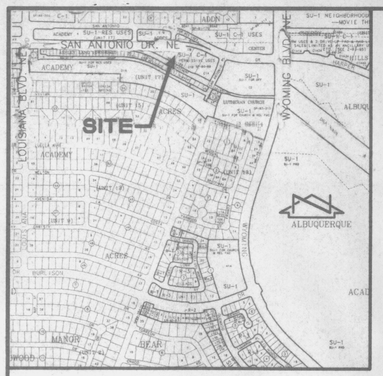


VICINITY MAP

SCALE: 1" = 750'

E-19

LEGAL DESCRIPTION

TRACT C-1-C-1-A, ACADEMY ACRES, UNIT 17

RECEIVED
APR 30 1999
HYDROLOGY SECTION

PROJECT BENCHMARK

A.C.S. 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 12-E19" EPOXIED TO THE TOP OF THE CONCRETE CURB, AT THE WEST NORTHWEST CURB RETURN OF THE INTERSECTION OF WYOMING BLVD. N.E. AND SAN ANTONIO DR. N.E.
ELEVATION = 5404.28' (M.S.L.D.)

T.B.M.

FOUND " + " CHISELED ON TOP OF CURB @ NE CORNER OF SITE
ELEVATION = 5378.21' (M.S.L.D.)

LEGEND

TC	TOP OF CURB
FL	FLOWLINE
TCO	TOP OF CONCRETE
TSW	TOP OF SIDEWALK
TA	TOP OF ASPHALT
EA	EDGE OF ASPHALT
TW	TOP OF WALL
BW	BOTTOM OF WALL
W.M.	WATER METER
P.P.	POWER POLE
W.V.	WATER VALVE
F.H.	FIRE HYDRANT
C.O.	CLEANOUT
SAS	SANITARY SEWER LINE
E	POWER LINE
T	TELEPHONE LINE
L.P.	LIGHT POLE
G.M.	GAS METER
G.P.	GUARD POST
W.C.	WHEELCHAIR
CONC.	CONCRETE
S/W	SIDEWALK
○	SMALL TREE
⬭	BOULDER
+ 72.40	EXISTING SPOT ELEVATION
70	EXISTING CONTOURS
	EXISTING FLOWLINE
⊕72.50	PROPOSED SPOT ELEVATION
70	PROPOSED CONTOUR
	PROPOSED FLOWLINE
	PROPOSED CONCRETE
	PROPOSED ASPHALT
	ROOF DRAINAGE

CONCEPTUAL DRAINAGE PLAN

The following items concerning the Brake Masters San Antonio Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the south side of San Antonio Drive N.E. just west of its intersection with San Antonio Place N.E. The site lies within the Wyoming Commercial Complex. The Pino Arroyo lies to the south of the site. The Pino Arroyo is currently fully improved as a City of Albuquerque public drainage channel. The site outfalls to that existing drainage facility.

As shown by Panel 141 of 825 of the National Flood Insurance Program Flood Insurance Rate Maps published by F.E.M.A. for the City of Albuquerque, New Mexico dated September 20, 1996, this site does not lie within a designated flood hazard zone. A flood hazard zone is identified within the Pino Arroyo. The flood maps indicate that the 100-year flood is "confined to channel". Due to the proximity of the site to the Pino Arroyo, and the status of that channel, the free discharge of runoff from this site is appropriate. Furthermore, it is consistent with the previously approved Master Drainage Plan for this site (Hydrology File NO. E19/D25C). The downstream concrete rundown was improved and upgraded as part of the Zip Lube project (E19/D25C3). The downstream improvements therefore satisfy the requirements of the previously approved plans.

The Grading Plan shows: 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As shown by this plan, a Brake Masters store is proposed within Tract C-1-C-1-A, Academy Acres, Unit 17. At present, this portion of the site slopes from northeast to southwest. This trend of drainage will be maintained through the development of this site. The runoff generated by the proposed improvements will be discharged onto the existing paving which slopes in a westerly direction and eventually discharges to an existing concrete rundown referenced above. No detention ponding is required.
The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Procedure for 40-acre and Smaller Basins, as set forth in the Revision of Section 22.2, Hydrology of the Development Process Manual, Volume 2, Design Criteria, dated January, 1993, has been used to quantify the peak rate of discharge and volume of runoff generated. As shown by these calculations, a minor increase of 330 cf in runoff volume and 0.1 cfs in the peak discharge rate is anticipated due to the proposed development.

