HYDROLOGY ○ K15/D17 ONE PLAN ○ NO DOCUMENTS

K15-D17

1 PLAN

NO DOCUMENTS

HYDROLOGY

K15/D17

SMITH'S - YALE + GOLD

KIS-D17

1 PLAN

INFORMATION SHEET

PROJECT TITLE Smith's – Yale & Coal TYPE OF SUBMITTAL Drainage Plan

ZONE ATLAS PAGE NO. K-15 - 017 CITY ADDRESS 320 Yale Blvd., SE

LEGAL DESCRIPTION

ENGINEERING FIRM Bohannan–Huston, Inc. CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd., NE 87107 PHONE 881-2000

OWNER Smith's Management Corp. CONTACT Tom Gilmore

ADDRESS P.O. Box 30550 Salt Lake City, UT 84130 PHONE (801) 973-4849

ARCHITECT Prescott Muir & Associates CONTACT Prescott Muir

ADDRESS 235 West 4th South Salt Lake City, UT 84101 PHONE (801) 521-9111

SURVEYOR CONTACT

ADDRESS PHONE

CONTRACTOR CONTACT

ADDRESS PHONE

DATE SUBMITTED December 23, 1982

BY David M. Millikan

RECEIVED

DEC 27 1982

ENGINEERING

BOHANNAN-HUSTON INC.
ENGINEERS PLANNERS PHOTOGRAMMETRISTS
4125 CARLISLE BLVD., N. E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

December 22, 1982

Mr. Fred Aguirre
City Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

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CITY ENGINEER

K15-D17

Re: Drainage Plan for Smith's Food and Drug Store at Coal and Yale

Dear Fred:

This letter and its enclosures are intended to meet the requirements for the Drainage Plan for the Smith's Food and Drug Store at Coal and Yale. The site is located at the northeast corner of Coal Avenue, S.E. and Yale Boulevard, S.E. This project will involve the demolition of the existing apartments and houses on the site and expansion of the existing store with increased parking. The majority of upland flows are cut-off by Harvard Avenue. There are four existing lots along the west side of Harvard Avenue which contribute runoff to the alley, which is located in the center of the site (see Sheet 1 of 2). The site is not located within a Flood Hazard Zone (see AMDS – Flood Hazard Boundary Map enclosed) The FEMA –Flood Hazard Boundary Map (copy enclosed) indicates flooding in Coal Avenue adjacent to the site. It indicates the average depth of flow to be 1.0 feet for the 100-year storm.

Under present conditions, runoff generated on the portion of the site north of the existing store drains north in Yale Boulevard to Lead Avenue. Runoff from the area south of the existing store drains south on Yale Boulevard. Total runoff generated on the site under present conditions is approximately 8.6 cfs. There is inadequate capacity in Yale Boulevard downstream of the site. Therefore, the peak discharge from this site should be reduced as much as practical in order to comply with the "Drainage Ordinance."

Due to the relatively flat grades on the site and the restraints imposed by existing curb and gutter (on three sides of the site) and an already established finished floor elevation, detention ponds have been created within the parking lots and landscaped areas at three locations (see Sheet 2 of 2).

The runoff generated within developed Basin A will be collected in the detention pond shown on Sheet 2 of 2. A four-inch PVC outlet pipe will discharge flows from this pond to Coal Avenue. During the 100-year storm, runoff will pond to a depth of 0.6' at the location of the outlet from the pond (see computations enclosed).

PRINCIPALS
JERRY R. BOHANNAN, P. E. & L.S.
LARRY W. HUSTON
DONALD T. CREMANS, P. E.
C. J. (SKIP) MEAD, P. E.
MICHIAL M. EMERY, P. E.

ASSOCIATES
ANDRES ARAGON VIAMONTE, P. E.
JACK EICHORN
ROBERT H. GREENLEE, P. E.
G. LEE TRUSSELL
ISAAC J. PINO, P. E.
RAMON LARA, P. E.
DARRELL L. WADE, P. E.
PATRICK L. STIEHR, P. E.
DAVID M. Y. MILLIKAN, P. E.

The runoff from developed Basin B (which includes the portion of roof being constructed on the front of the store) will be collected in a detention pond in the southwest corner of Basin B. The runoff from two lots east of the site impact developed Basin B (see Sheet 1 of 2). These flows will be conveyed within the alley and discharged into the detention pond. The peak flow rate generated in developed Basin B, due to a 100-year storm, is 4.4 cfs. The pond will discharge through a four-inch PVC outlet pipe to Coal Avenue.

Due to grade constraints, the pond does not have adequate volume to detain the entire volume generated during a 100-year storm. When the pond volume is exceeded, the flows will discharge through a spillway to Yale Boulevard (see Sheet 2 of 2). It is estimated that during a 100-year storm the capacity of the pond will be exceeded approximately 35 minutes after the storm begins. At this time, the inflow to the pond is approximately 2.5 cfs. These flows will pass through the pond and out the spillway. In addition to these, the discharge from the four-inch outlet pipe will be approximately 0.4 cfs. Therefore, the peak discharge from Basin B is being reduced from 4.4 cfs to 2.9 cfs due to its routing through the pond. In addition to this, the time of the peak discharge from the site is approximately 35 minutes after the storm begins. It is felt that the effectiveness of the pond during minor storms, its ability to reduce the peak and its ability to delay the peak during the 100-year storm will improve the conditions downstream of the site.

Developed Basin C will be unchanged from present conditions. This basin includes the roof area of the existing store. Runoff from this area will continue to discharge at an uncontrolled rate through roof drains to Yale Boulevard.

Developed Basin D is impacted by flows originating on two lots east of the site. These flows will be conveyed across the alley to the low point in developed Basin D. The new roof constructed on the rear of the store also contributes to developed Basin D.

In order to construct the loading dock within developed Basin D at the same elevation as the existing finished floor in the store, a sump is required. The allowable discharge from the sump will be set at the equivalent discharge rate of four-inch PVC outlet in an 18" deep pond. This discharge rate is approximately 0.5 cfs or 225 gpm. This flow rate will drain the sump during a 100-year storm in approximately 2.2 hours. The minimum discharge rate recommended from the pond is approximately 0.3 cfs or 135 gpm. This discharge rate will drain the sump in approximately 3.6 hours.

The sump area will be totally contained within asphaltic concrete pavement, portland cement concrete pavement or reinforced concrete walls. The retaining wall along the north boundary of Basin D and the stem wall for the store and loading dock should be designed with their proximity to the sump considered.

The low point of the sump will be at a trench drain within a concrete slab adjacent to the loading dock. The trench drain will discharge into a wet well. The runoff will be pumped out of the wet well and discharged through the face of the curb to Yale Boulevard. It is recommended that a back-up pump be installed in the wet well along with the primary pump.

Developed Basin E consists of the sidewalk and landscaped area along Harvard Avenue. This area will discharge to Harvard Avenue. The peak discharge from Basin E will be approximately 0.1 cfs during a 100-year storm.

