CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

August 25, 2015

Hiram Crook /Mark Goodwin
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

RE: **Holy Cross Townhomes (File: E19D021)**
Conceptual Grading & Drainage Plan, Engineer's Stamp Date 8-21-2015

Dear Mr. Goodwin:

Based upon the information provided in your latest submittal received 8-21-15, the above referenced plan cannot is approved for action by the DRB on the Site Plan for Building Permit and the Plat .

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Orig: Drainage file
c.pdf Addressee via Email

Free
q₀D = 0.81 Ac.

RH-R
E19D021

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: Holy Cross Townhomes ZONE MAP/DRG. FILE E-19-Z
DRB#: 1006844 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Tract A-1-A, Lands of Lutheran Church in America
CITY ADDRESS:

ENGINEERING FIRM: Mark Goodwin & Associates, PA
ADDRESS: PO Box 90606
CITY, STATE: ABQ, NM
CONTACT: Hiram L. Crook
PHONE: 828-2200
ZIP CODE: 87199

OWNER: Holy Cross Lutheran Church
ADDRESS: 6901 Wyoming Blvd. NE
CITY, STATE: ABQ, NM
CONTACT: Joseph Pappe Jr
PHONE: (505) 821-4676
ZIP CODE: 87109

ARCHITECT: NA
ADDRESS:
CITY, STATE:
CONTACT:
PHONE:
ZIP CODE:

SURVEYOR: Aldrich Land Surveying
ADDRESS: PO Box 30701
CITY, STATE: Albuquerque NM
CONTACT: Tim Aldrich
PHONE: 328-3988
ZIP CODE: 87190

CONTRACTOR: NA
ADDRESS:
CITY, STATE:
CONTACT:
PHONE:
ZIP CODE:

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- X CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT
- ____ ENGINEER/ARCHITECT CERT (TCL)
- ____ ENGINEER/ARCHITECT (DRB SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- X S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ____ YES
- ____ NO
- ____ COPY PROVIDED

RECEIVED
AUG 21 2015
LAND DEVELOPMENT SECTION

SUBMITTED BY: Hiram L. Crook DATE: August 21, 2015

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

Channel Report

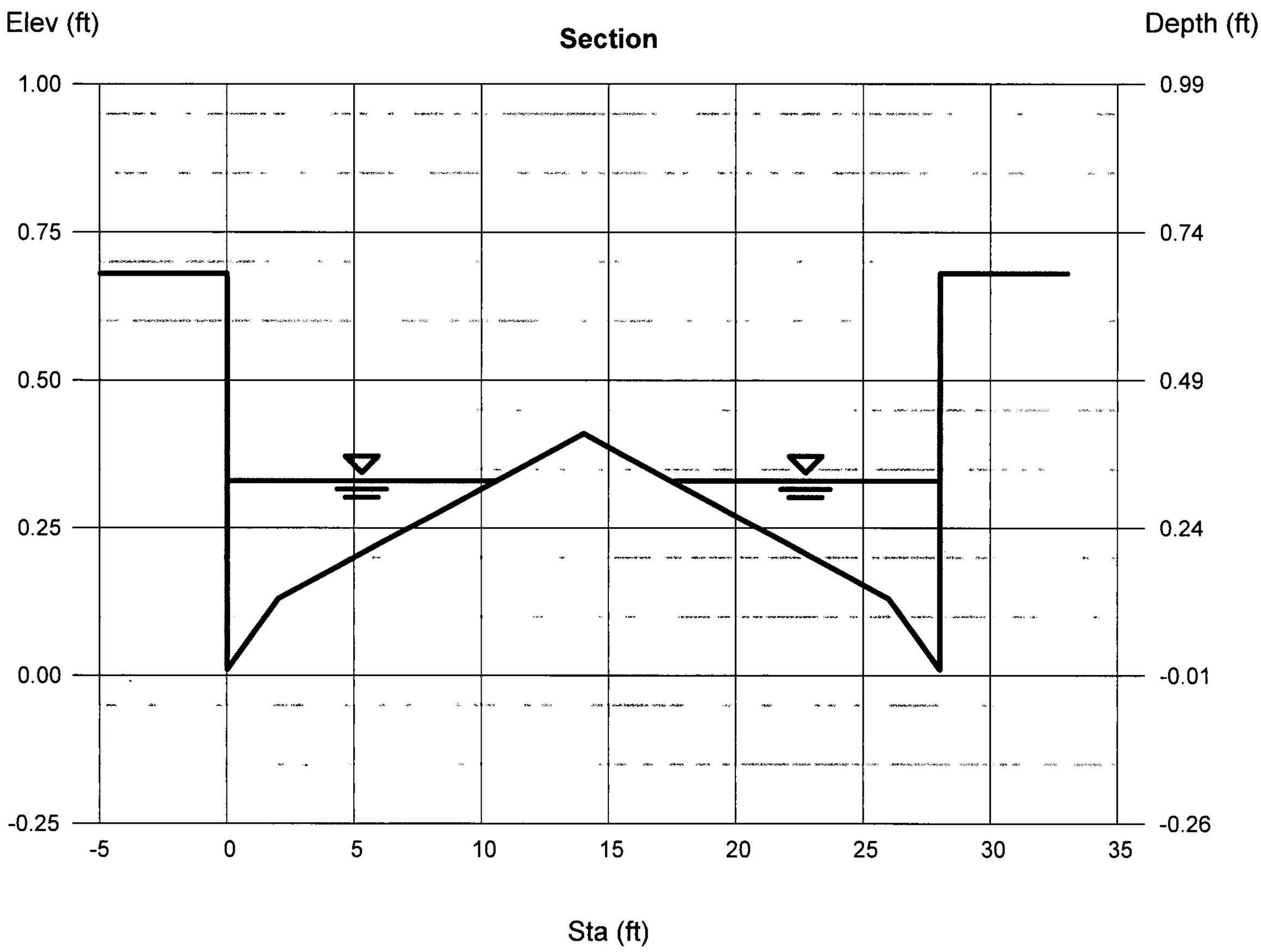
Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Wednesday, Aug 19 2015

VICKREY RD. Q100 Street Capacity (50 ROW)

User-defined		Highlighted	
Invert Elev (ft)	= 0.01	Depth (ft)	= 0.32
Slope (%)	= 2.00	Q (cfs)	= 8.980
N-Value	= 0.016	Area (sqft)	= 2.76
		Velocity (ft/s)	= 3.26
Calculations		Wetted Perim (ft)	= 21.79
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.38
Known Q (cfs)	= 8.98	Top Width (ft)	= 21.15
		EGL (ft)	= 0.49

(Sta, El, n)-(Sta, El, n)...

(0.00, 0.68)-(0.01, 0.01, 0.013)-(2.01, 0.13, 0.013)-(14.01, 0.41, 0.017)-(26.01, 0.13, 0.017)-(28.01, 0.01, 0.013)-(28.02, 0.68, 0.013)



E19D003

Received 10/29/76

DRAINAGE REPORT

ACADEMY ACRES

UNIT - 13.

ALBUQUERQUE, NEW MEXICO

RECEIVED
AUG 21 2015
LAND DEVELOPMENT SECTION

MURRAY-McCORMICK, INC.
ENVIRONMENTAL DESIGN
ECOSYSTEMS ANALYSIS • PLANNING • LAND SURVEYS • ENGINEERING

2601 WYOMING BLVD., NE. SUITE F / ALBUQUERQUE, N.M. 87110 / 505-292-1936

E19D003

16.2 cfs / 24 lots = (# lots in Basin)
.675 cfs / Lot

9 Lots * .675 = 6.07 cfs in Vickrey Dr

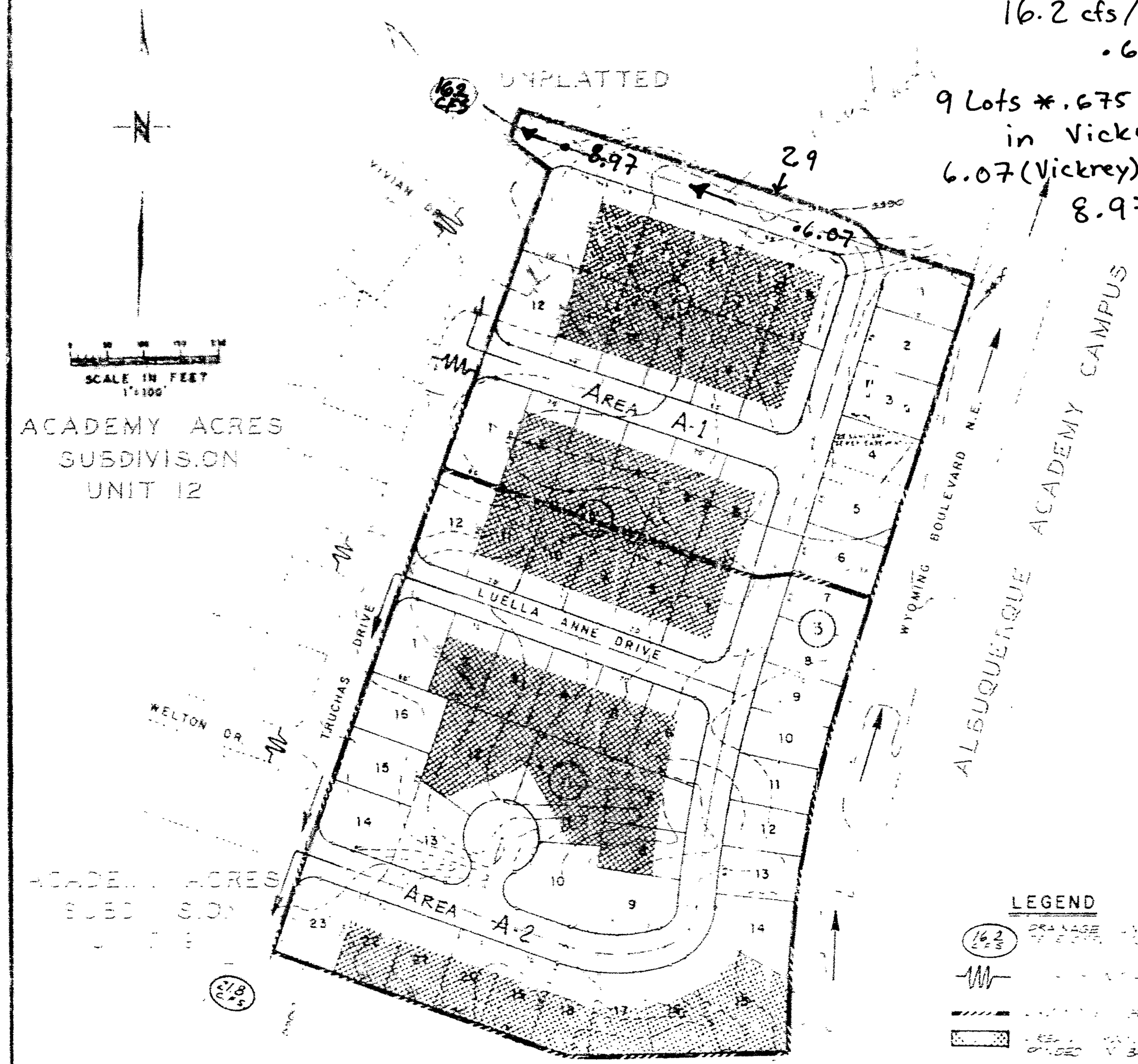
6.07 (Vickrey) + 2.9 (Church) =
8.97 cfs

