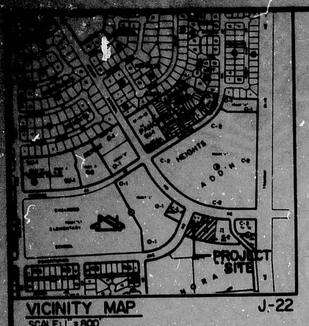


VICINITY MAP J-22
SCALE: 1" = 800'

LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED CONCRETE
- SWALE
- EXISTING RETAINING WALL
- PROPOSED WALL
- LANDSCAPED AREA

T.B.M.:

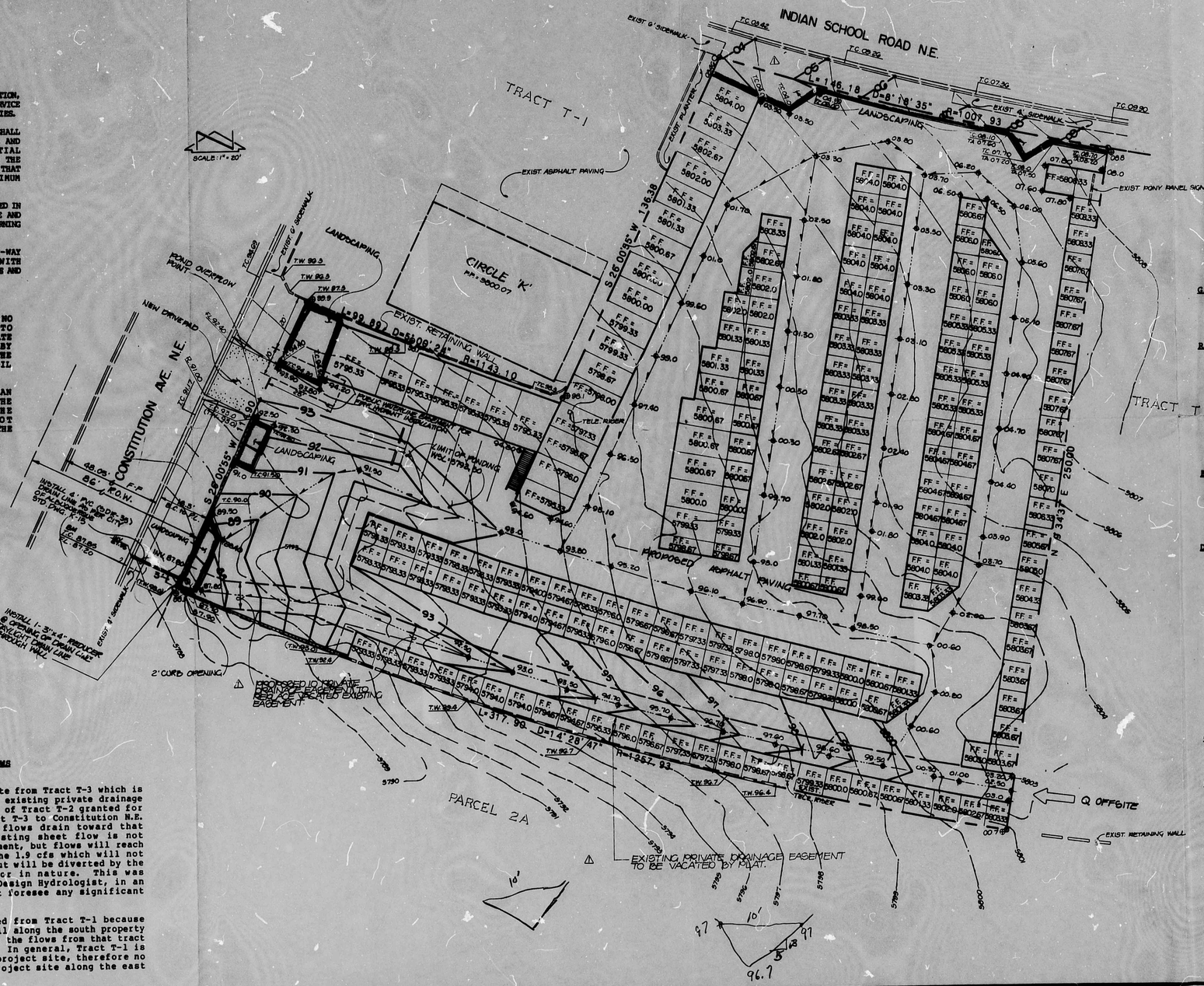
TOP OF CURB LOCATED AT THE SOUTHWESTERN CORNER OF SITE ELEVATION = 5787.85 FEET (MSLD)

PROJECT BENCHMARK:

ACS BENCHMARK NM 12-J22 LOCATED ON THE NORTHWEST SIDE OF CONSTITUTION AVE. N.E. 107 FEET SOUTH OF INDIAN SCHOOL RD. N.E. AN "X" CHISELED ON TOP OF THE CONCRETE CURB. ELEVATION = 5796.93 FEET (MSLD)

NOTES:

1. PROPOSED WALL ELEVATIONS SHOWN IN PARENTHESIS ( )
2. ALL ROOFS OF BUILDINGS ARE TO DRAIN TO THE FRONT OF EACH STORAGE UNIT ONTO PAVED AREAS.



CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, 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 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.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
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.

⚠ OFFSITE FLOWS

Offsite flows enter the project site from Tract T-3 which is located to the east. There is an existing private drainage easement at the southeast corner of Tract T-2 granted for the sole purpose of draining Tract T-3 to Constitution N.E. For the most part, the offsite flows drain toward that easement. At present, the existing sheet flow is not entirely directed toward the easement, but flows will reach the easement. The portion of the 1.9 cfs which will not flow directly to the easement, but will be diverted by the proposed construction, is minor in nature. This was presented to Mr. Fred Aguirre, Design Hydrologist, in an informal meeting and he did not foresee any significant problems with this approach.