Developed Basin F consists of the sidewalk and landscaped area along Coal Avenue. This area will discharge to Coal Avenue. The peak discharge from Basin F will be approximately 0.2 cfs during a 100-year storm.

In order to ensure that the runoff within Coal Avenue does not impact the site, berms shall be constructed within the landscaped areas along Coal Avenue which extend a minimum of 6" above the existing top of curb elevation. Since the berms will be constructed within this area, the sidewalks may drain into the parking lots instead of directly into the street as is normally required. The entrance to Coal Avenue shall be constructed with a water block at least 1.0 foot above the flowline of Coal Avenue.

Development of the site, as shown, will reduce the runoff contributed from the site to the problem areas downstream. Since the site is presently developed, and the areas which are to be modified all drain through detention ponds, additional erosion control measures are not necessary. The peak runoff from the site after development will not exceed 5.5 cfs during a 100-year storm.

Your prompt review and approval of this plan will be appreciated. If you have any questions, please do not hesitate to call Dave Millikan or me.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc: Mr. Tom Gilmore
Mr. Tom Vaughan

DMYM/dlh
Job No. 2 153 1

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

February 7, 1983

Mr. Fred Aguirre
Civil Engineer – Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Addendum to Drainage Plan for Smith's Food and Drug at Coal and Yale

Dear Fred:

In accordance with your discussion of the above-referenced drainage report with Dave Millikan, we would like to provide you with the enclosed supplemental information.

We are submitting a proposal to the owners to provide the necessary services to certify that the project, upon completion, is in compliance with the approved drainage plan.

We are enclosing copies of the architect's drawings which show the details for:

1. Drainage through the retaining walls along the east side of the alley.

2. Trench drain and sump.

The pump that is being specified on the architectural drawings is a Weil series 2500 submersible pump. The specifications for the pump are:

1. 150 gpm at 29 feet of head.

2. 208 volt, 3 phase, 60 amp, 1750 rpm.

Two of these pumps will be installed with mercury floats, high water alarm, and a control panel for duplex operation. These pumps are within the range of allowable discharge specified in the original drainage plan.

PRINCIPALS
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The overflow location from Basin D will be through the driveway to Yale Boulevard. The overflow elevation is 5162.88, which is below the finished floor elevation of the store (5163.58).

We are enclosing a revised copy of the proposed drainage and grading plan. The changes are:

1. Removal of the overflow spillway from Basin B.
2. Specifying elevations shown as top of curb.
3. Indicating overflow location for Basin D.
4. Adding a note which indicates the relative elevations of top of curb elevations and flowline elevations around the perimeter of the site.
5. Adding a vicinity map.

Copies of the request to construct drainage facilities within the City right-of-way will be submitted to City Engineering – Design.

This letter and the enclosed information are to serve as Addendum No. 1 to the previously submitted drainage plan.

If you have any questions, please call Dave Millikan or me.

Sincerely,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc: Mr. Tom Vaughan
Mr. Tom Gilmore

Enclosures

DMYM/dlh
Job No. 2 153 1

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

February 16, 1983

Mr. Dave Millikan
Bohannan-Huston, Inc.
4125 Carlisle Blvd. NE
Albuquerque, New Mexico 87107

Ref: Smith's - Coal & Yale Revised 2/4/83
(K15-D17)

Dear Mr. Millikan:

The revised drainage plan and attachments submitted 2/7/83, satisfies my comments discussed with you on 1/26/83.

The building plans will be approved with the inclusion of this plan and the approved Special Order #9 with the building set.

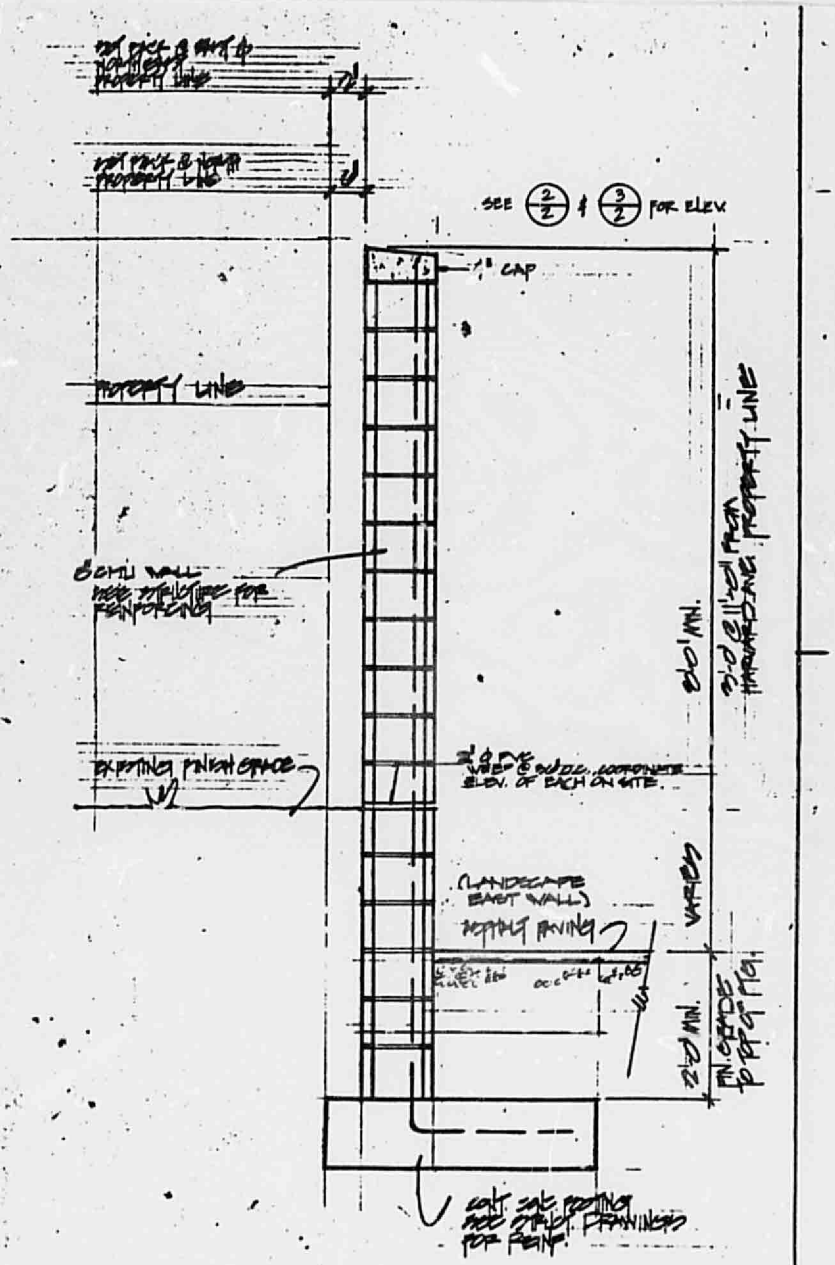
If you have any questions regarding the above, please feel free to call me at 766-7644.

