STEVENS, MALLORY, PEARL & CAMPBELL, P.A.
ARCHITECTS
115 AMHERST DRIVE, S.E. ALBUQUERQUE, NEW MEXICO 87106 505 255-8668

Fred

J14-D27

November 30, 1983

Mr. Gene Mares, Chairman
Development Review Board,
Planning Division,
Municipal Development Department
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: DRB-83-693

Dear Mr. Mares:

Attached please find three prints of the approved Site Development Plan for the above referenced project for your use.

Again, I would like to express our gratitude for your help in this matter.

Sincerely,

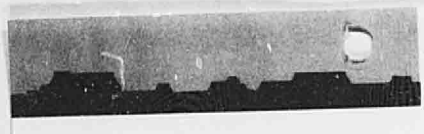
Glenn H. Fellows

GHF/jd

cc: Fred Aguirre, Hydrology
Vernon Doak, SWB

RECEIVED
DEC 01 1983
ENGINEERING

DONALD P. STEVENS A.I.A.
ROBERT G. MALLORY A.I.A.
GEORGE CLAYTON PEARL F.A.I.A.
C. ROBERT CAMPBELL A.I.A.



STEVENS, MALLORY PEARL & CAMPBELL, P.A.
ARCHITECTS
115 AMHERST DRIVE, S.E. ALBUQUERQUE, NEW MEXICO 87106 505 255-8668

September 9, 1983

John Armstrong
Hydrology Department
City of Albuquerque
123 Central Ave. N.W.
Albuquerque, New Mexico 87103

Re: First New Mexico Bankshare Building
500 4th St. N.W.

Dear Mr. Armstrong:

This letter is written to assure your office that Boyle Engineering will certify that new construction at the above referenced project does and will, upon completion, comply with the Checklist of the Development Process Manual, and in particular will comply with the approved drainage plan for the development.

Thank you for your consideration for a temporary certificate of occupancy.

Sincerely,

Glenn H. Fellows
Project Architect

GHF/jd

cc: Summit Construction

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 25, 1982

J14-D21

THERESA, I MARK A FILE AND ROUTE BACK TO ME (J14) Fred

Jacob A. Vigil, PE
Principal Civil Engineer
Boyle Engineering Corporation
Suite D
3939 San Pedro NE
Albuquerque, New Mexico 87110

Re: First New Mexico Bankshare Building

Dear Mr. Vigil:

The referenced project submitted 8/17/82 can not be given a complete review until the information on the attached checklist checked in red is included with your drainage plan.

If you have any questions regarding the above, please feel free to call me at 766-7644.

Sincerely,

Fred J. Aguirre, PE
Civil Engineer, Hydrology

cc: Drainage File
Reading File

Attachment

# DRAINAGE REPORT AND DRAINAGE PLAN CHECKLIST

Drainage Report: A drainage report is a comprehensive analysis of the drainage control, flood control and erosion control constraints on and impacts resulting from a proposed platting, development or construction project. Drainage reports are required for subdivisions containing more than 10 lots or constituting 5 acres or more, platting or construction within a designated flood hazard area and for any platting or development adjacent to a major arroyo. Engineer's certification may be required if not strongly recommended for major projects, projects requiring numerous drainage inspections during construction, projects in flood hazard areas and phased projects.

Drainage Plan: A short detailed presentation required for small, simple development approvals. Drainage plans are prepared with or on the detailed grading plan and address both on-site and off-site drainage control, flood control and erosion control issues. Drainage plans are required for building permits, site development plans and landscaping plans for developments involving less than 5 acres.

Although the checklist and information required for both the Drainage Report and Drainage Plan are quite similar, they are not one in the same. Basically the difference between the two is one of detail. The same report which was accepted for the subdivision of a large tract of land may not be adequate for the construction of each subdivided parcel.

NOTE: The following checklist is intended to be used as a guide for preparing your drainage report or plan to meet any or all drainage requirements. It is only a guide. Some items may not be applicable to your particular project; some items may require more detail.

