HYDROLOGY.

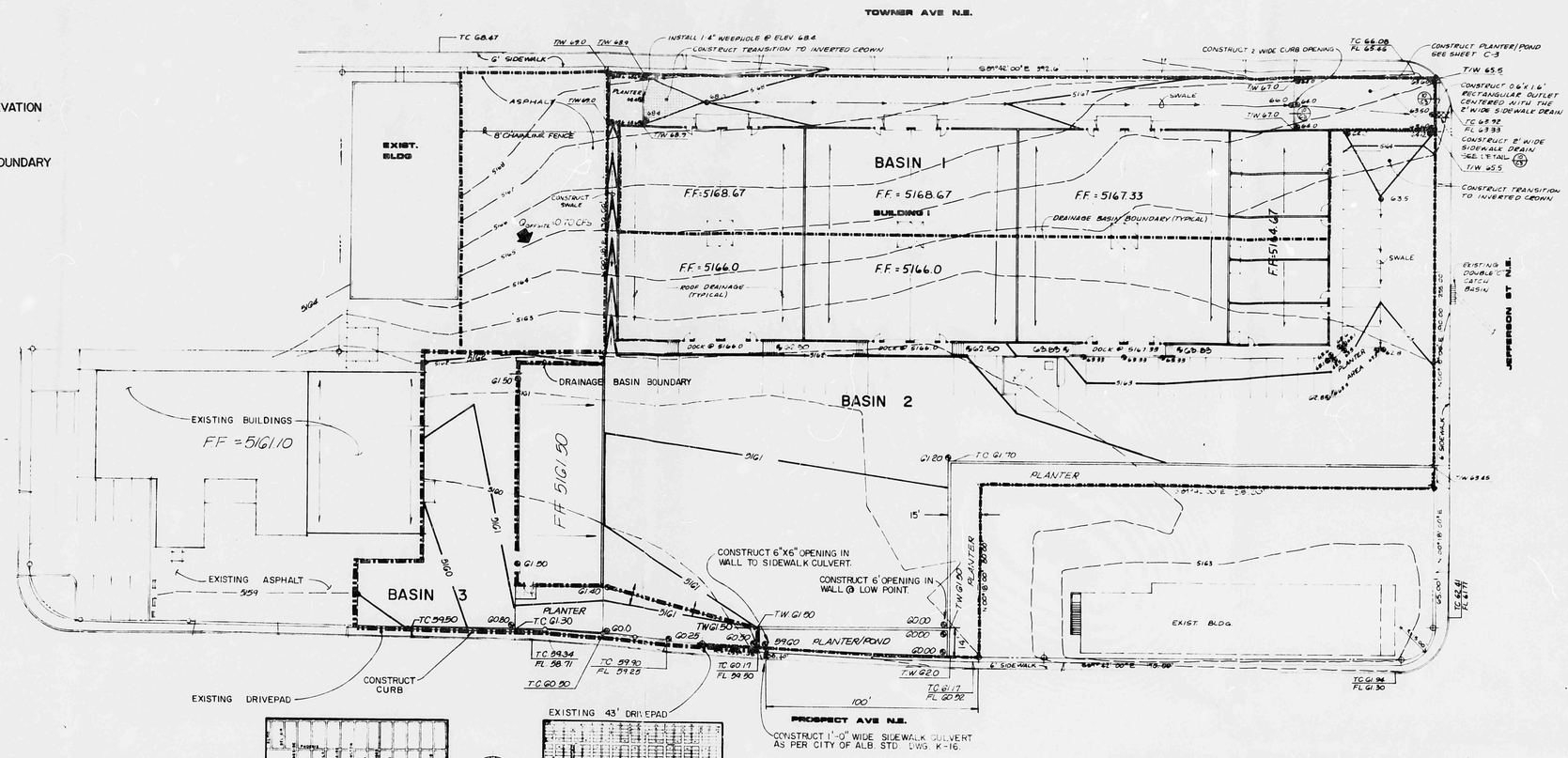
H17/D10
3 PLANS

H17/D10

3 PLANS

LEGEND

- 5160 — EXISTING CONTOUR
- 5160 — PROPOSED CONTOUR
- 6 — PROPOSED SPOT ELEVATION
- SWALE FLOWLINE
- PROPERTY LINE
- DRAINAGE BASIN BOUNDARY

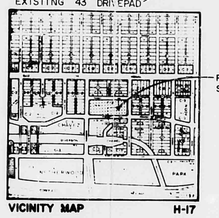


PROJECT BENCHMARK (5-H17):

A SQUARE, ▭, CHISELED ON TOP OF CONCRETE CURB AT THE ENE CURB RETURN AT THE INTERSECTION OF MENAUL BOULEVARD N.E. AND GRACELAND DRIVE N.E.

