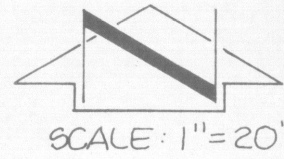


VICINITY MAP
SCALE: 1" = 800'

J-15



SCALE: 1" = 20'

LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- TOP OF CURB
- SWALE

LEGAL DESCRIPTION

TRACT LETTERED "A" OF
COLTON ADDITION

T.B.M.

A CROSS ON CURB AS
SHOWN HEREON.
ELEVATION: 5073.97 FEET (M.S.L.D.)

PROJECT BENCHMARK

A SQUARE, 2" CHISELED ON
TOP OF CONCRETE CURB AT
THE CURB RETURN.
LOCATED AT THE INTERSECTION
OF UNIVERSITY BLVD. N.E. +
INDIAN SCHOOL RD. N.E. IN THE
NE QUADRANT OF THE INTER-
SECTION.
ELEVATION: 5076.244 FEET (M.S.L.D.)

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 BERRS 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.

The following items concerning the New Mexico Chemical-Surgical Company Drainage Plan are contained herein:

1. Vicinity Map
2. Watershed Map
3. Grading Plan
4. Special Order 19
5. Calculations

As shown by the Vicinity Map, the site is located at the southwest corner of the intersection of University Boulevard N.E. and Indian School Road N.E. At present, the site is developed with several existing buildings and some existing paving. The proposed improvements will consist of the construction of a building addition with no additional paving proposed.

As shown by the Watershed Map, the site appears to be affected by a designated flood zone. Review of the Albuquerque Master Drainage Study (AMDS) II, which is an update to this watershed map, reveals that the site is no longer affected by a designated flood zone. This appears to be the result of a restudy of the area. Nonetheless, the ability of the existing system to remove the runoff from the adjacent street is analyzed in the calculations below. Presently, as shown by the City of Albuquerque Storm Drainage Facilities Maps, there are two double 'C' inlets and one single 'D' inlet located within the sump area within University Boulevard. Analyzing the ability of these catch basins to remove runoff from the street, based upon an Orifice Equation, indicates that sufficient capacity exists. There is no available information on the 36" RCP storm drain which conveys the runoff from these inlets, therefore it must be assumed that it has adequate capacity and was properly signed and constructed. In addition, this existing storm drain would be operating under a pressure flow situation and therefore would have increased capacity over that which would normally be estimated based upon the Manning Equation. This analysis can be concluded as stating that the runoff within the street remains in the street and does not enter the site. Consequently, a drainage covenant and a public drainage easement are not required.