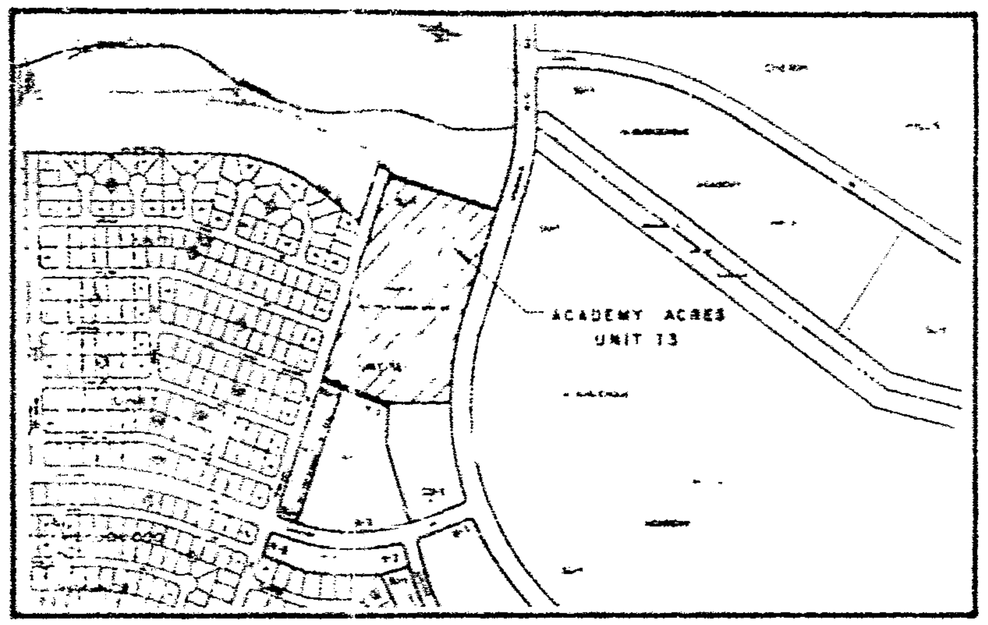
ACADEMY ACRES UNIT 13

BEING A REPLAT OF TRACT "A-2"

ALBUQUERQUE, NEW MEXICO

MAY 1976





VICINITY MAP
SCALE 1" = 800' (APPROX.)

LEGEND

162 cfs — DRAINAGE UNDER CONSTRUCTION

WATER BLOCK

PROPERTY LINE

AREA INCLUDED IN DRAINAGE BASIN

SITE DATA

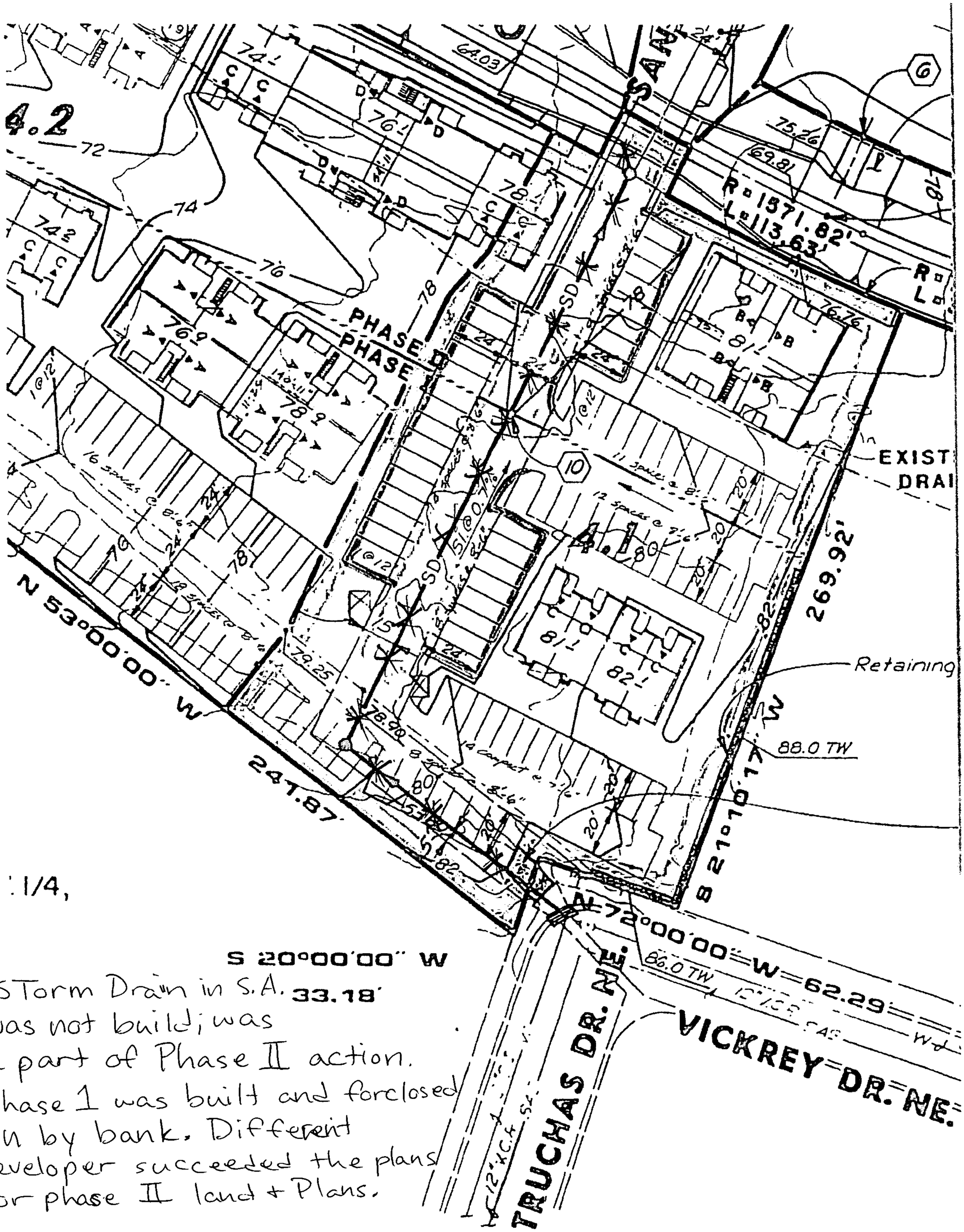
15.873 Ac
63 LOTS
3.97 LOTS/Ac

MILES OF STREETS - 0.57

FIGURE I

DEVELOPED DRAINAGE CHARACTERISTICS

MURRAY-McCORMICK, INC.
ENVIRONMENTAL DESIGN
ENGINEERING PLANNING SURVEYING



1/4,

* STorm Drain in S.A. was not build; was a part of Phase II action. Phase 1 was built and forclosed on by bank. Different developer succeeded the plans for phase II land + Plans.

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Tuesday, Aug 25 2015

San Antonio Dr. Q100 Street Capacoty (24' F-F)

User-defined

Invert Elev (ft)	= 100.00
Slope (%)	= 1.00
N-Value	= 0.015

Calculations

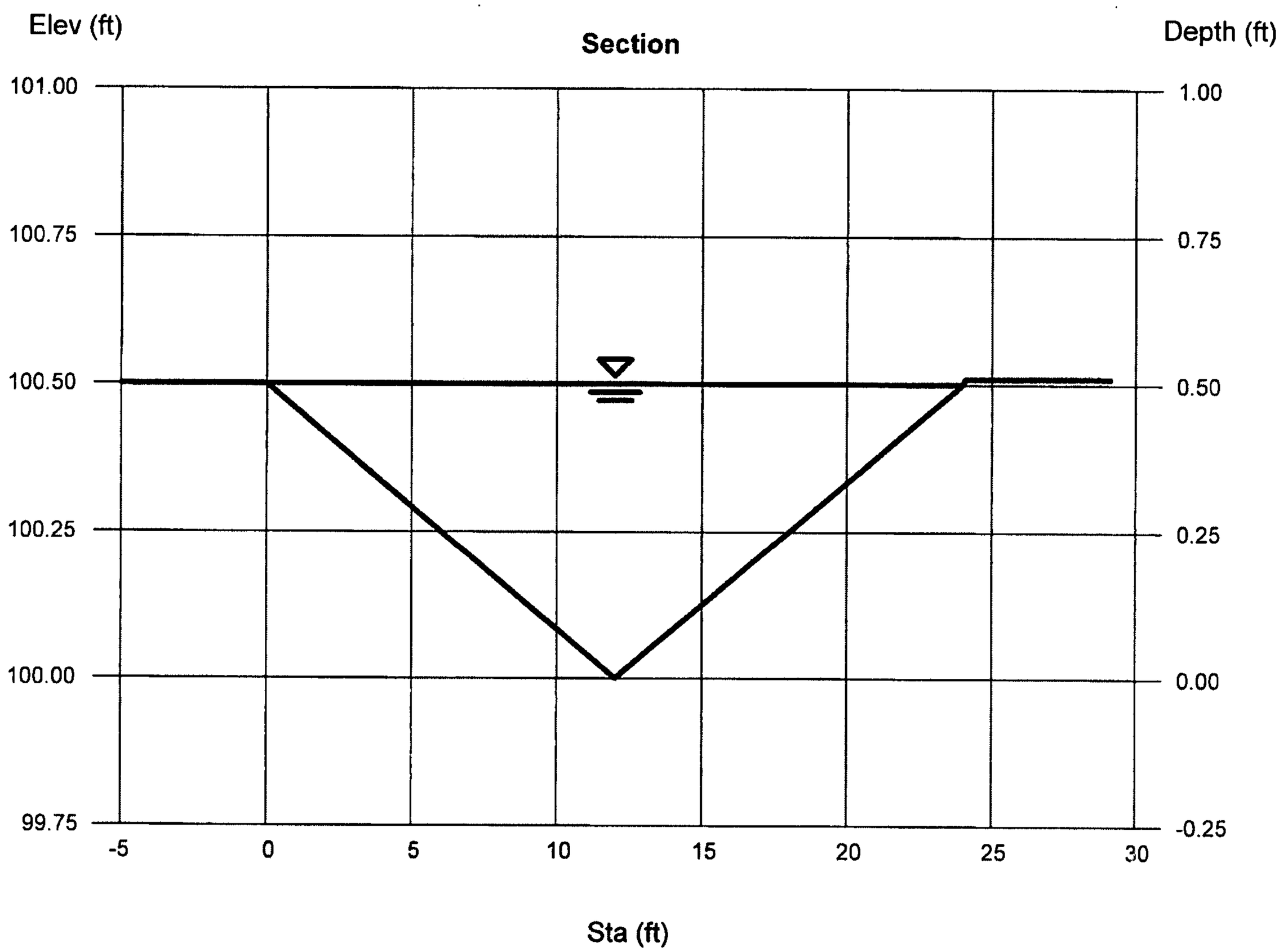
Compute by:	Known Q
Known Q (cfs)	= 23.27

Highlighted

Depth (ft)	= 0.50
Q (cfs)	= 23.27
Area (sqft)	= 6.00
Velocity (ft/s)	= 3.88
Wetted Perim (ft)	= 24.02
Crit Depth, Yc (ft)	= 0.51
Top Width (ft)	= 24.00
EGL (ft)	= 0.73

(Sta, El, n)-(Sta, El, n)...

