City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 21, 1995

Kim Kemper
Kemper-Vaughan
3700 Coors Rd. NW
Albuquerque, NM 87120

RE: ENGINEER CERTIFICATION FOR DEMENNO WAREHOUSE (G15-D45)
CERTIFICATION STATEMENT DATED 8/3/95.

Dear Mr. Kemper:

Based on the information provided on your August 8, 1995 submittal, Engineer Certification for the above referenced site is acceptable.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 6, 1994

Kim Kemper
Kemper-Vaughan Consulting
3700 Coors Rd. NW
Albuquerque, NM 87120

RE: REVISED DRAINAGE PLAN FOR DEMENNO WAREHOUSE (G15-D45)
ENGINEER'S STAMP DATED 12/22/94.

Dear Mr. Kemper:

Based on the information provided on your December 23, 1994 resubmittal, the above referenced site is 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 D.P.M. checklist will be required.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DEMENNO WAREHOUSE ZONE ATLAS/DRNG. FILE #: G-15/D45

LEGAL DESCRIPTION: LOT 13A, TINLEY PARCELS.

CITY ADDRESS: INDUSTRIAL ROAD

ENGINEERING FIRM: KEMPER-VAUGHAN CONSULTING ENGR CONTACT: KIM R. KEMPER, P.E.

ADDRESS: 3700 COOR RD NW, 87120 PHONE: 831-4520

OWNER: VINCE DEMENNO CONTACT:

ADDRESS: 5337 JESSIE NE 87111 PHONE: 294-0402

ARCHITECT: JLS ARCHITECTURE CONTACT: JOE, SLAGLE

ADDRESS: 414 2ND ST. SW 87102 PHONE: 246-0870

SURVEYOR: RIO GRANDE ENGR & SURVEY. CONTACT: REY VOGLER.

ADDRESS: 3700 Coors RD NW 87120 PHONE: 831-4520

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

____ YES

__X__ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

__X__ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

__X__ 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

__X__ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 12/22/94

BY: _____

DEC 23 1994

HYDROLOGY DIVISION

G15.D45

VERBAL CMTS

OM
11/30/94

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 6, 1994

Kim Kemper
Kemper-Vaughan Consulting
3700 Coors Rd. NW
Albuquerque, NM 87120

RE: REVISED DRAINAGE PLAN FOR DEMENNO WAREHOUSE (G15-D45)
ENGINEER'S STAMP DATED 12/22/94.

Dear Mr. Kemper:

Based on the information provided on your December 23, 1994 resubmittal, the above referenced site is 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 D.P.M. checklist will be required.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya

Bernie J. Montoya, CE
Engineering Associate

BJM/dl

c: Andrew Garcia
File

RECEIVED
AUG 8 1995

NOTE TO REVIEWER:

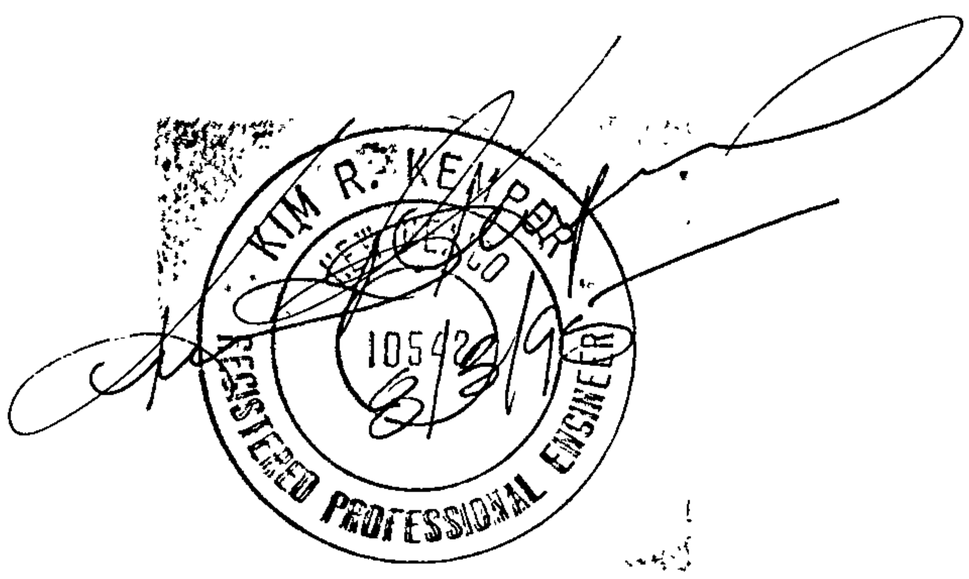
Demenno Warehouse

The grading and drainage plan was originally approved on January 6, 1995, plan engineers seal dated December 12, 1994. During construction several changes were made to the parking lot area. As a result the site could not be certified. We then prepared a new grading and drainage plan to accommodate the changes in construction. This plan required the removal and replacement of the proposed weir and the enlargement of the ponding area to accommodate additional runoff.

On August 3, 1995 we inspected the site and obtained "as-built" elevations at critical points on the site. Those record drawing elevations are shown on the attached plan.

(Engineers seal dated 7/17/95 when plan was prepared, and again on 8/3/95 when the record drawing data was added)

The site is in substantial compliance with the plan prepared dated 7/17/95 and the site drainage will function as originally approved.



DRAINAGE INFORMATION SHEET

PROJECT TITLE: DEMENNO WAREHOUSE ZONE ATLAS/DRNG. FILE #: G-15/D45

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

LEGAL DESCRIPTION: LOT 13A, TINLEY PARCELS.

CITY ADDRESS: INDUSTRIAL ROAD.

ENGINEERING FIRM: KEMPER-VAUGHAN CONSULTING ENGR CONTACT: KIM R. KEMPER

ADDRESS: 3700 COORS RD NW 87120 PHONE: 831-4520

OWNER: VINCE DEMENNO CONTACT: _____

ADDRESS: 5337 JESSIE NE 87111 PHONE: 294-0402

ARCHITECT: JLS ARCHITECTURE CONTACT: JOE SLAGLE

ADDRESS: 414 2ND ST. SW 87102 PHONE: 246-0870

SURVEYOR: RIO GRANDE SURVEY CONTACT: REX VOGLER

ADDRESS: 3700 COORS RD. NW 87120 PHONE: 831-4520

CONTRACTOR: DEMENNO CONSTRUCTION. CONTACT: _____

ADDRESS: ABOVE. PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

XX ENGINEER'S CERTIFICATION

____ OTHER _____

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ BUILDING PERMIT APPROVAL

XX CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 8/4/95

BY: _____

RECEIVED
AUG 8 1995

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DEMENNO WAREHOUSE ZONE ATLAS/DRNG. FILE #: G-15/D45

LEGAL DESCRIPTION: LOT 13A, TINLEY PARCELS.

CITY ADDRESS: INDUSTRIAL ROAD

ENGINEERING FIRM: KEMPER-VAUGHAN CONSULTING ENGR CONTACT: KIM R. KEMPER, P.E.

