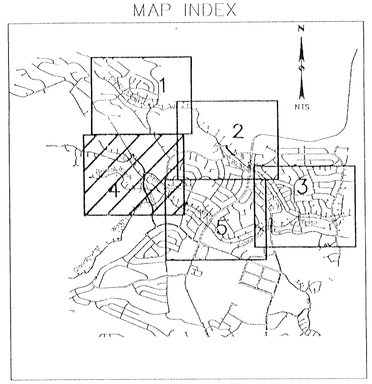
NOTES

Registered Professional Engineer
CERTIFICATE NO. 17926
GEORGE V. SABOL
Date Signed 1/8/96
ARIZONA, U.S.A.

MAP INDEX



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

George V. Sabol Consulting Engineers, Inc.

PLATE 8	BY	Flood Inundation In Ashbrook Wash From Aspen Dam Break
ANALYSIS	CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP– KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 4

Dwg. Name: E:\P\83\ACAD\WORK\A_EXHIBIT.DWG
Date: 1/18/96

SUNRIDGE CANYON

EARTHWORK

SCOPE

The work covered under this section consists of furnishing all labor, equipment and materials, and performing all operations in connection with the manipulation of soil or dirt throughout the site including the excavation of lakes, and grading as required by the plans and the following specifications.

BEFORE ANY GRADING IS TO OCCUR ON EACH AND EVERY HOLE, THE GOLF COURSE ARCHITECT AND CONTRACTOR MUST REVIEW THE WORK THAT IS TO BE DONE. This should be done in 2-3 hole increments. The intent is to further insure that the CONTRACTOR understands the design intent prior to the commencement of work. By reviewing the work prior, it may be possible to lessen the grading in some areas. The real advantage is that the GOLF COURSE ARCHITECT and CONTRACTOR are working together to properly build each hole. The result should be a well-coordinated effort.

MATERIALS

Fill - Fill, when and as required, shall be a good quality fill material, free from debris of any kind, shall be of a type suitable for the purpose intended, satisfactory to the GOLF COURSE ARCHITECT, and shall be the best available on the site.

EXCAVATION

Excavation of lake areas are to be completed in accordance to the grading plans supplied by BLUE MESA STUDIOS. These shall take precedence over the GOLF COURSE ARCHITECT'S plans. The material excavated shall be used as fill on the golf course if suitable for the purpose, and satisfactory to the GOLF COURSE ARCHITECT. If the material is determined to be unsuitable as fill, the CONTRACTOR shall place the unsuitable material at a location selected by the GOLF COURSE ARCHITECT or OWNER.

If large boulders, rock ledges, or cemented conglomerate are encountered in the excavation/grading process, the material shall be removed (at no additional cost to the OWNER) with a dozer equipped with a shank ripper. In the unlikely event non-rippable materials are encountered (less than three (3") inch penetration per pass), the CONTRACTOR shall notify the GOLF COURSE ARCHITECT and the OWNER. If the GOLF COURSE ARCHITECT and the OWNER determine that the Grading Plan cannot be adjusted to avoid the rock, then it will be necessary to drill or blast the material to acquire a suitable subgrade. The excavated rock shall be buried on the site with a minimum of two (2') feet of compacted cover. In addition, if irrigation trenches encounter rock in their excavation process, the spoils shall be removed to a disposal site and the lines shall be backfilled with two (2') feet of clean material.

GRADING

Grading consists of the mechanical manipulation of existing land or soil to achieve the limits of cut and fill and required elevations as designated in the plans or in the field by the GOLF COURSE ARCHITECT.

The CONTRACTOR will grade the golf course to within 1/10 foot of the Grading Plan with consideration given to the replacement of topsoil/plating material. Areas that are "cut" to the top of the subgrade, shall be ripped and processed for removal of rock four (4) inches in size or larger for a depth of not less than eight (8) inches. In the event the materials encountered at subgrade elevation in the cut areas are "not suitable" for top of subgrade use to the GOLF COURSE ARCHITECT, they shall be over-excavated one (1) foot and removed, and replaced with suitable material as directed by the GOLF COURSE ARCHITECT, and at no additional contract cost to the OWNER.

