DEVELOPMENT & BUILDING SERVICE CENTER
ONE STOP SHOP
600 SECOND ST. N.W.
ATTENTION: _____
505-924-3900

Records Withdrawal Form

Project No. 915-150. **Date:** January 18, 2007

Project Title: Pi Kappa Alpha Fat House Remodel

a. File b. Mylars c. Redlines/Comments
d. Other _____

Requested by: Tyler Archer Wilson & **Phone No.:** 348-4000.
Name and Company

Comments:
Plz copy entire file & deliver to 4900 Lang Dr ice
Thank You

Anticipated Return Date: _____

I hereby accept full responsibility for the security of the above noted records/plans until return receipt acknowledgement is completed. Records/plans will be returned to the Development and Building Services Center on or before the indicted anticipated return date.

Delivery Picked Up By:

Name: _____ **Organization:** _____
Print

Signed: _____ **Date:** _____

Office Use Only

Return Acknowledged:

Received By: _____ **Date:** _____
Print

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 22, 2002

Tucker Green, PE
Per Se Engineering
809 Valencia NE
Albuquerque, NM 87108

Re: Pi Kappa Alpha Fraternity House Remodel Grading and Drainage Plan
Engineer's Stamp dated 7-16-02 (~~J15/D48~~)
J15/D50

Dear Mr. Green,

Based upon the information provided in your submittal dated 7-16-02, the above referenced plan is approved for Site Development Plan for Building Permit action by the DRB. It is also approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Sr. Engineer, Planning Dept.
Development and Building Services

C: file

DRAINAGE INFORMATION SHEET

(REV. 11/01/2001)

J15/D50

PROJECT TITLE: Pi Kappa Alpha Fraternity House Remodel _____ ZONE MAP/DRG. FILE: _____

DRB #: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Lot 5, Block 22, Country Club Addition _____

CITY ADDRESS: 700 University Blvd. NE, _____

ENGINEERING FIRM: Per Se Engineering _____ CONTACT: Tucker Green _____
ADDRESS : 809 Valencia NE _____ PHONE : 232-9394 _____
CITY, STATE: Albuquerque, NM _____ ZIP CODE: 87108 _____

OWNER: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE _____ ZIP CODE: _____

ARCHITECT: Masterworks Architects _____ CONTACT: Jim Clark _____
ADDRESS: 516 11th St. NW _____ PHONE: 242-1866 _____
CITY, STATE: Albuquerque NM _____ ZIP CODE: 87102 _____

SURVEYOR: _____ CONTACT: _____
ADDRESS _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: Clayton Construction _____ CONTACT: Randy Bush _____
ADDRESS : 1208 San Pedro NE #190 _____ PHONE: 261-5479 _____
CITY, STATE: Albuquerque NM _____ ZIP CODE: 87110 _____

CHECK TYPE OF SUBMITTAL:

___ DRAINAGE REPORT
_X_ DRAINAGE PLAN
___ CONCEPTUAL GRADING & DRAINAGE PLAN
___ GRADING PLAN
___ APPROVAL
___ EROSION CONTROL PLAN
___ ENGINEER'S CERTIFICATION (HYDROLOGY)
___ CLOMR/LOMR
_X_ TRAFFIC CIRCULATION LAYOUT (TCL)
_X_ ENGINEERS CERTIFICATION (TCL)
___ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
___ CERTIFICATE OF OCCUPANCY (TEMP.)
___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

____ SIA / FINANCIAL GUARANTEE RELEASE
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
__X_ S. DEV. PLAN FOR BLDG. PERMIT
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
__X_ 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

DATE SUBMITTED: 7-16-02 BY Tucker Green

Requests for approvals of Site Development Plans and/or Subdivision Flats shall be accompanied by a drainage submittal. The particular nature , location and scope ot the proposed development defines 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 acres.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

RECEIVED
JUL 16 2002
HYDROLOGY SECTION

E:\0prj\VanG\Pka\DrainInfo-PKA.lwp

RECEIVED
JUL 16 2002
HYDROLOGY SECTION

DRAINAGE REPORT TEXT:

The report text appears both on the plan and at the start of the bound report. Calculations supporting the text and the drainage plan appear only in the bound report. The bound report was submitted at the same time as the plan and should be on file at the City of Albuquerque Hydrology Dept.