Sincerely,

Fred J. Aguirre, PE
Civil Engineer/Hydrology

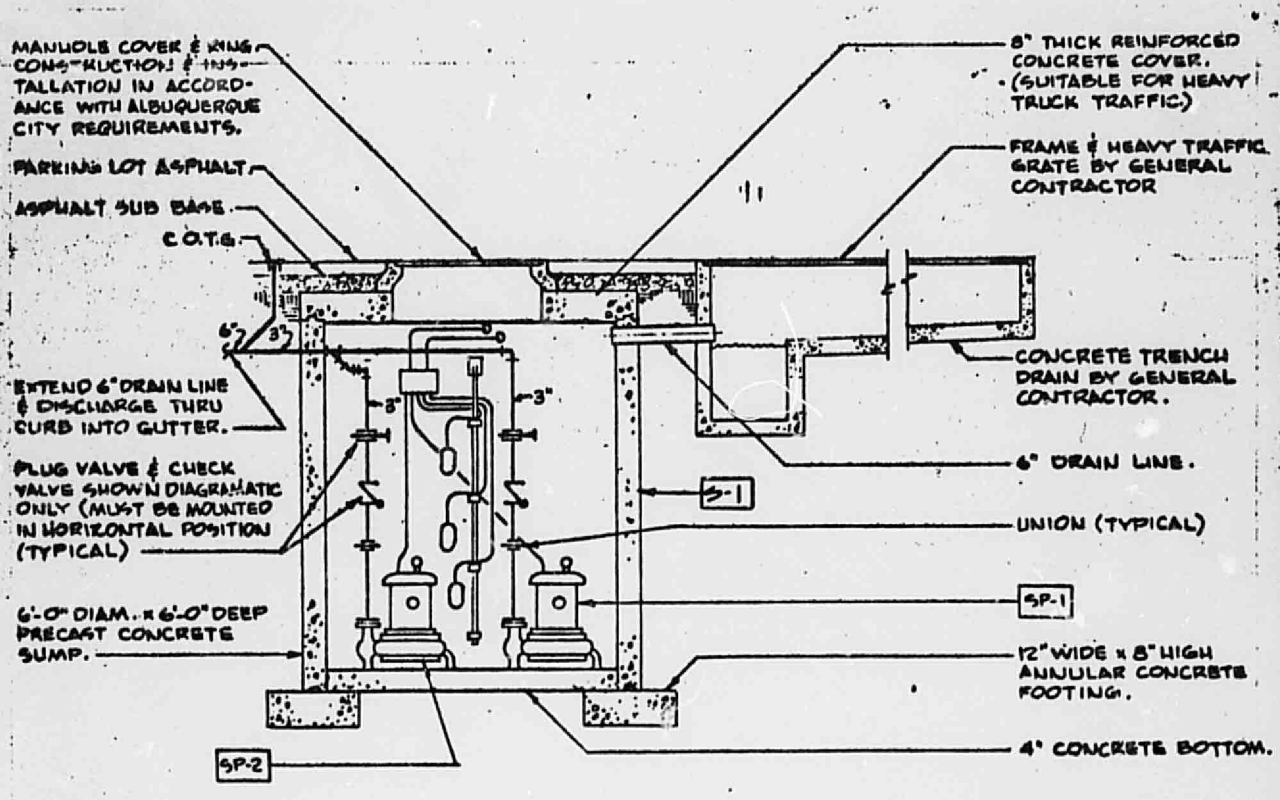
FJA/el

cc: ✓ Drainage File
Reading File



BUFFER/RETAINING WALL
1"=10'

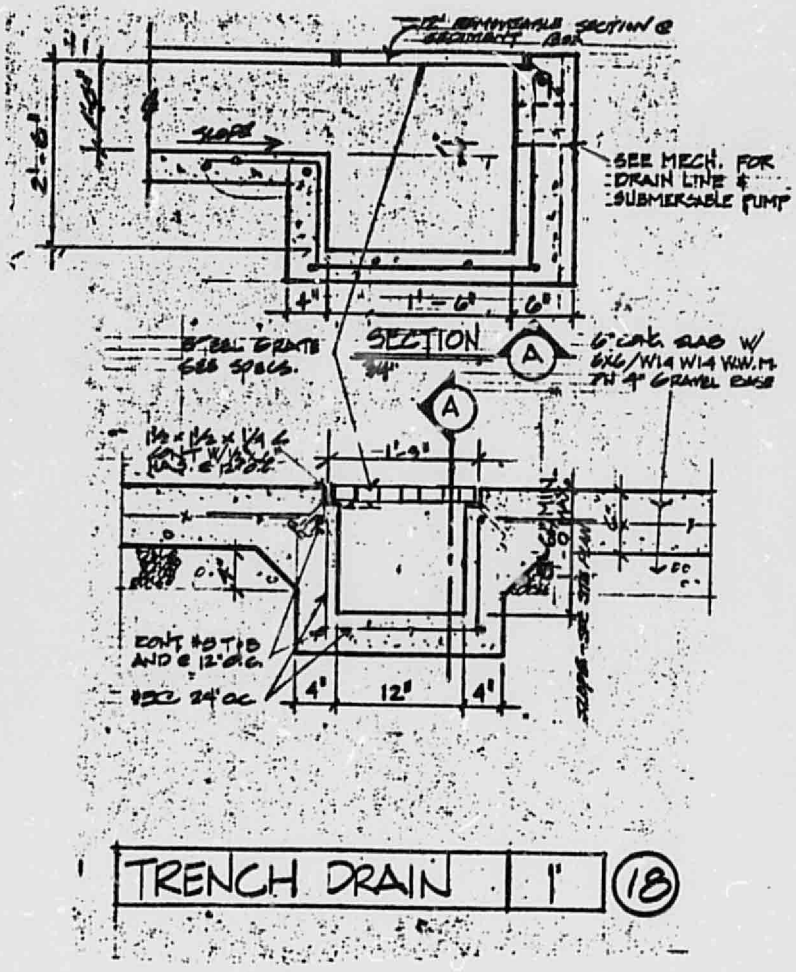
D/3



SUMP PUMP INSTALLATION DETAIL

NO SCALE:

6
P-4



TRENCH DRAIN	1'	18

Distance from most remote point

Area B: 145' Bare Ground at s = 0.5% V = 0.40* T = 6.0 min
Area C: 400' Paved Area at s = 0.5% V = 0.95* T = 7.0 min
Total T_c = 13.0 min

(* from Plate 22.2 B-1 in DPM)

WeB soil - SCS Soil Survey (Type "B")

I/6 = 2.2 in (Plate 22.2 D-1 in DPM)

For T_c = 13.0 min I = 4.07 in/hr.
= 10.0 min I = 4.65 in/hr

For Impervious Areas "c" = 1.00
Pervious areas "c" = 0.34

Area B and Area C - Undeveloped (Existing)