No offsite flows are anticipated from Tract T-1 because there is an existing retaining wall along the south property line of Tract T-1 which prohibits the flows from that tract from entering the project site. In general, Tract T-1 is topographically lower than the project site, therefore no offsite flows will affect the project site along the east property line of Tract T-1.

DRAINAGE PLAN

The following items concerning the Panorama Self Storage Units Site Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located at the southeast corner of the intersection of Constitution Avenue N.E. and Indian School N.E. At present, the site is undeveloped. Much of the surrounding area is currently developed.

As shown by Plate J-22 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard Zone, however, downstream flooding is a concern. Because of this, runoff generated by this site will be routed through a positive discharge pond and discharge to Constitution Avenue N.E. At present, the majority of the runoff generated from this site flows from east to west onto the adjoining Parcel 2-A and Tract T-1 (Circle K) with a small portion of runoff draining onto Constitution Avenue N.E. In addition, some offsite flows enter the site at the southeast corner of the site. This runoff, which has been quantified in the calculations, will be accepted and conveyed through the site and will be released onto Constitution Avenue N.E.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and character of the existing and proposed improvements. As shown by this plan, the proposed improvements consist of the construction of self storage units along with adjacent paving and landscaping. Flows generated onsite will be routed from east to west to a positive discharge pond located at the southwest corner of the site. This pond will discharge onto Constitution Avenue N.E. From that point, the runoff will flow in a southerly direction in Constitution Ave. N.E. to Juan Tabo Boulevard N.E. This plan is consistent with the existing drainage pattern. The proposed drainage pattern will improve the existing drainage by eliminating the runoff discharged onto the adjacent parcel 2-A.

The Calculations which appear hereon analyze the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. The analysis of the pond release rate is based upon the Orifice Equation. The analysis of the pond volume is based upon the Average End-Area Method. As shown by these calculations, the proposed improvements will result in a net decrease in peak runoff of approximately 1.7 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 32:
EtC embudo Tijeras Complex
Hydrologic Soil Group B

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6 (6.84) T_c^{-0.51} = 5.35$ in/hr
$P_6 = 2.53$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A$ (1/12)
where C varies
$P_6 = 2.53$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 57{,}000$ sf $= 1.31$ Ac±
$A_{impervious} = 0$ sf; % impervious = 0%
$C_{DPM} = 0.34$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.34\ (5.35)(1.31) = 2.4$ cfs
$V_{100} = CP_6A = 0.34\ (2.53/12)(57{,}000) = 4{,}090$ cf

Developed Condition

$A_{total} = 57{,}000$ sf $= 1.31$ Ac±
$A_{impervious} = 54{,}555$ sf; % impervious = 96%
$C_{DPM} = 0.93$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.93\ (5.35)(1.31) = 6.5$ cfs
$V_{100} = CP_6A = 0.93\ (2.53/12)\ (57{,}000) = 11{,}180$ cf
$Q_{release} = CA\sqrt{2gh}$
where C = 0.75
A = 0.0491(3" dia opening)
g = 32.2 ft/sec²
h = 4.9 ft
$Q_{release} = < Q_{existing} = 0.7$ cfs
By Hydrograph Analysis, $V_{required} = 8700$
$V_{pond} = 1/2\ [(A_{87.80} + A_{88.0}(88.0 - 87.80) + (A_{88.0} + A_{89.0})(89.0 - 88.0) + (A_{89.0} + A_{90.0})(90.0 - 89.0) + (A_{90.0} + A_{91.0})(91.0 - 90.0) + (A_{91.0} + A_{92.0})(92.0 - 91.0) + (A_{92.0} + A_{93.0})(93.0 - 92.0)]$
$V_{pond} = 1/2\ [(0 + 290)(0.2) + (290 + 800)(1.0) + (800 + 1510)(1.0) + (1510 + 2320)(1.0) + (2320 + 3360)(1.0) + (3360 + 4760)(0.8)]$
$V_{pond} = 8500$ cf $\simeq V_{required}$

Comparison

$\Delta Q_{100} = 2.4 - 0.7 = 1.7$ cfs (decrease)
$\Delta V_{100} = 11{,}180 - 4090 = 7090$ cf (increase)

Offsite Flows (southeast corner)

$A_{total} = 46{,}174$ sf $= 1.06$ Ac
$A_{impervious} = 0$ sf; % impervious = 0%
$C_{DPM} = 0.34$ (DPM Plate 22.2C-1)
$Q_{100} = (0.34)(5.35)(1.06) = 1.9$ cfs
$V_{100} = (0.34)(2.53/12)(46{,}174) = 3310$ cf

Channel Hydraulics of Proposed Easement (Manning Equation)

$Q = (1.49/n)\ AR^{2/3}\ S^{1/2} = 140$ cfs > offsite flows
where n = 0.017
A = 5 ft² (cross section area of channel)
R = 2.01 (area/wetted perimeter of channel)
S = 0.040 (average slope)

RECEIVED
NOV 21 1984
HYDROLOGY SECTION

NO.	DATE	BY	REVISIONS
⚠1	11/21	JGM	ADDRESS OFFSITE FLOWS, EASEMENTS & GRADING RE-VISIONS.

DESIGNED BY: LPU
DRAWN BY: jmc
APPROVED: JGM

JOB NO. 4-0891
DATE 10-84

GRADING & DRAINAGE PLAN
PANORAMA SELF STORAGE UNITS

811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS