HYDROLOGY

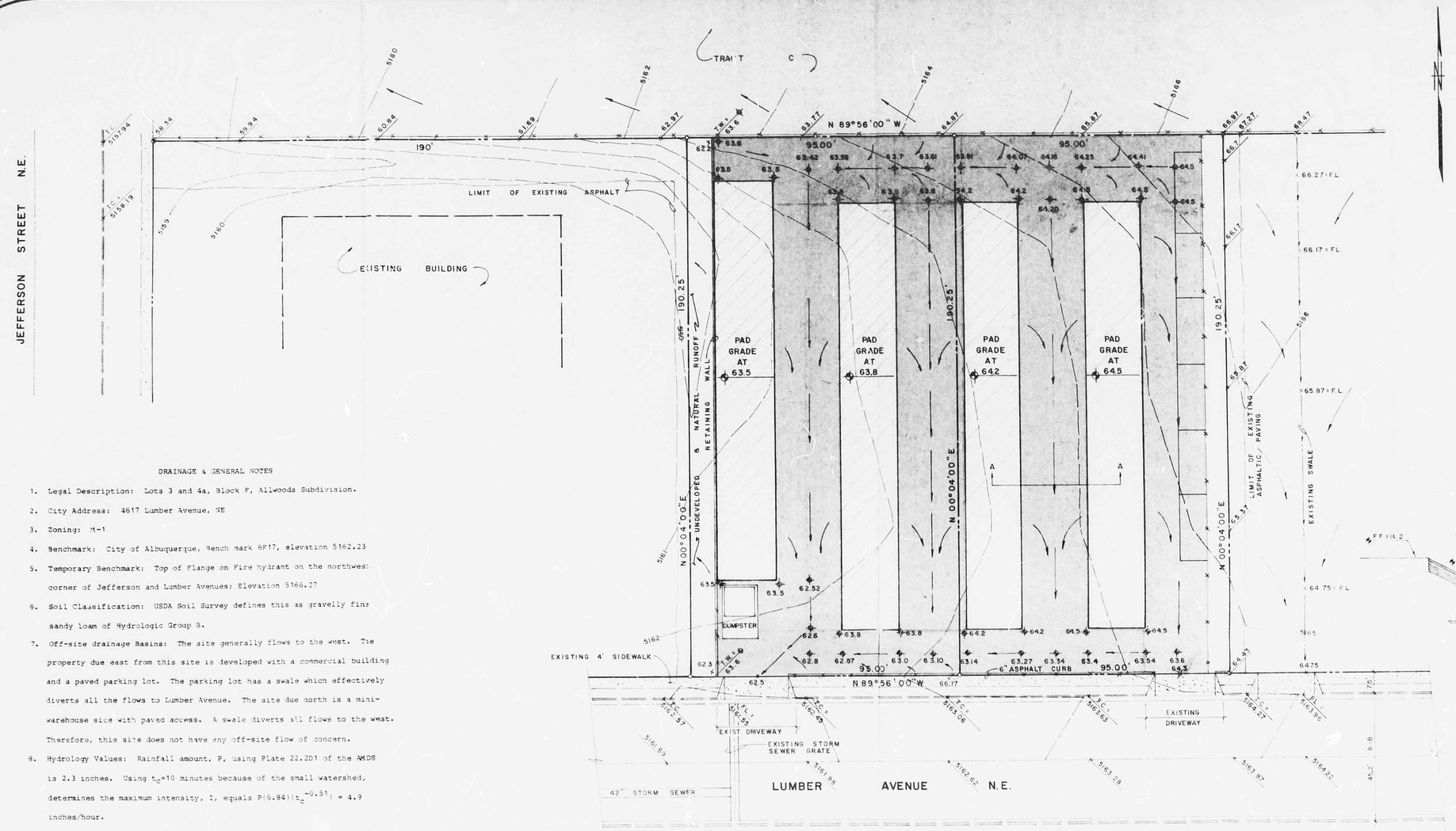
F17/D2B

ONE PLAN

# PLAN FOR

# E2 SELF STORAGE

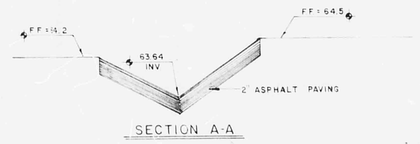
F 17- D2B




4617 LUMBER AVE. N.E.

LEGEND

- ASPHALT PAVING
- LANDSCAPED AREA
- PROPERTY LINE
- EXISTING CURB & GUTTER W/SIDEWALK
- 12.7 EXISTING SPOT ELEVATION
- 12 EXISTING CONTOUR
- 12.7 PROPOSED SPOT ELEVATION
- 12 PROPOSED FINISHED CONTOUR
- SURFACE FLOW DIRECTION
- BUILDING STRUCTURE




