HYDROLOGY

H16/D59

ONE PLAN

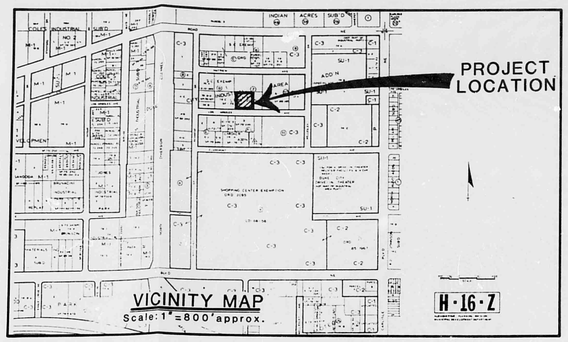
H16 / D59

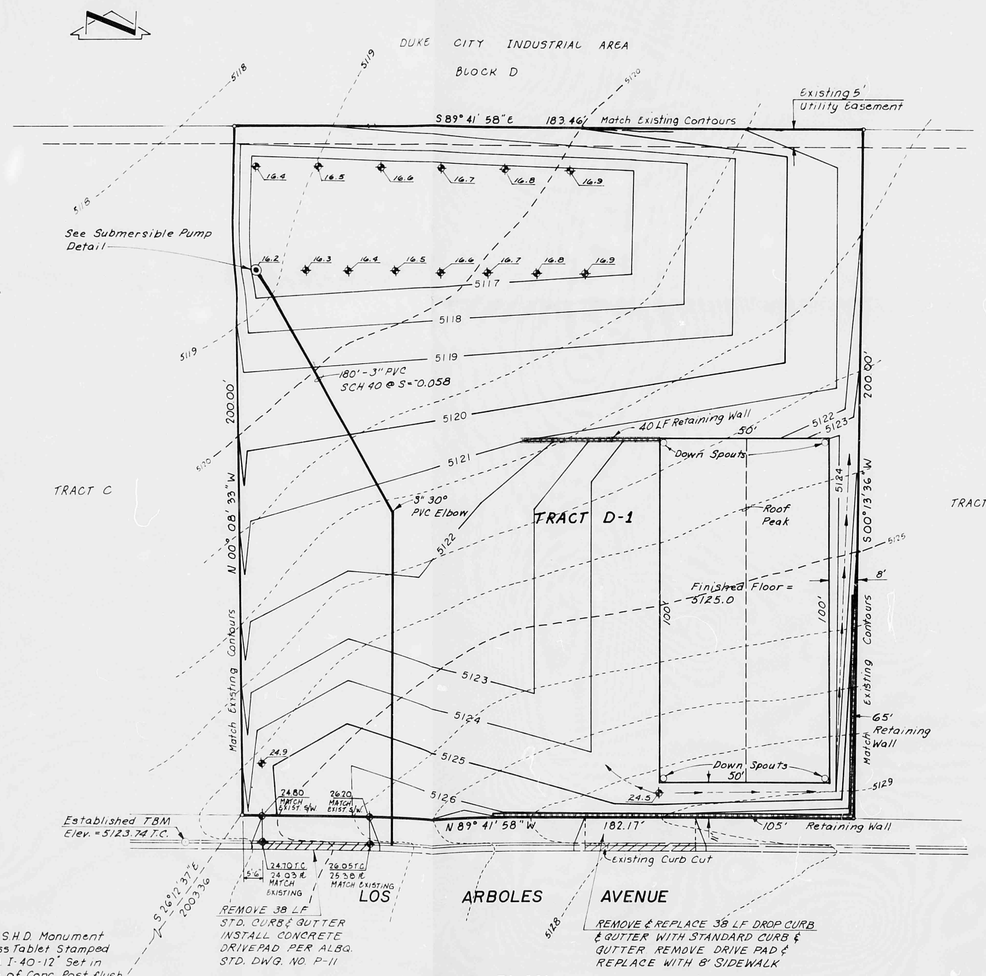
ALBUQUERQUE CAB

MAINTANCE YARD

1 PLAN

88102





GRADING PLAN

Scale 1" = 20'

HYDRAULIC CALCULATIONS

Area of Lot	36563 Sq. Ft.	(0.839 Ac.)
Slope	5.3%	
Soils Group	B	
Developed % Impervious	100%	

Off-site Runoff

Area	9326 Sq. Ft.	(0.214 Ac.)
Impervious	0%	
Time of Concentration	10 Min.	
100 Yr. Rainfall	2.25 In.	
Intensity	4.77 In./Hr.	(Plate 22.2 D-2, D.P.M.)
"C" Factor	0.34	(Plate 22.2 C-1, D.P.M.)

$Q_{100} = 0.34 \times 4.77 \times 0.214 = 0.35$ cfs peak

$Q_{10} = 0.657 \times Q_{100} = 0.23$ cfs

On-site Runoff

Area	0.839 Ac.	
"C" Factor	1.00	(Plate 22.2, C-1, D.P.M.)
Intensity	4.77 In./Hr.	

$Q_{100} = 0.86 \times 4.77 \times 0.839 = 4.00$ cfs peak

$Q_{10} = 0.657 \times Q_{100} = 2.63$ cfs

Inflow/Discharge Volume

Off-site: $\frac{9326 \times 0.34 \times 2.2}{12} =$ 581 Cu. Ft.

On-site: $\frac{36563 \times 1.00 \times 2.2}{12} =$ 6703 Cu. Ft.

Total Volume $(V)_{100} =$ 7284 Cu. Ft.

Total Volume$_{10} = 0.657 \times {}_{100} =$ 4786 Cu. Ft.

Water Surface Elevation

10 Year Storm	5117.72 Ft.
100 Year Storm	5118.04 Ft.

$QP_{100} = 4.00 + 0.35 = 4.35$ cfs

$QP_{10} = 2.63 + 0.23 = 2.86$ cfs

Discharge thru submersible sump pump
FLYGT Model BS40 or Equivalent
Discharge 40 GPM @ 14 Ft. Head

$40 \text{ GPM} \times \frac{0.0208 \text{ cf/h}}{1 \text{ GPM}} \times \frac{1 \text{ Hr.}}{3600 \text{ Sec.}} = 0.0891$ cfs

Time to Drain Pond

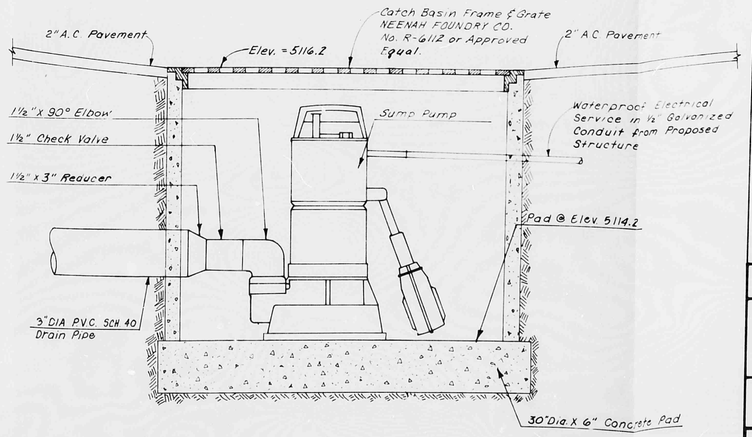
$\frac{7284 \text{ cf}}{0.0891 \text{ cfs}} = 81751$ Sec. $= 22.7$ Hours

Head Loses in Pipe Flow

Pipe Type	PVC
Pipe Length	180 Ft.
Pipe Flow Rate	40 GPM
Hazen-Williams	C=130

$Hf = 10.44\ L \left(\frac{Q\,(GPM)^{1.85}}{C^{1.85}\,(d\ in)^{4.8655}}\right) \qquad Hf = \frac{212.32}{(d\ in)^{4.8655}}$

d = 4 in	Hf = 0.25 Ft.
d = 3 in	Hf = 1.01 Ft.
d = 2 in	Hf = 7.28 Ft.
d = 1.5 in	Hf = 29.53 Ft.



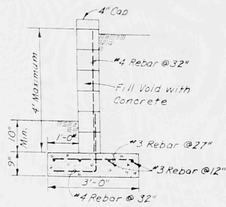
SUBMERSIBLE SUMP PUMP INSTALLATION DETAIL

Not to Scale

Revised 4-7-86

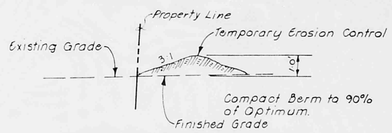
GENERAL NOTES

1. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "City of Albuquerque Interim Standard Specification for Public Works Construction, 1985 Edition".
2. Two working days prior to any excavation, contractor must contact Line Location Service, 765-1234, for location of existing utilities.
3. Earthwork shall conform to the technical specification, section 200, in that "City of Albuquerque Interim Standard Specification Public Works Construction, 1985 Edition".
4. Two FLYGT Model BS-40, or equivalent, submersible sump pump shall be kept on site. One located in detention pond and the other to serve as a back up system stored on site.
5. Total Site is to be paved with Asphalt Cement.
6. A 1.0 Ft. temporary berm shall be constructed, as per detail, around all boundaries during construction for erosion control.
7. Entire site shall be fenced to meet the City of Albuquerque Safety Requirements.



TYPICAL RETAINING WALL SECTION

Not to Scale



TYPICAL BERM SECTION

Not to Scale

REVISED 4/7/86

4/7/86

RECEIVED APR 07 1986 HYDROLOGY SECTION

PLANS PREPARED UNDER THE DIRECTION OF

3/21/86

Scanlon & Associates, Inc. JOB NO. 86105

APPROVED FOR CONSTRUCTION

CITY ENGINEER DATE

CITY OF ALBUQUERQUE

DETENTION POND, DRAIN & PUMP DETAILS

ALBUQUERQUE CAB COMPANY
LOS ARBOLES AVENUE N.E.

DATE	JOB NO.	SCALE	DRAWN R.L.H.	SHEET 1
Mar. 1986	86105	As Shown	CHECKED J.K.Z.	OF 1

SCANLON & ASSOCIATES
CONSULTING ENGINEERS

APR 9 1986 H16/D59