LEGAL DESCRIPTION & LOCATION:

Lot 5, Block 22, Country Club Addition, Bernalillo County NM
700 University Blvd. NE, Albuquerque NM -- SE corner of University & Sigma Chi Rd. COA Map K-15

FLOOD ZONE:

Per FEMA FIRM maps 35001C0 334-D and 353-D the site is not in or even near a 100-year flood zone, except the one confined to the North Diversion Channel and its upstream tributaries in and near Lomas Blvd.

EXISTING CONDITIONS:

The existing "["-shaped PKA (Pi Kappa Alpha) fraternity house is located on a roughly 3/8 acre site in a long-developed area near the University of New Mexico. Currently the PKA building is rundown and vacant. The building is unusual in that the low point of the roof is near the middle of the house, almost like a regular pitched roof turned upside down. Thus there is no roof runoff directly to either the front or rear yard; instead runoff flows either east (most of it) to a concrete-paved patio in the hollow of the [and thence down a concrete sidewalk to Sigma Chi Rd. or west to a concrete sidewalk, thence to the parking lot and the street.

WHERE DOES THE REST GO. IN THE HOUSE?

Sigma Chi Rd. is in front of the site, a residential building (another fraternity house?) is on the east, and a paved alley with an inverted crown is on the south. The longitudinal high point of the alley is perhaps 50-100 ft east of the site. There is a bare dirt parking lot on the west side of the building, with access from the alley and from University Blvd. but not from Sigma Chi Rd. The land slopes mostly down from the south (alley) to the north, but both Sigma Chi and the alley both slope slightly down toward University Blvd. at the PKA site. The front yard drains directly to the street. Currently the yard behind the house has been graded to retain all rain that falls on it. It appears that under normal circumstances no offsite runoff enters the site; part of the design problem is making sure that it doesn't enter during the design storm either.

PROJECT DESCRIPTION:

The project consists of a major repair and remodel of the existing fraternity house, with a 5-1/2 foot addition (apx 250 sf) to the south side of the building, and with some modifications to the parking area. The dilapidated wood fence along the south side of the east property line will be replaced with a CMU wall. The wood fence along the alley will be removed to provide for 7 new spaces. Per discussion with City staff, these spaces are shown as if access were from the east. These spaces will drain to the alley and thence west to University Blvd. Other than that, existing drainage patterns will remain essentially unchanged. Grades in the front of the house and on the east side from the courtyard northward remain unchanged. Several existing live trees will be removed to make way for the parking; one dead one will be removed because it is dead. ///

Although there is more paving than before, there is less packed dirt and slightly less lawn. The net result is that calculated runoff for the 100-yr 6-hr design storm barely increases, from 1.45 to 1.46 cfs, just 0.01 cfs. The only water reaching the landscape areas adjacent to the building is that which falls there, except at the new planter at the SW wall. Calculations and basin maps follow the report text. The calculations show that the alley has adequate capacity under both existing and proposed conditions - adequate but not a lot extra, largely because of the nearly flat slope along the alley near the east side of the site.

The proposed layout requires a lot of spot elevations in a small space, and the drawing is optically dense. To avoid confusion, the new contours are not shown - grading is by spot elevations only. For the most part, except in areas covered by landscape rock, the new grades are near existing grades and slopes are no steeper than about 4H:1V.

END OF REPORT TEXT

TUCKER H. GREEN 7-16-02 10731 REGISTERED PROFESSIONAL ENGINEER NEW MEXICO

ALBUQUERQUE, NM (1/93) CRITERIA - SIMPLE PROCEDURE FOR <= 40 ACRES
PX100-6 = PRECIPITATION EXCESS FROM 100-YEAR 6-HOUR STORM
VOL10D = VOLUME OF RUNOFF FROM 100-YEAR 10-DAY STORM
TRTMT CLASS A=UNDISTURBED, B=LAWNS, C=UNPAVED ROADS, D=ROOFS,PAVEMENT: SEE DPM 22.2 P A-5