SECTION A-A

DRAINAGE & GENERAL NOTES

1. Legal Description: Lots 3 and 4a, Block F, Allwoods Subdivision.
2. City Address: 4617 Lumber Avenue, NE
3. Zoning: M-1
4. Benchmark: City of Albuquerque, Bench mark 6F17, elevation 5162.23
5. Temporary Benchmark: Top of Flange on Fire hydrant on the northwest corner of Jefferson and Lumber Avenues; Elevation 5166.27
6. Soil Classification: USDA Soil Survey defines this as gravelly fine sandy loam of Hydrologic Group B.
7. Off-site drainage Basins: The site generally flows to the west. The property due east from this site is developed with a commercial building and a paved parking lot. The parking lot has a swale which effectively diverts all the flows to Lumber Avenue. The site due north is a mini-warehouse site with paved access. A swale diverts all flows to the west. Therefore, this site does not have any off-site flow of concern.
8. Hydrology Values: Rainfall amount, P, using Plate 22.2D1 of the AMDS is 2.3 inches. Using $t_c$=10 minutes because of the small watershed, determines the maximum intensity, I, equals $P(6.84)(t_c^{-0.51}) = 4.9$ inches/hour.
9. Undeveloped Characteristics: The site drains to the west through lots 1 & 2 at the following amount:

   Area = 0.83 acres

   $C_{undeveloped}$ = 0.34 (Plate 22.2C1 DPM vol. 2)

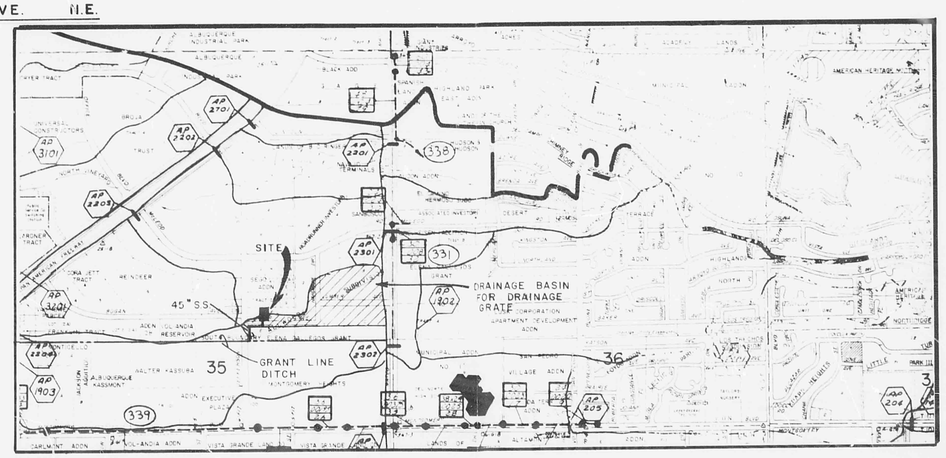
   I = 4.9

   $Q_{100}$ = (0.34)(4.9)(.83) = 1.4 c.f.s.

   $Q_{10}$ = .657 $Q_{100}$ = 0.91 c.f.s.

   The flows enter Jefferson and flow to the north to McLeod and contribute to the flood plain along I-25.
10. Proposed Developed Characteristics: The site will be graded to free discharge through the drivepad to an existing street grate in a sag condition. The total developed discharge is equal to $Q_{100}$ = CIA = (1.0)(4.9)(.83) = 4.1 c.f.s. The total off-site drainage basin contributing to this catch basin is approximately 21 acres with a watershed length of 2000 lin. ft. at a slope of 3%. The time of concentration is 11 minutes using the Kirpich equation. Hence, $Q_{100}$ = CIA with c = .72 assuming 72% impervious commercial type area $Q_{100}$ = (.72)(4.9)(.83) = 74 c.f.s. The pipe outfall is a 42 inch storm sewer with a capacity of 254 c.f.s. The grate can develop a head of 4.25 feet from the top of the curb to the midpoint of the 42 inch diameter pipe, therefore the pipe outfall has a capacity of 98 c.f.s. Since the developed basin will discharge 74 c.f.s. there is an aditional capacity of 22 c.f.s.

The grant line channel has a flow of approximately 119 c.f.s. at AP 1902 (Hydrograph 2302.6). The existing channel is rip-rap lined with 2:1 side slopes the channel slope is approximately 2.5% and the capacity is 500 c.f.s. The maximum outflow at the Grant line ditch per the AMDS hydrograph 1903.5 is 214 c.f.s. Hence the entire system outfalling to the North Diversion ditch is operating under capacity. Hence free discharge of this site will not create any problems.




VICINITY & DRAINAGE BASIN MAP

F17/D2B

REVISED 9-29-83

F17/D2B

RECEIVED SEP 29 1983 ENGINEERING

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| Revisions | Date |
|---|---|
| Designed A.H. | 8-83 |
| Drawn M.W. | 8-83 |
| Checked C.L.W. | 8-83 |

# GRADING/DRAINAGE FOR EZ SELF STORAGE

ANDRE HOULE NEW MEXICO 7876 REGISTERED PROFESSIONAL ENGINEER

SHEET 1 OF 1