HYDROLOGY K19/D29 1 PLAN

K19/D29

1 Plan

Address 121 Tennessee Engr/Arch

Plans Approved 4/8/83 Cond.

Comments: K19-D2G

Inspection Requested Contractor

Appr. Disappr. 30 Day Temp.

Comments: 7-1-83

Reinspection and/or comments:

INFORMATION SHEET

PROJECT TITLE Causey Auto Service TYPE OF SUBMITTAL revised drainage

ZONE ATLAS PAGE NO. K19-D29 CITY ADDRESS 121 Tennessee N.E.

LEGAL DESCRIPTION Mesa Verde addition Lots 35,36,37,38,39,40 Blk 2

ENGINEERING FIRM _____ CONTACT _____

ADDRESS _____ PHONE _____

OWNER Floyd + Paul Causey CONTACT Floyd Causey

ADDRESS _____ PHONE 2684586 2681586

ARCHITECT _____ CONTACT _____

ADDRESS _____ PHONE _____

SURVEYOR _____ CONTACT _____

ADDRESS _____ PHONE _____

CONTRACTOR _____ CONTACT _____

ADDRESS _____ PHONE _____

PRE-DESIGN MEETING:

___ YES
___ NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
X OTHER Requirments for (SPECIFY) proposed edition in drainage

DATE SUBMITTED: 5-8-84

BY: Floyd Causey

Pre-Design Investigation
(Additions)

DATE 5-10-89

ADDRESS 121 Tennessee N.E. ZONE ATLAS # K19-D29

LEGAL DESCRIPTION Mesa Verde Addition Lot 35 Thru 40 Blk 2

OWNER Floyd & Rae Causey.

ARCHITECT/ENGINEER

LOT SIZE

ZONING

PROPOSED DEVELOPMENT Addition.

	YES	NO	NA	COMMENTS
FLOOD HAZARD AREA		✓		
PART OF AN APPROVED REPORT	—			File K19-D29
CONSTRUCTION PLANS ON MICRO-FILM				
FIELD INSPECTION	✓			

COMMENTS:

Addition on West Side of Existing Building
Property Slopes to the West Thru chain
Link fence.

DRAINAGE REQUIREMENTS:

Owner advised me that he would Run gutter
System on new addition and discharge on Existing
Asphalt. See attached Plan.
No Additional Requirements Needed
Steve R. Cling 5-10-89

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

K19 - D29

April 8, 1983

August F. Mosimann
Engineering Associates, Inc.
1840 Lomas Blvd. NE
Albuquerque, N.M. 87106

RE: CAUSEY AUTOMOTIVE DRAINAGE REPORT

Dear Auggie:

The referenced drainage report is approved based on your revised submittal received by our office on April 5, 1983.

If I can be of any further help, please call.

Sincerely,

Jim Fink
Asst. Hydrology Engineer

JF/tsl

RECEIVED
APR 0 5 1983
CITY ENGINEER

James Innis
August F. Mosimann

engineering associates, inc.

April 5, 1983

1840
Lomas Boulevard, N E
Albuquerque, N. M.
87106
(505) 242-7522

Jim Fink
Acting Princ. Asst./City Engineer
Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Causey Automotive Site Plan

Dear Jim,

In this letter I am addressing the items we discussed in our meeting this morning on the above referenced project.

1. The discharge pipe invert elevation which was not shown on the grading plan has been added. It is 65.20 ft. Two copies of the revised grading plan are included with this letter.

2. The maximum pond volume we are capable of providing is 802 Cu.Ft. This is 59% of the 100 year detention volume that would be needed if the discharge through the 4 in. diameter pipe is 0.24 CFS. The emergency spillway will take care of the excess.

3. As you requested I re-calculated the spillway capacity using a weir coefficient of 2.85 in the broad crested weir equation. That calculation is:

$$Q = C \times L \times H^{3/2} = 2.85 \times 20 \times 0.1^{3/2} = 1.80 \text{ CFS}$$

The peak 100 year runoff rate is 1.05 CFS

If you have any questions please call.

Sincerely,

August F. Mosimann for
Engineering Associates, Inc.