ADDRESS: 3700 COOR RD NW, 87120 PHONE: 831-4520

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ADDRESS: 3700 Coors RD NW 87120 PHONE: 831-4520

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

___ YES

_X_ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

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EPC NO.

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TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

_X_ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

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___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

VERBAL Cmts on 11/3/94

1. county Rd private
2. Downstream evaluation
3. outFALL

DATE SUBMITTED: 11/4/94

BY: Kim R. Kemper

NOV 7 1994

DEVELOPMENT & BUILDING SERVICE CENTER

ONE STOP
600 SECOND ST. N.W./2ND FLOOR
ATTENTION: Margaret
505-924-3900

Records Withdrawal Form

Project No. GIS - 045 **Date:** 7-28-98

Project Title: DeMenno Warehouse

a. File b. Mylars c. Redlines/Comments

(d.) Other Partial File

Requested By: URS Greiner **Phone No.:** 345 - 3999
Company

Anticipated Return Date: 7-29-98

7th pick up
must sign

Receipt Acknowledged

I here by accept full responsibility for the security of the above noted records/pl
receipt acknowledgement is completed. Records/plans will be returned to the D ...ent &
Building Services Center on or before the indicated anticipated return date.

Delivery Picked Up By:

Name: M. PERKINS **Organization:** Sun Graphics
Print

Signed: _____ **Date:** _____
Phone No. 884-2080

Office Use Only

Return Acknowledged

Received by: _____ **Date:** _____
Print

SunGraphics: Please copy. Send copies
to Karen Stearns at URSGreiner. Return originals
to City of Albuquerque

4

$\frac{17}{15}$

$\frac{35}{}$

$\frac{11 \times 17}{1}$

1

$\frac{24 \times 36}{5}$

CONCEPTUAL DRAINAGE PLAN FOR

TINLEY PARCELS SUBDIVISION

OSUNA PARK, TRACT B-2

ALBUQUERQUE, NEW MEXICO

prepared for

Bob Tinley

Investment Corporation of the Southwest

by

Resource Technology, Incorporated

7800 Marble Avenue NE, Suite 5

Albuquerque, New Mexico 87110

December 3, 1984

PURPOSE

This report analyzes the existing drainage conditions and proposed conceptual plan for Tinley Parcels Subdivision, a proposed industrial park composed of 13 lots. This subdivision was surveyed and platted by D.T. Morrison, 1020 Texas N.E., Albuquerque, New Mexico (256-7364), as revised in October 1984. The topographic survey of the subdivision was conducted by Resource Technology, Incorporated (266-3320).

All survey and legal description information are on the original plat, prepared by D.T. Morrison. A copy of this plat is also submitted with this plan.

This report was developed in accordance with criteria in the City of Albuquerque Development Process Manual (DPM), and consultations with City Engineering staff.

SITE LOCATION AND DESCRIPTION

The 13.158 acre site is composed of 13 lots on Tract B-2 of the Osuna Park Subdivision which is shown on Figure 1. Edith Boulevard NE is about 540 feet west of Tract B-2 and Interstate 25 about 600 feet east. Candelaria Road NE is approximately 1,820 feet south and Rankin Road NE about 340 feet north. Tract B-2 is bounded on the west by the Alameda Lateral right-of-way; through this area the lateral is confined in a 60-inch diameter corrugated metal pipe and the surface area of the right-of-way is a strip of bare and unpaved land. Lot 13, on the east end of Tract B-2, is bounded by Tract B-4 which is also undeveloped. The State of New Mexico Girls Welfare Home which is a campus-like detention

facility borders Lots 5 through 13 on the south and Lots 3 and 4 are bounded on the south by a detention pond for off-site flows located on Tract B-1 of Osuna Park. Lots 6 through 13 are bounded on the north by undeveloped Tract B-3 and Tract A, which is a construction equipment storage and maintenance yard.

The study area has an elevation drop of 72 feet, from 5,070 feet at the east boundary of Lot 13 to 4,998 feet at the west boundary of Lot 3 measured along the proposed road (50-foot wide ingress and egress, drainage and utility easement), which will be located along the north edge of Lots 3 to 13. The distance from the east boundary of Lot 13 to the west boundary of Lot 3 is 1,796.3 feet and the average ground slope measured along the proposed road is 4 percent. The slope is relatively steep through lots 11 and 13 and these reaches will need considerable grading for accomodation of the roadway and a building site.

The study area has been partially graded and some steep cut and fill slopes are existing on Lots 7, 8, 10, 11, 12 and 13 along the southern boundary of the property.

Soils in the upper portion of the study area (Figure 2) consist of the Bluepoint Series which is loamy fine sand, and is classified by the SCS as Hydrologic Soil Group A, and the Gila Series which is loamy sand or sandy loam, and is classified as Hydrologic Soil Group B. The Gila soils are found along the western and lower portions of the study area.

There are no existing streets or structures on the site. A 30-foot ingress, egress and sewer easement is located along the east boundary of Lot 5 and a 20-foot sewer easement is located along the east boundary of

Lot 2. A 36-inch diameter storm sewer crosses the study area longitudinally. This corrugated metal pipe conveys runoff from an urbanized area east of IH-25 to a detention pond on Tract B-1, which lies south of Lots 3 and 4.

OFF-SITE FLOWS

Figure 3 shows the location of the off-site drainage areas with respect to each lot. Off-site flows enter all lots except Lots 1, 3, 4, and 5. Two arroyos enter Lot 13 from the State of New Mexico Girls Welfare Home property and Tract B-4. The State of New Mexico Girls Welfare Home property also has flow draining into lots 7 through 12. Most flow from Tract A discharges into Lot 6 and 7 with some flow into Lots 2, 12 and 13.

Flows which enter the upper portion of Tract B-2 from the State of New Mexico Girls Welfare Home property remain in a shallow swale along the south side of Tract B-2. These flows and additional flow from Tract B-2, drain back into the State of New Mexico Girls Welfare Home property near the southeast corner of Lot 7, as shown on Figure 3.

Table 1 shows that the time of concentration for the longest off-site area (B) is 7.0 minutes, and the time of concentration for the largest lot (13) is 1.31 minutes. Therefore the time of concentration for all lots and off-site drainage areas was assumed to be 10 minutes, as specified in the DPM.

Table 2 shows the off-site flow determinations. The largest off-site drainage area (L) has 5.32 acres, and the 100-year flood discharge is 11.66 cfs with a volume of 20,020 cu.ft. It is planned that each of the

off-site flows will drain into the adjacent downstream on-site lot and through a detention pond to be located at the west boundary of each lot.

A 3-foot diameter culvert located adjacent to and south of the planned road carries flow from the east side of Interstate 25 down to Tract B-1 which consists mostly of a pond into which the flow from the culvert is detained; however, the pond has a 3-foot diameter outflow pipe to the Alameda Lateral. Table 3 lists the drainage area and flow data from the area east of IH-25 that flows through the 3-foot culvert. The culvert capacity is only 65 cfs, and the 10-year flood from the contributing drainage area is 185 cfs; therefore the culvert has minimal capacity, and will flow under pressure during very minor rainstorms. Also, it will cause additional detention within the watershed east of IH-25.