Fills shall be free of debris and properly compacted. Fill shall be placed in six (6) inch layers and compacted with equipment approved by the GOLF COURSE ARCHITECT. Fill material in the top twelve (12) inches of the fill shall contain no stones more than four (4) inches in diameter. The soil shall be treated and worked so as to be damp but not wet. Fill in areas under roads or paved areas shall be compacted to not less than ninety-five percent (95%) maximum density at optimum moisture as determined by ASTM D-698. Borrow areas, if required, in addition to proposed lake excavations and other cuts shown on the plans shall be approved by the GOLF COURSE ARCHITECT.

It is the intent of the OWNER and GOLF COURSE ARCHITECT that the finished golf course be a well-drained, playable course. The CONTRACTOR shall maintain adequate drainage of surface water during construction from all areas on the site, whether included in his work or not.

IMBALANCE IN DESIGNATED CUT AND FILLS

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PLATING MATERIAL MANAGEMENT

SCOPE

The work covered under this section consists of furnishing all labor, equipment, and materials, and performing all operations in connection with the importation and spreading of plating material.

MATERIALS

Plating Materials - Plating material shall be a good quality sandy loam soil, free from boron, lumps sod, stones or debris of any kind, satisfactory to the GOLF COURSE ARCHITECT, and shall be the best available on the site. Plating material shall contain no stone larger than three-quarters (3/4) of an inch in diameter. If required, screening of the site plating material will be necessary to eliminate rock and debris inconsistent with the desired specification. The following criteria for screened plating material must be met:

U.S. Standard Sieve		Percent (%) Retained
Size #4	(4.00mm)	0.0
Size #7	(2.83mm)	20
Size #8	(1.00mm)	20
Size #1-0	(0.11mm)	85
Silt - 0.002-05mm		Less Than 8%
Clay		Less Than 2%

Importing Plating Material - Plating material brought in for golf course purposes shall be fertile, friable, natural loam, containing a liberal amount of humus; cable of sustaining vigorous plant growth; free of boron, subsoil, stones larger than three-quarters (3/4) of an inch in diameter, lumps, clods, plant roots, sticks and other debris.

STRIPPING AND STOCKPILING

Due to the nature of the existing site soils, all plating material for the finish grading will be imported from off the site.

SUBGRADE FOR PLATING MATERIALS

Prior to distributing the 6" plating material, the CONTRACTOR must scarify the top 9" and remove rock any greater than 2" in diameter. The intent being that surface rock does not work its way back up through the subgrade to the finish grade.

RESPREADING

Topsoil plating is sequenced after shaping has been complete and before drainage, irrigation and landscaping has been installed. Typically, plating is done after all improvements have been installed in the subgrade to eliminate the extensive contamination of the soil from digging in the rocky subgrade. In addition, the irrigation heads are set at sixes above subgrade and used as grading control to ensure a consistent topsoil layer.

The grades on the grading plans reflect the final subgrade. It is assumed that the cart path grade is final, and plating material will be added to all areas to be grassed.

SHORTAGE

It is the OWNER's responsibility to contract for the appropriate amount of plating material. In the event of a shortage, the OWNER will provide additional plating material sufficient to finish the project at no additional cost to the CONTRACTOR.

KEITH FOSTER & ASSOCIATES
Golf Course Architects
Office 602-279-4332 • Fax 602-279-6115
3110 N. 16th Street • Phoenix, AZ 85016

George V. Sabol Consulting Engineers, Inc.

PLATE 9		Flood Inundation in Bristol Wash from North Heights Dam Break	
	BY		
ANALYSIS	CCC		
DRAFTING	LKF/MCG		
REVIEW	GVS		
TOPOGRAPHY MAP- KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 4B	DATE 1/5/96

100 0 100 200
scale feet

Registered Professional Engineer (Civil) CERTIFICATE NO. 17926 GEORGE V. SABOL Date Signed ARIZONA, U.S.A.

GRADING PLAN Page 4B

June 9, 1994

SUNRIDGE CANYON

PLATING MATERIAL MANAGEMENT

SCOPE

The work covered under this section consists of furnishing all labor, equipment, and materials, and performing all operations in connection with the importation and spreading of plating material.

MATERIALS

Plating Materials - Plating material shall be a good quality sandy loam soil, free from boron, lumps, sod, stones or debris of any kind, satisfactory to the GOLF COURSE ARCHITECT, and shall be the best available on the site. Plating material shall contain no stone larger than three-quarters (3/4) of an inch in diameter. If required, screening of the site plating material will be necessary to eliminate rock and debris inconsistent with the desired specification. The following criteria for screened plating material must be met:

U.S. Standard Sieve		Percent (%) Retained
Size #4	(4.00mm)	0.0
Size #7	(2.83mm)	20
Size #8	(1.00mm)	20
Size #140	(0.11mm)	85
Silt - 0.002-05mm		Less Than 8%
Clay		Less Than 2%

Importing Plating Material - Plating material brought in for golf course purposes shall be fertile, friable, natural loam, containing a liberal amount of humus; cable of sustaining vigorous plant growth; fr[illegible] of boron, subsoil, stones larger than three-quarters (3/4) of an inch in diameter, lumps, clods, plant roots, sticks and other debris.

STRIPPING AND STOCKPILING

Due to the nature of the existing site soils, all plating material for the finish grading will be imported from off the site.

SUBGRADE FOR PLATING MATERIALS

Prior to distributing the 6" plating material, the CONTRACTOR must scarify the top 9" and remove rock any greater than 2" in diameter. The intent being that surface rock does not work its way back up through the subgrade to the finish grade.

RESPREADING

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The grades on the grading plans reflect the final subgrade. It is assumed that the cart path grade is final, and plating material will be added to all areas to be grassed.

SHORTAGE

It is the OWNER's responsibility to contract for the appropriate amount of plating material. In the event of a shortage, the OWNER will provide additional plating material sufficient to finish the project at no additional cost to the CONTRACTOR.

EARTHWORK

SCOPE

The work covered under this section consists of furnishing all labor, equipment and materials, and performing all operations in connection with the manipulation of soil or dirt throughout the site including the excavation of lakes, and grading as required by the plans and the following specifications.

BEFORE ANY GRADING IS TO OCCUR ON EACH AND EVERY HOLE, THE GOLF COURSE ARCHITECT AND CONTRACTOR MUST REVIEW THE WORK THAT IS TO BE DONE. This should be done in 2-3 hole increments. The intent is to further insure that the CONTRACTOR understands the design intent prior to the commencement of work. By reviewing the work prior, it may be possible to lessen the grading in some areas. The real advantage is that the GOLF COURSE ARCHITECT and CONTRACTOR are working together to properly build each hole. The result should be a well-coordinated effort.

MATERIALS

Fill - Fill, when and as required, shall be a good quality fill material, free from debris of any kind, shall be of a type suitable for the purpose intended, satisfactory to the GOLF COURSE ARCHITECT, and shall be the best available on the site.

EXCAVATION

Excavation of lake areas are to be completed in accordance to the grading plans supplied by BLUE MESA STUDIOS. These shall take precedence over the GOLF COURSE ARCHITECT'S plans. The material excavated shall be used as fill on the golf course if suitable for the purpose, and satisfactory to the GOLF COURSE ARCHITECT. If the material is determined to be unsuitable as fill, the CONTRACTOR shall place the unsuitable material at a location selected by the GOLF COURSE ARCHITECT or OWNER.

