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

August 14, 1991

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe Street, NE
Albuquerque, New Mexico 87108

RE: DRAINAGE PLAN FOR AN ADDITION TO AUTO ZONE @ 50TH & CENTRAL
(K-11/D41) REVISION DATED AUGUST 7, 1991

Dear Mr. Arfman:

Based on the information provided on your submittal of August 7, 1991, the above referenced plan is approved for Building Permit.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

xc: Alan Martinez

BJM/bsj
(WP+2848)

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AUTO ZONE ADDITION ZONE ATLAS/DRNG. FILE #: K-11 / D41

LEGAL DESCRIPTION: LOTS 5 & 6 OF WEST ALBUQUERQUE BUS. ADDITION

CITY ADDRESS: 50TH ST. & CENTRAL AVE

ENGINEERING FIRM: ISAACSON & ARFMAN, P.A. CONTACT: FRED C. ARFMAN

ADDRESS: 128 MONROE ST. N.E PHONE: 268-8828

OWNER: AUTO ZONE CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: AUTO ZONE CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: WILLIAM PETTIT CONTACT: BILL PETTIT

ADDRESS: _____ PHONE: 268-6431

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

____ YES

__X__ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

__X__ DRAINAGE PLAN (REV. 3-5-91)

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

__X__ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

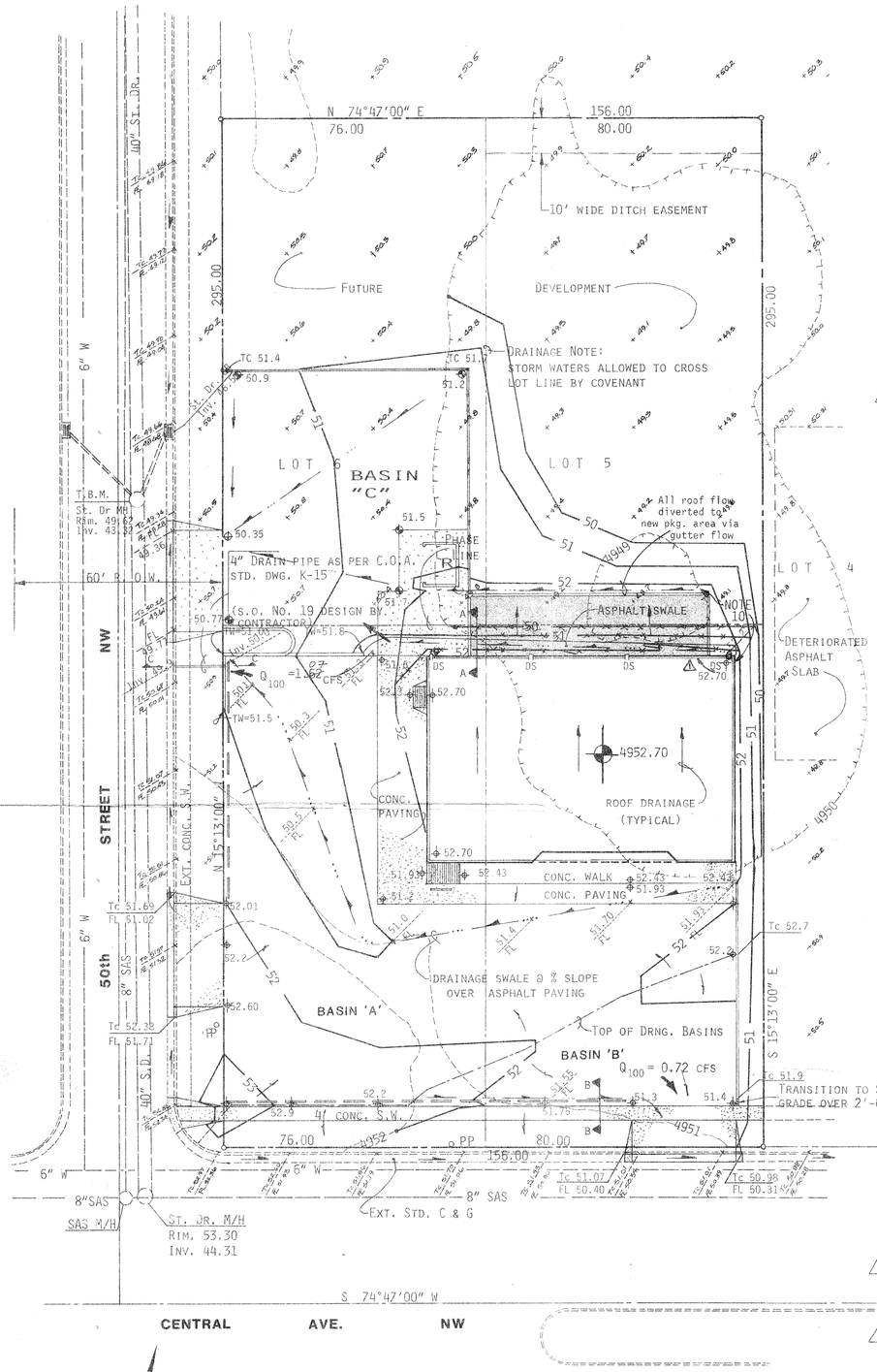
____ GRADING/PAVING PERMIT APPROVAL

____ OTHER _____ (SPECIFY)

RECEIVED
AUG 7 1991
HYDROLOGY DIVISION

DATE SUBMITTED: AUGUST 7, 1991

BY: FRED ARFMAN FOR ISAACSON & ARFMAN

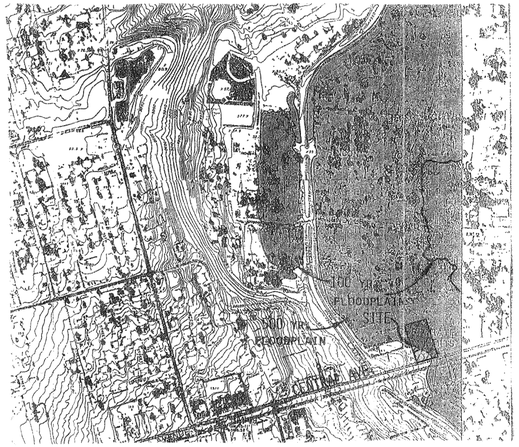


SCALE
1"=20'

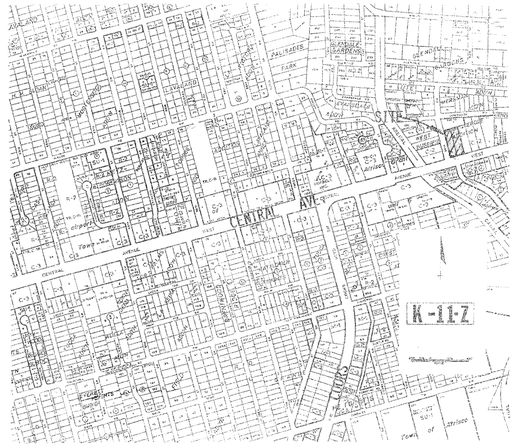
SITE DRAINAGE EXHIBIT

LEGEND

- EXISTING SPOT ELEVATION
- EXISTING CONTOUR (1 FT. INTERVAL)
- EXISTING TOP OF CURB & FLOWLINE ELEVATIONS
- 40" ST. DR. — 40" DIA. STORM DRAIN (EXISTING)
- FLOW DIRECTIONAL ARROW
- DRAINAGE SWALE
- 52.05 — FINISHED SPOT ELEVATION
- 52 — FINISH CONTOUR
- DS — ROOF DOWN SPOUT
- 50.0 FL — FLOW LINE SPOT ELEVATION
- Tc 51.69 / FL 51.02 — FINISH TOP OF CURB AND FLOWLINE ELEVATIONS @ NEW DRIVEPADS
- 1 — PHASE TWO BUILDING ADDITION