The 10-year flood volume into the detention pond on Tract B-1 is 7.3 acre-feet and the 100-year flood volume is 11.4 acre-feet. Table 4 shows the present and possible pond sizes on Tract B-1. The possible pond volume using the entire area of Tract B-1 and 2H:1V side slopes with a 10-foot depth, is 2.33 acre-feet. Therefore the pond volume on Tract B-1 is much smaller than even the 10-year volume.

ON-SITE FLOWS

The 13 lots and the existing conditions on Tract B-2 are shown on the Conceptual Drainage Plan (fold out sheet). Existing runoff is overland through most of the study area. This overland flow was intercepted by the Alameda Lateral before it was enclosed in a pipe. Now the undeveloped flows drain to the detention pond on Tract B-1 or to Edith Boulevard NE. The on-site flow determinations for each lot is shown in

Table 5 for undeveloped and developed conditions. For this conceptual plan the greatest possible developed condition (98 percent imperviousness) was assumed; actual development should be considerably less.

Developed condition flows on each lot will drain into a detention pond which will be located at the west boundary of the lot. Figure 4 shows the cross section through a typical detention pond. Each detention pond will have a retaining wall on the downstream side, and 3H:1V side slopes on the other sides. Table 6 lists the dimensions of the detention ponds which are also shown on the Conceptual Drainage Plan.

Each detention pond will extend along the west boundary of each lot from the proposed road to almost the south boundary of the lot, except Lots 1 and 2 which extend from the road to the north boundary of the lot. Each detention pond may have a controlled slow release draining into swales on both sides of the proposed road. Flows in these swales will eventually drain to the Alameda Lateral through slotted pipe drains to be installed in the swales.

STREET FLOWS

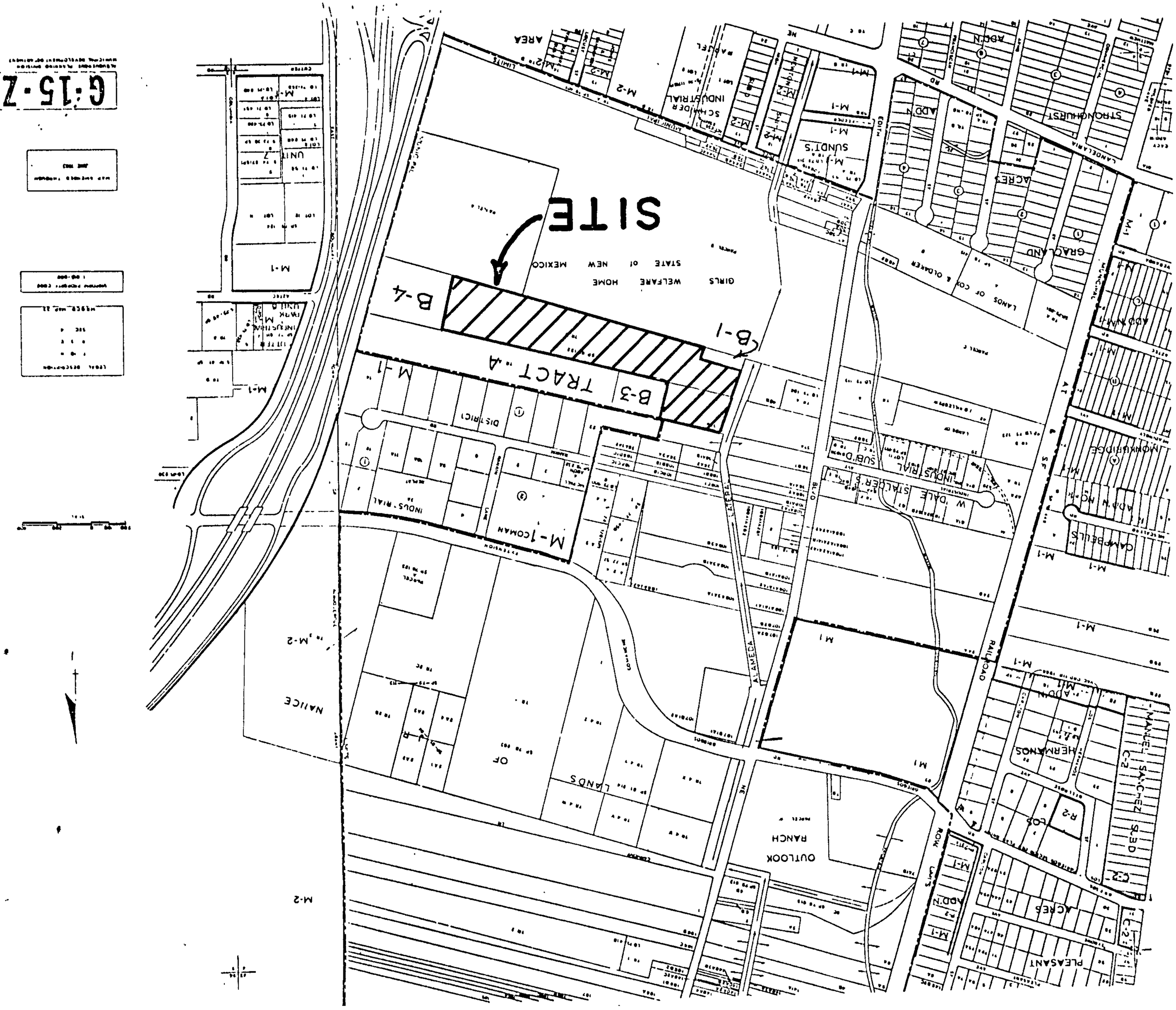
Figure 5 shows the conceptual road and swale cross section. The proposed road will require little grading from the present condition except through Lots 12 and 13, which will require extensive fill and grading.

Approximately trapezoid shaped swales will be located along the east and west lanes of the road. The north swale of the proposed road will have to handle flows from the road surface area and off-site flow from

the north side of the road (see Figure 3) plus 0.5 cfs controlled release from each detention pond on lots 1 and 2. The south swale will handle road flows, 0.5 cfs controlled release from each dentention pond on lots 3 through 13 and off-site flows from Tract B-4 and the New Mexico Girls Welfare Home (Figure 3). Table 7 shows the flow data for the road, including the flow expected in each swale and the size of each swale.

The flow in the swales along the road will be discharged into the Alameda Lateral, just as the historic runoff flowed into the Alameda Lateral. However, the new system will confine flows into slotted drains and pipes so that ditch breaks are no longer possible at this point.