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

Drainage Report

for

Causey Auto Addition

Jan 31, 1983

DESCRIPTION

EXISTING SITE FLOWS

The site is located on the west side of Tennessee N.E. between Chico and Central. (Legal Description Mesa Verde Addition, Block 2 Lots 35, 36, 37, 38, 39, 40.) It includes the existing shop. The site has paving and undeveloped area.

EXISTING SITE DRAINAGE

The runoff divides itself into two areas as shown on the attached sheet entitled "EXISTING DRAINAGE AREAS"

AREA 1

This area includes 4546 Sq. Ft. of paving and sidewalk and 440 is landscaping. Runoff flows into Tennessee Street.

The area is 4986 Sq. Ft. (.1145 Acres)
The impervious portion is 91%
The soil classifacation is "B" MWA
(Soil Survey Sheet 31)
The C factor is .88
(Plate 22.2 C-1)
The runoff length is 55 ft.
The slope is .84%
The Concentration time is .0078x(55^.77)/(.84^.385)=1.7 min
(10 min minimum)
The average velocity is 55/(10x60)=.09 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.88x5.16x.1145=.52 cfs
The 10 year flow rate is Q=CxIxA=.88x3.4x.1145=.34 cfs
The 100 year volume is V=CxPxA=.88x2.4x4986/12=877.9 cu. ft.
The 10 year volume is V=CxPxA=.88x1.58x4986/12=577.9 cu. ft.

RECEIVED
FEB 07 1983
ENGINEERING

James Innis
August F. Mosimann

engineering associates, inc.

K19-D29

March 22, 1983

1840
Lomas Boulevard, N E
Albuquerque, N. M.
8710 6
(505) 242-7522

Mr. Brian Burnett
Civil Engineer/Hydrology
City of Albuquerque
P O Box 1293
Albuquerque, New Mexico 87103

RECEIVED
MAR 23 1983
ENGINEERING

Re: Causey Auto Addition

Dear Brian,

This letter is a reply to your comments made in your letter dated Feb. 11, 1983 regarding the above referenced project. I received the letter from Mr. Jim Fink in a conference at your office on March 8, 1983.

We have made several modifications to the grading plan as a result of these comments and are including two copies of the plan for your records.

1. There are no offsite flows affecting the site. A residence is located toward the north of the site. All of the surrounding areas are lower than the Causey building and therefore do not contribute any runoff. I am enclosing a copy of our survey with this letter.
2. In discussing the berm Mr. Fink and I decided that the berm should not be incorporated in the construction. The existing flow characteristics in the undeveloped portion to the rear of the building will be left undisturbed.
3. The proposed construction and the existing construction both have flat roofs. Neither roof has been sized to support any load other than the code required Live Loads. Therefore we have utilized the parking area to control the discharge rather than the roofs. Several slight modification's have been made in the parking area to insure that positive discharge into Tennessee St. occurs.
4. The revisions dates have been included on the plan.

Thank you. If any furthur questions arise please call me.

Sincerely,

August Mosimann

August Mosimann for
Engineering Associates, Inc.

AM/js

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

INFORMATION SHEET

PROJECT TITLE Causey Auto Addition

TYPE OF SUBMITTAL Grading Plan and Drainage Report

D29

ZONE ATLAS PAGE NO. K-19 CITY ADDRESS 121 Tennessee N.E.

LEGAL DESCRIPTION Lots 35,36,37,38,39, and 40,Block 2, Mesa Verde Addition

ENGINEERING FIRM Engineering Associates, Inc. CONTACT August Mosimann,P.E.

ADDRESS 1840 Lomas,N. E., Albuq. PHONE 242-7522

OWNER Floyd or Paul Causey CONTACT Floyd or Paul Causey

ADDRESS 121 Tennessee N. E. PHONE 268-4586

ARCHITECT John Throne Architect CONTACT John Throne

ADDRESS 521 San Clemente N.W. PHONE 345-6762

SURVEYOR Southwest Surveying, Inc. CONTACT Frank Wilson

ADDRESS 215 Marble N. W. PHONE 247-4444

CONTRACTOR CONTACT

ADDRESS PHONE

DATE SUBMITTED Feb. 4, 1983

BY August F. Mosimann,P. E.
for
Engineering Associates, Inc.