(0.00, 100.50)-(6.00, 100.25, 0.015)-(12.00, 100.00, 0.015)-(18.00, 100.25, 0.015)-(24.00, 100.50, 0.015)-(24.10, 100.51, 0.015)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2013 by Autodesk, Inc. Tuesday, Aug 25 2015

San Antonio Dr. Q100 Street Capacoty (24' F-F)

User-defined

Invert Elev (ft)	= 100.00
Slope (%)	= 1.00
N-Value	= 0.015

Calculations

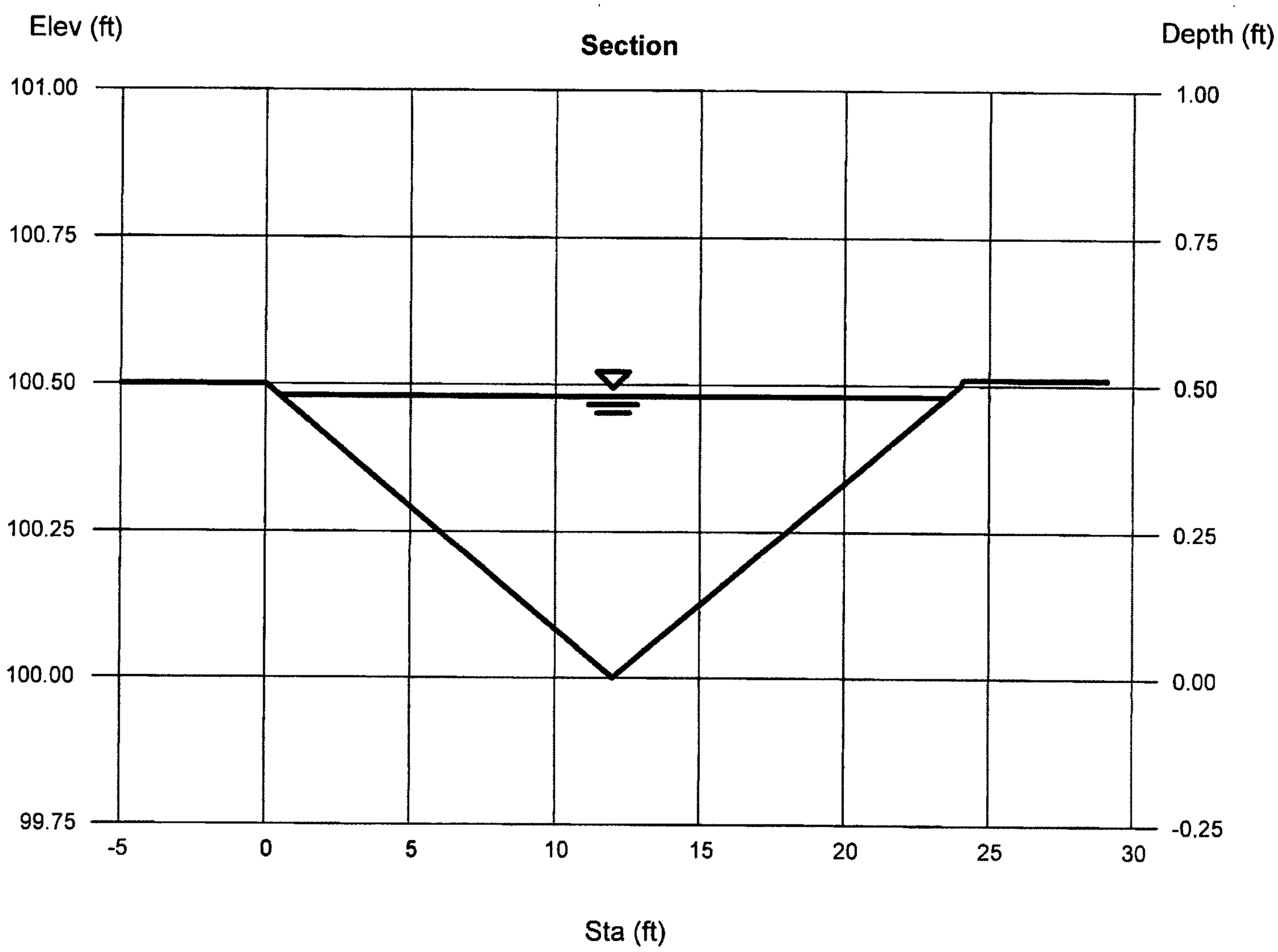
Compute by:	Known Q
Known Q (cfs)	= 20.30

Highlighted

Depth (ft)	= 0.48
Q (cfs)	= 20.30
Area (sqft)	= 5.53
Velocity (ft/s)	= 3.67
Wetted Perim (ft)	= 23.06
Crit Depth, Yc (ft)	= 0.51
Top Width (ft)	= 23.04
EGL (ft)	= 0.69

(Sta, El, n)-(Sta, El, n)...

(0.00, 100.50)-(6.00, 100.25, 0.015)-(12.00, 100.00, 0.015)-(18.00, 100.25, 0.015)-(24.00, 100.50, 0.015)-(24.10, 100.51, 0.015)



E19D025

HALL ENGINEERING COMPANY INC.

ENGINEERING • SURVEYING • PLANNING • CONSTRUCTION

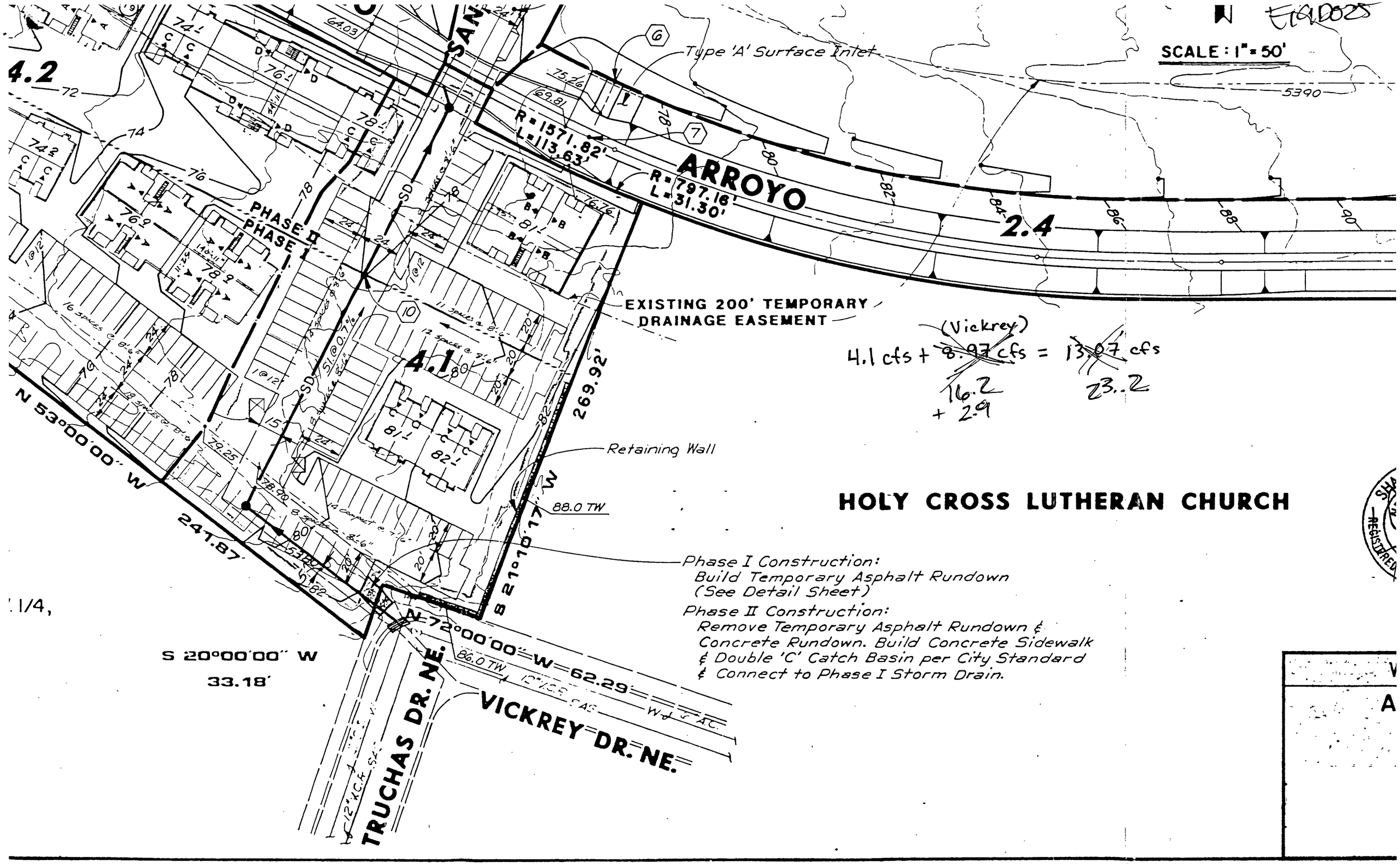
DRAINAGE REPORT

TRACTS D-1-A AND D-1-B
ACADEMY ACRES UNIT 17

January, 1991

RECEIVED
JAN 31 1991

6840 2ND ST., N.W., SUITE 306 • ALBUQUERQUE, NEW MEXICO 87107 • PHONE: (505) 345-1064


SCALE : 1" = 50'
Type 'A' Surface Inlet
R = 1571.82'
L = 113.63'
R = 797.16'
L = 31.30'
ARROYO
PHASE II
PHASE I
EXISTING 200' TEMPORARY DRAINAGE EASEMENT
4.2
4.1
2.4
269.92'
N 53°00'00" W
241.87'
S 20°00'00" W
33.18'
N 72°00'00" W 62.29'
S 21°10'17" W
88.0 TW
86.0 TW
Retaining Wall
Phase I Construction:
Build Temporary Asphalt Rundown
(See Detail Sheet)
Phase II Construction:
Remove Temporary Asphalt Rundown &
Concrete Rundown. Build Concrete Sidewalk
& Double 'C' Catch Basin per City Standard
& Connect to Phase I Storm Drain.
TRUCHAS DR. NE.
VICKREY DR. NE.
HOLY CROSS LUTHERAN CHURCH
(Vickrey)
4.1 cfs + ~~8.97~~ cfs = ~~13.07~~ cfs
16.2
+ 2.9
23.2