GENERAL INFORMATION:

✓1. Completed Information Sheet - see Information Sheet. ATTACHED
2. Planning History - planning and zoning action history.
3. Professional's stamp with signature and date.
   A. Engineer who prepared the drainage report OR PLAN.
   ✓B. Engineer or surveyor who performed the survey.
4. Flood Hazard - delineation of site on pertinent Flood Hazard Boundary Map.
5. Watershed Soils - delineation of site and contributing off-site watersheds on SCS Bernalillo County Soil Survey Maps.
6. Soils - soils investigation report for ponding within 15 ft. from planned or existing structure or closer than 15 ft. from the property line minus the required setback on adjacent property. For ponds 18" deep or less, water may be impounded adjacent to street ROW but not closer than 10' from pavement. For ponds deeper than 18", water shall not pond closer than 15' to the pavement.
7. Drainage Report or Drainage Plan - two copies
8. Erosion Control Plan - see Erosion Control Plan Checklist

OFF-SITE CONDITIONS

9. Watershed Area - delineation of off-site contributing watersheds on City of Albuquerque Ortho-Topo Area Maps at scale 1" = 200' or 1" = 500'.
10. Storm Flows - quantification of off-site rate of flow caused by contributing watersheds for the:
    A. 10 year frequency storm.
    B. 100 year frequency storm.
11. Flow Depth and Velocity
    A. Off-site flow velocities determined.
    B. Off-site flow depths determined.
    C. Locations indicated for A and B above.
12. Other Conditions - discussion of any off-site conditions or drainage facilities that affect site drainage.
13. Proposed Treatment - adequate treatment of off-site flows including:
    A. Definition of required drainage facilities.
    B. Location and configuration of facilities defined in A above.
    C. Verification of adequacy of downstream systems
14. Rights-of-Way and Easements - delineation of R/W and/or easement configuration necessary to accommodate #13 above.

ON-SITE CONDITIONS:

15. Flow Volumes and Rates - calculations showing on-site undeveloped and developed flow volumes and rates.
16. Flow Depth and Velocity:
    A. On-site flow velocities determined.
    B. On-site flow depths determined.
    C. Locations indicated for A and B.
17. Proposed Treatment - adequate treatment of on-site flows including:
    A. Definition of required drainage facilities.
        1. Pond volume calculations including routing if applicable.
        2. Positive discharge of pond with required rate and outlet calculations.
        3. Pond emergency spillway calculations.
        4. Pond fencing required for depths greater than 18".
        5. Pond landscaping provisions and commitments.
        6. Pond maintenance provisions and commitments if required. See Drainage Covenant.
        7. Channel characteristics including flow depths and velocities.
        8. Storm sewer characteristics including capacity and hydraulic grade line calculations.
        9. Hydraulic characteristics of other storm drainage facilities listed in AMAFCA Resolution.
    B. Verification of adequacy of downstream systems
18. Rights-of-Way and Easements - delineation of R/W and/or easement configuration necessary to accommodate #17 above.
19. Nuisance Waters - adequate provisions for nuisance waters provided on-site

PLAN DRAWINGS:

20. Drafting Standards:
    A. North Arrow.
    ✓B. Scales - recommended engineering scales:
        1. 1" = 20' for sites less than 5 acres
        2. 1" = 50' for sites 5 acres or more
    ✓C. Legend - see DPM Manual, Vol. 2, tables 27.3a - 27.3d for recommended standard symbols
    D. Plan drawings size 24" x 36"
21. Site Description:
    ✓A. Vicinity map showing location of the development in relation to well-known landmarks, municipal boundaries and zone atlas map index number.
    ✓B. Legal description or current plat.
22. Bench Marks - location, description and elevation of the:
    ✓A. Albuquerque Control Survey Vertical Datum.
    ✓B. Temporary bench mark on-site.
23. Existing Conditions:
    A. Existing Contours - vertical intervals for contour maps shall not exceed the following: SEE THE FOLLOWING ITEM 24, 1, 2, 3
    B. Spot elevations adequately showing conditions on-site.
    C. Contours and spot elevations extending a minimum of 25' beyond property line.
    D. Identification of all existing structures located on-site or on adjacent property extending a minimum of 25' beyond property line with particular attention to retaining and garden walls.
    E. Identification of all existing drainage facilities located on-site or on adjacent property.
    F. Pertinent elevation(s) of structures and facilities defined in D and E above with Mean Sea Level designation.
    G. Indication of all existing easements and rights-of-way on or adjacent to the site with dimensions and purpose shown.
    H. Existing City top of curb and flow line elevations with Mean Sea Level designation.
24. Proposed Conditions:
    A. Proposed Contours - vertical intervals for contour maps shall not exceed the following:
        1. One foot intervals for slopes under 1% with sufficient spot elevations at key ponts to adequately show the site's topography.
        2. Two feet for slopes between 1% and 5%.
        3. Five feet for slopes in excess of 5%.
    B. Indication of all proposed easements and rights-of-way on or adjacent to the site with dimensions and purpose shown.
    C. City Engineer approved street and alley grades when site abuts a dedicated unpaved street or alley. These grades are available at no charge from the City Engineer's Office. An advance request will expedite your project. NOTE: There may be up to a 3 month wait to have the City Engineer supply grades. However, to expedite the plans, the City Engineer will review grades provided by an engineer.

D. Internal contributory drainage areas, including roof areas, outlined on plan.
E. City approved street and/or alley grades.
F. Flow lines defined by arrows and spot elevations with Mean Sea Level designation.
G. Pond(s) 100 year water surface elevation outlined and indicated on plan.
✓ H. Notes defining property line, asphalt sidewalks, planting areas, ponding areas, and all other areas whose definition would increase clarity.
✓ I. Finish building floor elevation(s) with complete Mean Sea Level designation.
J. Slopes (cut or fill) with height of less than 3', not steeper than 2:1. Slopes with height greater than 3', not steeper than 3:1.
K. Elevation of property line at least .33' above adjacent top of curb.
L. Retaining walls indicated for vertical grade changes greater than 18".
* ✓ M. Details of ponds, swales, rundowns, curb cuts, water blocks, emergency spillways, retaining walls, pond outlets, safety fences, slopes, and all other significant drainage structures with contours, cross-sections, spot elevations and supporting calculations when appropriate. All cross-sections must be drawn to standard engineering scale or adequately dimensioned.
N. The following phases of development outlined and numbered in sequential order of construction with a proposed erosion plan (see Erosion Control Plan Checklist)
   1. Rough grading
   2. Phased development
   3. Construction phase
   4. Permanent phase
O. Required spot elevations for the standard City drivepad.
✓ P. Proposed construction of private storm drain improvements within the City right-of-way.

COMMENTS:

* (M) PROVIDE COMPLETE CROSS-SECTIONS FOR THE TWO PROPOSED DISCHARGE SYSTEMS

# INFORMATION SHEET

PROJECT TITLE _____ TYPE OF SUBMITTAL _____

ZONE ATLAS PAGE NO. _____ CITY ADDRESS _____

LEGAL DESCRIPTION _____

ENGINEERING FIRM _____ CONTACT _____

ADDRESS _____ PHONE _____

OWNER _____ CONTACT _____

ADDRESS _____ PHONE _____

ARCHITECT _____ CONTACT _____

ADDRESS _____ PHONE _____

SURVEYOR _____ CONTACT _____

ADDRESS _____ PHONE _____

CONTRACTOR _____ CONTACT _____

ADDRESS _____ PHONE _____

DATE SUBMITTED _____

BY _____

SAMPLE

Use this Information Sheet when submitting the following:

Drainage report or plan, conceptual grading and drainage plan, engineer's certification plan, erosion plan and grading plan. Provide the information applicable to your submittal.

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY


LOCATION MAP

SCALE 1:300

FROM ZONE ATLAS
MAPS J-14 & K-14

Thornton A. Schwat
No. 4729
12-12-83

J-14 - D27

NOTICE TO CONTRACTOR

1. 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.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for City-Wide Utilities and Cash Paving No. 31"

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.

5. Backfill compaction shall be according to ARTERIAL street use.

C-1.58.

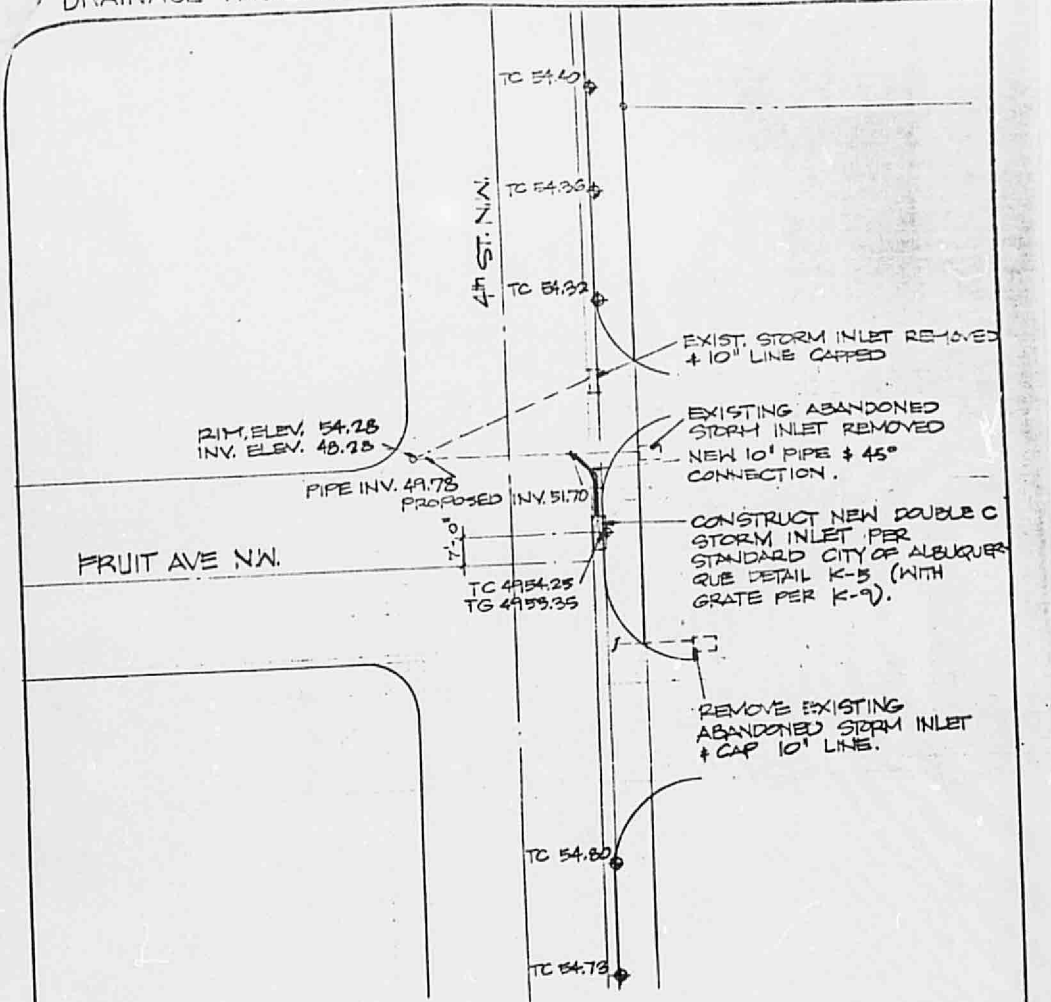
| APPROVALS | NAME | DATE |
|---|---|---|
| A.C.E./DESIGN | [illegible] | 13 DEC 83 |
| INSPECTOR | Ernest R. Vallejos | 1/31/84 |
| A.C.E./FIELD | W. F. McNamara | 1/31/84 |

TITLE: INSTALL STORM INLET
500 4TH ST. N.W.

PERMIT NO.
SHEET 1 OF 2

MAP NO. J-14

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY




ACS BRASS CAP 3-J14

MSL ELEV 4954.047

STORM INLET PLAN

SCALE: 1"=30'-0"

NORTH

REGISTERED PROFESSIONAL ENGINEER No. 4739 NEW MEXICO THOMAS D. SCHULTZ

12-12-83

| APPROVALS | NAME | DATE | TITLE: INSTALL STORM INLET 500 4TH STREET N.W. | |
|---|---|---|---|---|
| A.C.E./DESIGN | [illegible] | 15 DEC 83 | | |
| INSPECTOR | [illegible] B. Vallejos | 11/30/84 | PERMIT NO. | MAP NO. J-14 |
| A.C.E./FIELD | [illegible] | 1/31/84 | SHEET 2 OF 2 | |

**City of Albuquerque**
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 2, 1982

Mr. Jacob A. Vigil, PE
Boyle Engineering Corp.-Suite D
3939 San Pedro NE
Albuquerque, New Mexico 87110

Ref: First New Mexico Bankshare Building
(J14-D27)

Dear Mr. Vigil:

The Hydrology Section of the City Engineers Office has reviewed your drainage and grading plan. The plan is found to be in compliance with the predesign meeting and City Ordinances. Upon approval by the Design Section of the private drainage improvement in City right-of-way plans and inclusion of your grading plan in the construction drawing, we will sign the approval for a building permit.

Due to complexity of the underground facilities and the co-ordination difficulties, we will require the developer's engineer to certify the private portion of the underground drainage pipes, to release the Certificate of Occupancy. Please co-ordinate with construction to allow the certification of these improvements.

Please contact me if you require any further information on this matter.

Sincerely,

Andre Houle, PE
Civil Engineer/Hydrology

AH/el

cc: ✓Drainage File
Reading File

**Boyle Engineering Corporation**

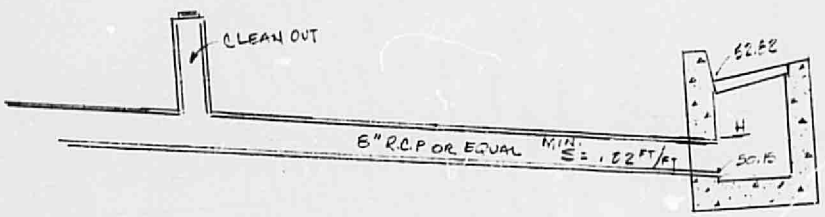
BY J.A.V. DATE 8/6/82 SUBJECT ANR DRAINAGE REPORT SHEET NO. 3 OF
CHKD. BY DATE JOB NO.

B. CONT'D. TRY 8" DIA. PIPE $Q = 1.57$ CFS $V = 4.5$ fps
$L = 80'$ TO CLEAN OUT

$$H_L = (0.5 + 1.0 + 3.55)\frac{V^2}{2g}$$

$$H_L = 1.59$$

$$HW = 50.15 + 1.59 - 0.67$$
$$= 52.41 < 55.75 \text{ GROUND FLOOR ELEV.}$$




$$V = \frac{1.486}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} = \frac{0.349}{2.10}$$

$S = 2\%$ MIN $\qquad V = \frac{1.486}{.015}(0.17)^{2/3}(.02)^{1/2}$ $\qquad R = 0.17$

$$V = 4.30 \text{ CFS.}$$

$$Q = AV = 0.349 \times 4.30$$
$$= 1.50 \text{ CFS} \quad \text{O.K.}$$

Boyle
Engineering
Corporation
consulting engineers
Suite D
3939 San Pedro N.E.
Albuquerque, New Mexico 87110
505/883-7700

# DRAINAGE REPORT
# FIRST NEW MEXICO BANKSHARE BUILDING
# FOURTH STREET AND ROMA AVENUE
# ALBUQUERUQE, NEW MEXICO

REVISED AUGUST, 1982

JULY, 1982

BOYLE ENGINEERING CORPORATION

TABLE OF CONTENTS

DRAINAGE REPORT

FIRST NEW MEXICO BANKSHARE BUILDING

FOURTH AND ROMA

## I. PURPOSE

The purpose of this report is to formulate a comprehensive drainage study for the Project area and to show that the development of the area does not restrict drainage in a manner to cause damage to adjacent land owners.

## II. SCOPE

The report is limited to run off originating within the development. General engineering procedures are presented for the calculation of storm runoff.

## III. LOCATION

The site is located on the Northeast quadrant of the intersection of Fourth Street and Roma Avenue in downtown Albuquerque (Map J-14). The project area is contained in Volume 1 of the Albuquerque Master Drainage Study and outside of the 10 year and 100 year flood hazard areas.

## IV. EXISTING DRAINAGE

The Project area is presently served with a storm drainage system consisting of a 36 inch reinforced concrete pipe line with drop inlets and manholes on Roma Avenue and likewise an 18 inch reinforced concrete pipe line with drop inlets and manholes on Fourth Street. The existing drainage system is adequate to handle the drainage from the Project and is outside of the 10 and 100 year flood hazard.

V. PROPOSED DRAINAGE PLAN

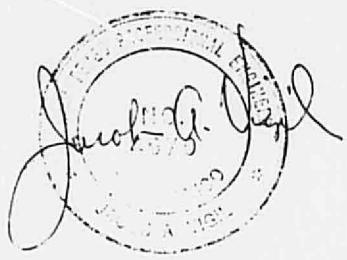
The proposed drainage plan is to construct a single catch basin, Type "D" (see plan), 36 feet north of Roma Avenue along the flow line of the south entrance to the Project. The catch basin will be connected to the 36" diameter storm sewer on Roma with a 8" inch P.V.C. pipe lateral.

The roof drains from the new construction will be connected with a new 8" P.V.C. lateral directly into the catch basin located on the northeast quandrant of Roma Ave. and Fourth Street. Discharging directly into the catch basin eliminates the nuisance that would occur if discharged directly into the street.

A ten inch water block will be constructed on the east side of Fourth Street to prevent water from entering the down ramps servicing the underground parking.

VI CONCLUSIONS AND RECOMMENDATIONS

On the basis of this report it can be shown that the Project can be developed as proposed without detrimental effects to adjacent landowners. The proposed drainage improvements enhances the overall drainage handling plan for the area.



31,500 s.f.
0.72 Acres.

**Boyle Engineering Corporation**

BY JAV DATE 5/16/86 SUBJECT Area Drainage Report SHEET NO. 1 OF
CHKD. BY DATE JOB NO.

I. COMPUTE RUNOFF:
TIME OF CONCENTRATION = 10 MIN. (Tc IS LESS THAN 10 MIN., USE 10 MIN.)
COEFFICIENT OF RUNOFF = 0.95 (ROOFS & PAVED AREAS) ✓

A. CONTRIBUTING AREA TO DROP INLET = 6957 FT² OR 0.16 ACRES
Q = CIA I = 5.0 IN/HR 100 YR-FREQ.

Q = 0.95 (5.0)(0.16)
= 0.76 CFS
ASSUME 1.5 CFS ADDITIONAL FLOW FROM ROOF DRAINS OF ADJACENT PROPERTY

$Q_T$ = 0.76 + 1.5
= 2.26 CFS

B. CONTRIBUTING AREA FROM ROOF DRAINS = 14,368 FT² OR 0.33 ACRES ✓
Q = CIA
= 0.95 (5.0)(0.33)
= 1.57 CFS

II. DESIGN OF DRAINAGE STRUCTURES.

A. DESIGN OF DROP INLET: Q = 2.26 CFS
INVERT OF 36" PIPE = 43.89
℄ OF PIPE (SPRING LINE) = 43.89 + 1.5
= 45.39 FT.

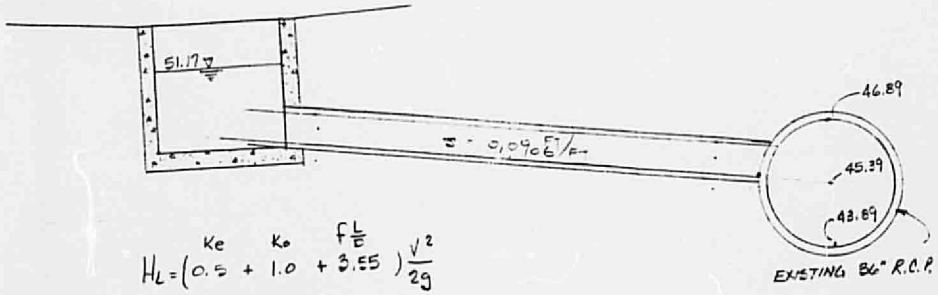
INVERT OF PIPE @ INLET = 49.74

SLOPE $\frac{49.74' - 45.39'}{50 FT} = .087 FT/FT$

CHECK INLET CONTROL FOR 8" PIPE:
$Q = Ca\sqrt{2gh}$
$= (0.80)(.349)\sqrt{2(32.2)(1.1)}$
= 2.35 CFS ✓
HWL = 49.74 + .33 + 1.1 ✓
= 51.17 O.K.

**Boyle Engineering Corporation**

BY J.A.V. DATE 8/6/82 SUBJECT ANB DRAINAGE REPORT SHEET NO. 2 OF ____
CHKD. BY ____ DATE ____ JOB NO. ____




$$H_L = \left(\underset{Ke}{0.5} + \underset{Ko}{1.0} + \underset{f\frac{L}{D}}{3.55}\right)\frac{V^2}{2g}$$

$$= (5.05)\frac{(6.48)^2}{64.4}$$

$H_L = 3.29$

$HW = 46.89 + 3.29$
$= 50.18 < 51.17$ O.K.

B. DESIGN OF ROOF DRAIN PIPE: $Q = 1.57$ CFS $L = 60'$

TRY 6" DIA. PIPE

AREA $= 0.196\ FT^2$

$V = \frac{Q}{A} = \frac{1.57}{0.196}$

$V = 8.01$ fps O.K.

$H_L = (0.5 + 1.0 + 6.37)\frac{8^2}{64.4}$

$H_L = 9.81$ FT.

$HW = 9.81 + 46.89$

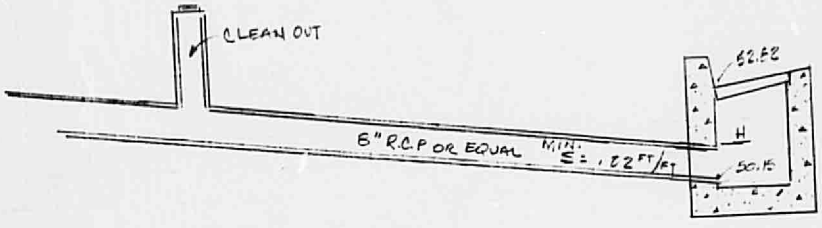
$= 56.70$ GREATER THAN GROUND FLOOR ELEVATION AND UNDER PRESSURE TRY LARGER SIZE PIPE.

B. CONT'D. TRY 6" DIA. PIPE $Q = 1.57$ CFS
$L = 80'$ TO CLEAN OUT $V = 4.5$ fps

$$H_L = (0.5 + 1.0 + 3.55)\frac{V^2}{2g}$$

$$H_L = 1.59$$

$$HW = 50.15 + 1.59 - 0.67$$
$$= 52.41 < 55.75 \text{ GROUND FLOOR ELEV.}$$




$$V = \frac{1.486}{n} R^{2/3} S^{1/2} \qquad R = \frac{A}{P} = \frac{0.349}{2.10}$$

$S = 2\%$ MIN $\qquad V = \frac{1.486}{.015}(0.17)^{2/3}(.02)^{1/2}$ $\qquad R = 0.17$

$$V = 4.30 \text{ CFS}$$

$$Q = AV = 0.349 \times 4.30$$
$$= 1.50 \text{ CFS} \quad \text{O.K.}$$

**Boyle Engineering Corporation**

consulting engineers

Suite D
3939 San Pedro N.E.
Albuquerque, New Mexico 87110

505 883 7700

August 2, 1982

Stevens, Mallory, Pearl & Campbell
115 Amherst Dr.
Albuquerque, New Mexico 87106
Attn: Glenn Fellows

Dear Sir:

Transmitted herewith is the Drainage Report for the First New Mexico Bankshare Building located on the Northeast corner of Roma and Fourth Street, N.W. in downtown Albuquerque. The recommencations in this report are in accordance with the requirements of the City of Albuquerque and the Albuquerque Metropolian Arroyo Flood Control Authority.

Thank you for the opportunity of serving you in this project.

Respectfully submitted,

BOYLE ENGINEERING CORPORATION

Jacob A. Vigil, P.E.
Principal Civil Engineer

Jacob A. Vigil

JAV/mw
Enclosure