RECEIVED
FEB 07 1983
ENGINEERING

AREA #2

The portion includes a 4200 Sq. Ft. building, 250 Sq. Ft. of undeveloped and 4982 Sq. Ft. of paving. The total area is 9432 Sq. Ft. of which 9182 is impervious. Runoff will be collected into a detention basin and drain into Tennessee St.

The area is 9432 Sq. Ft.(.2165 Acres)
The impervious portion is 97%
The soil classification is "B", MWA
(Soil Survey Sheet 31)
The C Factor is .94

(Plate 22.2 C-1)
The runoff length is 78 ft.
The slope is .4%
The Concentration time is .0078x(78^.77)/(.004^.385)= 1.87 min.
(10 min minimum)
The average velocity is 78/(10x60)=.13 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.94x.5.16x.2165=1.05 cfs
(Plate 22.2 D-1)
The 10 year flow rate is Q=CxIxA=.94x3.40x.2165=.69 cfs.
The 100 year volume is V=CxPxA=.94x2.4x9432/12=1773 cu. ft.
The 10 year volume is V=CxPxA=.94x1.58x9432/12=1167 cu ft.

The detention basin will have a volume of 1150 Cu. Ft. with a 4 in diameter orifice outlet and an emergency spillway. The orifice will allow a peak discharge of

Q=CxAxSqr(2xgxh)

=0.61x0.087xSqr(2x32.2x0.33)=0.24cfs

The volume requirements for each two minute interval of the 100 year storm is included with this report. The maximum volume requirement is 1148 Cu. Ft.
The emergency spillway is 20 ft. wide and has a depth of flow over the crest of 0.1 ft. It's capicity is

Q=CxLxH^(3/2)

=3.27x20x0.1^(3/2)=3.10 cfs

High

AREA 2

This area includes the 2000 Sq. ft. building, 2982 Sq Ft of paving, and 11,680 Sq. Ft. of undeveloped land. Flow is westerly across the back property line to ajacent property.

The area is 16662 Sq. Ft. (.3825)
The impervious portion is 30%
The soil classifacation is "B" MWA
(Soil Survey Sheet 31)
The "C" factor is .46
(Plate 22.2 C-1)
The runoff length is 145 ft.
The slope is 2%
The Concentration time is .0078x(145^.77)/(.02^.385)=1.62 min.
(10 min minimum)
The average velocity is 145/(10x60)=.24 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.46x5. 16x0.3825.=.91 cfs
The 10 year flow rate is Q=CxIxA=.46x3.4x.3825= .60. cfs.
The 100 year volume is V=CxPxA=.46x2.4x16662/12=1533 cu. ft.
The 10 year volume is V=CxPxA=.46x1.58x16662/12=1009 cu ft.

AREA 3

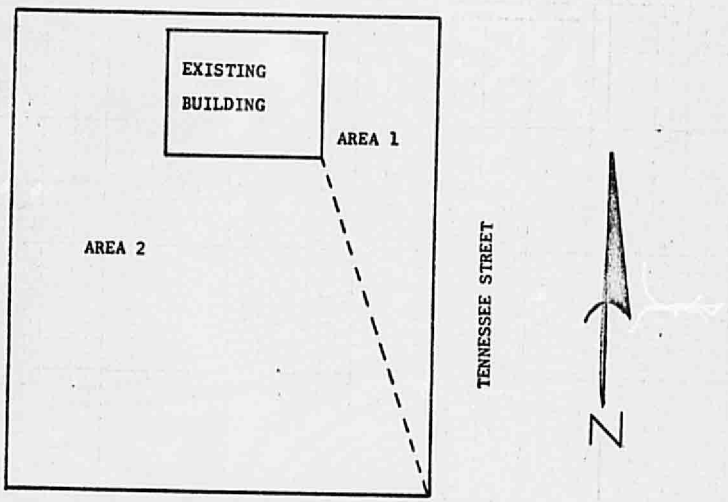
This area includes 7230 Sq. Ft. (.1666 Acres) of undeveloped land.