INTERIOR BASINS, TRACT D-1-A

Area	%Impervious	C =	Acres	Q_{100} cfs	Q_{10} cfs
C-1	70	.74	.55	2.06	1.36
C-2	45	.56	.10	.28	.19
D-1	80	.81	1.11	4.56	2.99
D-2	40	.53	.38	1.02	.67
E-1	65	.71	.76	2.74	1.80
E-2	45	.56	.20	.57	.37
F-1	70	.74	1.60	6.00	3.94
F-2	60	.67	.31	1.05	.69
G-1	55	.64	1.72	5.58	3.67
G-2	80	.81	.36	1.48	.97
H-1	60	.67	.81	2.75	1.81
H-2	65	.71	.47	1.69	1.11
J-1	70	.74	.88	3.30	2.17
J-2	5	.29	.05	.07	.05

INTERIOR BASINS, TRACT D-1-B

Area	%Impervious	C =	Acres	Q_{100} cfs	Q_{10} cfs
K	57	.65	.05	.16	.11
L	57	.65	.38	1.25	.82
M	100	.95	.05	.24	.16
N	57	.65	1.17	3.86	2.53
P	57	.65	1.22	4.02	2.64
Q	57	.65	1.66	5.47	3.59
R	57	.65	.41	1.35	.89

EXHIBIT - 3

Verbal No

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

D021

PROJECT TITLE: Holy Cross Townhomes ZONE MAP/DRG. FILE E-19-Z
DRB#: 1006844 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Tract A-1-A, Lands of Lutheran Church in America
CITY ADDRESS:

ENGINEERING FIRM: Mark Goodwin & Associates, PA CONTACT: Hiram L. Crook
ADDRESS: PO Box 90606 PHONE: 828-2200
CITY, STATE: ABQ, NM ZIP CODE: 87199

OWNER: Holy Cross Lutheran Church CONTACT: Joseph Pappe Jr
ADDRESS: 6901 Wyoming Blvd. NE PHONE: (505) 821-4676
CITY, STATE: ABQ, NM ZIP CODE: 87109

ARCHITECT: NA CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

SURVEYOR: Aldrich Land Surveying CONTACT: Tim Aldrich
ADDRESS: PO Box 30701 PHONE: 328-3988
CITY, STATE: Albuquerque NM ZIP CODE: 87190

CONTRACTOR: NA CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- X CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT
- ____ ENGINEER/ARCHITECT CERT (TCL)
- ____ ENGINEER/ARCHITECT (DRB SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- X S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ____ YES
- ____ NO
- ____ COPY PROVIDED

RECEIVED AUG 05 2015 LAND DEVELOPMENT SECTION

RECEIVED AUG 04 2015 LAND DEVELOPMENT SECTION

SUBMITTED BY: Hiram L. Crook DATE: August 4, 2015

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

May 6, 1992

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: ENGINEER'S CERTIFICATION FOR HOLY CROSS LUTHERAN CHURCH PHASE IIB & ADDITIONAL PARKING LOT (E-19/D21) ENGINEER'S CERTIFICATION STATEMENT DATED APRIL 28, 1992

Dear Mr. Mortensen:

Based on the information provided on your submittal of April 28, 1992, Engineer's Certification for the referenced site is acceptable.

Please be advised that further development will require a separate submittal for review.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Gilbert Alday

Bernie J. Montoya, C.E.
For Engineering Assistant

xc: Alan Martinez

BJM/bsj
(WP+3030)

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 16, 1991

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: REVISED CONCEPTUAL DRAINAGE PLAN FOR HOLY CROSS LUTHERAN CHURCH (E-19/D21) REVISION DATED DECEMBER 10, 1991

Dear Mr. Mortensen:

Based on the information provided on your submittal of December 11, 1991, the above referenced plan is approved for Site Development for Building Permit.

Please be advised that the following will be required during application for building permit:

1. Connection of the proposed rundown to the channel apron.

2. Identify on your plan drawing that construction is for Phase II B only.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+3030)

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 19, 1992

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR HOLY CROSS LUTHERAN CHURCH
PHASE II B & ADDITIONAL PARKING LOT (E-19/D21)
REVISION DATED MARCH 5, 1992

Dear Mr. Mortensen:

Based on the information provided on your resubmittal of March 5, 1992, the referenced site is approved for Building Permit and S.O. #19. The following schedule of events should be followed.

1. A separate permit is required for construction within City right-of-way. A copy of this letter must be on hand when applying for the excavation permit.

2. Inspection for the rundowns and tie into the exiting channel will be conducted by Glenn Jurgensen at Arroyo Maintenance, 291-6214.

3. Phase II B Certificate of Occupancy will be released after Engineer's Certification is submitted and accepted.

Glenn Jurgensen will need to be contacted for a pre-inspection and also for a final inspection on the rundowns.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

xc: Darlene Saavedra
Alan Martinez
Don Haval, Klinger Construction
Glenn Jurgensen

BJM/bsj
(WP+3030)

MICROFICHE
HARD COPY
E19D021

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: E19-D21 DATE: [illegible]

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: [illegible]

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: _____

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
X	SITE DEVELOPMENT PLAN	____	BUILDING PERMIT
____	OTHER	____	ROUGH GRADING

RECEIVED
AUG 20 2015
LAND DEVELOPMENT SECTION

ATTENDANCE:	WHO	REPRESENTING
	[illegible]	
	[illegible]	

FINDINGS:

1. An [illegible] for [illegible]
2. An [illegible] for each [illegible]

- The [illegible]

- [illegible]

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	[illegible]	SIGNED:	[illegible]
TITLE:	[illegible]	TITLE:	[illegible]
DATE:	[illegible]	DATE:	[illegible]

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOLY CROSS LUTHERAN CHURCH ZONE ATLAS/DRNG. FILE #: E-19/D2

LEGAL DESCRIPTION: TRACT A, ACADEMY ACRES

CITY ADDRESS: 6901 WYOMING BLVD N.E.

ENGINEERING FIRM: TOM MANNE ASSOC. CONTACT: LEONARD UTTER

ADDRESS: 811 DALLAS N.E. PHONE: 265-5611

OWNER: CONTACT ARCHITECT CONTACT:

ADDRESS: PHONE:

ARCHITECT: PUGH + ASSOCIATES CONTACT: MARK HARBERTS

ADDRESS: 301 GOLD AVE. S.W PHONE: 242-7572

SURVEYOR: NOT KNOWN CONTACT: ARCHITECT

ADDRESS: PHONE:

CONTRACTOR: NOT KNOWN CONTACT: ARCHITECT

ADDRESS: PHONE:

RECEIVED MAR 03 1987 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

RECEIVED AUG 20 2015 LAND DEVELOPMENT SECTION

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

✓ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

✓ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: 3-3-87

BY: [signature]

Original file has been sent for micro-filming. Shipment #4

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: E19-D21 DATE: [illegible]

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: [illegible] (PHASE I & II) [illegible]

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: _____

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
X	SITE DEVELOPMENT PLAN	____	BUILDING PERMIT
____	OTHER	____	ROUGH GRADING

	WHO	REPRESENTING
ATTENDANCE:	[illegible]	
	[illegible]	

FINDINGS:

1. An approval [illegible] for [illegible]
2. An approval [illegible] for each [illegible]

- The drainage [illegible] compliance [illegible] 2 [illegible] on [illegible] [illegible]

- [illegible]

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	[illegible]	SIGNED:	[illegible]
TITLE:		TITLE:	
DATE:	[illegible]	DATE:	[illegible]

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

March 6, 1987

RECEIVED
AUG 20 2015
LAND DEVELOPMENT SECTION

Leonard Utter
Tom Hart & Associates, Inc.
111 Dallas, NE
Albuquerque, New Mexico 87110

RE: CONCEPTUAL GRADING & DRAINAGE PLAN SUBMITTAL OF HOLY CROSS LUTHERAN CHURCH, RECEIVED MARCH 5, 1987 FOR SITE DEVELOPMENT PLAN APPROVAL (E-19/D21)

Dear Leonard:

The above referenced submittal dated February 27, 1987, is approved for Site Development Plan sign-off by the City Engineer.

I believe that in your plan narrative that there is an error, in that flows go from southeast to northwest, not to northeast.

Detailed Drainage and Grading plans will be required prior to building permit sign-off by Hydrology. Any structural work within the Pino Arroyo Channel Right-of-Way will need to be processed through the City Work Order process. Phase III outfall improvements must be within the site's property or within drainage easements.

If you have any questions, call me at 766-2656.

Sincerely,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

cc: Mike Pendarts, Pugh & Associates

FAL/RAG

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOLY CROSS LUTHERAN CHURCH ZONE ATLAS/DRNG. FILE #: E19/D21

LEGAL DESCRIPTION: TRACT A, ACADEMY ACRES

CITY ADDRESS: 6901 WYOMING BLVD. N.E.

ENGINEERING FIRM: TOM MANN & ASSOC. CONTACT: LEONARD P. VATTER

ADDRESS: 811 DALLAS N.E. PHONE: 265-5611

OWNER: CONTACT: ARCHITECT

ADDRESS: PHONE:

ARCHITECT: PUGH + ASSOC. CONTACT: MARIA UGARTE

ADDRESS: 301 GOLD AVE. SW. PHONE: 242-7572

SURVEYOR: CONTACT: ARCHITECT

ADDRESS: PHONE:

CONTRACTOR: NOT KNOWN CONTACT: ARCHITECT

ADDRESS: PHONE:

PRE-DESIGN MEETING:

✓ YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED AUG 25 1987 HYDROLOGY SECTION

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

✓ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

✓ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

✓ OTHER REVISION (SPECIFY)

DATE SUBMITTED: 8-25-87

BY: Leonard P. Vatter

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

September 8, 1987

Mr. Leonard P. Utter
Tom Mann & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: REVISION TO CONCEPTUAL GRADING & DRAINAGE PLAN FOR HOLY CROSS LUTHERAN CHURCH, SUBMITTED FOR SITE DEVELOPMENT APPROVAL (E-19/D21)

Dear Mr. Utter:

I have reviewed the revision to your original submittal. It remains approved for Site Development Plan sign-off by the City Engineer.

Thank you for keeping us informed of any changes as they occur.

Cordially,

Stuart Reeder

G. Stuart Reeder, P.E.
C.E./Hydrology Section

xc: Owner

GSR/bsj

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOLY CROSS LUTHERAN CHURCH ZONE ATLAS/DRNG. FILE #: E19/D21

LEGAL DESCRIPTION: TRACT A, ACADEMY ACRES

CITY ADDRESS: 6901 WYOMING BLVD. N.E.