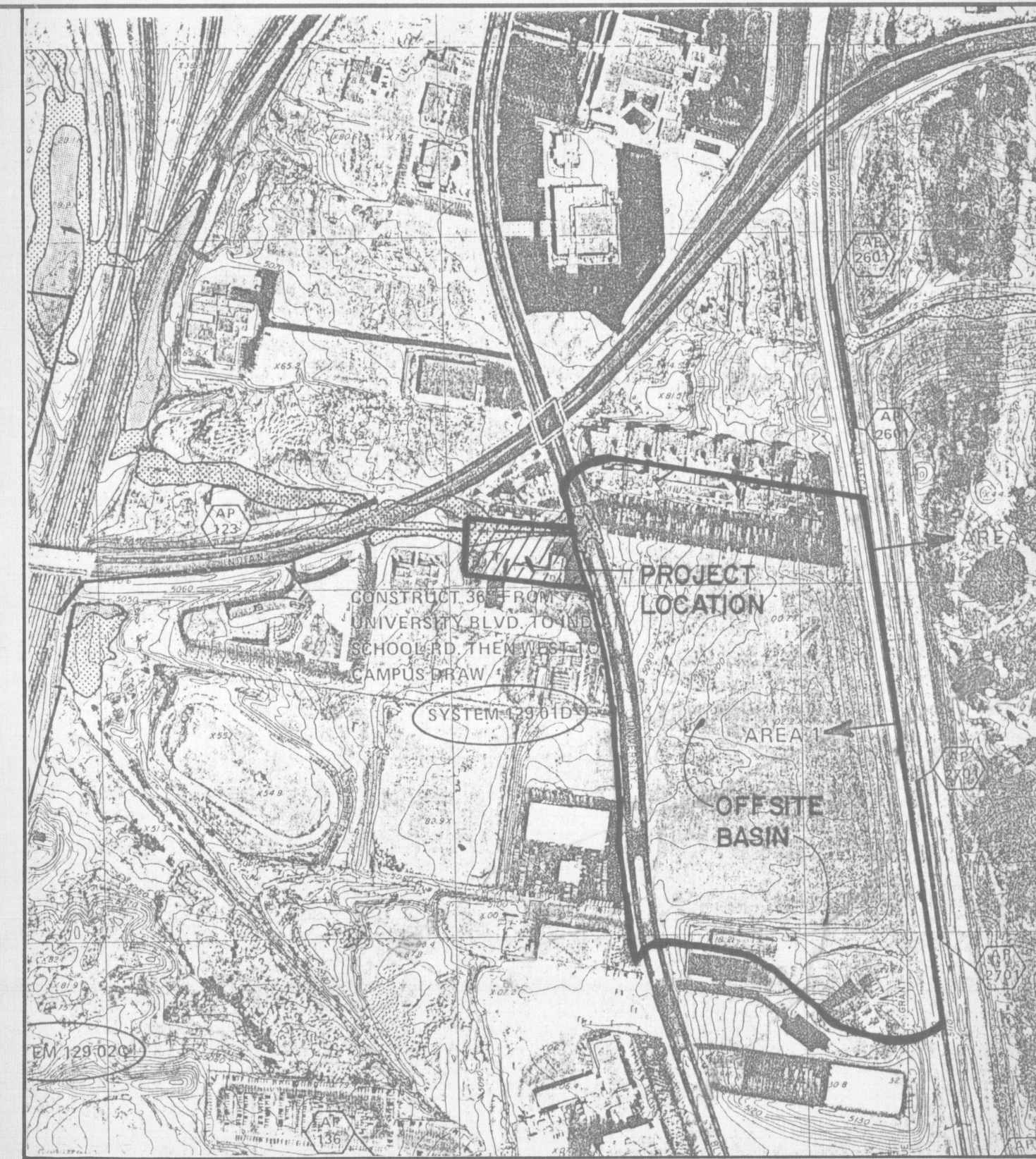
The Grading Plan shows 1) existing grades indicated by spot elevations and contours at 1'0" intervals as taken from a survey prepared by the Ross Howard Company dated October 28, 1980, 2) proposed grades indicated by spot elevations and contours at 1'0" intervals, 3) the limit and character of the existing improvements, 4) the limit and character of the proposed improvements, 5) the approximate floodplain limits taken from AMDS Plate J-15 and 6) continuity between existing and proposed grades. As shown by this plan, the proposed improvements consist of a building addition along with minor regrading and a private storm drain facility. It has been previously demonstrated that the mapped floodplain does not exist, however, it has been shown on this drawing to further demonstrate that the proposed improvements do not encroach upon this area. At present, the site drains from east to west towards the northwest corner of the site. At this point, the runoff leaves the site and eventually enters Indian School Road N.E. Because the proposed improvements will increase the developed runoff generated by this site, the proposed improvements will be accepted by the private storm drain facility and released to Indian School Road N.E. via a sidewalk culvert. Due to insufficient grade, this facility cannot handle the total developed runoff generated by the site, however, will handle an excess of the difference between the existing and developed runoff. This will ensure that the proposed improvements do not contribute any more runoff to the private property to the west. It will also ensure that runoff will not impact the site to the west any more frequently.

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 to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff generated. Both methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II coupled with the Mayor's Emergency Rule dated January 14, 1986. As shown by these calculations, the proposed improvements will result in a minor increase in runoff generated by the site. Additional calculations appear hereon which analyze the capacity of the existing storm drain facility and the offsite contributing area.

APPROVALS	NAME	DATE
A.C.E./DESIGN		
INSPECTOR		
A.C.E./FIELD		

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.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERE TO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
6. 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.
7. BACKFILL CONFACTION SHALL BE ACCORDING TO ARTERIAL STREET USE.
8. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.



WATERSHED MAP
SCALE: 1" = 400'

AMDS PLATE J-15

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 31: Cu = Cut and Fill Land
Hydrologic Soil Group: A
Existing Previous CN = 72 (DPM Plate 22.2 C-2, dirt)
Developed Previous CN = 72 (DPM Plate 22.2 C-2, dirt)

Time of Concentration/Time to Peak

$T_c = 0.0078 L^{0.77} S^{0.385}$ (Kirpich Equation)
 $T_p = T_c = 10$ min.
 $P_6 = 2.22$ in. (DPM Plate 22.2 D-1)

Point Rainfall

$P_6 = 2.22$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$
Where C varies:
 $C = P_6 (6.48) T_c - 0.51 = 4.69$ in/hr
 $P_6 = 2.22$ in (DPM Plate 22.2D-1)
 $T_c = 10$ min (minimum)
 $A =$ area, acres

