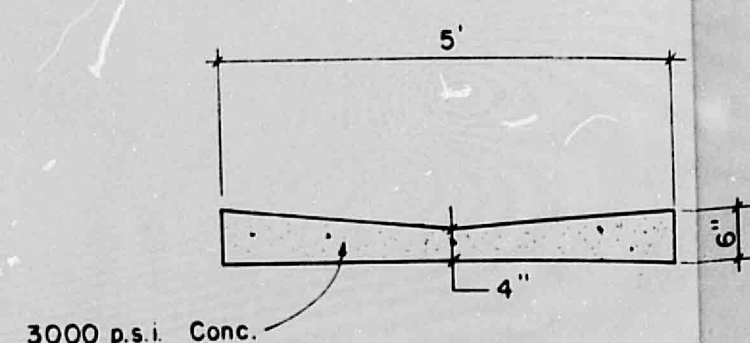
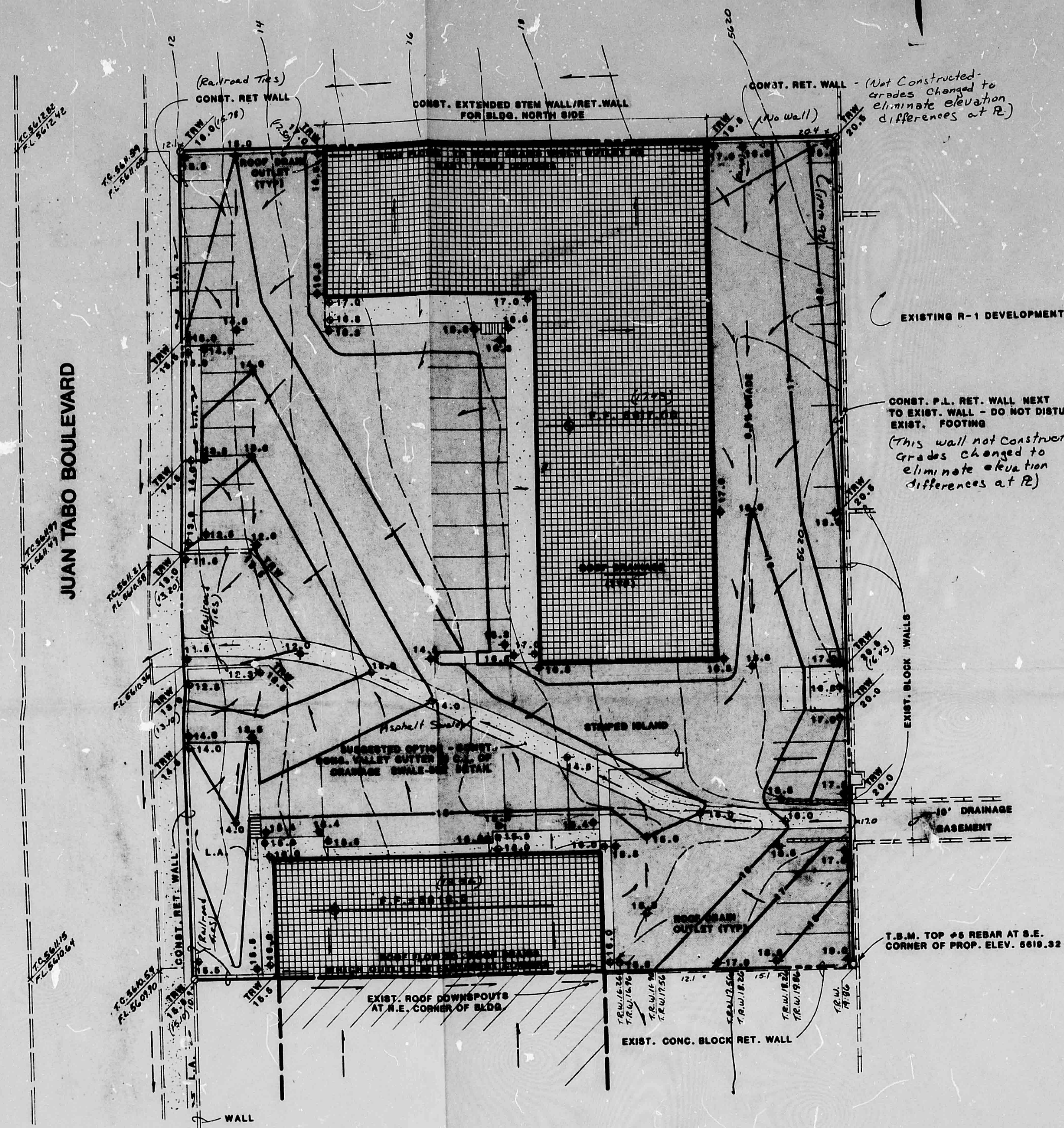
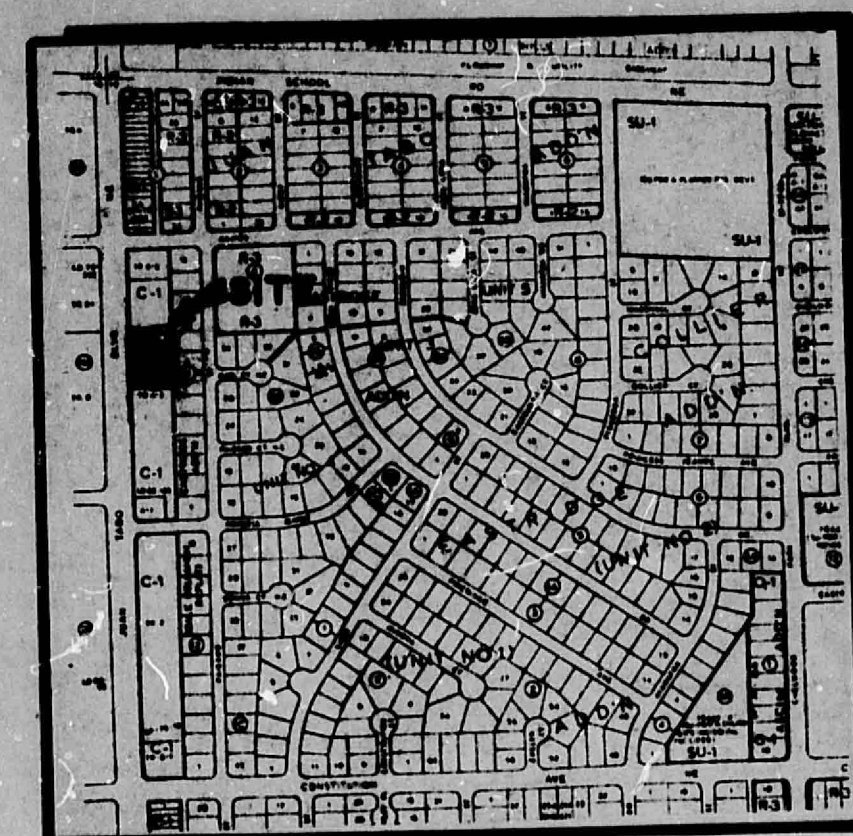