The impervious portion is 0%
The soil classification is "B", MWA
(Soil Survey Sheet 31)
The "C" factor is .34
(Plate 22.2 C-1)
The runoff length is 75 ft.
The slope is .1%
The Concentration time is .0078x(75^.77)/(.001^.385)=1.27 min
(10 min minimum)
The average velocity is 75/(10x60)=.12 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.,34.16x0.1660=.29 cfs
The 10 year flow rate is Q=CxIxA=.34x3.4x.1660=.19 cfs.
The 100 year volume is V=CxPxA=.34x2.4x7231/12=492 cu. ft.
The 10 year volume is V=CxPxA=.34x1.58x7230/12=324 cu ft.

The 100 year volume will be permanently retained on site. A basin is shown on the site plan with a berm protecting the adjacent property.

CHKD. BY_____ DATE_____ SUBJECT_____ SHEET NO_____
CLIENT_____ JOB NO._____

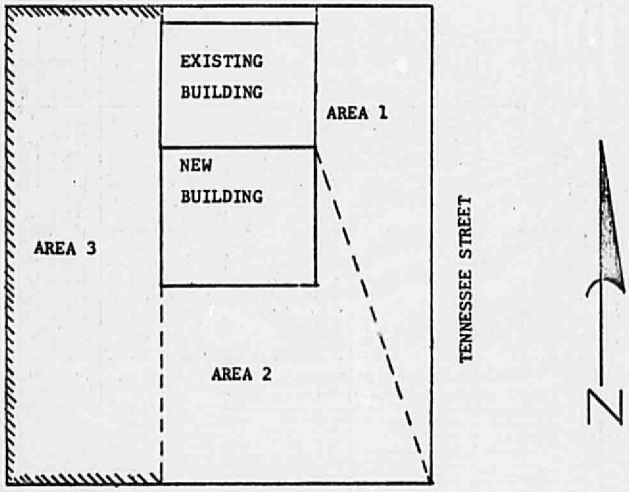
engineering associates, inc. • 1801 Lomas Blvd., NW • Albuquerque, NM 87104 • (505) 242-7522



