HYDROLOGY

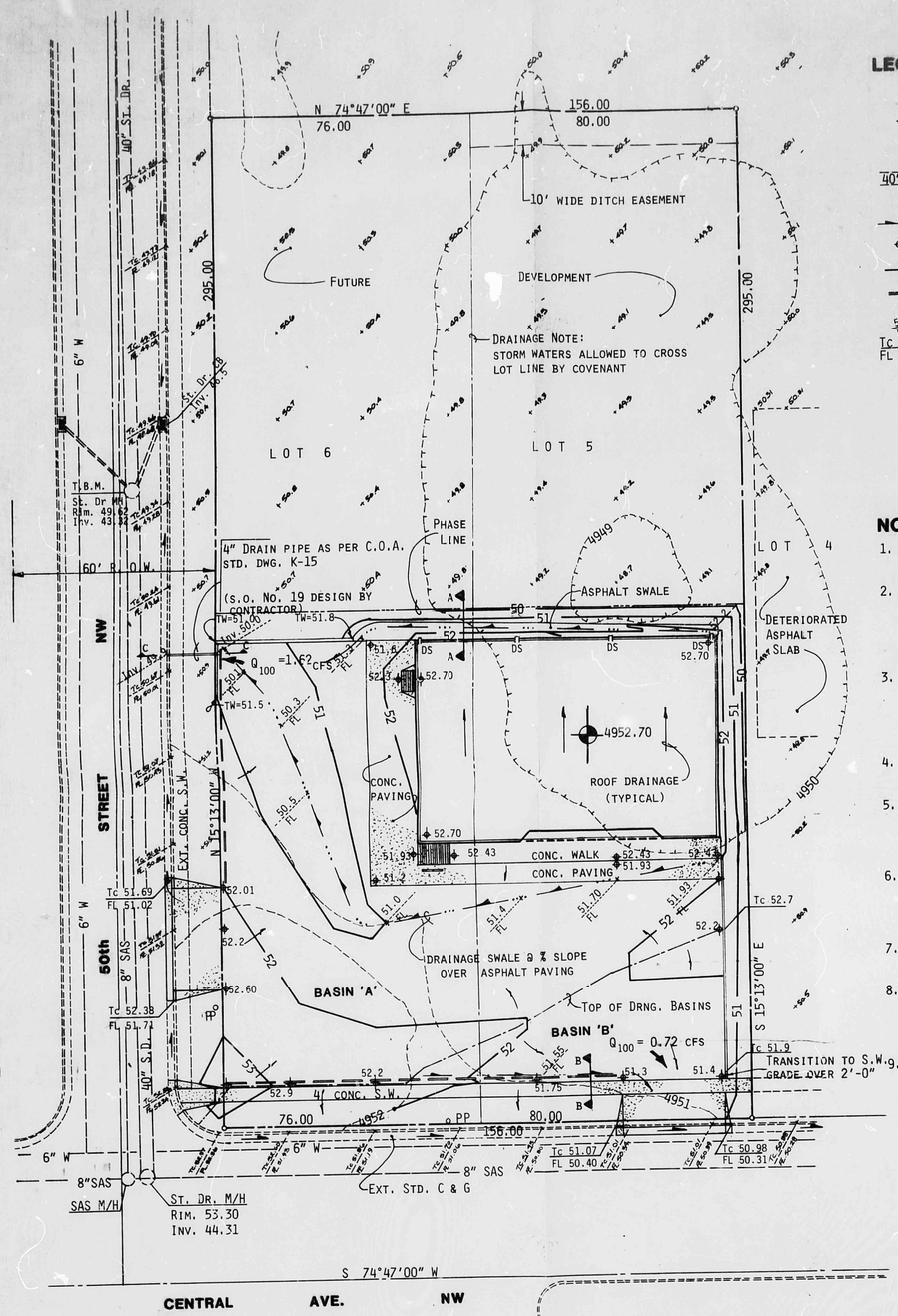
K11/D41

ONE PLAN

I PLAN FOR

AUTO SHACK #1

K11-D41



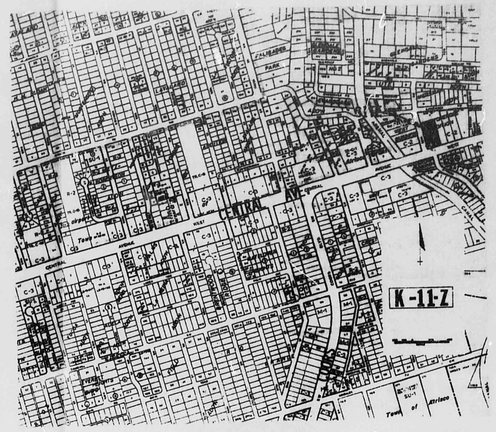
SCALE
1"=20'

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

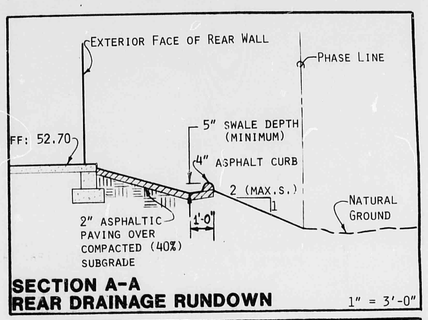
FLOOD PLAIN MAP



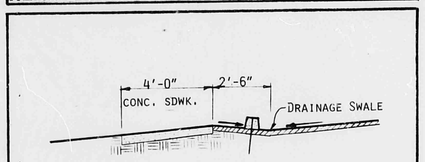
VICINITY MAP

NOTES

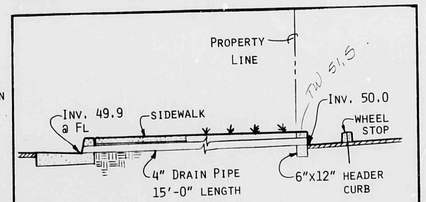
1. LEGAL DESCRIPTION: LOTS 5 & 6 OF WEST ALBUQUERQUE BUSINESS ADDITION.
2. BENCH MARK: NM 45-1A: STATION IS LOCATED IN THE ISLAND AT THE SE QUADRANT OF THE INTERSECTION OF CENTRAL AVE. AND COORS BLVD SOUTH. 3/4" ALUM. CAP SET IN CONCRETE STAMPED "ACS NM 45-1A, 1984"; ELEV. 5016.74.
3. TEMPORARY BENCH 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}.



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.

BY THE USE OF MANNING'S FORMULA BASED ON A HW/D 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.

RECEIVED
MAR 18 1986
HYDROLOGY SECTION

Fred C. Arfman
3-18-86

K11/D41

Date
Designed
Checked

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

DRAINAGE & GRADING PLAN

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

Sheet 1 of 1