Area Impervious = 54,325
Area Pervious = 21,750
Total Area = 76,075

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71% Impervious ⇒ "c" = 0.70 (Plate 22.2 C-1 in DPM)

$$Q_{100} = 4.07 \times 0.70 \times \frac{76,075}{43560} = 4.99 \text{ cfs}$$

Area D - Existing

Area = 14484 sf

100% Impervious ⇒ "c" = 1.00 (Plate 22.2 C-1 in DPM)

$$Q_{100} = 4.65 \times 1.00 \times \frac{14484}{43560} = 1.55 \text{ cfs}$$

Area A and Area E – Existing

Area Impervious = 14460
Area Pervious = 10225
Total Area = 24685

59% Impervious ⇒ "c" = 0.62 (Plate 22.2 C-1 in DPM)

$Q_{100} = 4.65 \times 0.62 \times \frac{24685}{43560} = 1.63$ cfs

Area F – Existing

Area = 2625

10% Impervious ⇒ "c" = 0.38 (Plate 22.2 C-1 in DPM)

$Q_{100} = 4.65 \times 0.38 \times \frac{2625}{43560} = 0.11$ cfs

Area G – Existing

Area = 3300

95% Impervious ⇒ "c" = 0.92 (Plate 22.2 C-1 in DPM)

$Q_{100} = 4.65 \times 0.92 \times \frac{3300}{43560} = 0.32$ cfs

Total Runoff from Areas A – G = 8.60 cfs

Distance from most remote point

Area B:

145' - Bare Ground at s=0.5% V=0.40* T=6.0min

400' - Paved Area at s=0.5% V=0.95* T=7.0min

Total Tc = 13.0min

(* From Plate 22.2 B-1 in DPM)

WeB soil - SCS Soil Survey (Type "B")

I/6 = 2.2in (Plate 22.2 D-1 in DPM)

For Tc = 13.0 min I = 4.07 in/hr.

Tc = 10.0 min I = 4.65 in/hr.

For Impervious areas "c" = 1.00

Pervious areas "c" = 0.34

Discharge through 4" outlet (Orifice Control)

Depth	Qout	Minimum Slope (n=.011)
0.2ft.	0.08cfs	0.00127 ft/ft
0.3	0.15	0.00445
0.4	0.20	0.00791
0.5	0.24	0.01139
0.6	0.28	0.01550
0.7	0.31	0.01900
0.8	0.33	0.02153
0.9	0.36	0.02562
1.0	0.38	0.02854

Area A

Area = 11900 sf

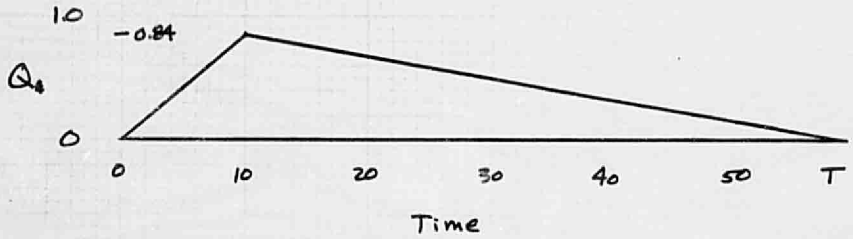
65% impervious ⇒ "C" = 0.66 (Plate 22.2 C-1 in DPM)

$$Q_{peak} = 4.65 \times \frac{11900}{43560} \times 0.66 = 0.84$$

$$Volume = \frac{2.2}{12} \times 11900 \times 0.66 = 1440 cf$$

Storage Volume of Detention Pond

Water Surface Elevation	Surface Area	Accumulated Volume
65.1	0	.
65.3	184 sf	18 cf
65.4	425	48
65.5	823	110
65.6	1305	216
65.7	1925	378
65.8	2666	608
65.9	3563	919
66.0	4441 sf	1319 cf



$$T = \frac{1440 \times 2}{0.84 \times 60} = 57.1 \text{ min}$$

Time	Q	Accum. Volume	Accum. Outflow	Detained Volume	Depth	Qout
0	0.00	0	0	0	0	0
5	0.42	63	0	63	0.2	0.08
10	0.84	252	24	228	0.4	0.20
15	0.75	490	84	406	0.5	0.24
20	0.66	701	156	545	0.6	0.28
25	0.57	885	240	645	0.6	0.28
30	0.48	1042	324	718	0.6	0.28
35	0.39	1172	408	764	0.6	0.28
40	0.30	1275	492	783	0.6	0.28
45	0.22	1354	576	778	0.6	0.28
50	0.13	1406	660	746	0.6	0.28
57.1	0.00	1434	744	690	0.6	0.28

Area B

Impervious Area = 49,761
Pervious Area = 10,929
Total Area = 60,690

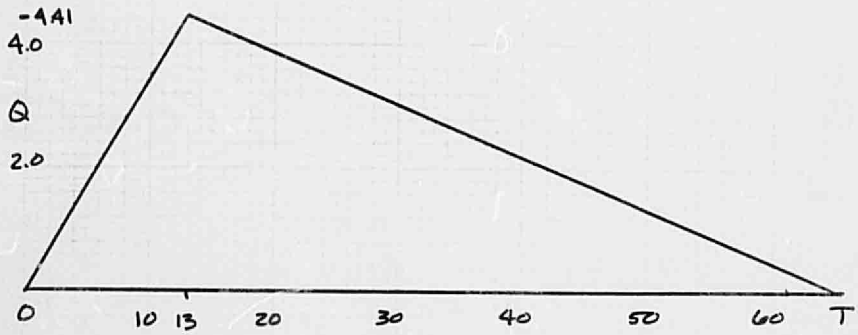
82% Impervious "c" = 0.78 (Plate 22.2 C-1 in DPM)

$$Q_{peak} = 4.07 \times \frac{60,690}{43,560} \times 0.78 = 4.41 \text{ cfs}$$

$$\text{Volume} = \frac{2.2}{12} \times 60,690 \times 0.78 = 8679 \text{ cf}$$

Storage Volume of Detention Pond

Water Surface Elevation	Surface Area	Accumulated Volume
61.6	194 sf	10 cf
61.7	778	59
61.8	1781	187
61.9	3069	430
62.0	4541	811
62.1	6291	1353
62.2	8413	2088
62.3	10,447	3031
62.4	12,391	4173
62.5	14,291 sf	5507 cf



$$T = \frac{8679 \times 2}{60 \times 4.41} = 65.6 \text{ min}$$

Time	Q	Accum Volume	Accum Outflow	Detained Volume	Depth	Qout
0	0	0	0	0	0	0
5	1.70	255	0	255	0.3	0.15
10	3.39	1017	45	972	0.5	0.24
13	4.41	1720	88	1632	0.6	0.28
15	4.24	2239	122	2117	0.7	0.31
20	3.82	3448	215	3233	0.8	0.33
25	3.40	4531	314	4217	0.9	0.36
overtops weir → 30	2.98	5488	422	5066	1.0	0.38
35	2.56	6319	812	5507	1.0	1.30
40	2.14	7024	1517	5507	1.0	2.35
45	1.72	7603	2096	5507	1.0	1.93
50	1.31	8059	2552	5507	1.0	1.52
55	0.89	8389	2882	5507	1.0	1.10
60	0.47	8593	3086	5507	1.0	0.68
65.6	0	8750	3243	5507	1.0	0.52