FLOOD PLAIN MAP



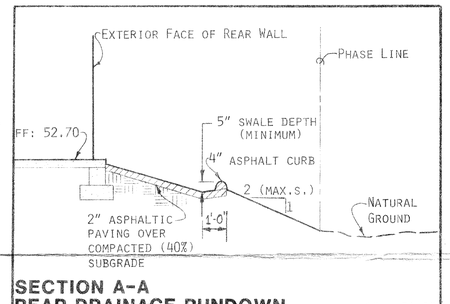
VICINITY MAP

NOTES

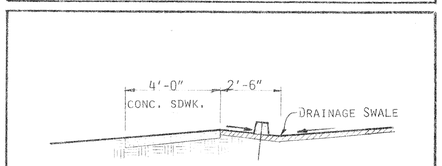
1. LEGAL DESCRIPTION: LOTS 5 & 6 OF WEST ALBUQUERQUE BUSINESS ADDITION.
2. BENCH MARK: NM 45-1A: STATION IS LOCATED IN THE ISLAND AT THE SE QUADRANT OF THE INTERSECTION OF CENTRAL AVE. AND COORS BLVD SOUTH. 3/4" ALUM. CAP SET IN CONCRETE STAMPED "ACS NM 45-1A, 1984"; ELEV. 5016.74.
3. TEMPORARY BENCH MARK: NORTH RIM ELEV. OF STORM DRAIN MANHOLE COVER LOCATED WITHIN 50TH ST. APPROX. 232 FT. NORTH OF CENTRAL AVE. CENTERLINE. ELEV. 5049.62
4. SITE SURVEYS (TOPIGRAPHICAL & BOUNDARY) BY WILSON & COMPANY, FEB. 19, 1986.
5. SITE IS NOT WITHIN ANY RECOGNIZED FLOOD HAZARD OR FLOODPLAIN AREA AS DETERMINED BY THE CITY OF ALBUQUERQUE OR THE FEMA MAP No. 27.
6. WATERSHED SOILS: SITE SOILS ARE CLASSIFIED AS AGUA WITH A HYDROLOGIC SOIL GROUP OF 'B' AS DETERMINED ON MAP 30 OF THE SOIL SURVEY OF BERNALILLO COUNTY.
7. THERE SHALL BE NO PONDING OF DEVELOPED STORM WATER VOLUMES ONSITE.
8. ONLY THE SOUTHERLY HALF OF SUBJECT SITE SHALL BE DEVELOPED AND THE REMAINING HALF SHALL REMAIN UNDISTURBED AND SET ASIDE FOR FUTURE LEASE DEVELOPMENT.
9. THE REDEVELOPMENT OF THE SOUTHERLY HALF OF LOTS 5 AND 6 WILL INCREASE THE 100 YEAR STORM WATER FLOW RATE FROM 1.33 CFS TO 2.34 CFS. THIS INCREASE OF 1 CFS SHOULD HAVE LITTLE, IF ANY IMPACT ON THE DOWNSTREAM DRAINAGE FACILITIES. IN ADDITION, THE 4" DRAIN PIPE DETAINS THE MAJORITY OF THE FLOWS AND DECREASES THE ACTUAL FLOW RATE THAT ENTERS PUBLIC RIGHT-OF-WAY TO LESS THAN 1 CFS WHICH IS LOWER THAN THE UNDEVELOPED Q_{100}.

1 10. ALL STORM WATER RUNOFF FROM ROOF DRAINS SHALL EITHER DISCHARGE DIRECTLY ONTO PERIMETER CONCRETE PAVING OR INTO A ROOF GUTTER SYSTEM WHICH DIRECTS FLOWS TO THE CONCRETE PAVING.

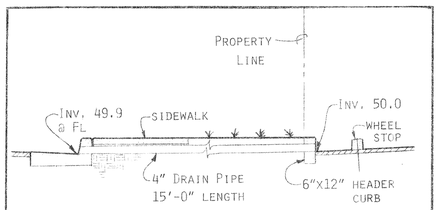
1 11. PLAN REVISED AUGUST 6, 1991 TO ADD BUILDING ADDITION ALONG THE NORTH SIDE OF EXISTING STRUCTURE, ADD ONE DRIVEPAD ONTO 50TH STREET NW AND TO EXPAND THE PARKING AREA.



SECTION A-A
REAR DRAINAGE RUNDOWN 1" = 3'-0"



SECTION B-B
BASIN 'B' DRAINAGE SWALE 1" = 3'-0"



SECTION C-C
BASIN 'A' DRAIN PIPE 1" = 3'-0"

DRAINAGE CALCULATIONS

THE FOLLOWING CALCULATIONS ARE FOR THE SOUTHERLY 150 FT OF LOTS 5 & 6 ONLY. THE NORTHERLY HALF OF LOTS 5 & 6 SHALL REMAIN UNDISTURBED AND ITS DRAINAGE CHARACTERISTICS ALLOWED TO REMAIN AS IS.

UNDEVELOPED CONDITIONS: THIS SITE WAS PREVIOUSLY DEVELOPED AND SHALL BE CONSIDERED AS HAVING A RUNOFF VALUE OF 0.52. IN ADDITION, THIS IS AN IN-FILL PROJECT.

AREA = 156'x150' = 23,400 S.F. = 0.5372 Ac.
'C' = 0.52
D = 2.2"
I = 4.75

Q_{100} = (0.52)(4.75)(0.5372) = 1.33 CFS
Q_{10} = (0.657)(1.33) = 0.87 CFS

V_{100} = (0.52)(0.183)(23,400) = 2,231 cu. ft.
V_{10} = (0.657)(2,231) = 1,466 cu. ft.