ELEVATION = 5174.25 FEET.

FLOOD HAZARD MAP NO. 5



VICINITY MAP H-17

GRADING & DRAINAGE PLAN

SCALE: 1" = 30'

CALCULATIONS

BASIN 1 - NO CHANGES

BASIN 2 - REVISED

A_{Total} = 1.44 Ac±

A_{Imp} = 1.31 Ac± (C = 0.95)

A_{Perv} = 0.13 Ac± (C = 0.40)

Composite $C = \frac{1.31}{1.44}(0.95) + \frac{0.13}{1.44}(0.40) = \underline{0.90}$

$Q_{allow} = Q_{5,\ Undev} = 0.40(2.82)(1.44) = 1.62$ cfs

Q_o = 1.25 cfs/ac T = 50.2 min

V_s = 5,053 cf/ac V_T = 6,549 cf = $V_{req'd}$

Ponding provided = 6,800 cf as determined by planimeter and the average end-area method.

Elev.	Area, sf	Vol., cf	Σ Vol., cf
59.60	0		
		212	212
60.00	1,060		
		6,590	6,802
61.00	12,120		

Sizing the outlet by the orifice equation, opening in wall shall be 6" x 6" square.

$Q = C_v\sqrt{2gh}\ A$ or $A = \frac{Q}{C_v\sqrt{2gh}}$

Letting $Q = Q_{5,\ undev} = 1.62$ cfs, $C_v = 0.7$, $g = 32.2$ ft/sec^2 and $h = 61-59.6-0.25 = 1.15$

$A = 0.27$ sf and $\sqrt{A} = 0.52'$ ∴ Use 6" x 6" opening. Spilling will occur at elevation 5161.0 at the northwest corner of planter/pond and hence, leave the site via the existing driveway opening. Minimum top of wall elevation shall be 5161.5'. No spillway in the planter wall will be necessary.

Sizing the inlet by the weir equation, opening in curb shall be

$Q = 3.33\ LH^{1.5}$ or $L = \frac{Q}{3.33\ H^{1.5}}$

where $Q = Q_{100,\ dev} = 0.90(5.4)(1.44) = 7.0$ cfs

and H = 0.5' (i.e. 6" curb).

Therefore L = 5.9' , let L = 6'.

BASIN 3 - REVISED

A_{Total} = 0.20 Ac±

A_{Imp} = 0.18 Ac±

A_{Perv} = 0.02 Ac±

Composite "C" $= \frac{0.18}{0.20}(0.95) + \frac{0.02}{0.20}(0.40) = \underline{0.90}$

$Q_{100,\ Undev} = 0.40(5.4)(0.20) = 0.43$ cfs

$Q_{100,\ Dev} = 0.90(5.4)(0.20) = 0.97$ cfs

$\Delta Q_{100} = 0.54$ cfs

BASIN 4 - DELETED

ENTIRE SITE

$Q_{100,\ Undev} = 4.80 + 0.43 = 5.23$ cfs

$Q_{100,\ Dev} = 2.95 + 1.62 + 0.97 = 5.54$ cfs (Direct)

Although $Q_{100,\ Dev} > Q_{100,\ Undev}$ it must be recalled that Basin 1 discharges directly to an existing catch basin downstream.

DRAINAGE PLAN

The following items concerning the Purvis Warehouse Drainage Plan are contained hereon:

1. Vicinity Map
2. Flood Hazard Map
3. Revised Grading Plan
4. Revised Calculations

The proposed improvements, as shown by the Vicinity Map, are located in Tract A-1 of the Chavez Addition. At present, the site is under development.