EXISTING DRAINAGE AREAS

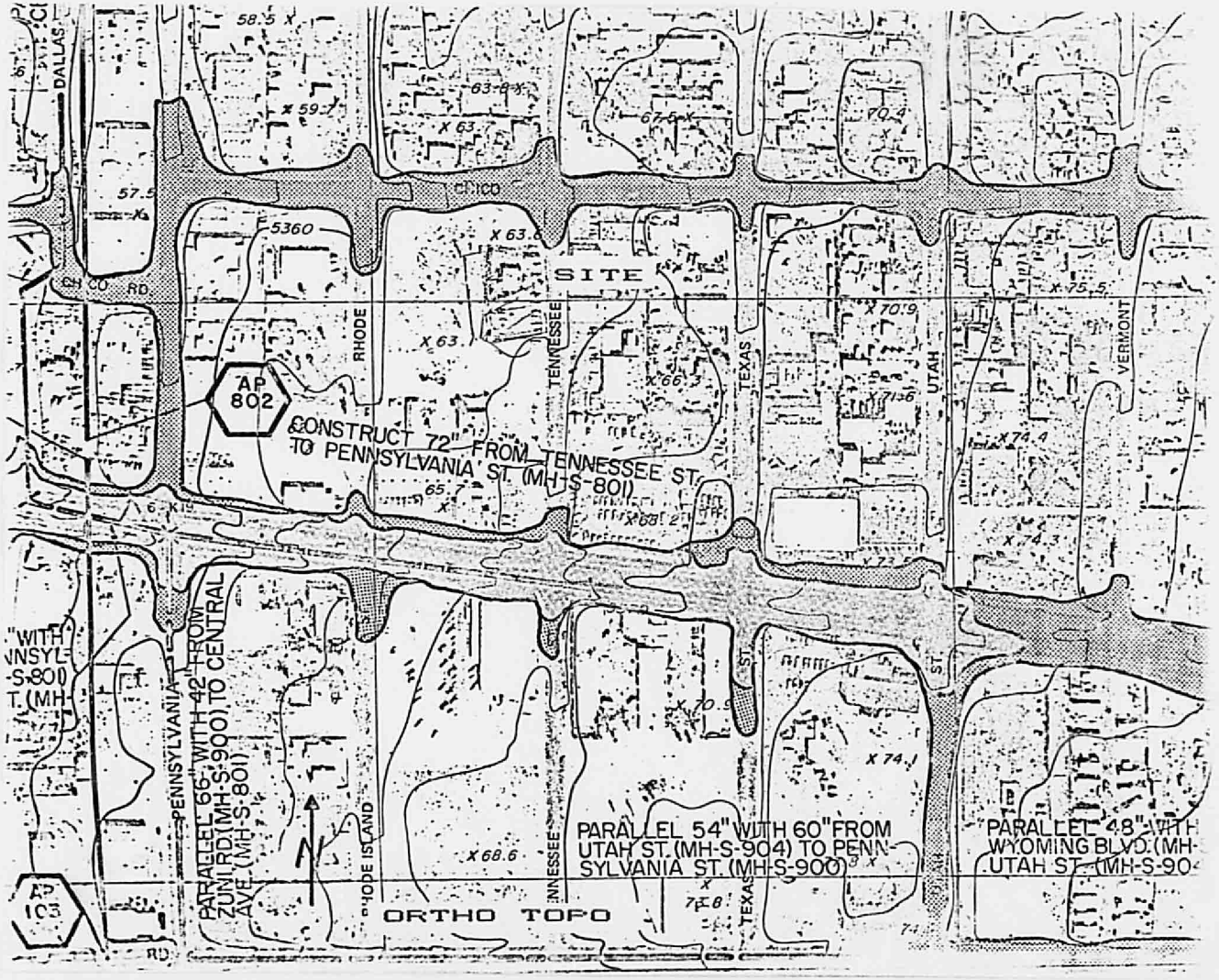
DRAPHIX INC. 11978

engineering associates, inc. • 1801 Lomas Blvd., NW • Albuquerque, NM 87104 • (505) 242-7522



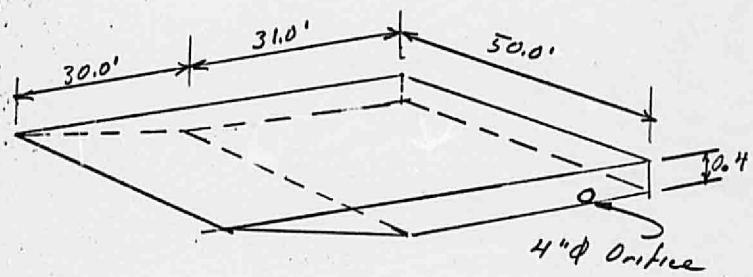
NEW DRAINAGE AREAS

DRAPHIX INC. 11978


SITE
AP 802
CONSTRUCT 72" FROM TENNESSEE ST. TO PENNSYLVANIA ST. (MH-S-801)
PARALLEL 66" WITH 42" FROM ZUNI RD. (MH-S-900) TO CENTRAL AVE. (MH-S-801)
PARALLEL 54" WITH 60" FROM UTAH ST. (MH-S-904) TO PENNSYLVANIA ST. (MH-S-900)
PARALLEL 48" WITH WYOMING BLVD. (MH-
UTAH ST. (MH-S-90
AP 103
ORTHO TOPO
PENNSYLVANIA
RHODE ISLAND
TENNESSEE
TEXAS
UTAH
VERMONT
CHICO
CHICO RD.
DALLAS
5360

CHKD. BY_____ DATE_____ CLIENT_____ JOB NO._____

engineering associates, inc. • 1801 Lomas Blvd., NW • Albuquerque, NM 87104 • (505) 242-7522



620 + 300 926

Volume = 31x50x.4 + 30x50x.4/2 = 1150 Cu Ft

– 230 ft³

DETENTION BASIN

(Joins sheet 21)
MENAUL BLVD
Cortez School
Pius X High School
Monroe Jr High School
Inez School
Neighborhood Church
Mark Twain School
Temple Church
ALBUQUERQUE
County Seat
State Fairground
La Mesa School
Kadesh Church
Highland Church
Highland High School
Emerson School
Mary Francis School
East Mesa Church
Holy Ghost School
Wilson Jr High School
Wherry School
SITE
NORTH
SANDIA MILITARY RESERVATION
Army Reserve Training Center
Los Alros Park
Los Alros Church
LOMAS
T. 10 N.
(Joins sheet 32)
(Joins sheet 41)
BASE
2 Miles
1000
2000
3000
4000
5000

SOIL SURVEY

OFF SITE FLOWS

There are no offsite flows affecting the project. Flows from Tennessee St. are intercepted by the curb and directed north.