FIGURE 1
SITE LOCATION MAP



BERNALILLO COUNTY, AND PARTS OF SANDOVAL AND VALENCI

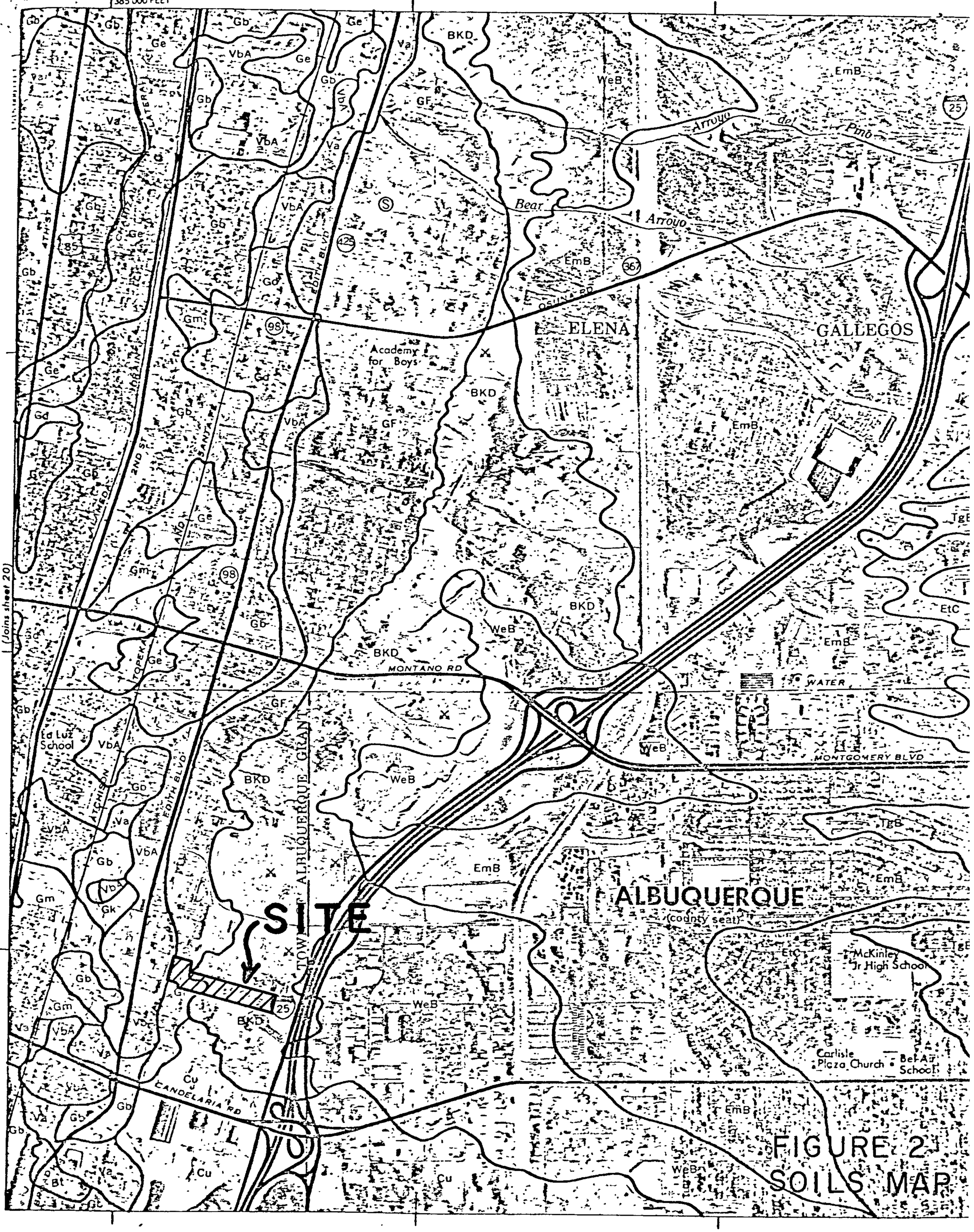


FIGURE 2
SOILS MAP

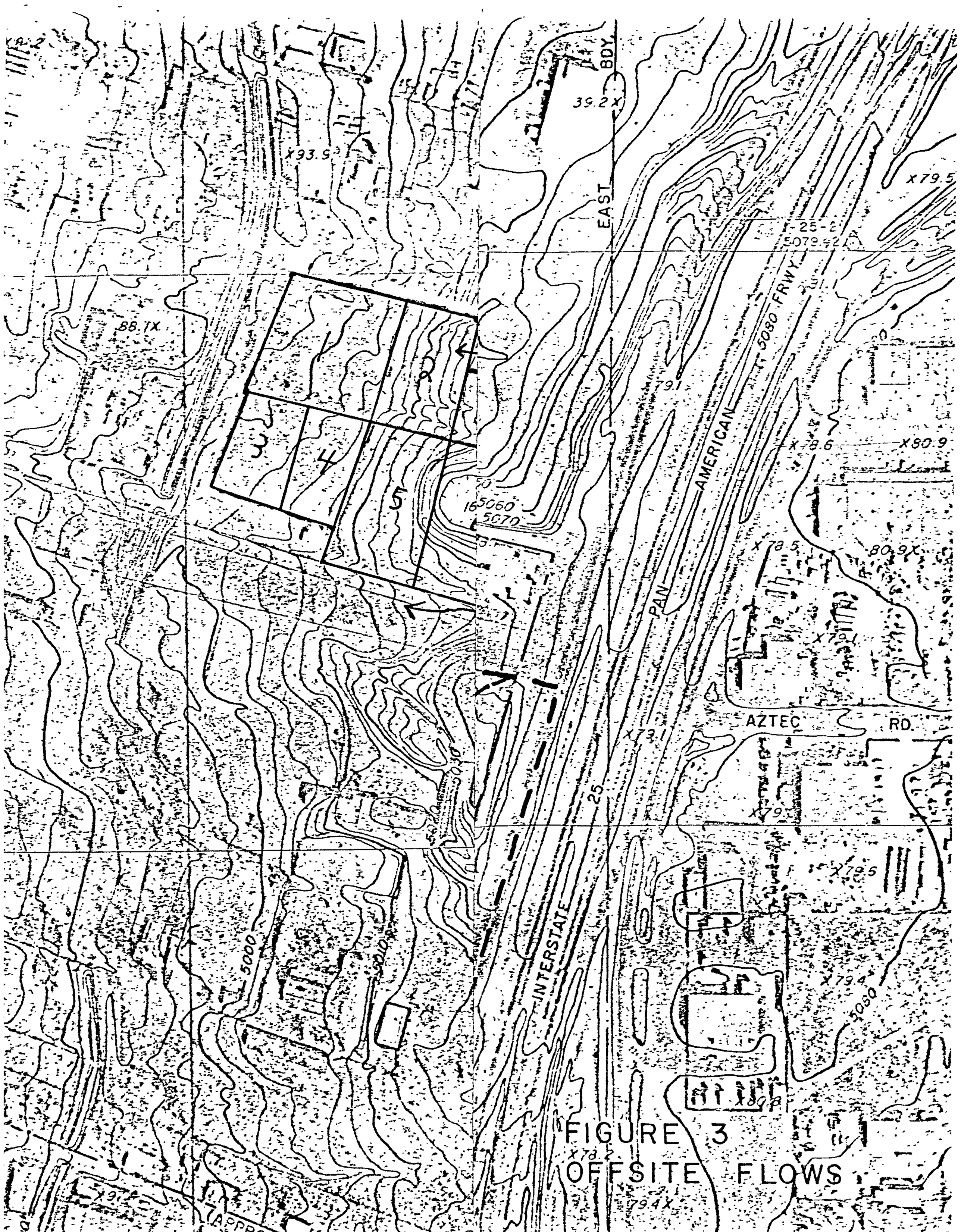


FIGURE 3
OFFSITE FLOWS

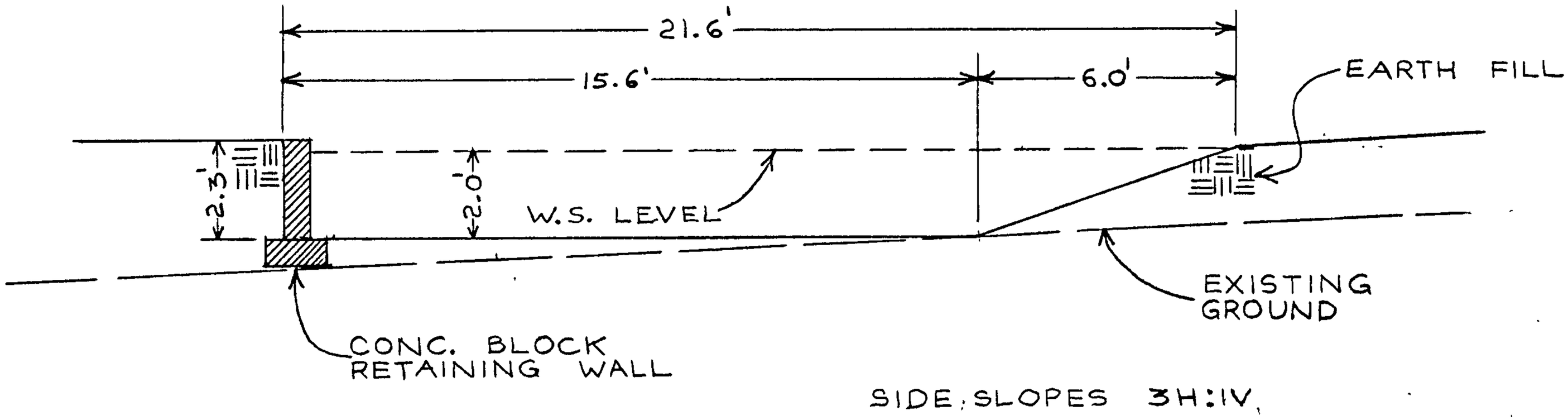


FIGURE 4

TYPICAL DETENTION POND