SCALE: 1" = 20'



DRAINAGE SWALE DETAIL



VICINITY MAP J 22

LEGEND

-----	SIDEWALK, CURB & GUTTER (EXISTING, PROPOSED)
=====	PROPOSED ASPHALT
=====	BUILDING (EXISTING, PROPOSED)
-----	PROPERTY LINE
12.7.8	EXISTING SPOT ELEVATION
12.7.8	EXISTING CONTOUR
12.7.8	PROPOSED SPOT ELEVATION
12.7.8	PROPOSED CONTOUR
-----	SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
L.A.	LANDSCAPED AREA
T.O.W.	TOP OF GRADE WALL (LESS THAN 18" HIGH)
T.R.W.	TOP OF RETAINING WALL (MORE THAN 18" HIGH)
T.A.	TOP OF ASPHALT
T.C.	TOP OF CURB
F.L.	FLOW LINE
F.F.	FINISHED FLOOR

CONSTRUCTION NOTES:

- Before construction, the Contractor shall check and verify pertinent figures shown herein and shall make all applicable field measurements. Should any conflict, error or discrepancy be discovered, the contractor shall notify the Engineer at once to resolve the problem. It is recommended that the Contractor meet with the Engineer for a pre-design conference to discuss the scope of work and critical areas involved.
- The Contractor shall be responsible for following the plans using his best skill and attention. Any departure from the plans must be approved by the Engineer and the City Hydrology Department prior to construction.
- The Contractor shall check the site plan for locations of existing utilities within or adjacent to streets and shall take all necessary precautions and efforts to locate and protect these utilities. He shall give 48 hours notice to the Locating Service, 765-1234, for any work that may interfere with said utilities.

INFORMATION SHOWN IN PARENTHESIS INDICATES
AS-BUILT SHOTS TAKEN BY CONTRACTOR 9-85

SCOPE:

The proposed improvements, comprised of two commercial buildings, associated walks and paved parking/access areas, is located on the east side of Juan Tabo Blvd. between Constitution and Indian School Road N.E.

The present site is undeveloped land with an average cross slope of 5% from east to west. The site is isolated from offsite drainage due to adjoining developments except for a 10' wide drainage/utility easement near the S.E. corner. This easement is the outfall for runoff from the existing developments to the east of the site.

The intent of this plan is to show:

- Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.
- The extent of proposed site improvements, including buildings, walks and pavement.
- The flow and volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.
- The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

GENERAL NOTES:

LEGAL: Replat Tract B-2, Block 11, Eastridge Add., Unit #4

SURVEYOR: Martinez & Taylor Surveying Co. 3-28-85

B.M.: City of Albuquerque BM # 5-J21A @ north end of median @ Juan Tabo & Constitution South side of Constitution) Elev. 5594.30

T.B.M.: Southeast corner of property, top of #5 R/B Elev. 5619.32

SOILS: SCS Soils Map #32, Soil Type "Tg", Hydrologic Group "B"

FLOOD HAZARD: Site is not located in or adjacent to a flood hazard zone. (FPM Panel #31, (7-14, 1983).