PROJECT DESCRIPTION

The project will include a 2200 SQ. FT. addition to the existing building, 2440 Sq. Ft. of new paving, and 132 Sq.Ft. new landscaping. Developed drainage will be divided into three areas as outlined on the attached sheet entitled "NEW DRAINAGE AREAS"

DEVELOPED SITE DRAINAGE

No new grading will be provided in Area 1. Runoff will be the same as it was before development. However, a downstream flooding condition exists to the north of the site in Tennessee St. and Chico St. The development threfore will incorporate a detention basin which will restrict flow into Tennessee St. The grading of the undeveloped land at the West end will include a berm along the west property line.

AREA #1

This portion includes 4414 Sq. Ft. of existing paving and 440 Sq. Ft. of existing landscaping with 132 Sq. Ft. of new landscaping. Runoff will be left essentially as it was before development.

The area is 4986 Sq. Ft.(.1145 Acres)
The impervious portion is 89%
The soil classification is "B" MWA
(Soil Survey Sheet 31)
The "C" factor is .86
(Plate 22.2 C-1)
The runoff length is 55 ft.
The slope is .84%
The Concentration time is .0078x(55^.77)/(.038^.385)=1.07 min
(10 min minimum)
The average velocity is 55/(10x60)=.09 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA.86X5.16x.1145=.51 cfs
The 10 year flow rate is Q=CxIxA=.86x3.4x.1145=.33 cfs.
The 100 year volume is V=CxPxA=.86x2.4x4986/12=857 cu. ft.
The 10 year volume is V=CxPxA=..87x1.58x4986/12=564 cu ft.

James Innis
August F. Mosimann

RECEIVED
JAN 25 1983
CITY ENGINEER

engineering associates, inc.

1801
Lomas Boulevard, NW
Albuquerque, N. M.
87104
(505) 242-7522

Mr. Jim Fink, Civil Engineer, Hydrology
City of Albuquerque
P O Box 1293
Albuquerque, New Mexico 87103

January 24, 1983

Re: Causey Auto Addition - 121 Tennessee Street

Dear Jim,

This letter is a synopsis of our meeting on January 21, 1983 regarding drainage for the above referenced project.

The existing site consists of a building and some paving. Drainage divides into two basins; one drains into Tennessee St. & the other drains toward the back property line unto adjacent property.

It was decided that an acceptable drainage scheme would incorporate the following features:

1. The portion of the existing site which currently is draining into Tennessee St. will continue to drain into Tennessee St.

2. Runoff from the existing building, the addition, and the paved area which does not drain into Tennessee St. will be collected into a ~~retention~~ detention basin which will drain into Tennessee St. at a controlled rate.

3. The undeveloped land at the back of the site will be graded to ~~detain~~ retain its entire 100 year runoff volume. A berm will be provided at the rear porperty line to prevent any runoff into adjacent land.

If you feel that this scheme should be changed in any way please let me know. We are working on the drainage plan at this time and it should be submitted for your review shortly.

