Hydrology

A14/D2A

[redacted]/[redacted]

ALBUQ. FEDERAL SAVINGS & LOAN

A14/02

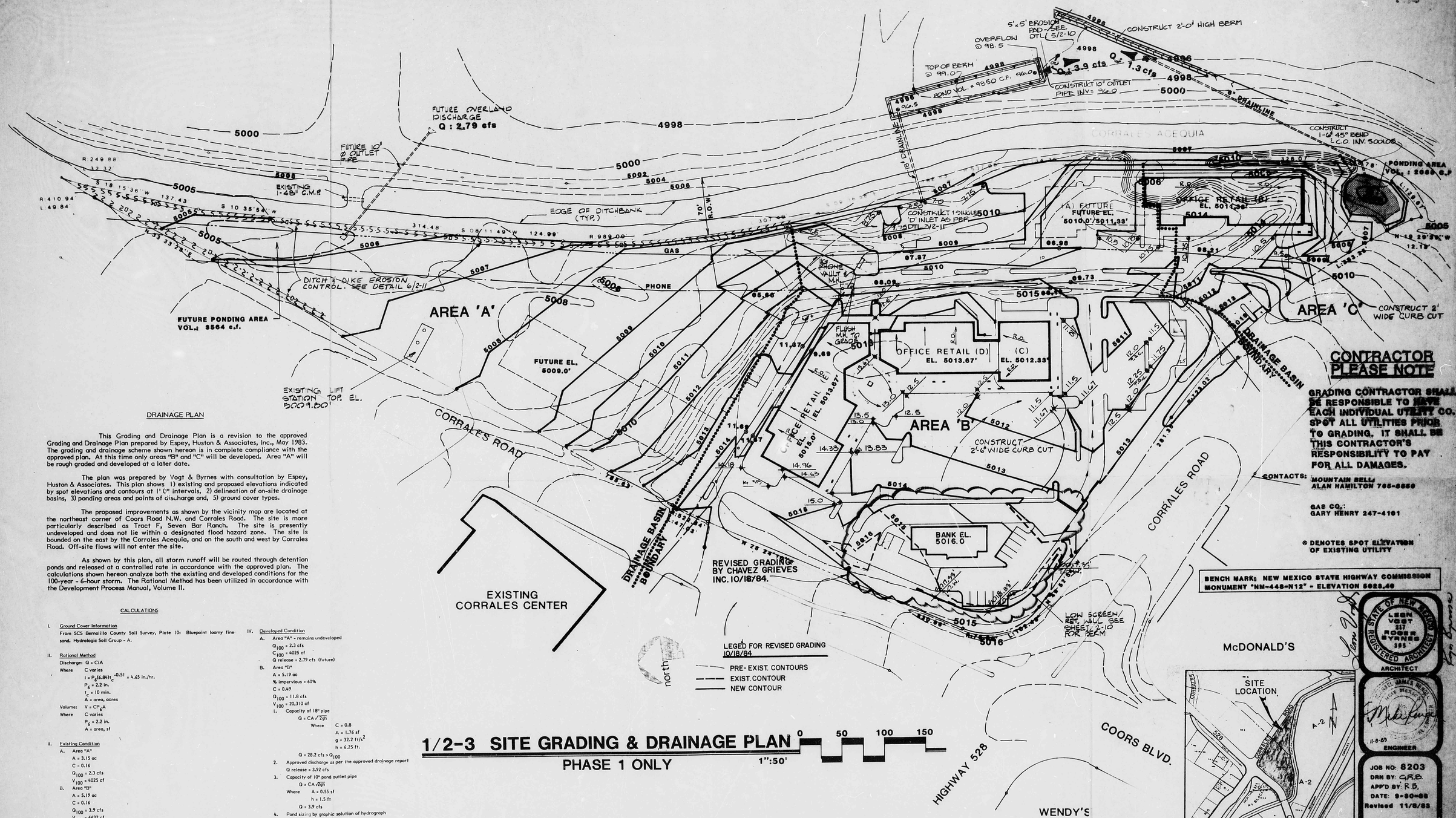
BK / DD

ALBUQUERQUE

FEDERAL SAVINGS +

LOAN

2 PLANS



DRAINAGE PLAN

This Grading and Drainage Plan is a revision to the approved Grading and Drainage Plan prepared by Espey, Huston & Associates, Inc., May 1983. The grading and drainage scheme shown hereon is in complete compliance with the approved plan. At this time only areas "B" and "C" will be developed. Area "A" will be rough graded and developed at a later date.

The plan was prepared by Vogt & Byrnes with consultation by Espey, Huston & Associates. This plan shows 1) existing and proposed elevations indicated by spot elevations and contours at 1' 0" intervals, 2) delineation of on-site drainage basins, 3) ponding areas and points of discharge and, 5) ground cover types.

The proposed improvements as shown by the vicinity map are located at the northeast corner of Coors Road N.W. and Corrales Road. The site is more particularly described as Tract F, Seven Bar Ranch. The site is presently undeveloped and does not lie within a designated flood hazard zone. The site is bounded on the east by the Corrales Acequia, and on the south and west by Corrales Road. Off-site flows will not enter the site.

As shown by this plan, all storm runoff will be routed through detention ponds and released at a controlled rate in accordance with the approved plan. The calculations shown hereon analyze both the existing and developed conditions for the 100-year - 6-hour storm. The Rational Method has been utilized in accordance with the Development Process Manual, Volume II.

CALCULATIONS

I. Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 10: Bluepoint loamy fine sand. Hydrologic Soil Group - A.

II. 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.

$t_c = 10$ min.

A = area, acres

Volume: $V = CP_6A$

Where C varies

$P_6 = 2.2$ in.

A = area, sf

II. Existing Condition

A. Area "A"

A = 3.15 ac

C = 0.16

$Q_{100} = 2.3$ cfs

$V_{100} = 4025$ cf

B. Area "B"

A = 5.19 ac

C = 0.16

$Q_{100} = 3.9$ cfs

$V_{100} = 6632$ cf

C. Area "C"

A = 1.41 ac

C = 0.16

$Q_{100} = 1.0$ cfs

$V_{100} = 1802$ cf

IV. Developed Condition

A. Area "A" - remains undeveloped

$Q_{100} = 2.3$ cfs

$C_{100} = 4025$ cf

Q release = 2.79 cfs (future)

B. Area "B"

A = 5.19 ac

% impervious = 60%

C = 0.49

$Q_{100} = 11.8$ cfs

$V_{100} = 20,310$ cf

1. Capacity of 18" pipe

$Q = CA\sqrt{2gh}$

Where C = 0.8

A = 1.76 sf

g = 32.2 ft/s²

h = 6.25 ft.

$Q = 28.2$ cfs > Q_{100}

2. Approved discharge as per the approved drainage report

Q release = 3.92 cfs

3. Capacity of 10" pond outlet pipe

$Q = CA\sqrt{2gh}$

Where A = 0.55 sf

h = 1.5 ft

Q = 3.9 cfs

4. Pond sizing by graphic solution of hydrograph

V required = 9475 cf < V provided

C. Area "C"

A = 1.41 ac

% impervious = 38%

C = 0.35

$Q_{100} = 2.3$ cfs

$V_{100} = 3940$ cf

1. Approved discharge as per the approved drainage report

Q release = 1.42 cfs

2. Capacity of 6" pond outlet pipe

$Q = CA\sqrt{2gh}$

Where A = 0.20 sf

h = 1.0 ft

Q = 1.3 cfs

3. Pond sizing by graphic solution of hydrograph

v required = 750 cf < V provided

1/2-3 SITE GRADING & DRAINAGE PLAN

PHASE 1 ONLY

0 50 100 150

1":50'

CONTRACTOR PLEASE NOTE

GRADING CONTRACTOR SHALL BE RESPONSIBLE TO HAVE EACH INDIVIDUAL UTILITY CO. SPOT ALL UTILITIES PRIOR TO GRADING. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO PAY FOR ALL DAMAGES.

CONTACTS:

MOUNTAIN BELL: ALAN HAMILTON 765-8860

GAS CO.: GARY HENRY 247-4101

⊗ DENOTES SPOT ELEVATION OF EXISTING UTILITY

BENCH MARK: NEW MEXICO STATE HIGHWAY COMMISSION MONUMENT "NM-448-N12" - ELEVATION 5023.49

STATE OF NEW MEXICO REGISTERED ARCHITECT LEON VOGT 217 ROGER BYRNES 395 ARCHITECT

ENGINEER

JOB NO: 8203
DRN BY: C.R.B.
APP'D BY: R.B.
DATE: 9-30-83
Revised 11/8/83

PAGE NO. 7

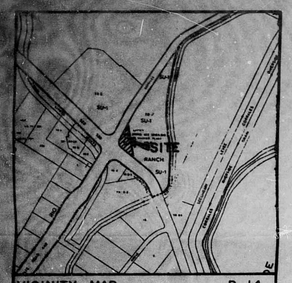
2-3

OF: 57

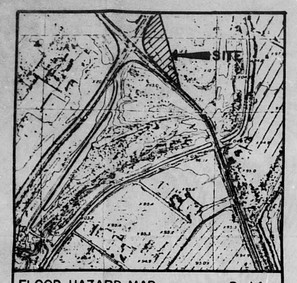
LAS TIENDAS DE CORRALES CENTER

Albuquerque, New Mexico

VOGT & BYRNES P.A. 1617 University Blvd. N.E., Albuquerque, New Mexico 87102 (505) 242-1526



VICINITY MAP B-14



FLOOD HAZARD MAP B-14

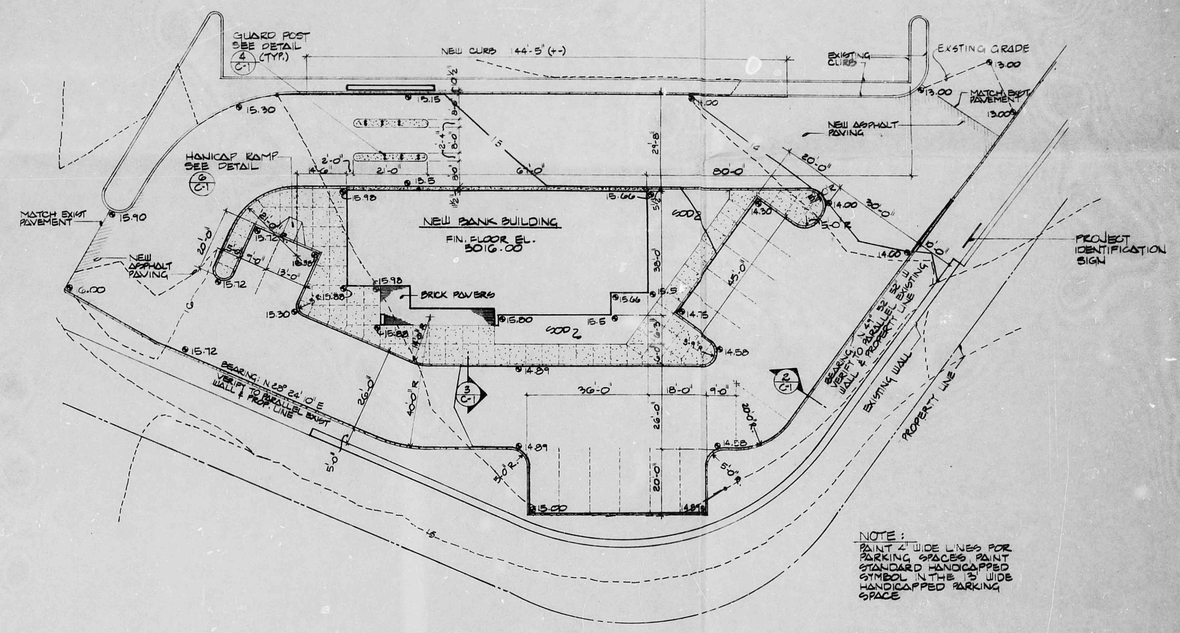
BENCH MARK: NEW MEXICO STATE HIGHWAY COMMISSION MONUMENT "NM-448-N12" EL: 5028.40

ALBUQUERQUE FEDERAL SAVINGS AND LOAN

LAS TIENDAS DE CORRALES CENTER

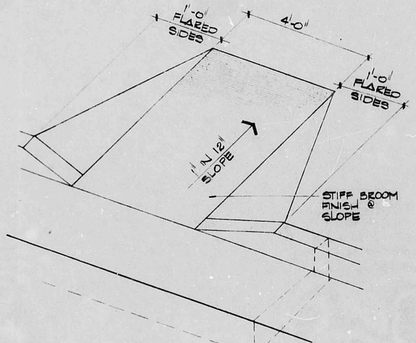
THIS GRADING AND DRAINAGE PLAN IS A REVISION TO THE APPROVED GRADING AND DRAINAGE PLAN PREPARED BY VOGT AND BYRNES, NOV., 1983, WHICH WAS A REVISION OF THE APPROVED GRADING AND DRAINAGE PLAN PREPARED BY ESPEY, HUSTON & ASSOCIATES, INC., MAY, 1983.

THE PROPOSED REVISION AT THE WEST END OF "AREA 'B'", AS SHOWN ON THE GRADING AND DRAINAGE PLAN, FOLLOWS THE SAME DIRECTION OF FLOW AS THE APPROVED PLAN. OFF-SITE FLOWS WILL NOT ENTER THE SITE. ALL ON-SITE FLOWS WILL BE DIVERTED AROUND PROPOSED STRUCTURES AND BE TRANSPORTED AS SURFACE FLOWS THROUGH THE PARKING AREA AND LANDSCAPING TO THE DETENTION POND DESIGNED FOR "AREA 'B'".

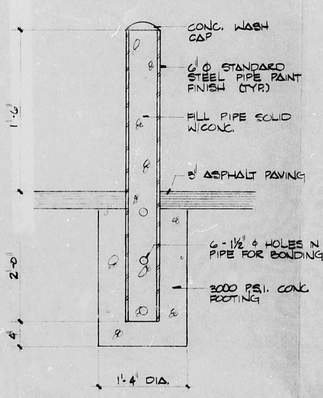


NOTE:
PAINT 4" WIDE LINES FOR PARKING SPACES. PAINT STANDARD HANDICAPPED SYMBOL IN THE 5' WIDE HANDICAPPED PARKING SPACE

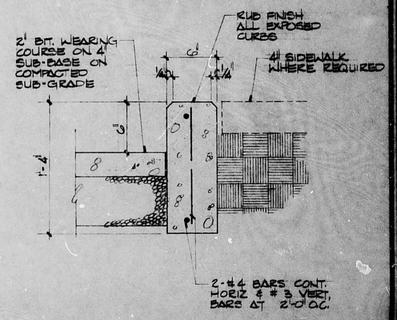
SITE PLAN
SCALE 1" = 20'-0"



HANDICAP RAMP 6 C-1
SCALE 1½" = 1'-0"

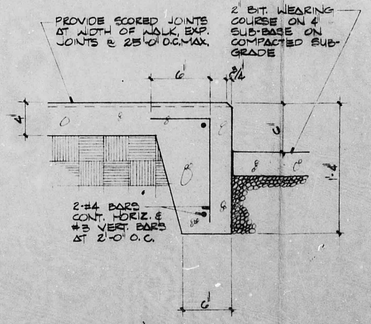


GUARD POST 4 C-1
SCALE 1" = 1'-0"



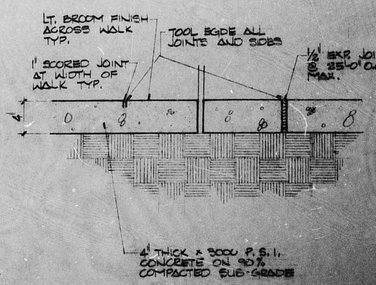
CURB DETAIL 2 C-1
SCALE 1½" = 1'-0"

HANDICAP SYMBOL 5 C-1
SCALE 1½" = 1'-0"



CONTRACTOR'S OPTION:
MAY BE USED WHERE STANDING CURB ABUTTS SIDEWALK

TURNDOWN CURB 3 C-1
SCALE 1½" = 1'-0"



SIDEWALK 1 C-1
SCALE 1½" = 1'-0"

W. C. KRUGER & ASSOCIATES ARCHITECTS-PLANNERS, INC.
SUITE 1100 BANK OF NEW MEXICO BUILDING
ALBUQUERQUE, NEW MEXICO
ZIP CODE 87101
TELEPHONE (505) 842-9653

STATE OF NEW MEXICO W. C. KRUGER NO. 47 ALBUQUERQUE, NEW MEX. REGISTERED ARCHITECT

STATE OF NEW MEXICO W. C. KRUGER & ASSOCIATES INC. NO. 578 ALBUQUERQUE, N. M. REGISTERED ARCHITECT

VICTOR J. CHAVEZ STATE OF NEW MEXICO 5343 REGISTERED PROFESSIONAL ENGINEER
10/29/84

ALBUQUERQUE FEDERAL SAVINGS & LOAN
LAS TIENDAS DE CORRALES CENTER
ALBUQUERQUE, NEW MEXICO

SITE PLAN, GRADING & DETAILS

REVISIONS

DATE	7-31-84
DRAWN	RB JE
CHECKED	KD
JOB NUMBER	6450-84