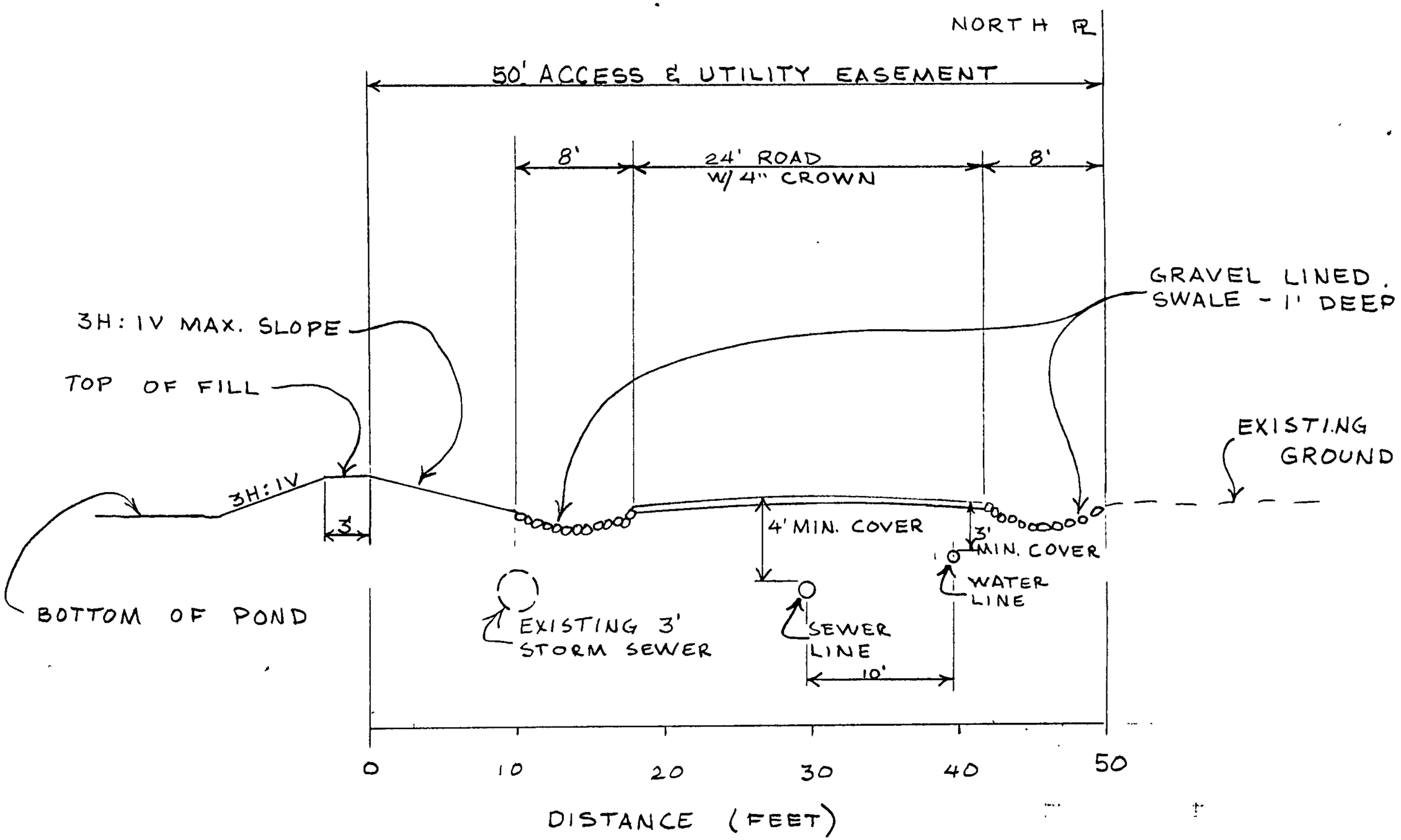


FIGURE 5

PROPOSED ROAD & SWALE CROSS SECTION

TABLE 1

TIME OF CONCENTRATION

Tc = The time runoff takes to reach an analysis point from the most hydraulically remote location in the basin, measured from the time rainfall starts.