CALCULATIONS

Site Characteristics

1. Precipitation Zone = 3
2. $P_{6,100} = P_{360}$ = 2.60
3. Total Area (A_T) = 22,300 sf/0.51 ac
4. Existing Land Treatment

Treatment	Area (sf/ac)	%
C	11,910/0.27	53.4
D	10,390/0.24	46.6

5. Developed Land Treatment

Treatment	Area (sf/ac)	%
B	3,480/0.08	15.6
C	3,400/0.08	15.2
D	15,420/0.35	69.2

Existing Condition

1. Volume

$E_W = (E_AA_A+E_BA_B+E_CA_C+E_DA_D)/A_T$

$E_W = [(1.29)(0.27)+(2.36)(0.24)]/0.51 = 1.79$ in

$V_{100} = (E_W/12)A_T$

$V_{100} = (1.79/12)0.51 = 0.0762$ ac.ft./3,320.0 cf

2. Peak Discharge

$Q_p = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

$Q_p = Q_{100} = (3.45)(0.27)+(5.02)(0.24) = 2.1$ cfs

Developed Condition

1. Volume

$E_W = (E_AA_A+E_BA_B+E_CA_C+E_DA_D)/A_T$

$E_W = [(0.92)(0.08)+(1.29)(0.08)+(2.36)(0.35)]/0.51 = 1.97$ in

$V_{100} = (E_W/12)A_T$

$V_{100} = (1.97/12)0.51 = 0.0837$ ac.ft./3,650 cf

2. Peak Discharge

$Q_p = Q_{PA}A_A + Q_{PB}A_B + Q_{PC}A_C + Q_{PD}A_D$

$Q_p = Q_{100} = (2.60)(0.08)+(3.45)(0.08)+(5.02)(0.35) = 2.2$ cfs

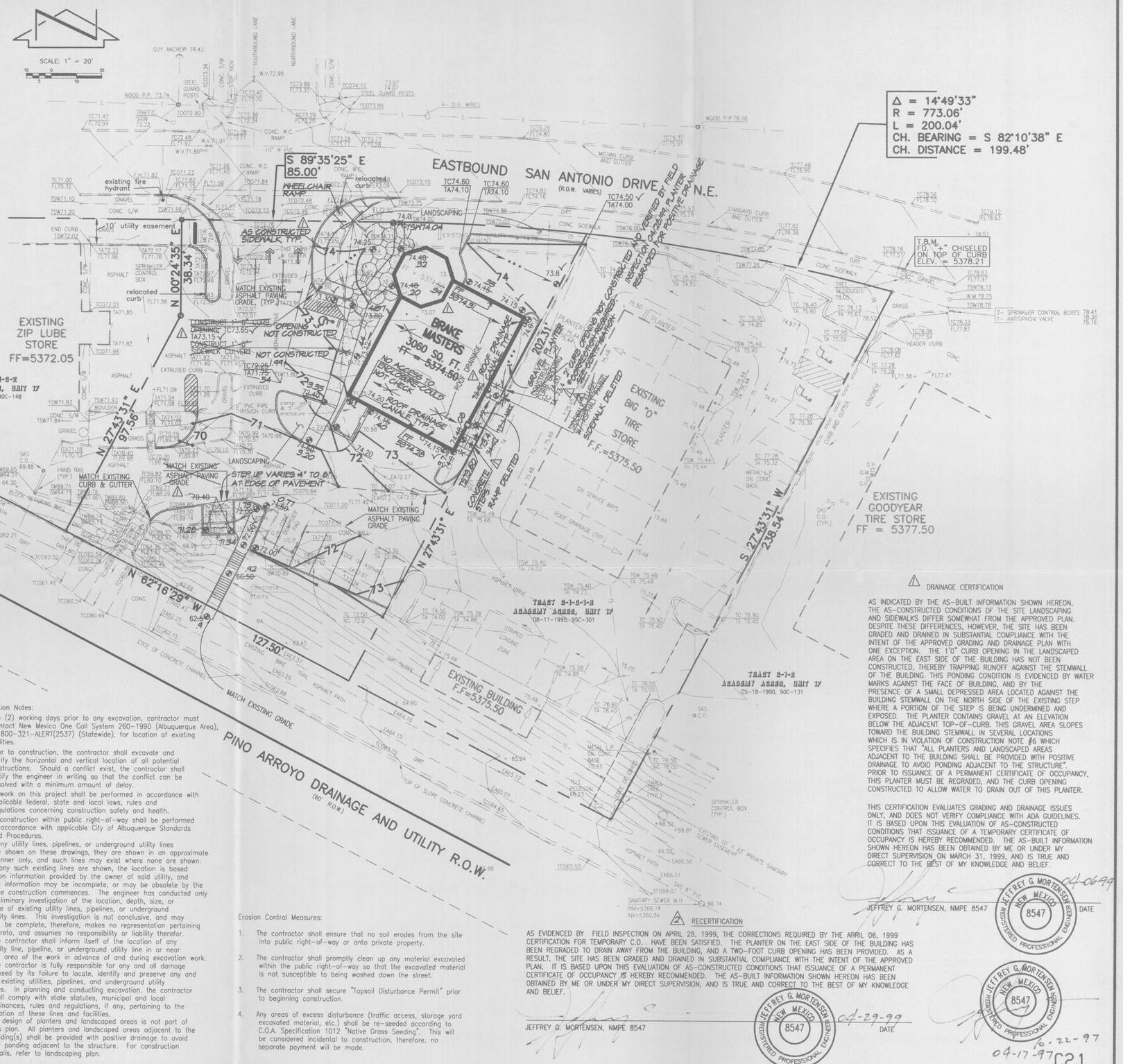
Comparison

1. $\Delta V_{100} = 3,650 - 3,320 = 330$ cf (increase)
2. $\Delta Q_{100} = 2.2 - 2.1 = 0.1$ cfs (increase)

⚠ AS-BUILT LEGEND

⊕74.15.40 AS-BUILT SPOT ELEVATION
+ 73.4 AS-BUILT SPOT ELEVATION
74.15✓ AS-BUILT = AS DESIGNED ELEVATION

SCALE: 1" = 20'



Construction Notes:

1. Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System 260-1990 (Albuquerque Area), 1-800-321-ALERT(2537) (Statewide), for location of existing utilities.
2. Prior to construction, the contractor shall excavate and verify the horizontal and vertical location of all potential obstructions. Should a conflict exist, the contractor shall notify the engineer in writing 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 concerning construction safety and health.
4. All construction within public right-of-way shall be performed in accordance with applicable City of Albuquerque Standards and Procedures.