PROJECT NAME Smith's - Yale + Coal SHEET 7 OF 18
PROJECT NO. 21531 BY Dmyn DATE 12-14-82
SUBJECT Drainage Computations Proposed CH'D DATE

Area D

Area Impervious = 21,600
Area Pervious = 8700
Total Area = 30,300

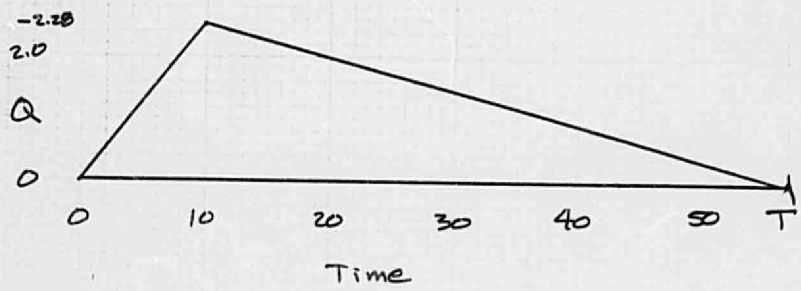
71% Impervious ⇒ "C" = 0.70 (Plate 22.2 C-1 in DPM)

$$Q_{peak} = 4.65 \times \frac{30,300}{43,560} \times 0.70 = 2.28 \text{ cfs}$$

$$\text{Volume} = \frac{2.2}{12} \times 30,300 \times 0.70 = 3888$$

Storage Volume of Detention Pond

Water Surface Elevation	Surface Area	Accumulated Volume
59.1	0	0
59.5	3420	684
59.6	3600	1035
60.0	4620	2679
60.1	4813	3150



$$T = \frac{3888 \times 2}{2.28 \times 60} = 56.8 \text{ min.}$$

Time	Q	Accum. Volume	Accum Outflow	Detained Volume	Depth	Qout*
0	0	0	0	0	0	0
5	1.14	177	99	78	0.1	0.33
10	2.28	684	198	485	0.4	0.33
15	2.04	1333	297	1036	0.5	0.33
20	1.79	1907	396	1511	0.7	0.33
25	1.55	2409	495	1914	0.7	0.33
30	1.31	2839	594	2245	0.8	0.33
35	1.06	3194	693	2501	0.9	0.33
40	0.82	3477	792	2685	0.9	0.33
45	0.57	3685	891	2794	0.9	0.33
50	0.33	3821	990	2831	1.0	0.33
56.8	0	3888	1089	2799	0.9	0.33

* Based upon 135 gpm pump

Area C

Area = 14484 sf

100% Impervious ⇒ "c" = 1.0 (Plate 22.2C-1 in DPM)

$$Q_{peak} = 4.65 \times \frac{14484}{43560} \times 1.0 = 1.55 \text{ cfs}$$

$$\text{Volume} = \frac{2.2}{12} \times 14484 \times 1.0 = 2655 \text{ cf}$$

Area E

Area = 2610 sf

35 % Impervious ⇒ "c" = 0.50 (Plate 22.2 C-1 in DPM)

$$Q_{peak} = 4.65 \times \frac{2610}{43560} \times 0.50 = 0.14 \text{ cfs}$$

$$\text{Volume} = \frac{2.2}{12} \times 2610 \times 0.50 = 239 \text{ cf}$$

Area F

Area = 2550 sf

50 % Impervious ⇒ "c" = 0.57

$$Q_{peak} = 4.65 \times \frac{2550}{43560} \times 0.57 = 0.16 \text{ cfs}$$

$$\text{Volume} = \frac{2.2}{12} \times 2550 \times 0.57 = 266 \text{ cf}$$

10-year Flow Rates

Basin	Area	"c"	I_{100}	I_{10}	Q_{10}
A	11900sf	0.66	4.65	3.06	0.55
B	60,690sf	0.78	4.07	2.65	2.88
C	14484sf	1.00	4.65	3.06	1.02
D	39,300sf	0.70	4.65	3.06	1.49
E	2610	0.50	4.65	3.06	0.09
F	2550	0.57	4.65	3.06	0.10

Basin D

Duration of Flooding

3888 cf discharged to street

- with 135gpm pump:

$$\frac{135\,gal}{min} \times \frac{1\,cf}{7.48\,gal} \times \frac{1\,min}{60\,sec} = 0.30\,cfs$$

$$\frac{3888\,cf}{.30\,cfs} = 12960\ sec. = 3.6\ hr.$$

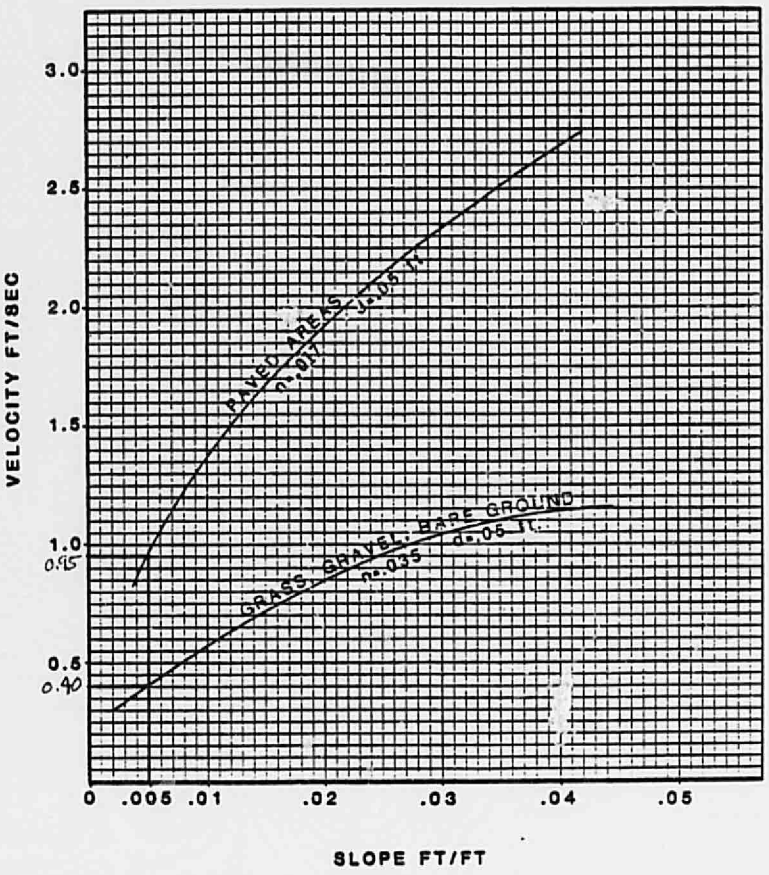
- with 225gpm pump

$$\frac{225\,gal}{min} \times \frac{1\,cf}{7.48\,gal} \times \frac{1\,min}{60\,sec.} = 0.50\,cfs$$