*** Pi Kappa Alpha Fraternity, 700 University Blvd. NE

RAIN ZONE 2 SEE DPM P 22.2-2
100-YEAR PRECIPTATION (P) DEPTHS, INCHES

1 HR	6 HR	24 HR	4 DAY	10 DAY
2.01	2.35	2.75	3.3	3.95

OFFSITE: ALLEY: EAST OF X GATE, existing cond — ASSUME 0% A, 20% B, 30% C, 50% D — SF TOTAL 24,760

TRTMT CLASS	AREA JARE FEET	AREA ACRES	PX100-6 IN/AC	QP100-6 CFS/AC	QP100-6 CFS	VOL6HR AC-FT	VOL1D AC-FT	VOL4D AC-FT	VOL10D AC-FT	TRTMT PERCENT
A	0.0	0.0000	0.53	1.56	0.000	0.000	0.000	0.000	0.000	0.00
B	4,952.0	0.1137	0.78	2.28	0.259	0.007	0.007	0.007	0.007	20.00
C	7,428.0	0.1705	1.13	3.14	0.535	0.016	0.016	0.016	0.016	30.00
D	12,380.0	0.2842	2.12	4.70	1.336	0.050	0.060	0.073	0.088	50.00
TOTAL	24,760	0.5684	AVG Q/AC=	3.748	2.130	0.074	0.083	0.096	0.112	100.00
	SQ MI=>	0.000888			CU FT=>	3208	3621	4189	4859	<=CU FT

ALLEY: EAST OF X GATE, existing offsite + 2613sf parking — ASSUME 0% A, 20% B, 30% C, 50% D offsite — SF OFFSITI 24,760

TRTMT CLASS	AREA JARE FEET	AREA ACRES	PX100-6 IN/AC	QP100-6 CFS/AC	QP100-6 CFS	VOL6HR AC-FT	VOL1D AC-FT	VOL4D AC-FT	VOL10D AC-FT	TRTMT PERCENT
A	0.0	0.0000	0.53	1.56	0.000	0.000	0.000	0.000	0.000	0.00
B	4,952.0	0.1137	0.78	2.28	0.259	0.007	0.007	0.007	0.007	18.09
C	7,428.0	0.1705	1.13	3.14	0.535	0.016	0.016	0.016	0.016	27.14
D	14,993.0	0.3442	2.12	4.70	1.618	0.061	0.072	0.088	0.107	54.77
TOTAL	27,373	0.6284	AVG Q/AC=	3.839	2.412	0.084	0.096	0.112	0.130	100.00
	SQ MI=>	0.000982			CU FT=>	3670	4170	4857	5669	<=CU FT

Change because of new parking to alley=2.41-2.13=0.28cfs

OFFSITE: ENTIRE ALLEY TO UNIV. BLVD — ASSUME 0% A, 20% B, 30% C, 50% D — SF TOTAL 35,360

TRTMT CLASS	AREA JARE FEET	AREA ACRES	PX100-6 IN/AC	QP100-6 CFS/AC	QP100-6 CFS	VOL6HR AC-FT	VOL1D AC-FT	VOL4D AC-FT	VOL10D AC-FT	TRTMT PERCENT
A	0.0	0.0000	0.53	1.56	0.000	0.000	0.000	0.000	0.000	0.00
B	7,072.0	0.1624	0.78	2.28	0.370	0.011	0.011	0.011	0.011	20.00
C	10,608.0	0.2435	1.13	3.14	0.765	0.023	0.023	0.023	0.023	30.00
D	17,680.0	0.4059	2.12	4.70	1.908	0.072	0.085	0.104	0.126	50.00
TOTAL	35,360	0.8118	AVG Q/AC=	3.748	3.042	0.105	0.119	0.137	0.159	100.00
	SQ MI=>	0.001268			CU FT=>	4582	5171	5982	6939	<=CU FT

