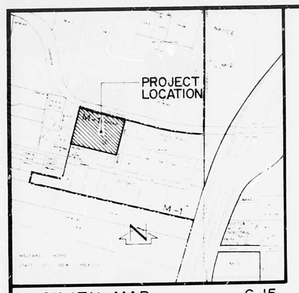
HYDROLOGY

G15/D24
ONE PLAN

G 15/D24

1 PLAN



VICINITY MAP G-15
SCALE 1" = 800'

LEGEND

- 280 — EXISTING CONTOUR
- 30 — PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING CHAINLINK FENCE
- PROPOSED ASPHALT

TEMPORARY BENCHMARK

TOP OF CONCRETE ELEVATION @ NORTHEAST CORNER OF 10' CONCRETE LOADING PLATFORM, AS SHOWN.
ELEVATION = 5,036.84 FEET (MSL 10)

PROJECT BENCHMARK

A STANDARD NGS/CGS BRASS TABLET, STAMPED "STA. 1 95 2 11 1 SET" IN TOP OF CONCRETE POST FLUSH WITH THE GROUND. TO REACH THE STATION FROM THE INTERSECTION OF CANDELARIA RD. NE & CARLISLE BLVD. NE, GO WEST ON CANDELARIA RD. 1.8 MILES TO THE EAST FRONTAGE RD. OF HWY. I-25, THEN GO NORTH ON THE EAST FRONTAGE RD. 0.45 MILES TO THE STATION ON THE LEFT.

LEGAL DESCRIPTION

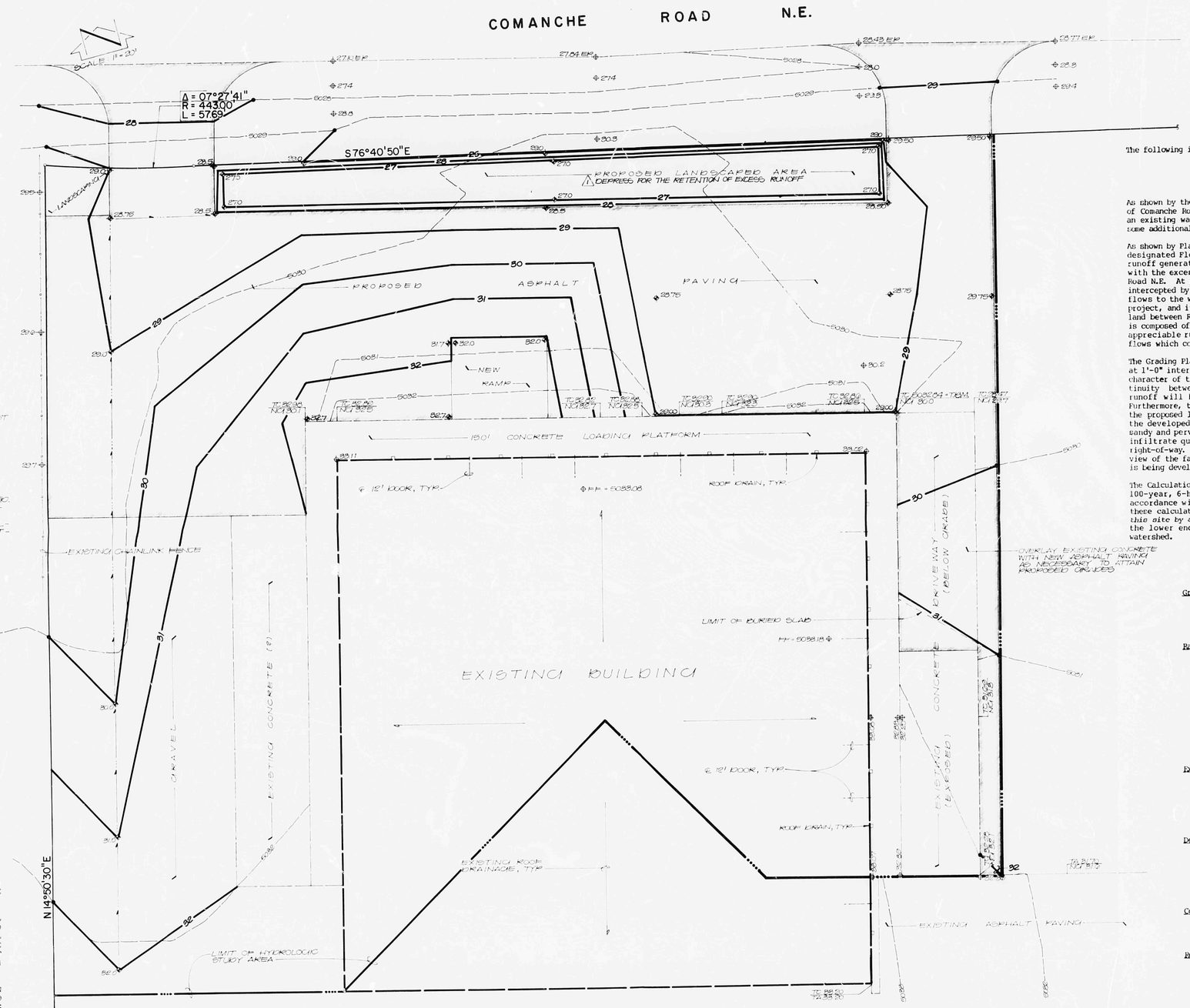
LOT 1, BLOCK 2, COMAN INDUSTRIAL PARK

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.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

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.