$$\frac{3888\,cf}{0.50\,cfs} = 7776\,sec = 2.2\ hr.$$

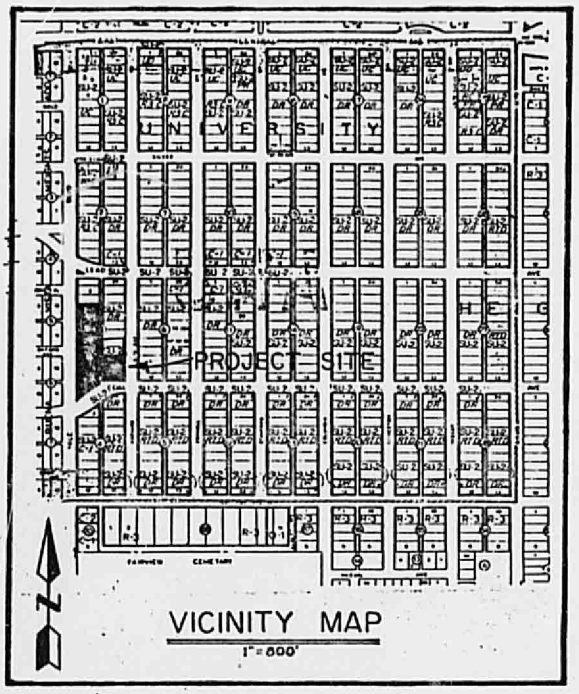
OVERLAND FLOW SEGMENTS

VELOCITY DETERMINATIONS FOR Tc CALCULATIONS



CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



DAVID M. Y. MILLER
7547
2-15-83
REGISTERED PROFESSIONAL ENGINEER

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 31 "

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.

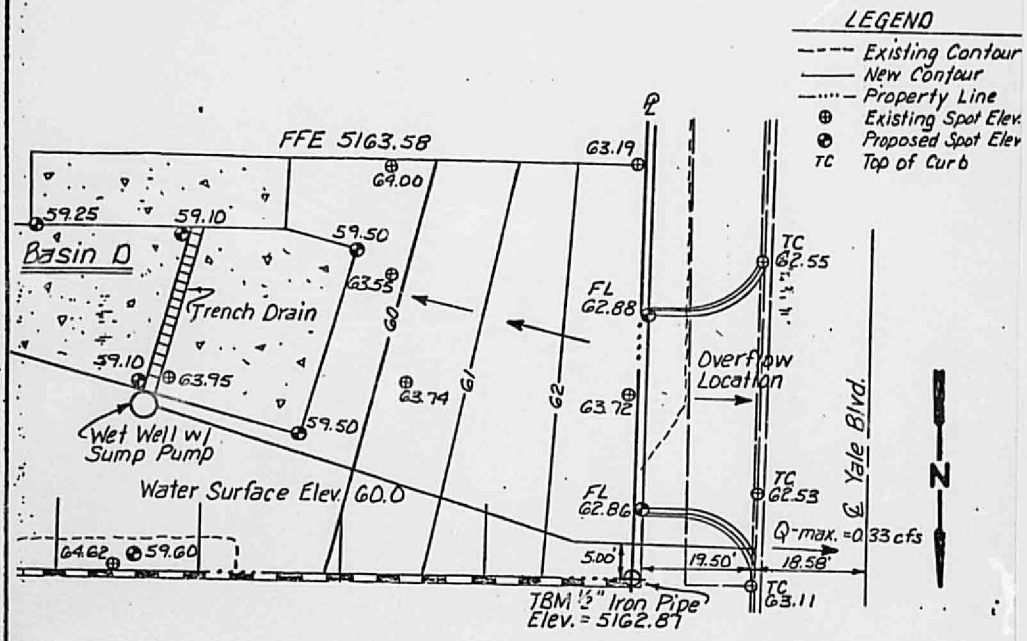
5. Backfill compaction shall be according to arterial street use.

P-07339 ✓ Summit Const. C-40

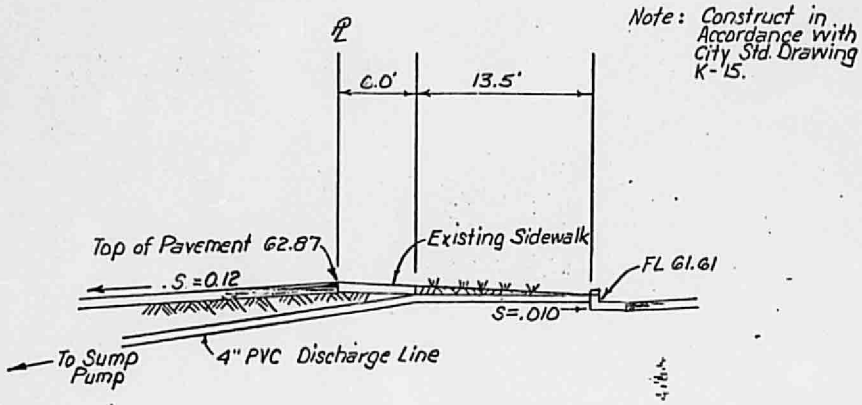
APPROVALS	NAME	DATE	TITLE: Smith's Food & Drug 320 Yale Blvd. S.E.
A.C.E./DESIGN	[illegible]	2/11/83	
INSPECTOR	[illegible]	10/31/83	PERMIT NO. MAP

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN 1" = 20'



PROFILE 1" = 10'

C-40

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	21 Mar 83
INSPECTOR	[illegible]	10/31/83
A.C.E./FIELD	[illegible]	11-3-83

TITLE: Smith's Food & Drug
320 Yale Blvd., S.E.