The site does not lie within a flood hazard zone, as shown by the Flood Hazard Map. The Flood Hazard Map was taken from the "City of Albuquerque, New Mexico, Bernalillo County Flood Hazard Boundary Map" prepared by the U. S. Department of HUD, Federal Insurance Program. Offsite flows enter the site as discussed in the original drainage report submitted May, 1981, and approved July 28, 1981 (Case No. H17-D10).

The Grading Plan shows (1) existing grades indicated by contours at 1'-0" intervals, (2) proposed grades indicated by spot elevations and contours at 1'-0" intervals, (3) proposed ponding areas, (4) continuity between proposed and existing elevations and (5) the limit and character of proposed improvements. The improvements shown above involve two different sites; however, these sites are being developed in harmony by a single owner.

The calculations which appear on this sheet analyze the proposed development on a per basin basis, as well as analyzing the entire site. The calculations have been performed using the Rational formula. Basin 1 remains unchanged from the original drainage report. Basin 2 has been revised to accommodate the owner's change in plans. The entire basin, however, drains to a positive discharge pond from which discharge is regulated at the five-year undeveloped peak rate. The method of analysis used for Basin 2 is taken from the work of Yrjanainen and Warren. Basin 3 discharges directly offsite. Further information concerning the hydrologic analysis of the site appears below.

REFERENCES

1. "Drainage Report for the Purvis Warehouse Complex, Jefferson Street N.E. and Towner Avenue N.E.," Tom Mann & Associates, Inc., May 1981.
2. Yrjanainen, G. and Warren A. W., "A Simple Method for Retention Basin Design," Water & Sewage Works, December 1978.

STATE OF NEW MEXICO REGISTERED ARCHITECT

Architect

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO THOMAS T. MANN, JR. 3796 LAND SURVEYOR 2/26/82

Engineer

RECEIVED
FEB 26 1982
ENGINEERING

PROJECT

THE BURNS/PETERS GROUP
Architects & Planners
8100 Pennsylvania Circle NE
Albuquerque, New Mexico
87110 505 265 1645

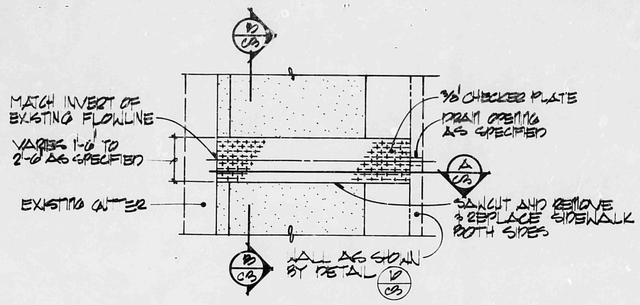
Date

GRADING AND DRAINAGE PLAN

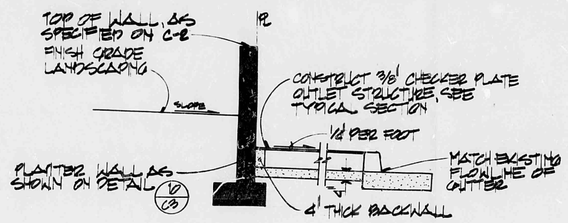
C 2

Sheet No.

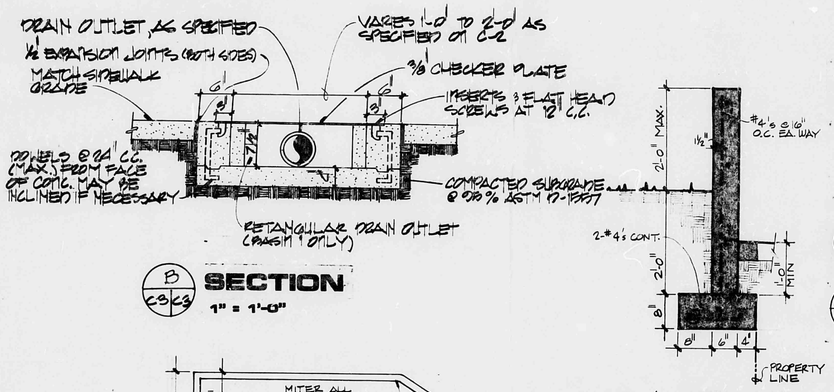
DATE	NAME	TIME
5-27	JFK	6 HRS
6-4	JFK	2 HR.
6/10	JCB	3 HR.