With new parking to alley need 3.04+0.38=3.32cfs

ONSITE - EXISTING, total — SF TOTAL 16,765.0

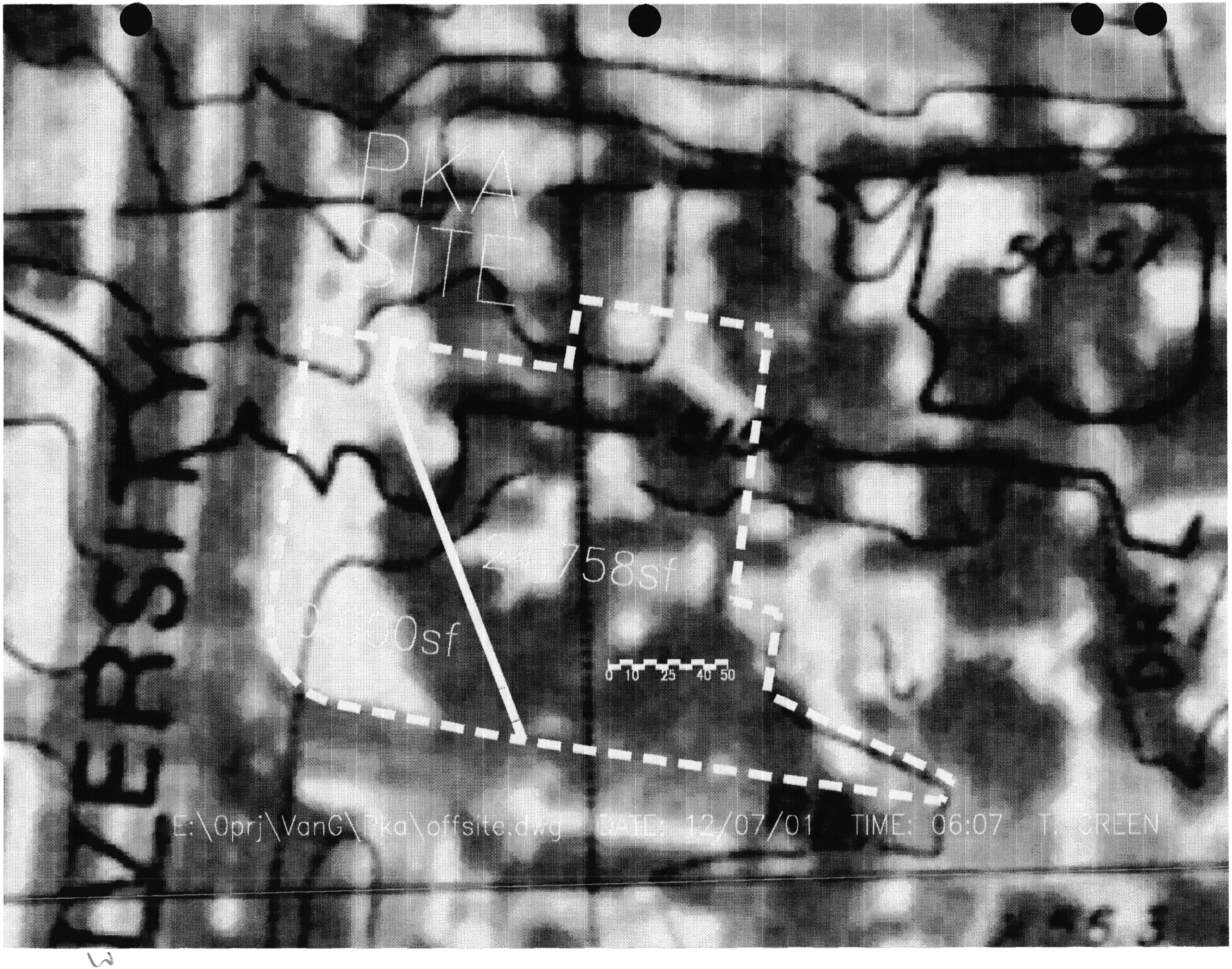
TRTMT CLASS	AREA JARE FEET	AREA ACRES	PX100-6 IN/AC	QP100-6 CFS/AC	QP100-6 CFS	VOL6HR AC-FT	VOL1D AC-FT	VOL4D AC-FT	VOL10D AC-FT	TRTMT PERCENT
A	0.0	0.0000	0.53	1.56	0.000	0.000	0.000	0.000	0.000	0.00
B	1,718.0	0.0394	0.78	2.28	0.090	0.003	0.003	0.003	0.003	10.25
C	7,380.0	0.1694	1.13	3.14	0.532	0.016	0.016	0.016	0.016	44.02
D	7,667.0	0.1760	2.12	4.70	0.827	0.031	0.037	0.045	0.055	45.73
TOTAL	16,765	0.3849	AVG Q/AC=	3.765	1.449	0.050	0.055	0.064	0.073	100.00
	SQ MI=>	0.000601			CU FT=>	2161	2417	2768	3183	<=CU FT