5. If any utility lines, pipelines, or underground utility lines are shown on these drawings, they are shown in an approximate manner only, and such lines may exist where none are shown. If any such existing lines are shown, the location is based upon information provided by the owner of said utility, and the information may be incomplete, or may be obsolete by the time construction commences. The engineer has conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, makes no representation pertaining thereto, and assumes no responsibility or liability therefor. The contractor shall inform itself of the location of any utility line, pipeline, or underground utility line in or near the area of the work in advance of and during excavation work. The contractor is fully responsible for any and all damage caused by its failure to locate, identify and preserve any and all 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.
6. The design of planters and landscaped areas is not part of this plan. All planters and landscaped areas adjacent to the building(s) shall be provided with positive drainage to avoid any ponding adjacent to the structure. For construction details, refer to landscaping plan.

Erosion Control Measures:

1. The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property.
2. The contractor shall promptly clean up any material excavated within the public right-of-way so that the excavated material is not susceptible to being washed down the street.
3. The contractor shall secure "Topsoil Disturbance Permit" prior to beginning construction.
4. Any areas of excess disturbance (traffic access, storage yard excavated material, etc.) shall be re-seeded according to C.O.A. Specification 1012 "Native Grass Seeding". This will be considered incidental to construction, therefore, no separate payment will be made.

File Path: E:\MW\960086\ Plot Date: 04-29-1999
File Name: 960086AB.DWG Plot Time: 1:24 pm

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS SURVEYORS (505) 345-4250

GRADING AND DRAINAGE PLAN
BRAKE MASTERS - SAN ANTONIO
WYOMING COMMERCIAL COMPLEX

DESIGNED BY J.G.M.
DRAWN BY J.M.A.
APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS
1	04/99	G.M.	AS-BUILT AND CERTIFY FOR TEMPORARY C.O.
2	04/99	G.M.	RECERTIFY FOR PERMANENT C.O.

JOB NO. 960086
DATE 03-1997 04-1999
SHEET 1 OF 1
C2.1