If large boulders, rock ledges, or cemented conglomerate are encountered in the excavation/grading process, the material shall be removed (at no additional cost to the OWNER) with a dozer equipped with a shank ripper. In the unlikely event non-rippable materials are encountered (less than three (3") inch penetration per pass), the CONTRACTOR shall notify the GOLF COURSE ARCHITECT and the OWNER. If the GOLF COURSE ARCHITECT and the OWNER determine that the Grading Plan cannot be adjusted to avoid the rock, then it will be necessary to drill or blast the material to acquire a suitable subgrade. The excavated rock shall be buried on the site with a minimum of two (2') feet of compacted cover. In addition, if irrigation trenches encounter rock in their excavation process, the spoils shall be removed to a disposal site and the lines shall be backfilled with two (2') feet of clean material.

GRADING

Grading consists of the mechanical manipulation of existing land or soil to achieve the limits of cut and fill and required elevations as designated in the plans or in the field by the GOLF COURSE ARCHITECT.

The CONTRACTOR will grade the golf course to within 1/10 foot of the Grading Plan with consideration given to the replacement of topsoil/plating material. Areas that are "cut" to the top of the subgrade, shall be ripped and processed for removal of rock four (4) inches in size or larger for a depth of not less than eight (8) inches. In the event the materials encountered at subgrade elevation in the cut areas are "not suitable" for top of subgrade use to the GOLF COURSE ARCHITECT, they shall be over-excavated one (1) foot and removed, and replaced with suitable material as directed by the GOLF COURSE ARCHITECT, and at no additional contract cost to the OWNER.

Fills shall be free of debris and properly compacted. Fill shall be placed in six (6) inch layers and compacted with equipment approved by the GOLF COURSE ARCHITECT. Fill material in the top twelve (12) inches of the fill shall contain no stones more than four (4) inches in diameter. The soil shall be treated and worked so as to be damp but not wet. Fill in areas under roads or paved areas shall be compacted to not less than ninety-five percent (95%) maximum density at optimum moisture as determined by ASTM D-698. Borrow areas, if required, in addition to proposed lake excavations and other cuts shown on the plans shall be approved by the GOLF COURSE ARCHITECT.

It is the intent of the OWNER and GOLF COURSE ARCHITECT that the finished golf course be a well-drained, playable course. The CONTRACTOR shall maintain adequate drainage of surface water during construction from all areas on the site, whether included in his work or not.

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Legend

	Cart Path
	Cart Path With Curbing
	Drain Inlet
	Temporary Cart Path Location

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Registered Professional Engineer (Civil) CERTIFICATE NO. 17928 GEORGE V. SABOL ARIZONA, U.S.A.

George V. Sabol Consulting Engineers, Inc.		
PLATE 10		Flood Inundation in Cloudburst Wash from SunRidge Canyon Dam Break
ANALYSIS	BY CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP- KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91		SHEET 4A / DATE 1/5/96