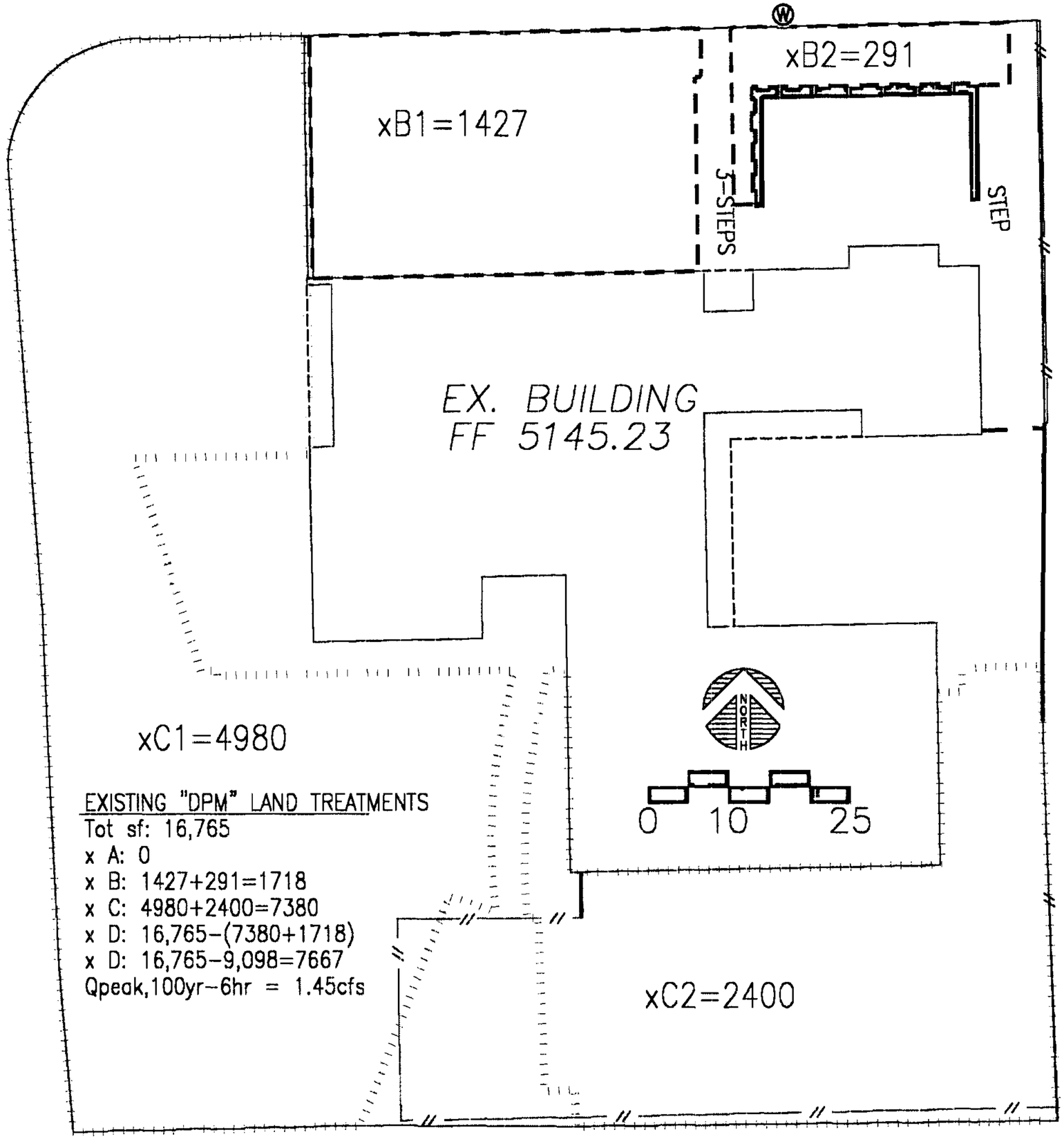
ONSITE - PROPOSED, total, including parking area draining to alley — SF TOTAL 16,765.0