Sincerely,

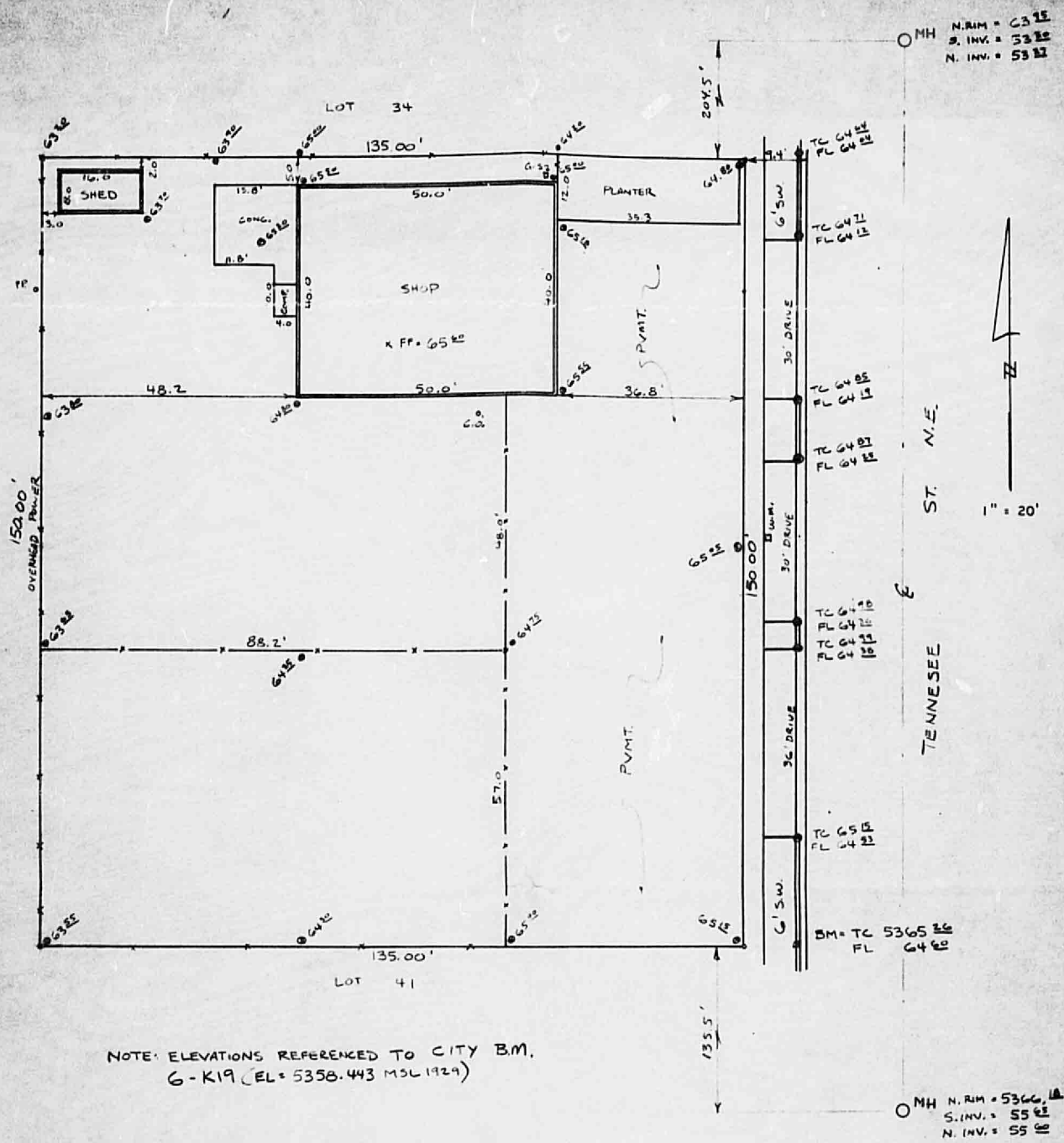
August F. Mosimann

August F. Mosimann for
Engineering Associates, Inc.

cc: John Throne
Andre' Houle
Fred Aguirre

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

AFM/js



NOTE: ELEVATIONS REFERENCED TO CITY B.M.
6-K19 (EL = 5358.443 MSL 1929)

LEGAL DESCRIPTION

Lots numbered Thirty-five (35), Thirty-six (36), Thirty-seven (37), Thirty-eight (38), Thirty-nine (39) and Forty (40), Block numbered Two (2) MESA VERDE, an Addition to the City of Albuquerque, New Mexico, as the same are shown and designated on the plat thereof, filed in the office of the County Clerk of Bernalillo County, New Mexico, on November 17, 1939.

SURVEYOR'S CERTIFICATE

I, Franklin E. Wilson, licensed under the laws of the State of New Mexico, do hereby certify that this plat was prepared by me or under my direction from notes of an actual field survey, and is true and correct to the best of my knowledge and belief.

This certificate is executed at Albuquerque, New Mexico on this 10th. day of January 19 83.

Franklin E. Wilson

Franklin E. Wilson, New Mexico Licensed Surveyor No. 6446
SOUTHWEST SURVEYING CO., INC. 215 MARBLE NW, ALBUQUERQUE, NM 87102
247-4444

REGISTERED LAND SURVEYOR STATE OF NEW MEXICO 6446 FRANKLIN E. WILSON

T-20N R1E, SEC. 19

0 5 1 4