10/C2|C3 TYPICAL OUTLET PLAN
1" = 3'-0"

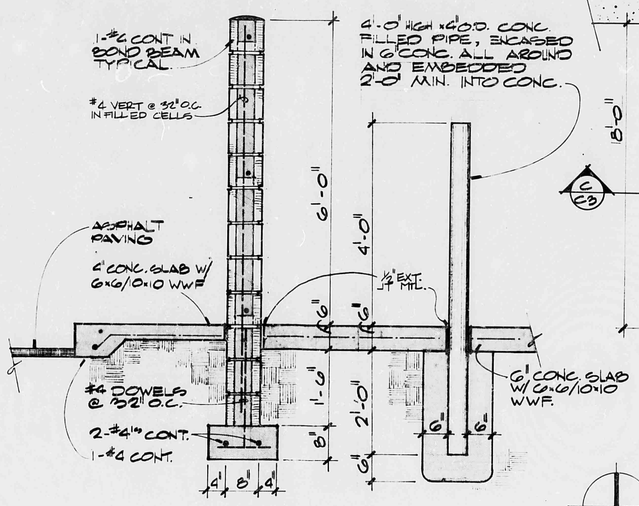


A/C3|C3 SECTION
1" = 2'-0"

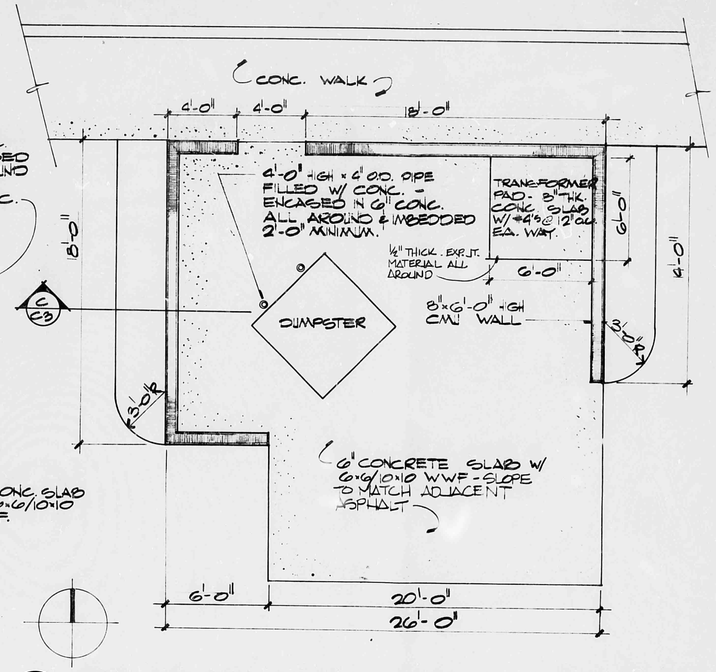


B/C3|C3 SECTION
1" = 1'-0"

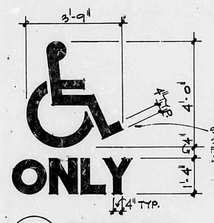
10/C1|C3 DETAIL
3/4" = 1'-0"



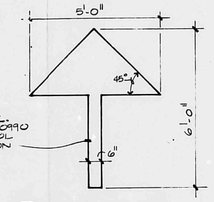
C/C3|C3 SECTION
3/4" = 1'-0"



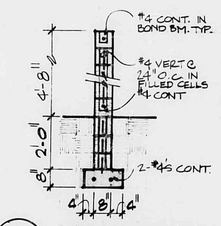
1/C1|C3 ENLARGED REFUSE ENCLOSURE PLAN
SCALE: 1/4" = 1'-0"



5/C1|C3 DETAIL
SCALE 3/8" = 1'-0"



4/C1|C3 DETAIL
3/8" = 1'-0"