THESE UNDEVELOPED STORM WATERS WOULD BOTH EXIT THE SITE AND POND NATURALLY ON THE NORTHERLY PORTION OF LOT 5.

DEVELOPED CONDITIONS: SITE SHALL BE DEVELOPED WITH TWO DISTINCT DRAINAGE BASINS, THE MAJOR BASIN 'A' (0.3705 Ac.) COMPRISING THE BUILDING AND MOST OF THE PARKING AREA. THIS BASIN RELEASES ITS STORM WATERS TO 50TH ST. VIA A 4" DRAIN PIPE AND THEY ARE ACCEPTED BY A CATCH BASIN 67' TO THE NORTH.

AREA = 0.3705 Ac.
'C' = 0.92
D = 2.2" = 0.183'
I = 4.75
Q_{100} = (0.92)(4.75)(0.3705) = 1.62 CFS
Q_{10} = (0.657)(1.62) = 1.06 CFS

V_{100} = (0.92)(0.183)(16,139) = 2,717 cu. ft.
V_{10} = (0.657)(2,717) = 1,785 cu. ft.

1 REVISED
AREA = 0.25 Ac.
'C' = 0.90
D = 2.2" = 0.183'
I = 4.75
Q_{100} = 1.07 CFS
Q_{10} = 0.7 CFS

V_{100} = 1,794 cu.ft.
V_{10} = 1,178 cu.ft.

BY THE USE OF MANNING'S FORMULA BASED ON A R^2/3 RATIO OF 2:1 AND A SLOPE OF 0.007'/', THE 4" DRAIN PIPE HAS THE CAPACITY OF 0.25 CFS OR 900 CF/HR. A STORAGE CAPACITY OF 875 CU.FT. IS AVAILABLE WITHIN THE PARKING AREA TO HOLD THE STORM WATER VOLUME UNTIL IT HAS SUFFICIENT TIME TO DISCHARGE TO PUBLIC RIGHT-OF-WAY. IN CASE OF OVERFLOW, STORM WATERS SHALL EXIT THE SITE OVER THE NORTHWEST CORNER'S TOP OF HEADER CURB AND ENTER INTO PUBLIC RIGHT-OF-WAY.

DRAINAGE BASIN 'B' STORM WATERS GENERATED WITHIN THIS BASIN ARE DISCHARGED ONTO THE PUBLIC RIGHT-OF-WAY OF CENTRAL VIA A NEW CONC. DRIVEPAD AT THE SITE'S SOUTHEAST CORNER.

AREA = 0.1667 Ac.
'C' = 0.91
D = 2.2" = 0.183'
I = 4.75
Q_{100} = (0.91)(4.75)(0.1667) = 0.72 CFS
Q_{10} = (0.657)(0.72) = 0.47 CFS

V_{100} = (0.91)(0.183)(7,261) = 1,209 cu. ft.
V_{10} = (0.657)(1,209) = 795 cu. ft.

1 BASIN "C":

THIS NEW BASIN CONTAINS THE NEW ASPHALTIC AND CONCRETE PAVING, THE 1,260 SQ.FT. BUILDING ADDITION AND THE ROOF AREA OF THE EXISTING STRUCTURE. ALL STORM WATER RUNOFF IS ROUTED TO THE NEW DRIVEPAD LOCATION ON 50TH ST. VIA OVERLAND PAVEMENT FLOW AND THE ROOF RAIN GUTTER SYSTEM. STORM WATERS ARE THEN ACCEPTED BY A PUBLIC STORM WATER CATCH BASIN APPROXIMATELY 25 FEET TO THE SOUTH OF SAID NEW DRIVEPAD.

AREA = 12,320 SQ.FT. (0.28 Ac.)
"C" = 0.93
D = 2.2" = 0.183'
I = 4.75

Q_{100} = (0.93)(4.75)(0.28) = 1.25 CFS
Q_{10} = (0.657)(1.25) = 0.82 CFS

V_{100} = (0.93)(0.183)(12,320) = 2,096 cu.ft.
V_{10} = (0.657)(2,096) = 1,378 cu.ft.

Fred C. Arfman

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AUG 7 1991
HYDROLOGY DIVISION

Isaacson & Arfman, P.A.
CONSULTING ENGINEERING ASSOCIATES
Albuquerque, New Mexico

Date
Designed
Checked

AUTO SHACK STORE #1
50th ST. & CENTRAL AVE.
ALBUQUERQUE, NEW MEXICO

DRAINAGE & GRADING PLAN

Sheet 1 of

445-1