Tc For longest off-site area, B

$$Tc = 0.0078 \frac{(1300)^{0.77}}{(47/1300)^{0.385}} = 7.0 \text{ minutes}$$

Tc For largest lot, 13

$$Tc = 0.0078 \frac{(190)^{0.77}}{(11.5/190)^{0.385}} = 1.31 \text{ minutes}$$

Assume Tc = 10 minutes for all on and off-site areas

TABLE 2

OFF-SITE FLOW DETERMINATIONS

CONTRI-BUTING AREA	TOTAL DRAINAGE AREA (FT^2)	TOTAL DRAINAGE AREA (ACRES)	IMPERVIOUS AREA (%)	HYDROLOGIC SOIL GROUP	"C" FACTOR	LOT AND INFLOW LOCATION	100-YEAR FREQUENCY Q (CFS)	100-YEAR FREQUENCY V (FT^3)	10-YEAR FREQUENCY Q (CFS)	10-YEAR FREQUENCY V (FT^3)
A	45,882	1.05	50	A	0.42	2 EAST	2.05	3,533	1.31	2,248
B	268,537	6.16	98	A	0.92	6,7 NORTH	26.35	45,293	16.77	28,823
C	9,299	0.21	0	A	0.16	SOUTH	0.16	273	0.10	174
D	17,778	0.41	0	A	0.16	8 SOUTH	0.31	521	0.19	332
E	102,222	2.35	0	A	0.16	9 SOUTH	1.75	2,999	1.11	1,908
F	12,741	0.29	0	A	0.16	10 SOUTH	0.22	374	0.14	238
G	67,556	1.55	60	A	0.49	11 SOUTH	3.53	6,069	2.25	3,862
H	32,211	0.74	98	A	0.92	12 NORTH	3.17	5,433	2.02	3,457
I	5,926	0.14	0	A	0.16	SOUTH	0.10	174	0.07	111
J	89,312	2.05	98	A	0.92	13 NORTH	8.77	15,064	5.58	9,586
K	99,556	2.29	0	A	0.16	SOUTH	1.70	2,920	1.08	1,858
L	231,642	5.32	60	A	0.49	EAST	11.66	20,020	7.42	12,740

DESIGN RAINFALL

6-hr, 10-yr
rainfall depth = 1.4 inches
rainfall intensity = 2.96 inches/hour

Assume Tc = 10 minutes

6-hr, 100-yr
rainfall depth = 2.2 inches
rainfall intensity = 4.65 inches/hour

TABLE 3

FLOW FROM DRAINAGE AREA EAST OF INTERSTATE 25

(CONVEYED THROUGH CULVERT INTO TRACT B-1 POND)

Area = 3,777,143 sq. ft. or 86.7 acres

Impervious Area = 75%

Hydrologic Soil Group B

"C" Factor = 0.72

6-hr, 10-yr
rainfall depth = 1.4 inches
rainfall intensity = 2.96 inches/hour

10-Year Flood; Q = 185 cfs, V = 317,280 cu. ft. = 7.3 ac. ft.

6-hr, 100-yr
rainfall depth = 2.2 inches
rainfall intensity = 4.65 inches/hour

100-Year Flood; Q = 291 cfs, V = 498,583 cu. ft. = 11.4 ac. ft.

7 Drainage is through a 36-inch diameter CMP under Interstate 25. Under inlet control and maximum headwater depth of 6 feet, the capacity of this pipe is 65 cfs. Therefore, the pipe may flow under pressure during average runoff conditions.

TABLE 4

PRESENT AND POSSIBLE POND VOLUME ON TRACT B-1

PRESENT POND

Average Pond Width 45.9 ft.
Average Pond Length 143.8 ft.
Maximum Pond Depth to
Top of Outlet Culvert = 8.8 ft. (Culvert 3 ft. Diameter)

Present Pond Volume to Top of Outlet Culvert = 58,084 cu. ft. = 1.3 ac.-ft.

POSSIBLE POND

Tract B-1 Width = 69.77 ft.; Length = 223.69 ft.
Area = 15,606.85 sq. ft. = 0.358 acres

Assume 10 ft. depth, 2H:1V side slopes

Average Pond Width = 49.77 ft.
Average Pond Length = 203.69 ft.
Maximum Pond Depth = 10 ft.

Possible Pond Volume = 101,377 cu. ft. = 2.33 ac.-ft.

TABLE 5

ON-SITE FLOW DETERMINATIONS

LOT (TRACT B-2)	TOTAL AREA (FT^2)	TOTAL AREA (ACRES)	IMPERVIOUS AREA (%)	HYDROLOGIC SOIL GROUP	"C" FACTOR	100-YEAR FREQUENCY Q (CFS)	100-YEAR FREQUENCY V (FT^3)	10-YEAR FREQUENCY Q (CFS)	10-YEAR FREQUENCY V (FT^3)
1 UN	45506.	1.068	0	B	.34	1.69	2,837	1.07	1,805
D			98	B	.96	4.78	8,009	3.03	5,097
2 UN	33,312.	0.765	0	B	.34	1.21	2,076	0.77	1,321
D			98	B	.96	3.41	5,863	2.17	3,731
3 UN	19,899.	0.457	0	B	.34	0.72	1.240	0.46	789
D			98	B	.96	2.04	3,502	1.30	2,229
4 UN	19,112.	0.439	0	B	.34	0.69	1,191	0.44	758
D			98	B	.96	1.96	3.364	1.25	2,141
5 UN	40,532.	0.931	0	B	.34	1.47	2,527	0.94	1,608
D			98	B	.96	4.13	1,134	2.65	4,540
6 UN	39,462.	0.906	0	B	.34	1.43	2,460	0.91	1,565
D			98	B	.96	4.04	6,945	2.57	4,420
7 UN	40,416.	0.928	0	B	.34	1.47	2,519	0.93	1,603
D			98	B	.96	4.14	7,113	2.64	4,527
8 UN	49,431.	1.135	0	B	.34	1.79	3,081	1.14	1,961
D			98	B	.96	5.07	8,700	3.23	5,536
9 UN	50,789.	1.166	0	A	.16	0.87	1,490	0.55	948
D			98	A	.92	4.99	8,566	3.18	5,451
10 UN	55,356.	1.270	0	A	.16	0.94	1,624	0.60	1,033
D			98	A	.92	5.43	9,337	3.46	5,942
11 UN	57,249.	1.314	0	A	.16	0.98	1,679	0.62	1,069
D			98	A	.92	5.62	9,656	3.58	6,145
12 UN	58,605.	1.345	0	A	.16	1.00	1,719	0.64	1,094
D			98	A	.92	5.75	9,885	3.66	6,290
13 UN	62,458.	1.4343	0	A	.16	1.07	1,832	0.68	1,166
D			98	A	.92	6.13	10,535	3.91	6,704