OFF-SITE DRAINAGE: Except for a defined 10' wide drainage easement located near the S.E. corner, the site is isolated from the effects of runoff from the east due to adjacent development. Runoff from this drainage easement will be accepted at the pavement and be routed thru the site within the parking areas to Juan Tabo Blvd.

FROCTION CONTROL: Contractor will be responsible for controlling sediment-laden runoff from leaving the site during construction. Recommend that preliminary drainage patterns be established to outfall at the S.W. corner of the site onto Juan Tabo. Construct a fabric silt fence across this outfall as a temporary erosion control.

CALCULATIONS:

Based on a pre-design meeting with City of Albuquerque Hydrology, on 3-85, the following criteria was established.

- Due to the passage of offsite flows thru the site and the difficulty of separating on-site w/off-site flows, analyze downstream capacity to justify total free discharge of on-site flows from site.

Calculations are based on the City of Albuquerque D.P.M. Manual, Vol. II for the 100 year-1 hour storm, using the Rational Formula to compare the existing and proposed runoff rates.

RATIONAL METHOD - C-1

Area of site: 11,132 sq. ft. = 0.94 Ac.

Run-off Coefficients:

Existing Site:	Developed Site:
A imp. = 0.4c	A imp. = 0.90 Ac
T imp. = 0.2c	T imp. = 0.6c
"C" = 0.36 (DPM 22.2 C-1)	"C" = 0.94 (DPM 22.2 C-1)

Rainfall Intensity:

$I = P_2 (6.6) T_c^{-0.48} = 5.18"$ per hour
where $P_2 = 1.45"$ (DPM 22.2 D-1)
 $T_c = 10$ minutes

Existing Condition:

Existing Condition:	Developed Condition:
Q100 = (0.5)(5.18)(0.94) = 2 cfs	Q100 = (0.94)(5.18)(0.94) = 5 cfs
V100 = (2.5) Tc (60 sec/in)/2 = 3.00 cu. ft.	V100 = (5)(50)(60)/2 = 7,500 cu. ft.

SUMMARY:

Q100 = (2)(5) = 3 cfs (increase)
V100 = (3)(100) = 3,000 cu. ft. (increase)

OFFSITE DRAINAGE

Offsite flows impact the site at only one point on the east boundary - a 10' wide drainage easement which drains a basin 18 Ac in size. Typical percent imperviousness is 30% for a C of 0.45. Tc for the basin is 9 min. - use 10 min. $Q = (0.45)(2.11)(2.45)(18) = 42$ cfs. The total impact of this flow is divided at the street intersections prior to entering the drainage easement. An approximate estimate of this division should be 50%, for a total flow thru the site of 21 cfs. ±.

DOWNSTREAM ANALYSIS:

Onsite Flows

The flows turn south on Juan Tabo after leaving the site and travel approximately 400' to the first inlet in a 48" storm sewer (capacity 110 cfs @ 0.075 gpm). Time of travel from the furthest point within the site to the 1st inlet is -

- $T_c = 0.001 \frac{(1350) \cdot 0.77}{(0.025) \cdot 1350} = 3$ min. (on site time)
- Tc for 40' of street with a 7' fall, Vol. = 3.6' / sec.
 $T_c = \frac{400'}{3.6' / \text{sec}} = 111$ sec = 1.85 min. (street time-Juan Tabo)

Total time for flows to enter storm inlet from the site = 5 min.

Offsite passing thru site

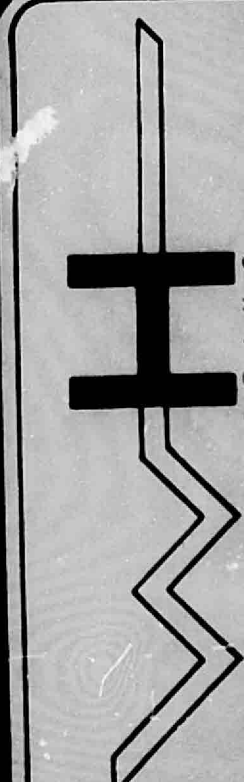
The total length of the drainage basin which passes thru the site is 2200' with a drop of 57'. Avg. velocity = 4.3' / sec. Time to inlet = $\frac{2200'}{4.3' / \text{sec}} = 512$ sec = 8.5 min.

Offsite Flows

The next basin to impact the storm sewer drains from Princess Jeanne St. Length of street avel from that basin is 2,600 feet with a drop of 88'. Avg. velocity = 4.8' / sec. Time to Juan Tabo = $\frac{2600'}{4.8' / \text{sec}} = 542$ sec = 9 min.

Because the site is located near the high point of Juan Tabo, only a limited portion of a storm system.

In conclusion, the discharge from the site should be allowed because site flows enter the storm sewer prior to other basins impacting the system. Additionally, it will be extremely difficult to separate on-site flows, for controlled release. From off-site flows that pass thru the site. Finally, the site is one of the few remaining open tracts of land to be built in the area; it can be considered an in-fill situation in a developed basin.

DRAINAGE / GRADING PLAN
EASTRIDGE - PHASE II

SHEET 1 OF 1

J22/D44