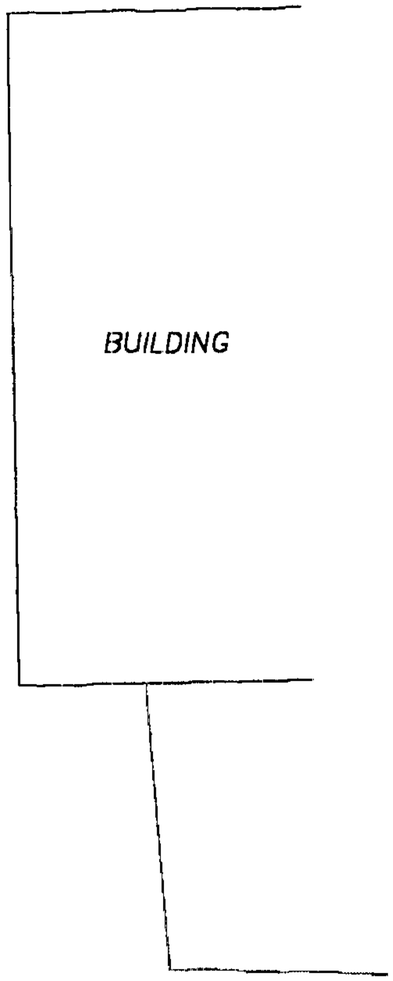
TRTMT CLASS	AREA JARE FEET	AREA ACRES	PX100-6 IN/AC	QP100-6 CFS/AC	QP100-6 CFS	VOL6HR AC-FT	VOL1D AC-FT	VOL4D AC-FT	VOL10D AC-FT	TRTMT PERCENT
A	3,670.0	0.0843	0.53	1.56	0.131	0.004	0.004	0.004	0.004	21.89
B	1,473.0	0.0338	0.78	2.28	0.077	0.002	0.002	0.002	0.002	8.79
C	0.0	0.0000	1.13	3.14	0.000	0.000	0.000	0.000	0.000	0.00
D	11,622.0	0.2668	2.12	4.70	1.254	0.047	0.056	0.068	0.083	69.32
TOTAL	16,765	0.3849	AVG Q/AC=	3.800	1.463	0.053	0.062	0.074	0.089	100.00
	SQ MI=>	0.000601			CU FT=>	2311	2698	3231	3861	<=CU FT

Increase = 1.46-1.45 = 0.01cfs nominal

2


PKA
SITE
758sf
0 10 25 40 50
E:\0prj\VanG\Tka\offsite.dwg
DATE: 12/07/01
TIME: 06:07





E:\0prj\VanG\Pka\PkaDr1.dwg DATE: 01/31/02 TIME: 07:52 T. GREEN

PROPOSED CONDITIONS LAND TREATMENTS

SIGMA CHI RD. NE
ONE-WAY EASTBOUND →

UNIVERSITY BLVD. NE
(NORTHBOUND)

±EXLFH

sfA=1351

sfB=1416
SF total=16,675
sfA=1,351+184+60+743+669+369
+294
sfA=3,670
sfB=1,416+57=1,473
sfC=0
sfD=16,675−(3,670+1,473)
sfD=11,622

sfA=294

EXIST. CONC. PATIO

STEPS

4,120 SF
EXISTING
FRATERNITY
HOUSE

sfA=184

ACCESSIBLE ROUTE

sfA=60

sfA=669

sfB=57

sfA=743

sfA=369

EXISTING BUILDING
252 SF ADDITION

EX. PAVED ALLEY

E:\0prj\VanG\Pka\PkaDr3.dwg DATE: 07/15/02 TIME: 23:54 T. GREEN

0 10 25

BUILDING

0 10 25

E:\0prj\VanG\Pka\PkaDr1sm1.dwg DATE: 01/31/

XSA
dH 0.41
L 27.05
S .0186

XSB
dH 0.15
L 26.30
S .0057

dH 0.17
L 28.48
S .0060

XSC
dH 0.0
L 47.08
S .0000

XSD
dH 0.11
L 13.29
S .0083

dH 0.0011
L 60.36
S .0018

XSN1
(NEW XS)
(a3.58,pw20.69,y0.41,t20.67)
(Capacity=3.22cfs@S=0.110%)