SCS Method

Volume: $V = 3630 (DRO) A$
Where DRO = direct runoff in inches
 $A =$ area, acres

Existing Condition

Atotal = 62,600 sf = 1.44 Ac
Roof area = 7,500 sf (0.12)
Paved area = 18,500 sf (0.30)
Unpaved area = 36,600 sf (0.58)
 $C = 0.61$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.61(4.69)(1.44) = 4.3$ cfs
% impervious = 42 %
Composite CN = 83 (DPM Plate 22.2 C-3)
DRO = 0.45 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 4,440$ cf

Developed Condition

Atotal = 62,600 sf = 1.44 Ac
Roof area = 12,300 sf (0.20)
Paved area = 18,500 sf (0.30)
Unpaved area = 31,800 sf (0.50)
 $C = 0.67$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.67(4.69)(1.44) = 4.5$ cfs
% impervious = 58 %
Composite CN = 85 (DPM Plate 22.2 C-3)
DRO = 1.0 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 5,230$ cf

Comparison

$Q_{100} = 4.5 - 4.3 = 0.2$ cfs (increase)
 $V_{100} = 5,230 - 4,440 = 790$ cf (increase)

Offsite Area

Atotal = 30 Ac
Roof area = 5 Ac
Paved area = 25 Ac
 $C = 0.5$ (weighted average)
 $Q_{100} = 0.5(4.69)(30) = 70$ cfs

Existing Storm Drain Capacity

Single "C" & Single "D" (Sag-point & Low-point):

$Q = VA = C_v/2gh A = 16.7$ cfs*
Where:
 $C_v = 0.67$
 $g = 32.2$ ft/sec²
 $h = 0.67'$
 $A = (15 \frac{1}{2} \times 12) (35 \frac{3}{8}) = 548$ in² = 3.8 sf

* Double value for double "C" or double "D".
2 double "C" inlets 66.8 cfs
1 single "D" inlet 16.7 cfs
Total available capacity 83.5 cfs

FORWARD TO PERMIT
SECTION w/ STANDARD
COVER LETTER

GRADING & DRAINAGE PLAN

NEW MEXICO CHEMICAL SURGICAL CO.



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

DESIGN BY J.G.M.
DRAWN BY R.A.R.
APPROVED BY J.G.M.