DESIGN RAINFALL

6-hr, 10-hr
rainfall depth = 1.4 inches
rainfall intensity = 2.96 inches/hour

6-hr, 100-yr
rainfall depth = 2.2 inches
rainfall intensity = 4.65 inches/hour

UN = UNDEVELOPED
D = DEVELOPED
Assume Tc = 10 minutes

TABLE 6

DETENTION POND DATA

LOT	CONCEPTUAL POND SIZE		
	LENGTH (FEET)	DEPTH (FEET)	WIDTH (FEET)
1	218	2.3	21.4
2	222	2.3	16.2
3	125	2.3	17.0
4	129	2.3	16.0
5	203	2.3	20.6
6	209	2.3	19.6
7	216	2.3	22.5
8	200	2.3	24.8
9	230	2.3	21.6
10	237	2.3	22.7
11	235	2.3	23.5
12	220	2.3	25.5
13	254	2.3	23.7

3H:1V Side Slopes

TABLE 7

STREET FLOW PARAMETERS

PROPOSED ROAD AREA		IMPERVOIUS AREA	"C" FACTOR	100-YEAR FREQUENCY		10-YEAR FREQUENCY	
				Q	V	Q	V
(FT^2)	(ACRES)	(%)		(CFS)	(FT^3)	(CFS)	(FT^3)
109,815	2.52	100	1.0	11.72	20,133	7.46	12,812

DESIGN RAINFALL

6-hr, 10-yr
rainfall depth = 1.4 inches
rainfall intensity = 2.96 inches/hour

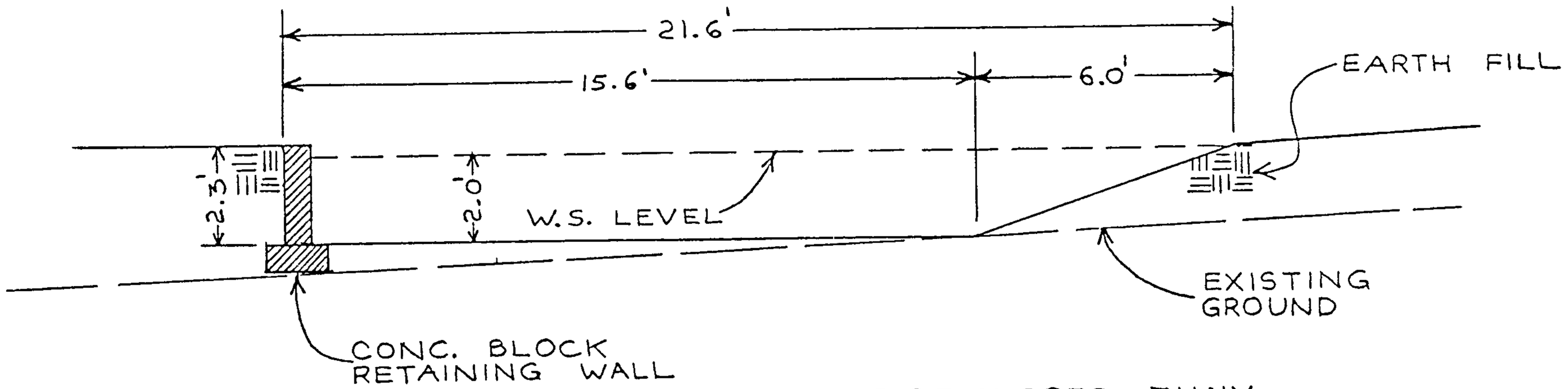
6-hr, 100-yr
rainfall depth = 2.2 inches
rainfall intensity = 4.65 inches/hour

ROAD	LANE	AVE. SLOPE	100-YR. FREQ. AT INLET		TRAPEZOIDAL SWALE		
			Q	D	TOP	BOTTOM	DEPTH
		(FT/FT)	(CFS)	(FT)	(FT)	(FT)	(FT)
50' Wide Ingress, Egress Easement	EAST	.037	39.56*	0.90	6.5	2.5	1.0
	WEST		36.38**	.82	6.5	2.5	1.0

* 39.56 = Half the 100-year Q for the street area (5.86), plus off-site inflow from areas C, D, E, F, G, I, K, J AND L (28.20), plus controlled release from lots 3 - 13 (5.5)

** 36.38 = Half the 100-year Q for the street area (5.86), plus off-site inflow from areas B and H (29.52), plus controlled release from lots 1 and 2 (1)

Swale side slopes are 2H:1V; maximum capacity is 40 cfs.



0 10 20

DISTANCE (FEET)

FIGURE 4

TYPICAL DETENTION POND

COUNTY OF BERNALILLO
PUBLIC WORKS DEPARTMENT

EDITH BOULEVARD DRAINAGE ANALYSIS

C.O.A. PROJECT 3675.91

NOVEMBER 1990

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BASIN 7
SUMMARY

SUBBASIN	C	CN	AREA (SQ MI)	AREA (ACRES)	SLOPE (FT/FT)	LENGTH (FT)	TC (MIN)	AVE INTENS. (INCHES/HR)	Q PEAK (CFS)	VOL 100 (ACRE FT)	VOL 10 (ACRE FT)
7A-1	.80	90	.0032	2.02	.034	350	10	4.8	7.7	.31	.13
7A-2	.95	98	.0008	.54	.003	520	10	4.8	2.5	.11	.06
7A-3	.80	90	.0053	3.40	.031	450	12	4.6	12.5	.51	.22
7A-4A	.95	98	.0012	.74	.003	750	10	4.8	3.4	.16	.09
7BS	.70	75	.0026	1.64	.035	450	10	4.8	5.5	.12	.03
7BN	.73	76	.0033	2.13	.02	300	10	4.8	7.4	.16	.04
7C	.90	92	.0259	16.60	.035	2650	18	3.85	57.5	2.73	1.22
7D	.70	75	.0719	46.00	.03	3200	25.7	3.2	77.3	3.19	.78
7E	.65	69	.0125	8.00	.047	1900	15	4.3	22.4	.38	.06
									TO POND 1	7.67	2.63

Table 3

BASIN 8,1,5
SUMMARY

SUBBASIN	C	CN	AREA (SQ MI)	AREA (ACRES)	SLOPE (FT/FT)	LENGTH (FT)	TC (MIN)	AVE INTENS. (INCHES/HR)	Q PEAK (CFS)	VOL 100 (ACRE FT)	VOL 10 (ACRE FT)
1	.92	92	.172	110.00	.0055	4000	42	2.35	233	18.1	8.13
8A	.84	90	.044	28.00	.032	2000	15	4.3	101.4	4.23	1.79
5	.85	90	.0065	4.16	.02	600	10	4.8	17	.62	.26
28	.75	72	.0052	3.30	.067	830	10	4.8	11.9	.19	.04
27	.89	92	.0083	5.30	.015	600	10	4.8	22.6	.87	.39
8B	.89	92	.0266	17.00	.021	1700	14.8	4.4	66.6	2.8	1.26
30	.89	92	.0063	4.00	.02	600	10	4.8	17.1	.66	.30
31	.90	92	.0014	.90			10	4.8	3.9	.15	.07
8C	.89	92	.0059	3.75	.03	800	10	16	.45	.62	.06
32	.89	92	.0036	2.30	.0036	650	10	4.8	9.8	.38	.17
24	.83	88	.05	32.00	.0072	1250	13	4.5		4.38	1.75
25	.89	92	.0341	21.80	.0057	1650	17.1	4.2		3.59	1.61
									TO POND 1	36.59	15.83

Table 4

roadway. An inlet structure will be placed in the detention basin with the purpose of conveying the peak flow into the Edith system. This structure will change the purpose of the existing detention basin to that of a storm water collection "manifold." See Figure 6 for a schematic of System 7 and Table 3 for hydrologic summary of Basin 7.

The northern system (System 8) consists of two main lines: 1) a northerly line along Edith Boulevard beginning near Comanche - Griegos Road, and 2) an easterly line originating on Industrial Avenue, near the West Frontage Road. The northerly line accepts runoff from the area between Edith Boulevard and the Alameda Lateral, and from the roadway itself. This flow is drained by combination inlets placed on Edith Boulevard. A stub-out is also provided on Rankin Road for future drainage facilities in sub-basin 8B. The easterly line connects to an existing 36" CMP at a point approximately 800 feet east of Edith Boulevard on Industrial Road. The existing CMP drains sub-basins 1 and 5. The existing detention basin, which is located between Industrial Road and the NMYDDC, will be enlarged to store the runoff generated from sub-basin 8A.

The enlarged detention basin (Detention Basin No. 5) has a top-of-berm elevation of 5,000.00 feet and a storage capacity of 2.9 acre-feet. It has 3 to 1 side slopes and a depth of about 11 feet.

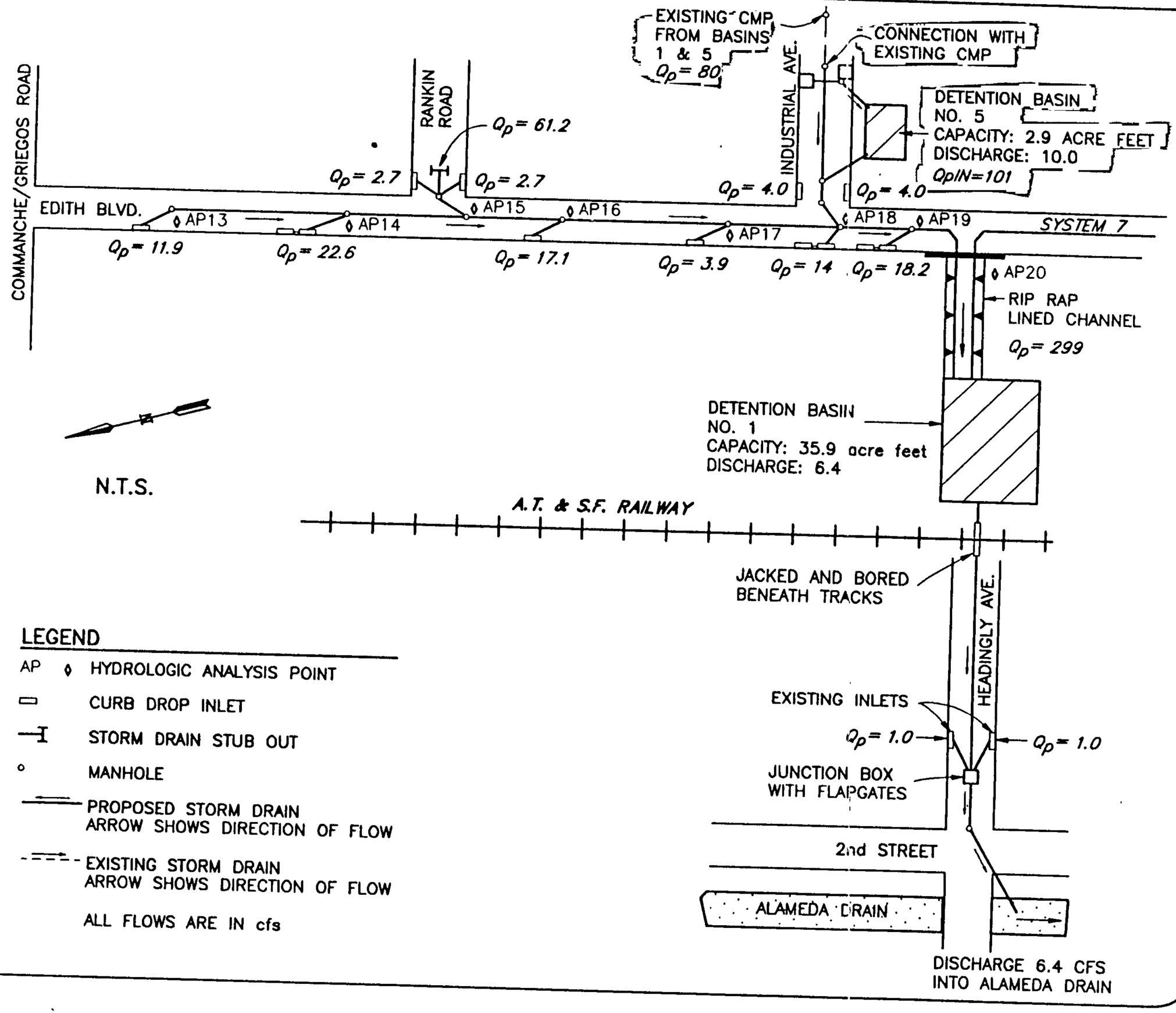
The inlet to the detention basin consists of two drop inlets and a 42 inch stub-out on Industrial Road. The stub out is designed to extend the drainage facilities within sub-basin 8A at some future time. Discharge from Detention Basin No. 5 is limited to 10 cfs by means of a flow restriction plate. Flow from the detention basin enters the drainage system on Industrial Road which then flows west to Edith Boulevard where it is joined by the flow in the northerly line mentioned above. See Figure 7 for schematic of System 8, and Table 4 for a summary of System 8.

Flow continues in a southerly direction to a point located about 350 feet south of Industrial Road. At this point, flow from both systems 7 and 8 turn west and enter a trapezoidal, rip-rap lined channel. The channel continues west for about 500 feet where it discharges into Detention Basin No. 1.

BOYLE
ENGINEERING CORPORATION

SYSTEM 8

Figure 7



N.T.S.

LEGEND

- AP ◊ HYDROLOGIC ANALYSIS POINT
- ▭ CURB DROP INLET
- —I STORM DRAIN STUB OUT
- ○ MANHOLE
- ═══► PROPOSED STORM DRAIN ARROW SHOWS DIRECTION OF FLOW
- - - -► EXISTING STORM DRAIN ARROW SHOWS DIRECTION OF FLOW

ALL FLOWS ARE IN cfs