ENGINEERING FIRM: TOM MANN + ASSOC. CONTACT: LEONARD P. UTTER

ADDRESS: 811 DALLAS N.E. PHONE: 265-5611

OWNER: CONTACT: ARCHITECT

ADDRESS: PHONE:

ARCHITECT: PUGH + ASSOC. CONTACT: MARIA UGARTE

ADDRESS: 301 GOLD AVE. S.W PHONE: 242-7572

SURVEYOR: CONTACT: ARCHITECT

ADDRESS: PHONE:

CONTRACTOR: CONTACT: ARCHITECT

ADDRESS: PHONE:

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ ~~COPY OF CONFERENCE RECAP SHEET PROVIDED~~

VERBAL W/ FRED AGUIRRE

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

✓ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

✓ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: 9-30-87

BY: [signature]

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

October 1, 1987

Jeff Mortensen
Tom Mann & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR PHASE II, HOLY CROSS LUTHERAN CHURCH
(E-19/D21) ENGINEER'S STAMP DATED SEPTEMBER 29, 1987

Dear Mr. Mortensen:

Based on the information provided on your submittal of September 29, 1987, the above referenced drainage plan is approved for Building Permit.

The retention pond is only an interim solution which will need to be eliminated as soon as possible. As you well know, retention ponds are no longer accepted without a permanent outfall, therefore, the sooner Phase III can be accomplished, the sooner the ponding area will be eliminated.

Please attach a copy of this approved plan to the construction plans prior to sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

870225

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HOLY CROSS LUTHERAN CHURCH

ZONE ATLAS/DRNG. FILE #: E19/D21

LEGAL DESCRIPTION: TRACT A, ACADEMY ACRES

CITY ADDRESS: 6901 WYOMING BLVD. N.E.

ENGINEERING FIRM: Tom Mann + Assoc. CONTACT: LEONARD P. UTTER

ADDRESS: 811 DALLAS N.E. PHONE: 265-5611

OWNER: CONTACT: ARCHITECT

ADDRESS: PHONE:

ARCHITECT: Pugh + Assoc. CONTACT: MARIA UGARTE

ADDRESS: 301 GOLD AVE. S.W. PHONE: 242-7572

SURVEYOR: CONTACT: ARCHITECT

ADDRESS: PHONE:

CONTRACTOR: CONTACT: ARCHITECT

ADDRESS: PHONE:

PRE-DESIGN MEETING:

✓ YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

RECEIVED NOV 13 1987 HYDROLOGY SECTION

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

✓ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

✓ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

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___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

✓ OTHER Revision (SPECIFY)

DATE SUBMITTED: 11-24-87

BY: [signature]

Please give this drawing back to

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

December 4, 1987

Jeff Mortensen, P.E.
Tom Mann & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: REVISED DRAINAGE PLAN FOR PHASE II HOLY CROSS LUTHERAN CHURCH (E-19/D21) REVISION DATE NOVEMBER 23, 1987

Dear Mr. Mortensen:

Based on the information provided on your resubmittal dated November 23, 1987, revisions as indicated are acceptable. Again, please be advised that the retention pond is only an interim solution.

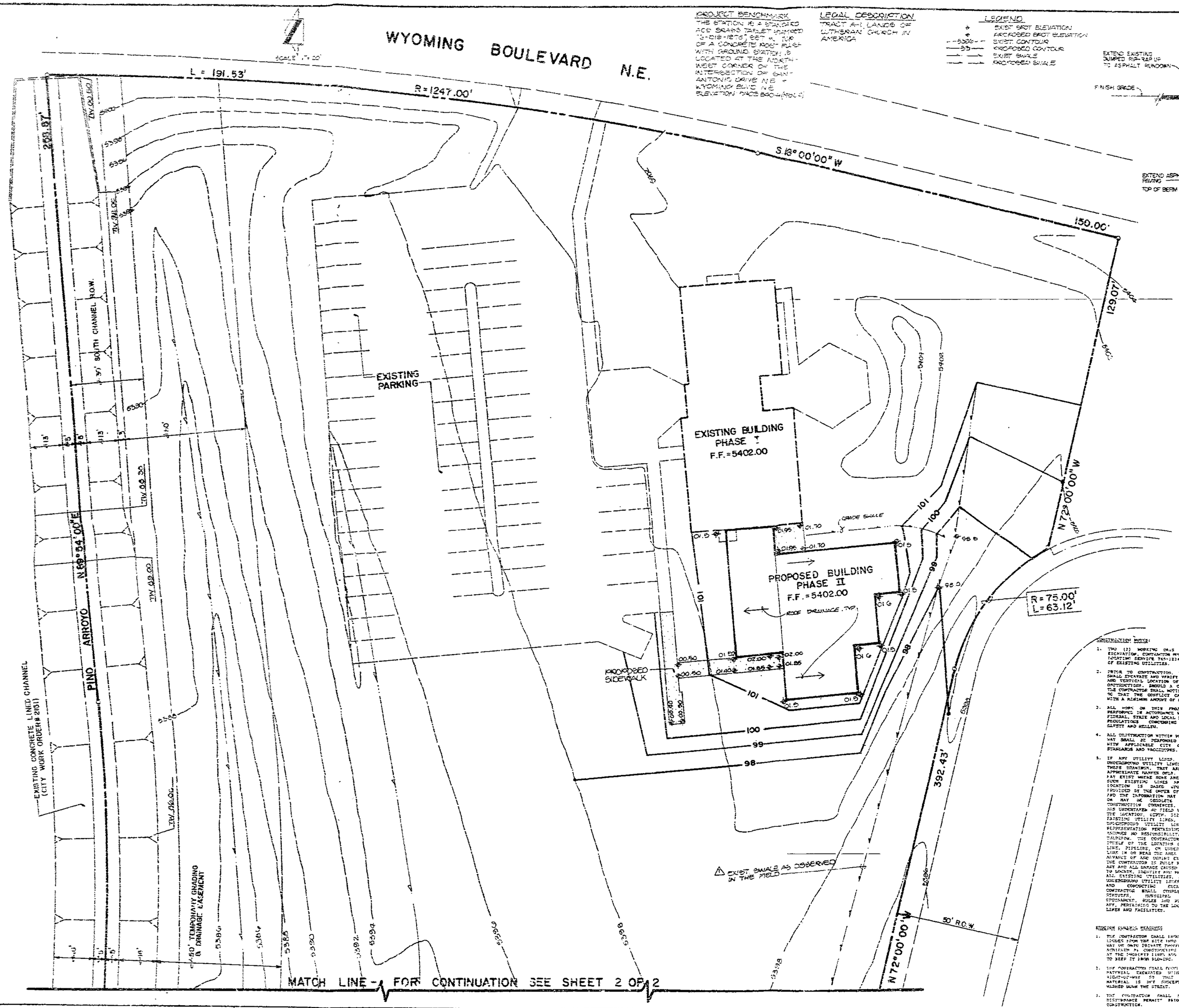
If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

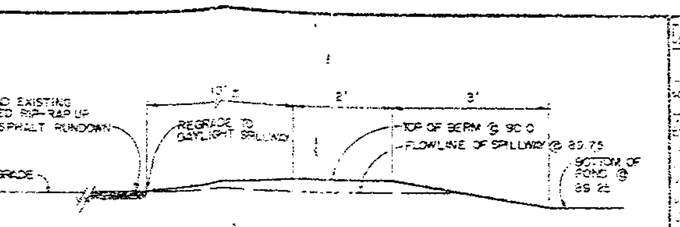
BJM/bsj



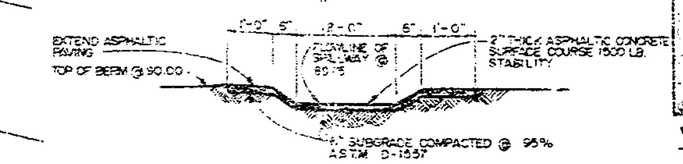
PROJECT BENCHMARK
THE STATION IS A STANDARD ACS BRASS TABLET (STAMPED "2-D18 1973") SET W. SIDE OF A CONCRETE ROOF PLUG WITH GROUND STATION IS LOCATED AT THE NORTH-WEST CORNER OF THE INTERSECTION OF SAN ANTONIO DRIVE N.E. & WYOMING BLVD. N.E. ELEVATION 5402.00 (NAVD 88)

LEGAL DESCRIPTION
TRACT A-1, LANDS OF LUTHERAN CHURCH IN AMERICA

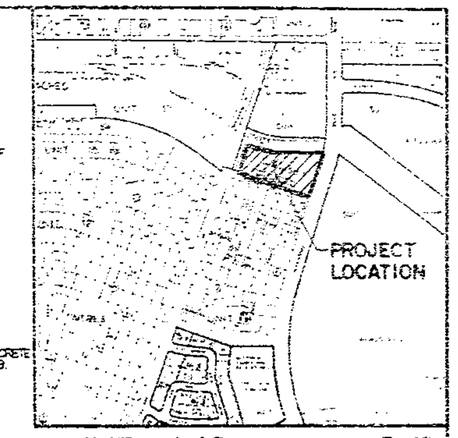
LEGEND
- EXIST SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXIST CONTOUR
- PROPOSED CONTOUR
- EXIST SWALE
- PROPOSED SWALE



SECTION A-A
SCALE: 1" = 2'



SECTION B-B
SCALE: 1" = 2'



VICINITY MAP
SCALE: 1" = 800'

E-19

DRAINAGE PLAN

The following items concerning the Holy Cross Lutheran Church Phase II Addition Drainage Plan are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements as shown by the Vicinity Map, are located on the east side of Wyoming Boulevard N.E. between Harper Road N.E. and Bellflower Drive N.E. At present the site is developed, much of the surrounding area is currently developed. As shown by Plate A-19 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. Downstream flooding is not apparent and therefore does not appear to be a problem. At present, the site drains from southeast to northwest to an existing dumped rip-rap rundown located at the northwest corner of the site. From that point, the runoff enters the Pino Arroyo Drainage Easement which is the outfall for this site. No offsite flows enter the site along the east and south property lines since the existing roads route runoff away from the project site. No offsite flows enter the site along the west property line since the existing lot is graded in a manner which will route runoff away from the project site. No offsite flows enter the site along the north property line since the existing concrete channel routes runoff away from the project site.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 2'0" intervals, 2) continuity between the existing and proposed grades, and 3) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the construction of a minor addition to the existing church building along with adjacent landscaping. Flows generated by Phase II will be routed from east to west to a proposed interim retention pond located on the west side of the new addition designed to handle the excess developed 100-year runoff generated by the proposed improvements. The pond will also serve to mitigate erosion until Phase III construction is started. Phase III will consist of the construction of a more substantial addition to the Church along with significant amounts of paving and landscaping. This is discussed in the previously approved Conceptual Grading and Drainage Plan prepared by this office (E-19/D1). At that time, the interim retention pond will be deleted and the developed runoff from the site will be discharged to the Pino Arroyo. Of course, this will require a separate submittal to accompany that Building Permit.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume 2; and the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will result in a decrease in runoff. The overall decrease in runoff will be approximately 0.4 cfs.