100 0 100 200
scale feet

GRADING PLAN Page 4A

June 9, 1994

SUNRIDGE CANYON

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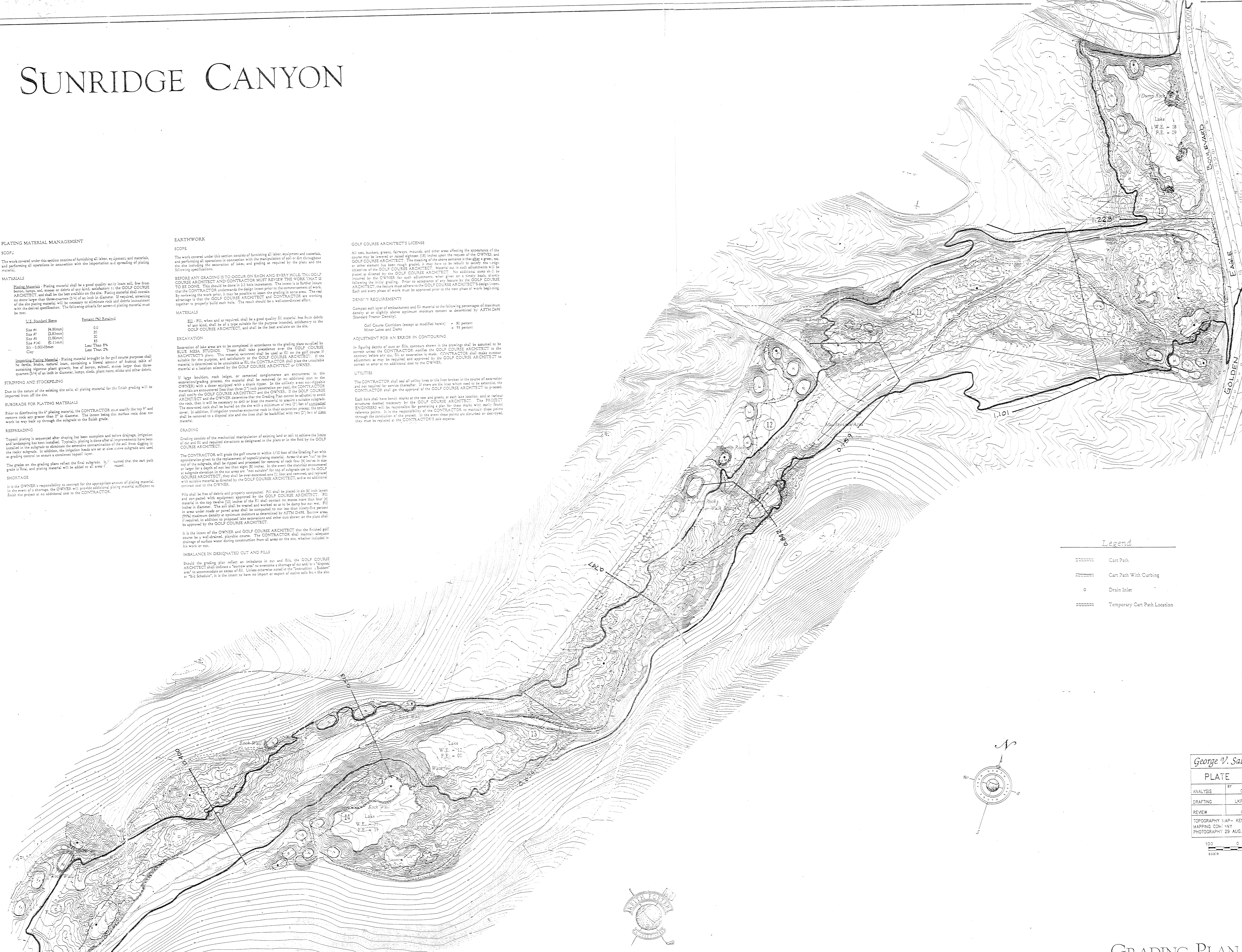

Legend

=======	Cart Path
=======	Cart Path With Curbing
▫	Drain Inlet
=======	Temporary Cart Path Location

N

Keith Foster & Associates
Golf Course Architects

Registered Professional Engineer (Civil) Certificate No. 17928 George V. Sabol, Arizona, U.S.A.

George V. Sabol Consulting Engineers, Inc.		
PLATE 11		Flood Inundation in Cloudburst Wash from SunRidge Canyon Dam Break
ANALYSIS	BY CCC	
DRAFTING	LKF/MCG	
REVIEW	GVS	
TOPOGRAPHY MAP- KENNEY AERIAL MAPPING COMPANY PHOTOGRAPHY 29 AUG. 91	SHEET 4C	DATE 1/5/96

100 0 100 200
scale feet

GRADING PLAN Page 4C

June 9, 1994