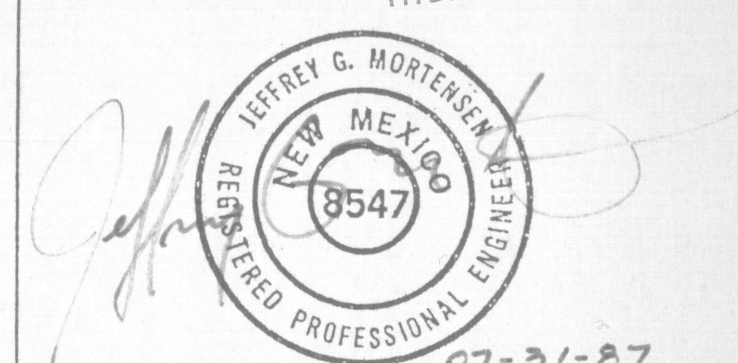
No.	Date	By	Revision

JOB NO. 870721

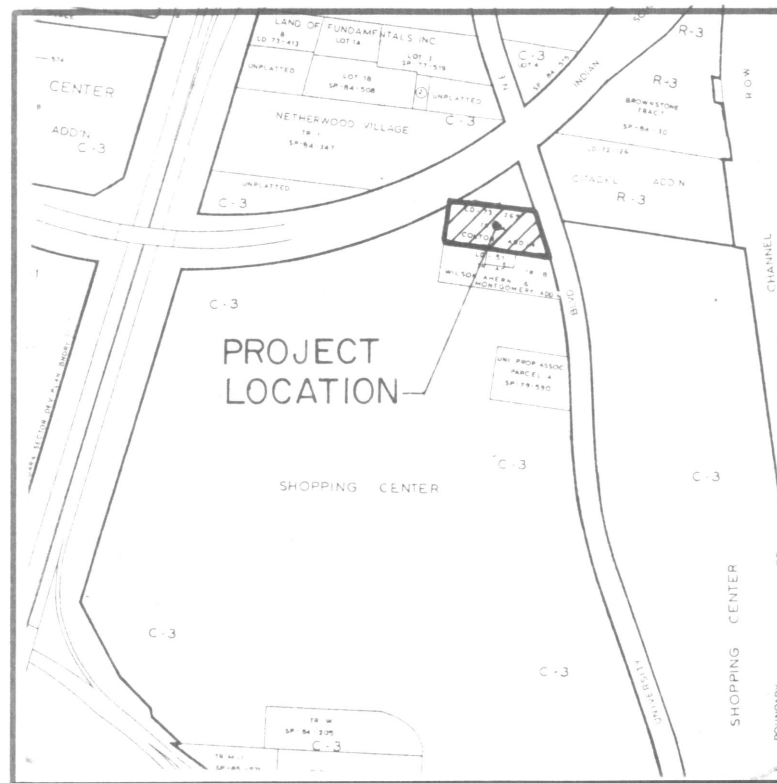
DATE 7-87

SHEET OF 1

GRADING AND DRAINAGE PLAN PREPARED
UNDER THE SUPERVISION OF
HYDROLOGY SECTION

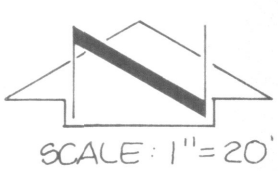


TOPOGRAPHIC SURVEY PREPARED BY
OTHERS AND PROVIDED BY OWNER. ITS
ADEQUACY IS HEREBY DISCLAIMED AS IT
RELATES TO THIS DRAWING.



VICINITY MAP
SCALE 1" = 800'

J-15



SCALE 1" = 20'

LEGEND

EXISTING SPOT ELEVATION
PROPOSED SPOT ELEVATION
PROPOSED CONCRETE
PROPOSED ASPHALT
TOP OF CURB
SWALE

LEGAL DESCRIPTION

TRACT LETTERED "A" OF
COLTON ADDITION

T.B.M.

A CROSS ON CURB AS
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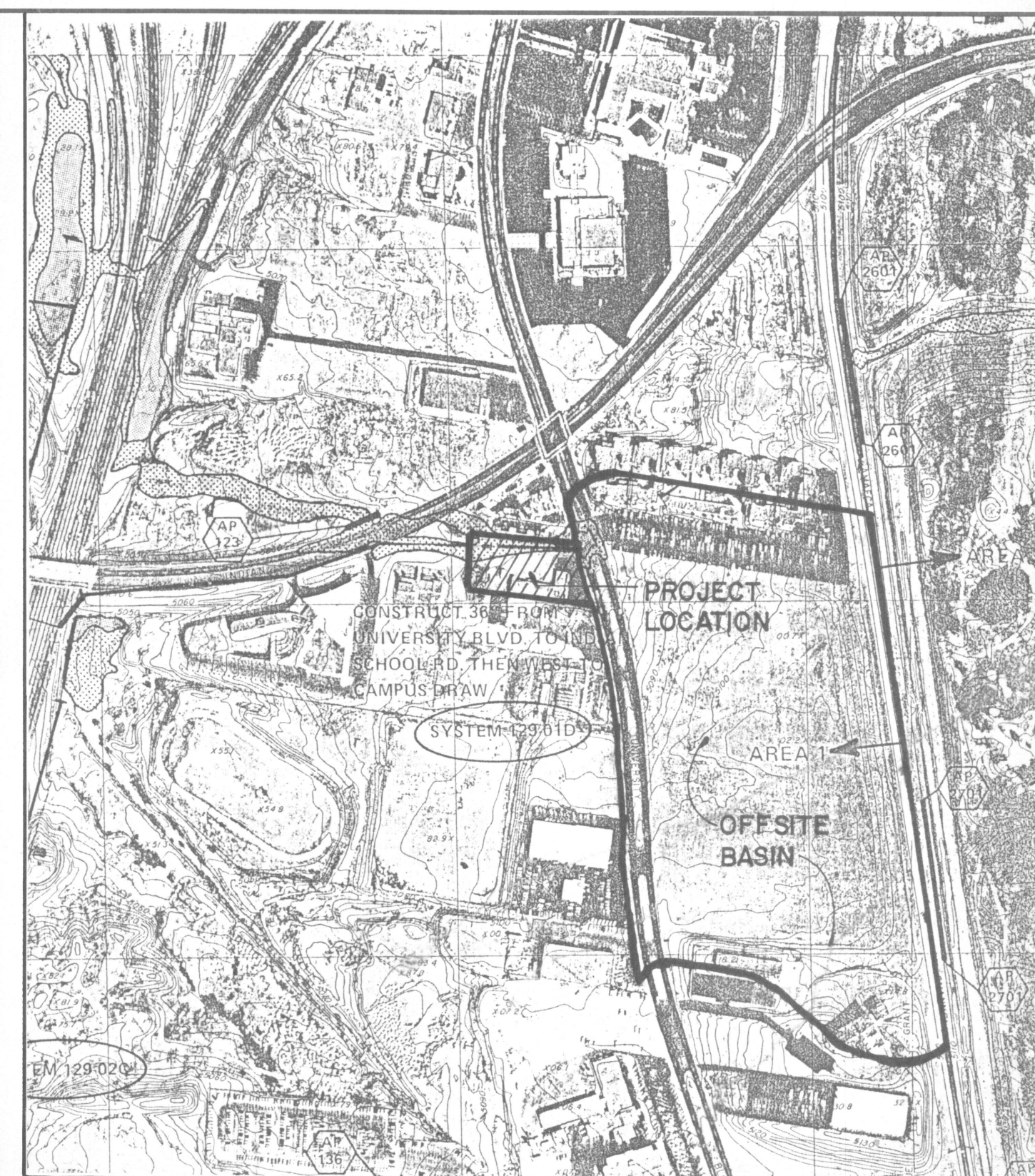
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A.C.E./DESIGN		
INSPECTOR		
A.C.E./FIELD		