3/C1|C3 SECTION
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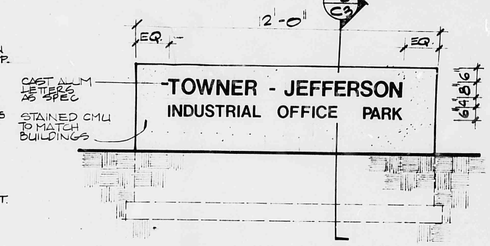
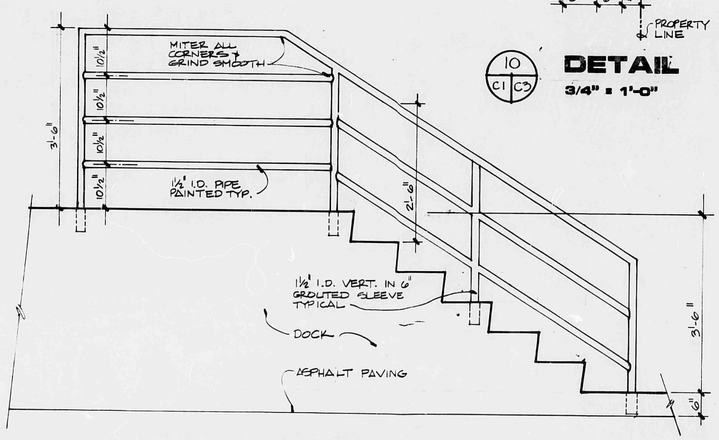
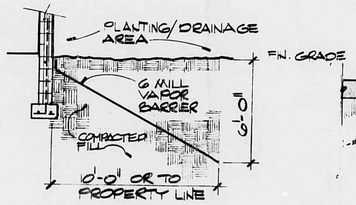


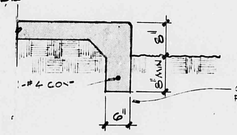
2/C1|C3 ELEVATION
SCALE: 3/8" = 1'-0"



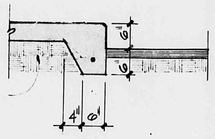
11/C2|C3 TYPICAL HANDRAIL
3/4" = 1'-0"



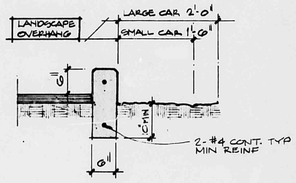
9/C1|C3 DETAIL
1/4" = 1'-0"



8/C1|C3 DETAIL
SCALE 3/4" = 1'-0"



7/C1|C3 DETAIL
SCALE 3/4" = 1'-0"



6/C1|C3 DETAIL
SCALE 3/4" = 1'-0"