CALCULATIONS

Ground Cover Information:

From SCS Bernalillo County Soil Survey,
Plate: 21, TQB - Tijeras gravelly fine sandy loam
Hydrologic Soil Group: B
Existing Pervious CN = 76 (DPM Plate 22.2 C-3
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

Time of Concentration/Time to Peak

$T_c = 0.0078\ (L^{0.77}/S^{0.385})$ (Kirpich Equation)

$T_p = T_c = 10$ min.

Point Rainfall

$P_6 = 2.38$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$

where C varies
$I = P_6\ (4.84)\ T_c^{-0.51} = 5.03$ in/hr
$P_6 = 2.38$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)\ A$

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition
Phase I
$A_{total} = 204,613$ sf = 4.70 Ac
Roof area = 4,060 sf (0.09)
Paved area = 24,560 sf (0.12)
Dirt area = 176,060 sf (0.86)
C = 0.48 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.48)(5.03)(4.7) = 11.3$ cfs
$A_{imp} = 28,620$ sf; % impervious = 14 %
Composite CN = 66 (DPM Plate 22.2 C-3)
DRO = 0.3 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 5,120$ cf

Developed Condition
Phase II
$A_{total} = 204,680$ sf = 4.70 Ac
Roof area = 7,500 sf (0.04)
Paved area = 25,056 sf (0.12)
Landscaped area = 22,300 sf (0.16)
Dirt area = 139,824 sf (0.68)
C = 0.46 (weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.46)(5.03)(4.7) = 10.9$ cfs
$A_{imp} = 32,556$ sf; % impervious = 16 %
Composite CN = 67 (DPM Plate 22.2 C-3)
DRO = 0.33 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 5,970$ cf

$V_{required} = V_{developed} - V_{existing} = 850$ cf

$V_{pond} = 1/2[(A_{bot} + A_{top})(89.75 - 89.25)]$
$= 1/2[(2025 + 2490)(0.50)]$
$= 1,130$ cf > $V_{required}$

Comparison

$\Delta Q_{100} = 11.3 - 10.9 = 0.4$ cfs (decrease)
$\Delta V_{100} = 5970 - 5120 = 850$ cf (increase)

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 766-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ESTABLISH AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL CONFLICTING UTILITIES. IF CONFLICT EXISTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS GOVERNING CONSTRUCTION SAFETY AND WELFARE.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND SPECIFICATIONS.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS THAT ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES EXIST, WHERE THEY ARE SHOWN, IF ANY LOCATION IS DONE UNDER THE SUPERVISION OF THE OWNER OF SAID UTILITY, AND TO THE INFORMATION THAT BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES, THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. NATHE NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM HIMSELF OF THE LOCATION OF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES IN THE AREA OF THE WORK IN ADVANCE OF ANY SITE EXCAVATION WORK. THE CONTRACTOR IS TO TAKE ALL PRECAUTIONARY AND ALL DAMAGE CAUSED TO EXISTING, TO LOCATE, IDENTIFY AND PROTECT EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES IN PLANNING AND CONDUCTING EXCAVATION. THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL LEAVES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACCOMPLISHED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND MOTTING THE SOIL TO KEEP IT FROM RUN-OFF.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY TO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING BLOWN ALONG THE STREET.
3. THE CONTRACTOR SHALL OBTAIN "STORMWATER DISCHARGE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

RECEIVED
NOV 13 1987
HYDROLOGY SECTION

GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

JEFFREY C. BOSTWICK
NEW MEXICO
8547
REGISTERED PROFESSIONAL ENGINEER

11-23-87

TOPOGRAPHIC SURVEY PREPARED BY OTHERS AND PROVIDED BY OWNER. ITS ACCURACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.

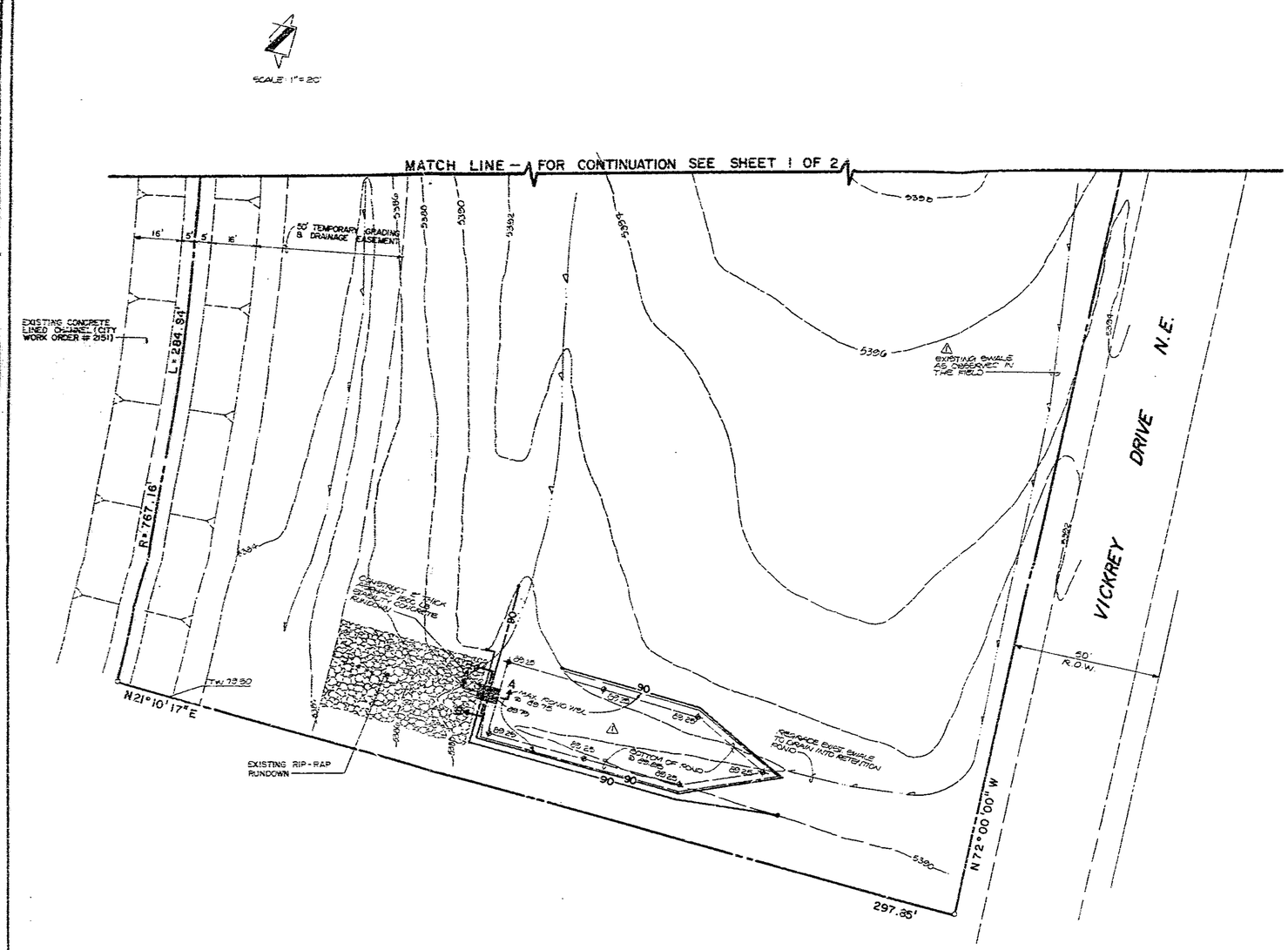
BOHANNAN-HUSTON INC.
8100 DALLAS N.E. - ALBUQUERQUE - NEW MEXICO - 87109
ENGINEERS

GRADING & DRAINAGE PLAN - PHASE II
HOLY CROSS LUTHERAN CHURCH
PHASE II ADDITION

DESIGN BY	L.P.U.
DRAWN BY	R.A.P.
APPROVED BY	J.C.M.

No.	DATE	BY	REVISION
1	11/87	L.P.U.	REVISE LOCATION OF POND, SECTIONS + CALCULATIONS

JOB NO. 870225
DATE 09/87
SHEET 1 OF 2



RECEIVED
NOV 1 3 1987
HYDROLOGY SECTION

GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

JEFFREY G. MORTENSEN
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER
(6547)

11-24-87

TOPOGRAPHIC SURVEY PREPARED BY OTHERS AND PROVIDED BY OWNER. ITS ADEQUACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.

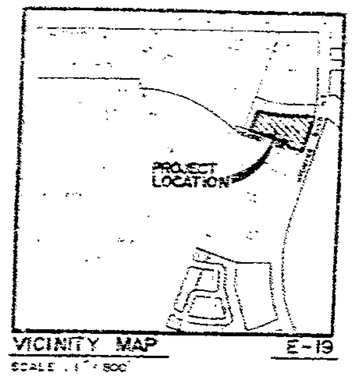
811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

GRADING & DRAINAGE PLAN – PHASE II
HOLY CROSS LUTHERAN CHURCH
PHASE II ADDITION

DESIGN BY	L.P.U.
DRAWN BY	R.A.R.
APPROVED BY	J.G.M.

No.	Date	By	Revision
1	11/87	L.P.U.	REVISE LOCATION OF POND, SECTIONS + CALCULATIONS

JOB NO. 870225
DATE 09/87
SHEET 2 OF 2



VICINITY MAP E-19

SCALE : 1" = 800'

PROJECT BENCHMARK

THE STATION IS A STANDARD ACS BRASS TABLE STAMPED "2-D10 1984" SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND & SITUATED IN THE NORTHWEST CORNER OF THE INTERSECTION OF SAN ANTONIO DRIVE N.E. & WYOMING BLVD N.E. ELEVATION = 5605.340 FEET (NGVD)

TBM = PROJECT BENCHMARK

LEGAL DESCRIPTION

TRACT A, ACADEMY ACRES

LEGEND

- 5400 — EXISTING CONTOUR
- 5400 — PROPOSED SPOT ELEVATION
- 5400.00 — FUTURE SPOT ELEVATION
- EXISTING SWALE
- PROPOSED SWALE

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR INTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUBSEQUENTLY TO BLOW OR WASH DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE A PUBLIC PERFORMANCE PERMIT PRIOR TO BEGINNING CONSTRUCTION.

GRADING & PLAN

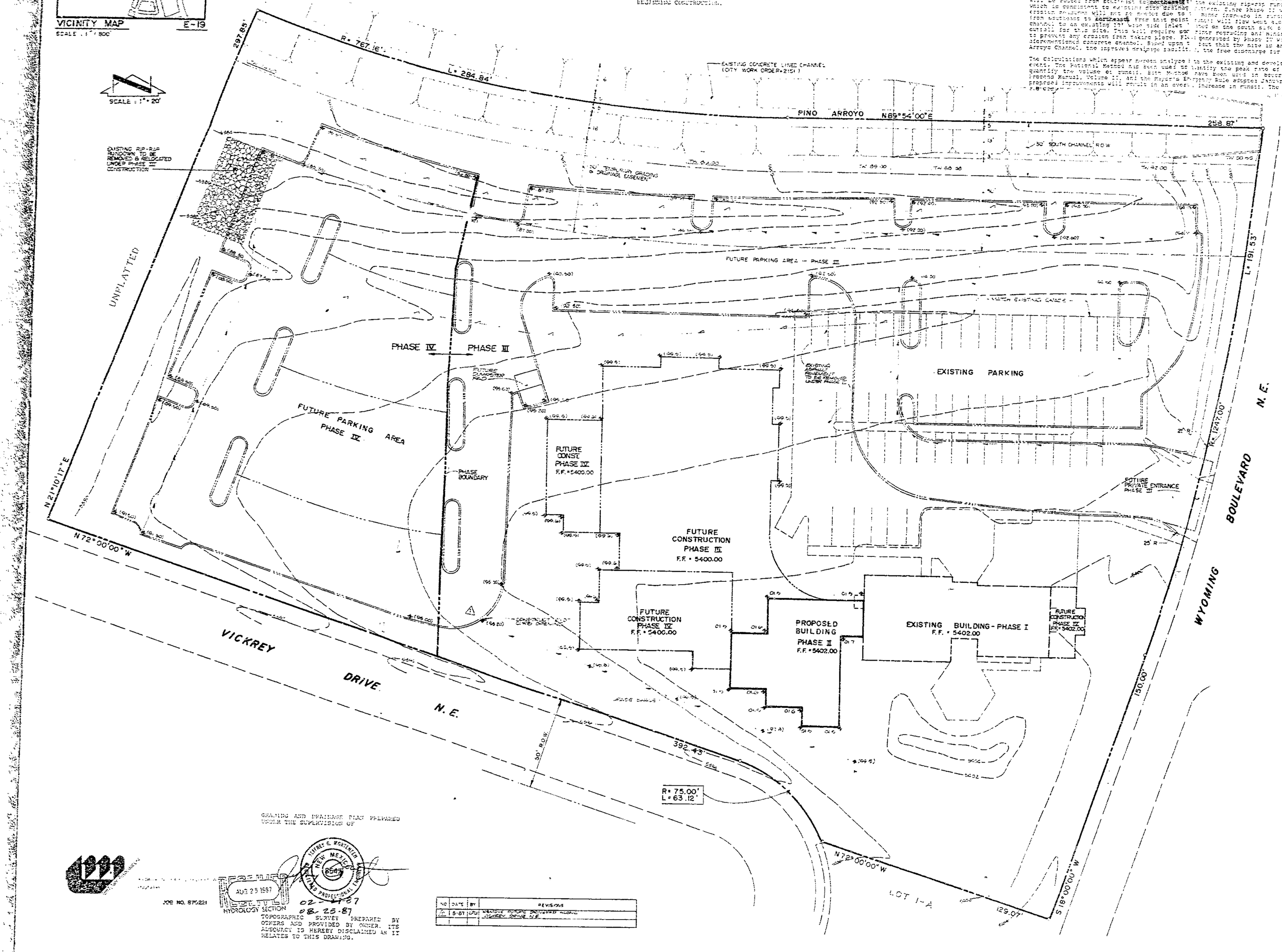
The following items pertain to the Holy Cross Lutheran Church Industrial Ministry Plan are contained herein:

1. Grading Plan
2. Drainage Plan
3. Calculations

The proposed improvements as shown on the Grading Plan, are location on the east side of Wyoming Boulevard N.E. between Master Plan N.E. and Vickrey Drive N.E. At present the site is undeveloped, with of the surrounding area is currently Flood Hazard Zone. Subsequent to a hydrologic study, the site does not lie within a designated flood hazard zone. Subsequent planning is to be approved and therefore does not appear to be a problem. At pre-development site, from that point, the runoff enters the existing garage runoff located at the northwest corner of the site. Flow enters the site along the east and south property lines since the existing roads drain runoff away from the project site. No offsite flows enter the site along the west property line since the existing lot is graded in a manner which will cause runoff away from the project site. No offsite flows enter the site along the north property line since the existing concrete channel carries runoff away from the project site.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 2'ft intervals, 2) continuity between the existing and proposed grades, and 3) the limits and character of the proposed improvements. As shown on this plan, the proposed improvements consist of the construction of new additions to the existing church building along with adjacent parking and landscaping, which will be constructed in phases. Flows generated by Phase II which is constructed at the northeast corner of the site will be conveyed to existing offsite drainage facilities. Future Phase IV will only be the construction of a new addition, from northwest to northeast. Flows generated by Phase IV will be routed through a swale, which will flow west along the south side of the existing concrete lined channel to an existing 18" wide side inlet and on the south side of the Pino Arroyo Channel (which is the future roadway and minor improvements during the Phase IV construction). Flows generated by Phase IV will be routed from southeast to northwest to the existing concrete channel. Based upon the fact that the site is an infill site and is located adjacent to the Pino Arroyo Channel, the proposed drainage facilities, the free discharge for this site is appropriate.

The Calculations which appear hereon analyze the existing and developed conditions for the 100-year, 6-hour rainfall events. The Rational Method and Soil Conservation Service Method are used to analyze the peak rate of discharge and the SCS Method has been used to determine the volume of runoff. Both methods have been used in accordance with the City of Albuquerque Development Manual, Volume II, and the Hydrologic Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will result in an overall increase in runoff. The overall increase in runoff will be approximately 0.8 cfs.



SCALE : 1" = 20'

GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

JEFFREY E. WORKMAN NEW MEXICO 8545 REGISTERED PROFESSIONAL ENGINEER

02-25-87

JOB NO. 870221

AUG 25 1987 HYDROLOGY SECTION

TOPOGRAPHIC SURVEY PREPARED BY OWNER AND PROVIDED BY OWNER. ITS ACCURACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.

NO	DATE	BY	REVISIONS
1	8-07	JPU	PER HYDROLOGY DEPARTMENT REQUEST

CALCULATIONS

Grading Cover Information

From SCS Bernalillo County Soil Survey, Plate: 21, TyB - Tijeras gravelly fine sandy loam
Hydrologic Soil Group: B
Existing Pervious CN = 71 (DPM Plate 22.2 C-2 Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

Time of Concentration/Time to Peak

$T_c = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_c = T_p = 10$ min.

Point Rainfall

$P_6 = 2.35$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$

where C varies
$I = P_6\ (6.84\ T_c^{-0.61}) = 5.01$ in/hr
$P_6 = 2.38$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)\ A$

where DRO = Direct runoff in inches
A = area, acres

Existing Condition
Phase I
Atotal = 195,278 sf = 4.48 Ac
Roof area = 4240 sf (0.02)
Paved area = 24,560 sf (0.13)
Landscaped area = 166,658 sf (0.85)
C = 0.63 (Weighted average per Emergency Rule, 1/14/86)
Q100 = CIA = (0.63)(5.03)(4.48) = 12.6 cfs
Aimp = 28,620 sf; % impervious = 15 %
Composite CN = 66 (DPM Plate 22.2 C-3)
DRO = 0.3 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO) A = 4880 cf

Developed Condition
Phase I
Atotal = 195,278 sf = 4.48 Ac
Roof Area = 7525 sf (0.04)
Paved area = 29,560 sf (0.15)
Landscaped area = 158,193 sf (0.81)
C = 0.50 (Weighted average per Emergency Rule, 1/14/86)
Q100 = CIA = (0.50)(5.03)(4.48) = 11.3 cfs
Aimp = 37,080 sf; % impervious = 19 %
Composite CN = 69 (DPM Plate 22.2 C-3)
DRO = 0.5 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO) A = 8,130 cf

Phase III

Atotal = 195,278 sf = 4.48 Ac
Roof area = 18,409 sf (0.09)
Paved area = 89,445 sf (0.33)
Landscaped area = 117,224 sf (0.60)
C = 0.53 (Weighted average per Emergency Rule, 1/14/86)
Q100 = CIA = (0.53)(5.03)(4.48) = 12.0 cfs
Aimp = 78,054 sf; % impervious = 40 %
Composite CN = 76 (DPM Plate 22.2 C-3)
DRO = 0.7 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO) A = 11,385 cf

Phase IV—

Atotal = 195,278 sf = 4.48 Ac
Roof area = 24,760 sf (0.12)
Paved area = 87,310 sf (0.45)
Landscaped area = 83,208 sf (0.43)
C = 0.65 (Weighted average per Emergency Rule, 1/14/86)
Q100 = CIA = (0.65)(5.03)(4.48) = 14.6 cfs
Aimp = 112,070 sf; % impervious = 57 %
Composite CN = 82 (DPM Plate 22.2 C-3)
DRO = 1.2 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO) A = 19,515 cf

Comparison
Phase II
Q100 = 11.3 - 10.8 = 0.5 cfs (increase)
V100 = 8,130 - 4,880 = 3,250 cf (increase)

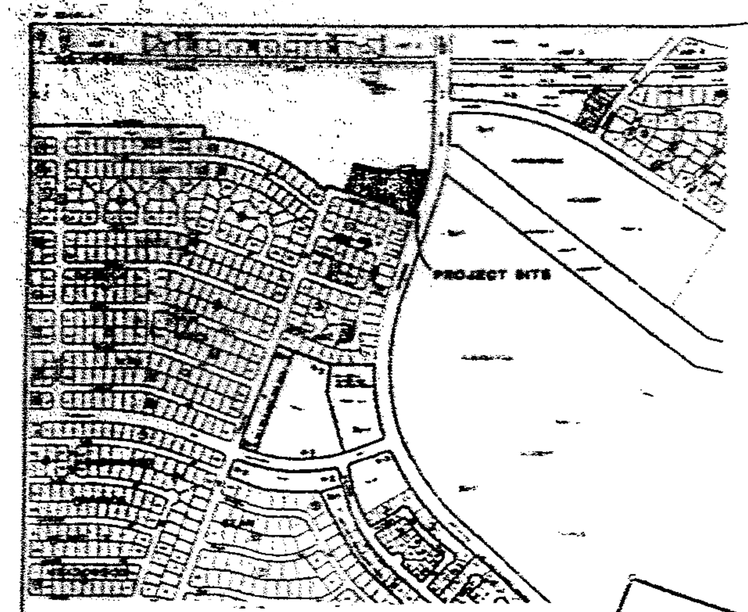
Phase III
Q100 = 12.0 - 11.3 = 1.3 cfs (increase)
V100 = 11,385 - 8,130 = 3,255 cf (increase)

Phase IV
Q100 = 14.6 - 12.0 = 2.6 cfs (increase)
V100 = 19,515 - 11,385 = 8,130 cf (increase)

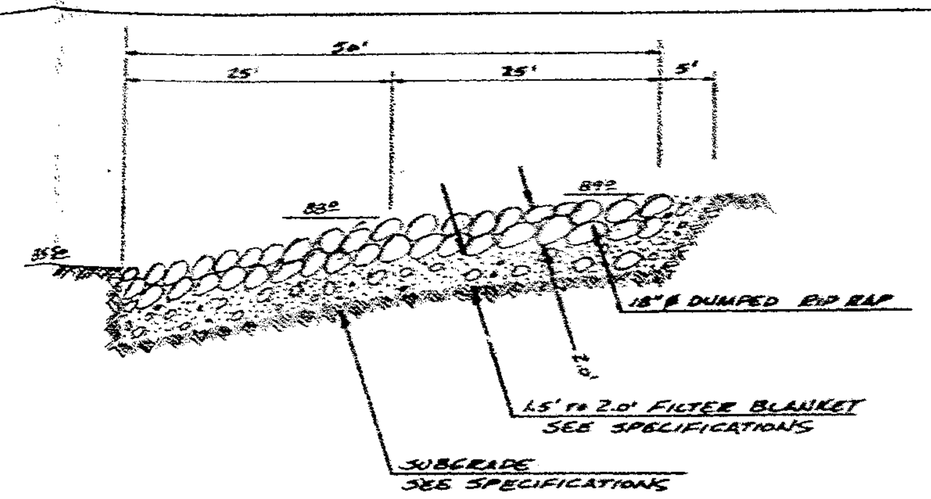
Approved for Site Development
5 Sep 87
GSIC

AUG 25 1987 HYDROLOGY SECTION

CITY OF ALBUQUERQUE
THIS MICROFILMED IMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT



VICINITY MAP



SECTION A-A

SCALE 1" = 10' HORIZ.
1" = 5' VERT.