A
a6.10,pw15.74,y0.60,t15.67

B
a9.46,pw17.10,y.91,t16.98

(C)
(a2.70,pw13.30,y.42,t13.42)

D
a2.83,pw15.33,y.36,t15.12

E:\0prj\VanG\Pka\PkaDr1sm1.dwg DATE: 01/31/02 TIME: 07:14 T. GREEN

Manning's equation for normal flow in trapezoidal channels.
b=bottom width (=0 for triangles), m=sideslope H:V (=0 for rectangles)
P=wetted perimeter; R=A/P; Q=flow(cfs); Ev=velocity energy; Fr=Froude no.
Es=specific energy=y+v^2/2g; Ms=specific momentum=Q^2/gA+A*ybar
(For Ms, see e.g. F.M.Henderson, Open Channel Flow, 1966, Eqns 3-8 & 3-9)
Tau = (bed) shear stress (psf) = (gamma water=62.4pcf)*Slope*(Hydraulic Radius R)

NOTE: This version of Mantrap uses externally calculated values for A, T, P to calc Q, V, etc. The depth y is NOT used in the calculations. Other versions of maptrap use values of M, B, & y to calculate A, T, P, etc.

Cross-sections xaA, xsB, & xsD are existing-condition cross-sections.
Since the sections were cut using survey data collected at an angle to the alley, the cosine is used to correct xs lengths.

xsN1 is a "new" xs taken at apx the E. end of the new sidewalk. It extends 5 ft into the property from the back of the existing estate curb, at 2% slope. Per Se Engineeringt estimated the elevations based on judgement and on interpolation for front and back of curb, low flow line etc. Note especially that the low flow elevation is (conservatively) taken as 7.55 (from nearby 7.49 & 7.60) rather than the surveyed 7.32.

Existing Qreq'd at apx apx 55-60' EAST of University Blvd.flow line=2.13 cfs, total at Univ=3.04cfs
Proposed Qreq'd at apx apx 55-60' EAST of University Blvd.flow line=2.41 cfs, total at Univ=3.32cfs

	Cosine =	0.987		Cosine =	0.983	Cosine =	0.984	NEW
	xsA	A, T, & P	xsB	xsB	A, T, & P	xsD	A, T, & P	xsN1
n	0.01700	0.01700	0.01700	0.01700	0.01700	0.01700	0.01700	0.01700
S	0.00570	0.00570	0.00180	0.00110	0.00110	0.00180	0.00180	0.00110
M1								
M2								
B								
Y	0.600	0.600	0.910	0.910	0.910	0.360	0.360	0.410
T	15.67	15.47	16.98	16.98	16.69	15.12	14.88	20.67
A	6.10	6.02	9.46	9.46	9.30	2.83	2.78	3.58
P	15.74	15.54	17.10	34.08	33.50	30.26	29.78	20.69
R	0.39	0.39	0.55	0.28	0.28	0.09	0.09	0.17
Q	21.40	21.12	23.64	11.67	11.47	2.16	2.13	3.22
V	3.51	3.51	2.50	1.23	1.23	0.76	0.76	0.90
Ev	0.19	0.19	0.10	0.02	0.02	0.01	0.01	0.01
Es	0.79	0.79	1.01	0.93	0.93	0.37	0.37	0.42
Fr (Y)	0.80	0.80	0.46	0.23	0.23	0.22	0.22	0.25
Fr (A/T)	0.99	0.99	0.59	0.29	0.29	0.31	0.31	0.38
Ms	2.33	2.30	1.84	0.45	0.44	0.05	0.05	0.09
Tau, psf	0.21	0.21	0.10	0.06	0.06	0.04	0.04	0.03