STATE OF NEW MEXICO — W. L. BURNS NO 774, R. L. PETERS NO 769, ALBUQUERQUE N.M. — REGISTERED ARCHITECT

Architect

REGISTERED PROFESSIONAL ENGINEER — STATE OF NEW MEXICO — THOMAS L. MANN — LAND SURVEYOR

Engineer

WAREHOUSE COMPLEX
FOR
DON PURVIS
ALBUQUERQUE NEW MEXICO

81-12
PROJECT

the burns group
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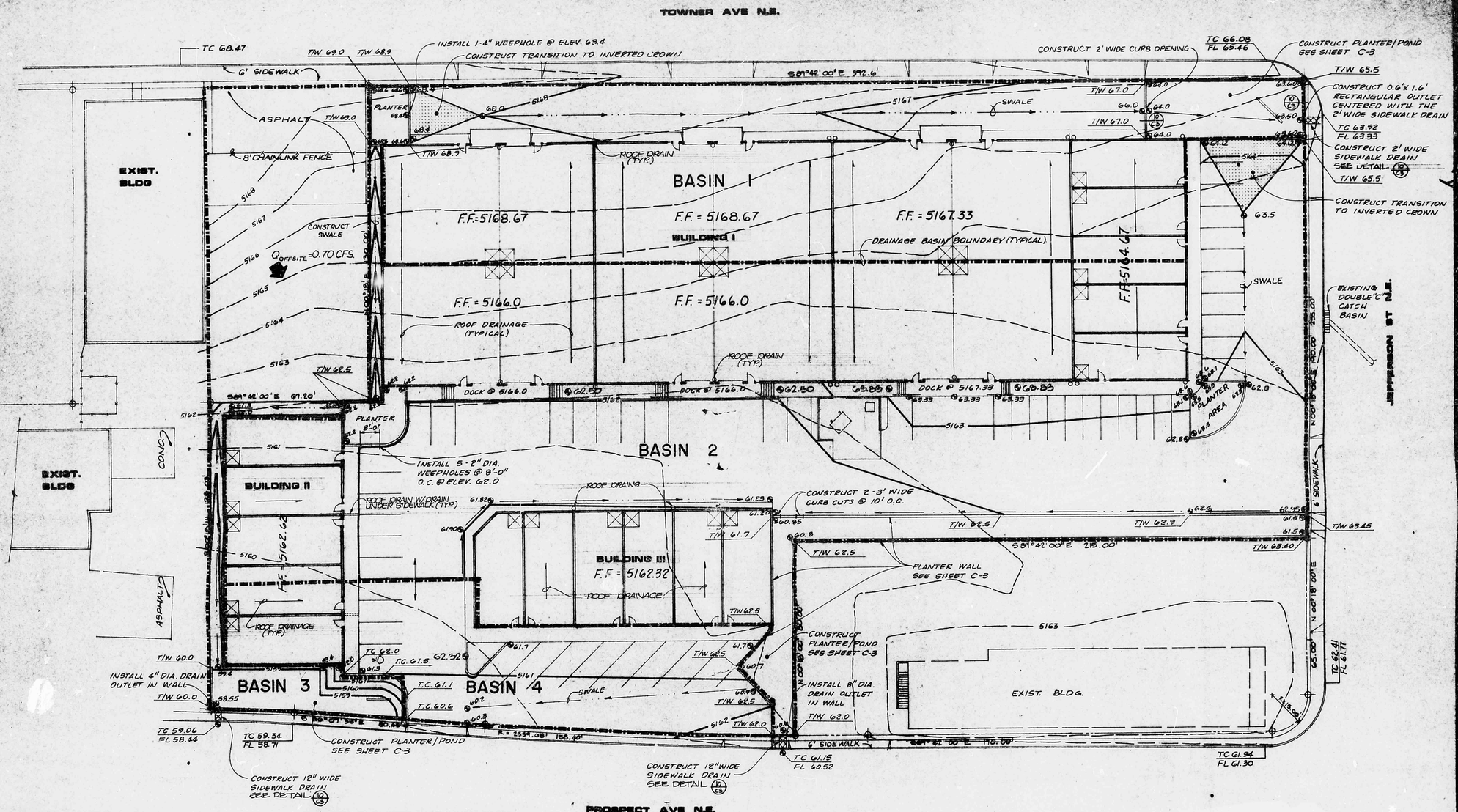
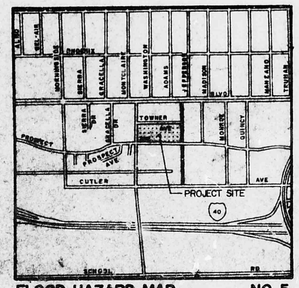
Architects & Planners
8000 Pennsylvania Circle NE
Albuquerque, New Mexico
87110 505 265 3645

Date JUNE '81

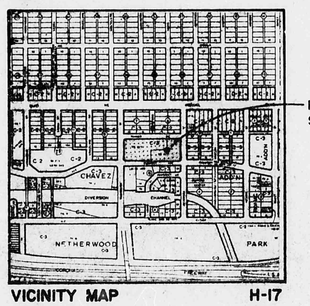
SITE DETAILS

C 3
Sheet No.





FLOOD HAZARD MAP NO. 5
1" = 1000'



VICINITY MAP H-17
1" = 500'

NOTE:
ALL DRIVEPADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STD DWG. P-411. DRIVEPAD ELEVATIONS @ THE PROPERTY LINE SHALL BE 1' ABOVE CORRESPONDING GUTTER FLOWLINE ELEVATION.

GRADING & DRAINAGE PLAN

SCALE: 1" = 20'-0"

1 REVISION 7/30/81 JCM

2531 JEFFERSON N.E.

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Architect

Engineer

WAREHOUSE COMPLEX
FOR
DON PURVIS
ALBUQUERQUE, NEW MEXICO

81-12
PROJECT

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Architects & Planners
8000 Pennsylvania Circle NE
Albuquerque, New Mexico
87110 505 268 3400

Date 24 JUNE 1981

GRADING AND DRAINAGE PLAN

C2
Sheet No.