SPECIFICATIONS

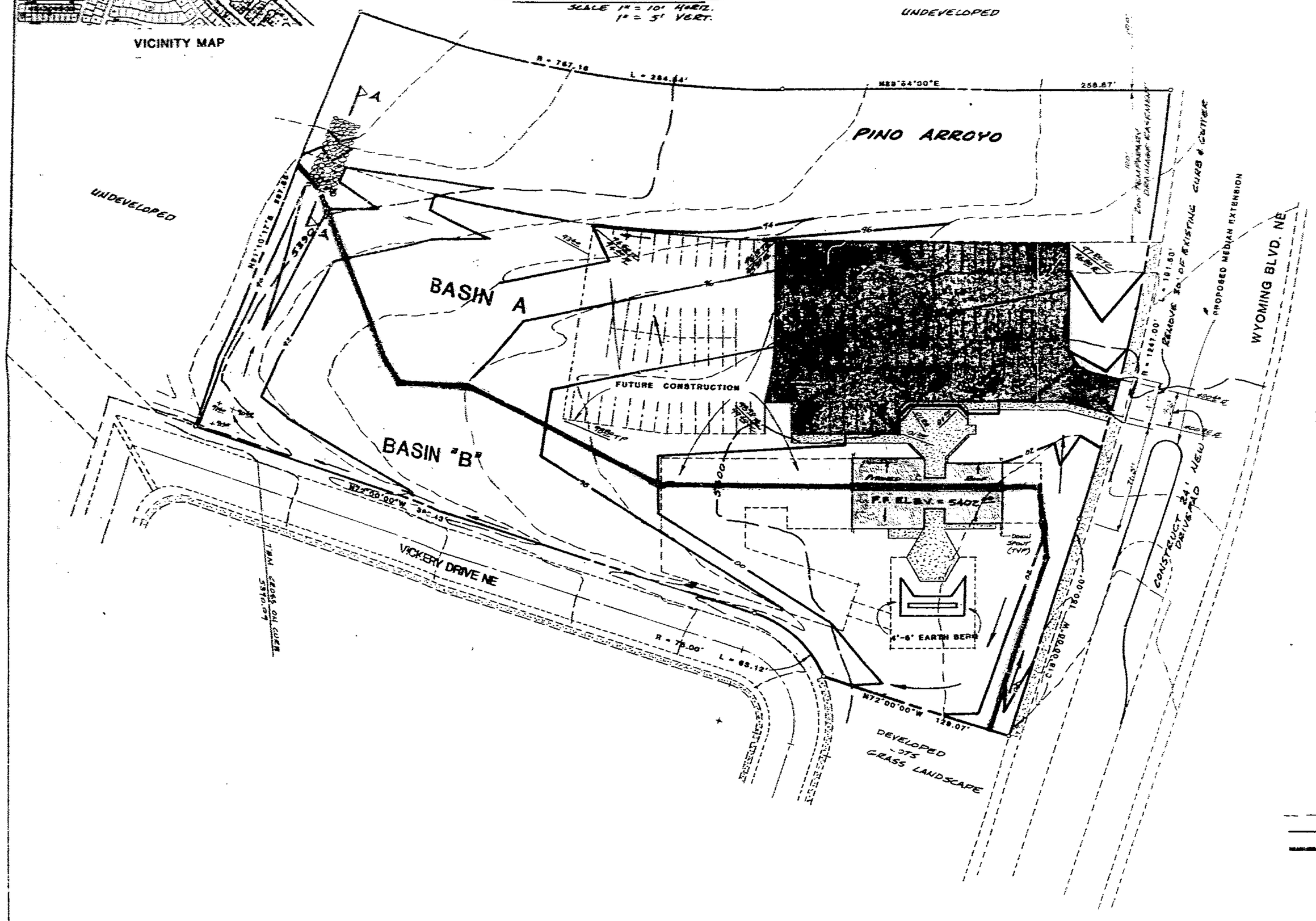
Pervious filter blanket shall consist of free draining, well graded, gravel, cobbles, and boulders, imported or manufactured on-site meeting the following gradation requirements:

Sieve Size	% Retained
18"	0-5
12"	40-100
6"	85-100
No. 200	95-100

The material shall be hard, durable, dense angular to subrounded rock with all pieces having a length to width ratio of 3 or less. Smaller rocks and stones shall be used to chink interstices. Rip Rap material shall be approved by the Engineer and shall be placed in a manner to avoid segregation or nesting of large rock.

Subgrade shall be scarified and compacted to a minimum of 95% of the maximum density as determined by ASTM D-1557.

SCALE 1" = 40'



DRAINAGE ANALYSIS

THIS ANALYSIS IN FACT A [illegible] OF THE PROPERTY OF HOLY CROSS IN WYOMING BLVD. IN THE EAST. THERE IS ALSO [illegible] ACRES (MOL) OF THE EAST AS INTERLOCKED BY [illegible] THE POND ARROYO ON THE NORTH. THE PROPERTY [illegible] HOLY CROSS LUTHERAN CHURCH. THE PROPERTY IS PRESENTLY [illegible] FOR CHURCH USE.

THE RATIONAL ANALYSIS HAS BEEN USED TO DETERMINE [illegible] FOR THIS ANALYSIS. THIS [illegible] NOT ONLY [illegible] INITIAL CONSTRUCTION, BUT [illegible] FUTURE ULTIMATE DEVELOPMENT OF THE SITE AS WELL.

AS DEVELOPMENT OCCURS, THE SITE WILL BE [illegible] AND PERVIOUS PARKING BASINS. THESE BASINS [illegible] A AND B RESPECTIVELY. NO DETENTION OF WATER [illegible] EMPLOYED IN THIS CALCULATION, BUT RATHER A [illegible] THE POND ARROYO FOR BASIN A AND B.

THE DISCHARGE FLOW RATES FOR THE ULTIMATE PROPERTY [illegible]

BASIN A

TOTAL AREA = 3.[illegible] ACRES (34,[illegible] SF
IMPERVIOUS AREA = 4,[illegible] SF
PERVIOUS AREA = 30,[illegible] SF

HISTORIC FLOW RATE Q = $\frac{(4.75)(.25)(.5)}{43.560}$ = [illegible] CFS

COEFFICIENT OF RUNOFF C = $\frac{(4.25)(.9) + (3.4)(.35)}{(7.65)}$ = [illegible]

DEVELOPED RUNOFF Q = $\frac{0.5625(3.4)(.35)(.9)}{43.560}$ = [illegible] CFS

A DIRECT DISCHARGE OF [illegible] CFS WILL BE DISCHARGED INTO THE PINO ARROYO FROM BASIN A.

BASIN B

TOTAL AREA = 1.35[illegible] ACRES (59,[illegible] SF
IMPERVIOUS AREA = 14,[illegible] SF
PERVIOUS AREA = 44,302 SF

HISTORIC FLOW RATE Q = $\frac{(1.35)(.25)(.5)}{43.560}$ = 2.[illegible] CFS

COEFFICIENT OF RUNOFF C = $\frac{(.44)(.35) + (.91)(.75)}{59,062}$ = [illegible]

DEVELOPED RUNOFF Q = $\frac{0.5625(59,062)(.5)(.4)}{43.560}$ = [illegible] CFS

A DIRECT DISCHARGE OF 5.84 CFS WILL BE DISCHARGED INTO THE PINO ARROYO FROM BASIN B.

THE PINO ARROYO IS PRESENTLY BEING DESIGNED AS A MAJOR LOCAL CHANNEL. THEREFORE, NO TEMPORARY STABILIZATION OF THE DRAINAGE IS PROPOSED IN THIS REPORT. RIP RAP WILL BE PROVIDED, HOWEVER, AT THE POINT OF DISCHARGE INTO THE POND ARROYO TO PREVENT EROSION AND EPOSION FROM DISCHARGE WATER.

NO OFF-SITE FLOWS ENTER THE PROPERTY AND NO DISCHARGES OTHER THAN THOSE PREVIOUSLY MENTIONED SHALL BE DISCHARGED OFF-SITE.

NOTE
ALL ELEVATIONS AND CONTOURS BASED ON TEMPORARY BENCH MARK ESTABLISHED BY RICK HOWARD CO.

LEGEND

- 5400 — EXISTING CONTOUR
- 02 — PROPOSED CONTOUR
- DRAINAGE BOUNDRY
- FLOW DIRECTION
- NEW PAVEMENT

ALL BENCH MARKS ARE LOCATED ON THE AREA

SURVEY INFORMATION

NO.	BY	DATE	FIELD NOTES
			ACS Z-19 LOCATED ON THE AREA
			STOBE OF WYOMING BLVD. NE, A 55
			HIGGS SOUTH OF SAN ANTONIO DR. NE
			A SQUARE ⊠ CHISELED ON TOP OF
			CONCRETE CURB.
			ELEVATION = 5403.29

ENGINEER'S SEAL

REMARKS

REVISIONS

NO.	DATE	BY

DESIGN

		DATE
DESIGNED BY	T. WITEK	OCT. 1982
DRAWN BY	T. WITEK	OCT. 1982
CHECKED BY	V. BLACKWELL	OCT. 1982

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CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE:
DRAINAGE & GRADING PLAN

APPROVED	ENGINEER	DATE	APPROVED	ENGINEER	DATE
City Engineer			Traffic		
A.C.E. Design			Water		
A.C.E. Hydrologist					

DRAWING NO

MAP NO E-19

SHEET 3 OF

E19/D21