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WATERSHED MAP
SCALE 1" = 400'

AMDS PLATE J-15

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 31: Cu = Cut and Fill Land
Hydrologic Soil Group: A
Existing Pervious CN = 72 (DPM Plate 22.2 C-3, dirt)
Developed Pervious CN = 72 (DPM Plate 22.2 C-3, dirt)

Time of Concentration/Time to Peak

$T_c = 0.0078 L^{0.77} / S^{0.385}$ (Kirpich Equation)
 $T_p = T_c = 10$ min.

Point Rainfall

$P_g = 2.22$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = C i A$
where C varies
 $i = P_g (6.84) T_c^{-0.51} = 4.69$ in/hr
 $P_g = 2.22$ in (DPM Plate 22.2 D-1)
 $T_c = 10$ min (minimum)
 $A =$ area, acres

SCS Method

Volume: $V = 3630 (DRO) A$
Where DRO = Direct runoff in inches
 $A =$ area, acres

Existing Condition

Atotal = 62,600 sf = 1.44 Ac
Roof area = 7,500 sf (0.12)
Paved area = 18,500 sf (0.30)
Unpaved area = 36,600 sf (0.58)
 $C = 0.63$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.63 (4.69) (1.44) = 4.3$ cfs
 i impervious = 42 %
Composite CN = 72 (DPM Plate 22.2 C-3)
DRO = 0.85 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 4,440$ cf

Developed Condition

Atotal = 62,600 sf = 1.44 Ac
Roof area = 12,100 sf (0.20)
Paved area = 18,500 sf (0.30)
Unpaved area = 31,000 sf (0.50)
 $C = 0.67$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.67 (4.69) (1.44) = 4.5$ cfs
 i impervious = 50 % (DPM Plate 22.2 C-3)
Composite CN = 83
DRO = 1.0 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 5,230$ cf

Comparison

$Q_{100} = 4.5 - 4.3 = 0.2$ cfs (increase)
 $V_{100} = 5,230 - 4,440 = 790$ cf (increase)

Offsite Area

Atotal = 30 Ac
Imper = 5 Ac
Aper = 25 Ac
 $Q_{100} = 0.5 (4.69) (30) = 70$ cfs

Existing Storm Drain Capacity

Single "C" & Single "D" (Sag-point & Low-point):

$Q = v A = C_v 2gh A = 16.7$ cfs
where
 $C_v = 0.67$
 $g = 32.2$ ft/sec²
 $h = 0.67'$
 $A = (15 \frac{1}{2}') (35 \frac{3}{8}') = 548$ in² = 3.8 sf

* Double value for double "C" or double "D".

2 double "C" inlets 66.8 cfs
1 single "D" inlet 16.7 cfs
Total available capacity 83.5 cfs

RECEIVED
JUL 31 1987

GRADING AND DRAINAGE PLANS PREPARED
UNDER THE SUPERVISION SECTION

APPROVED FOR DRAINAGE

14 AUG 87

G.S. Reeder, P.E. CE/HO

ADVISE DRAINAGE INSPECTOR
WHEN GRADING EXECUTED



TOPOGRAPHIC SURVEY PREPARED BY
OTHERS AND PROVIDED BY OWNER. ITS
ADEQUACY IS HEREBY DISCLAIMED AS IT
RELATES TO THIS DRAWING.



811 DALLAS N.E. • ALBUQUERQUE • NEW MEXICO • 87112
ENGINEERS

GRADING & DRAINAGE PLAN NEW MEXICO CHEMICAL SURGICAL CO.

DESIGN BY J.G.M.

DRAWN BY R.A.R.

APPROVED BY J.G.M.

No.	Date	By	Revision
708 NO.	870721		
DATE	7-87		
SHEET	OF		