DRAINAGE PLAN

The following items concerning the Bekins Company Paving Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, this site is located at the southwest corner of the intersection of Comanche Road N.E. and Rankin Lane N.E. At present, the site is developed commercially with an existing warehouse building and some adjacent paving. The proposed improvements consist of some additional asphalt paving and a landscaped strip along Comanche Road N.E.

As shown by Plate G-15 of the Albuquerque Master Drainage Study, this 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 to the proposed landscaped area retention pond with the excess runoff discharged to the existing bar ditch along the south side of Comanche Road N.E. At present, runoff from this site flows north to Comanche Road N.E. where it is intercepted by an existing bar ditch along the south side of the road. From this point, runoff flows to the west along the street right-of-way. Rankin Lane N.E. lies to the east of this project, and it intercepts offsite flows from the east. Furthermore, there is a vacant strip of land between Rankin Road N.E. and the improved portion of this site. This portion of the site is composed of very sandy soils which are extremely pervious and, therefore, do not generate any appreciable runoff which will impact the proposed improvements. There are no other offsite flows which could affect the proposed improvements.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, 4) the limits of the hydrologic study area, and 5) continuity between existing and proposed grades. As shown by this plan, the existing pattern of runoff will be maintained and not significantly altered by the proposed construction. Furthermore, the majority of the runoff created by the proposed improvements will pass through the proposed landscaped area which will effectively attenuate any nuisance flows generated by the developed portion of the site. As previously mentioned, the onsite soils are extremely sandy and pervious thereby tending to permit the runoff contacting the soil to percolate and infiltrate quickly. This plan shows a free discharge of runoff from the site to the public right-of-way. The free discharge of runoff from this site is appropriate for this project in view of the fact that this is merely a modification to an existing site, a relatively small area is being developed, and a means by which to attenuate nuisance flows is being provided.

The Calculations which appear hereon analyze both 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. As shown by these calculations, the proposed improvements will increase the peak discharge of runoff from *this site by approximately 2.5 cfs. This increase,* due to the fact that this site is located at the lower end of this watershed, will have a negligible affect on the hydrology of the watershed.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 21:
BKD Bluepoint-Kokan Association
Hydrologic Soil Group A

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6(6.84)T_c^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ in (DPM Plate 22.2 D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.2$ in (DPM Plate 22.2 D-1)
A = area, sf

Existing Condition

$A_{total} = 98,860$ sf = 2.27 Ac
$A_{imp} = 45,315$ sf; % impervious = 46%
$C = 0.40$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.40(4.65)(2.27) = 4.2$ cfs
$V_{100} = CP_6A = 0.40(2.2/12)(98,860) = 7,250$ cf

Developed Condition

$A_{total} = 98,860$ sf = 2.27 Ac
$A_{imp} = 78,560$ sf; % impervious = 79%
$C = 0.65$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.65(4.65)(2.27) = 6.7$ cfs
$V_{100} = CP_6A = 0.65(2.2/12)(98,860) = 11,780$ cf

Comparison

$\Delta Q_{100} = 6.7 - 4.2 = 2.5$ cfs
$\Delta V_{100} = 11,780 - 7,250 = 4,530$ cfs

Retention Volume (Nuisance Flows)

$V = 1/2[(A_{27.0} + A_{28.50})(28.50 - 27.0)]$
$= 1/2[(4,465 + 5,100)(1.5)]$
$= 7,174$ cf $> \Delta V_{100}$

RECEIVED
JUN 27 1985
HYDROLOGY SECTION

JEFFREY G. MORTENSEN
NEW MEXICO
8947
REGISTERED PROFESSIONAL ENGINEER
05-23-85

05-23-85
06-27-85

APPROVED FOR DRAINAGE
7/11/85
SIGNATURE DATE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

NO.	DATE	BY	REVISIONS
1	5/86	JGM	DEPRESS LANDSCAPED AREAS FOR THE RETENTION OF EXCESS RUNOFF

DESIGNED BY JGM
DRAWN BY LBR
APPROVED JGM

JOB NO. 50521
DATE 5·85

REVISED GRADING & DRAINAGE PLAN
BEKINS COMPANY PAVING

FILE NO.
SHEET 1 OF 1

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

N40867