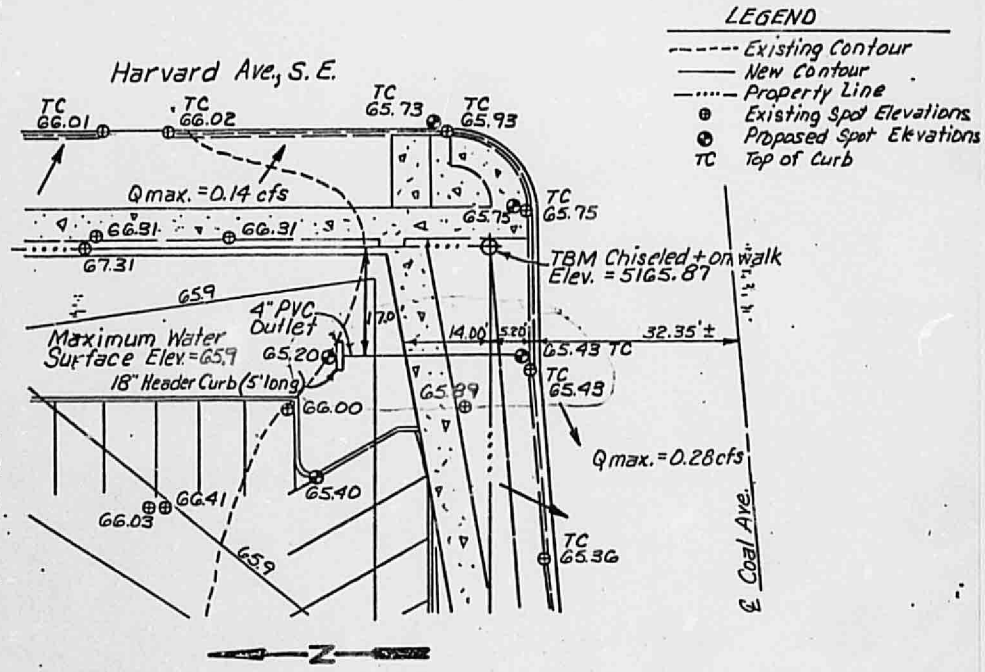
PERMIT NO.

SHEET 2 OF 5

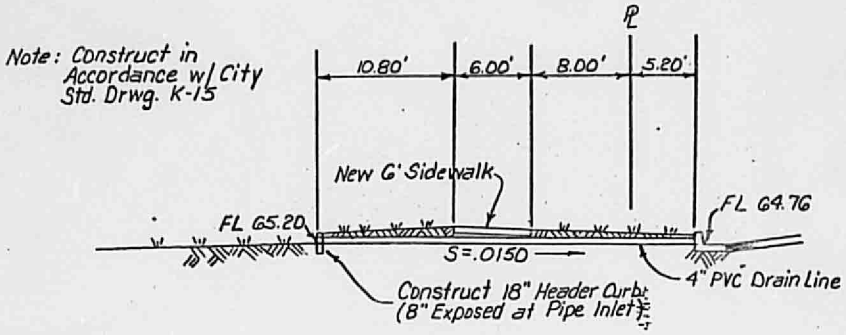
MAP NO. K-16

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN 1" = 20'



PROFILE 1" = 10'

C-40

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	21 Mar 83
INSPECTOR	[illegible]	

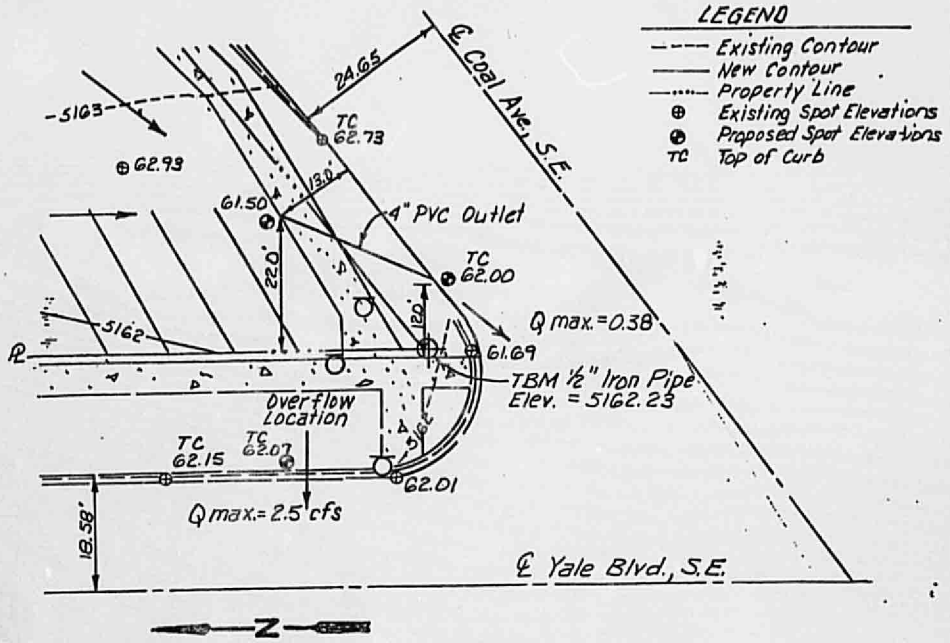
TITLE: Smith's Food & Drug
320 Yale Blvd., S.E.

PERMIT NO.

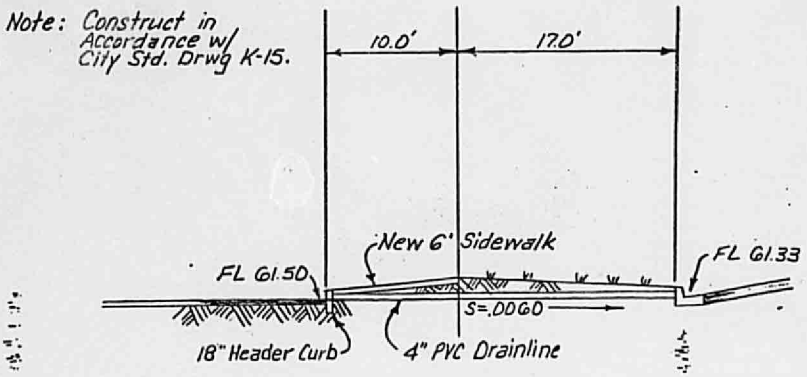
MAP NO. K-16

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN 1"=20'



PROFILE 1"=10'

C-40

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	21 Mar 83
INSPECTOR	[illegible]	10/27/83
A.C.E./FIELD	[illegible]	4-3-83

TITLE: Smith's Food & Drug
320 Yale Blvd., S.E.

PERMIT NO.

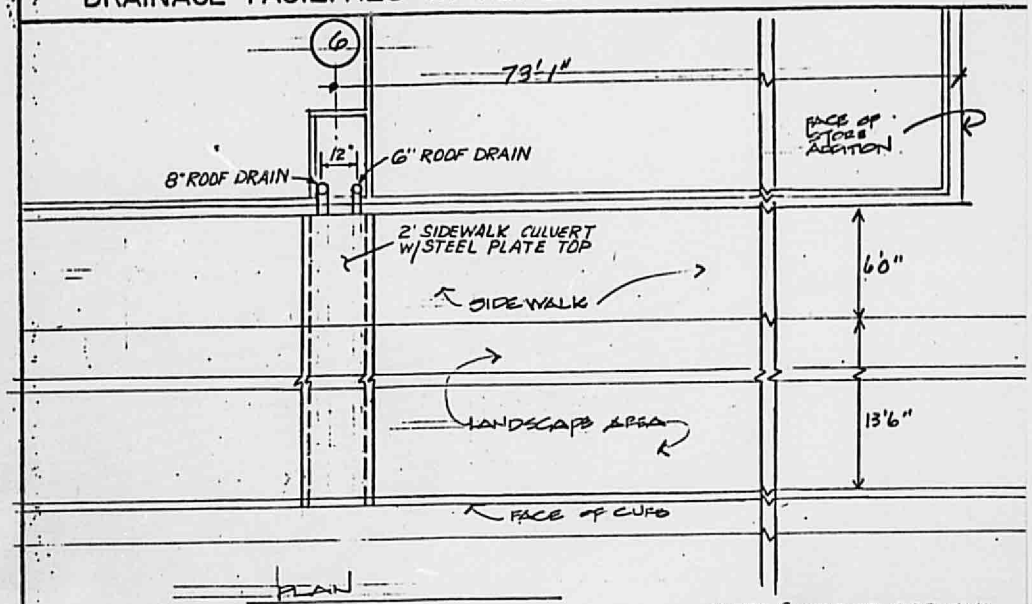
SHEET 4 OF 5

MAP NO. K-16

CITY OF ALBUQUERQUE

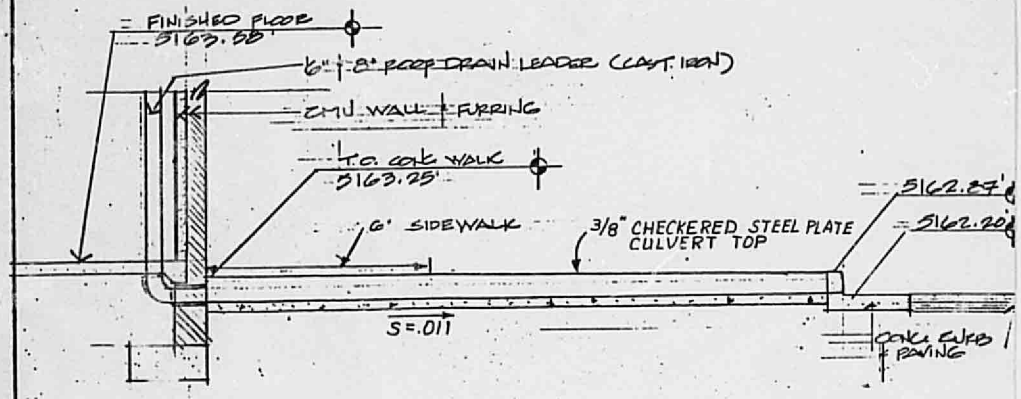
RECEIVED

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN
NTS.

NOTE: CONSTRUCT SIDEWALK CULVERT W/STEEL PLATE TOP PER CITY STD. DRWG. K-16-1.



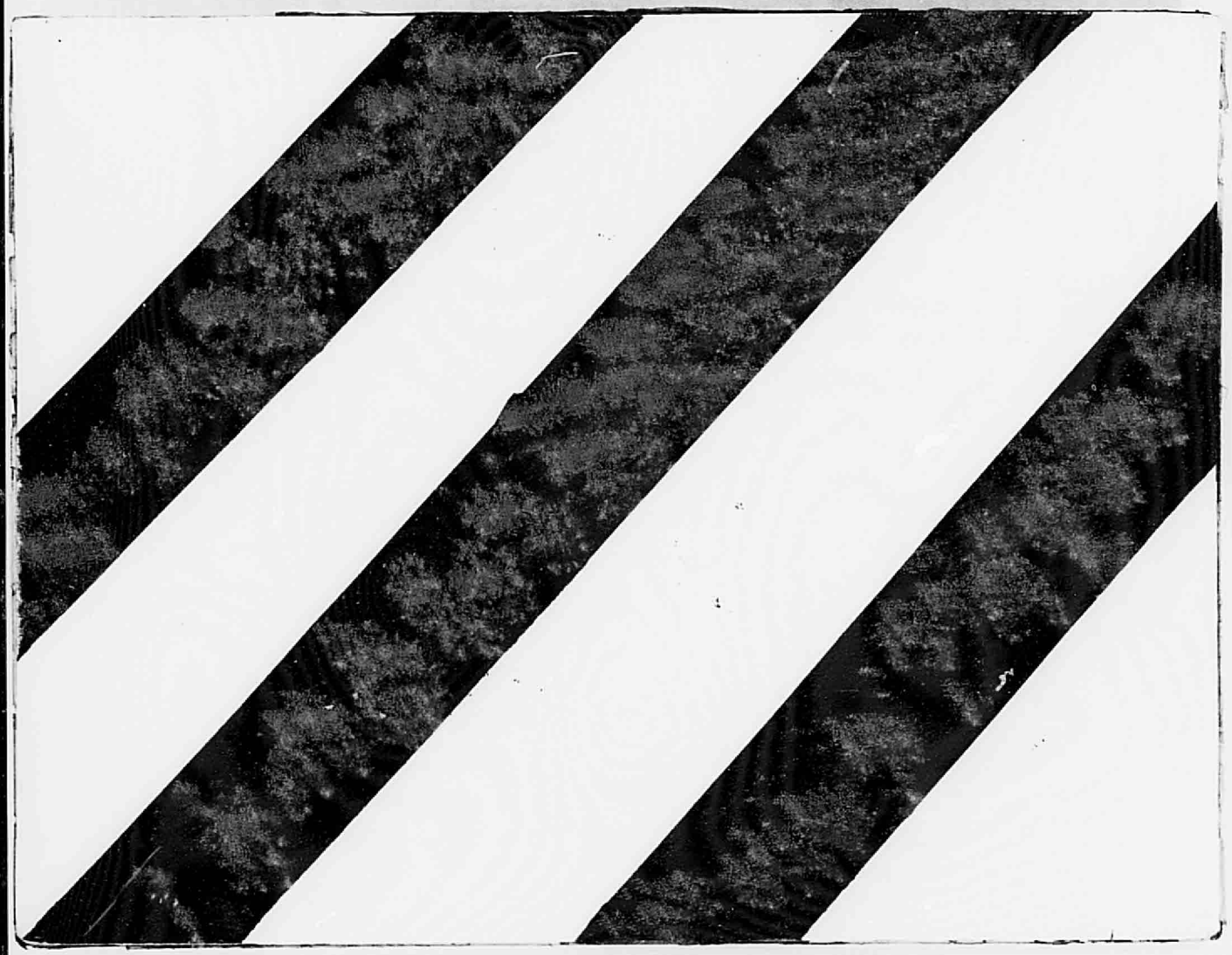
SECTION
NTS

C-40

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	5/MAY/83
INSPECTOR	[illegible]	10/27/83
A.C.E./FIELD	[illegible]	11-3-83

TITLE: Smith's Food & Drug
320 Yale Blvd., S.E.

PERMIT NO.

SHEET 5 OF 5

MAP NO. K-16