HYDROLOGY

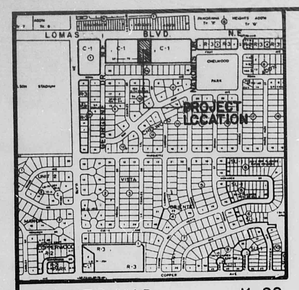
K22/D38

ONE PLAN

I PLAN FOR

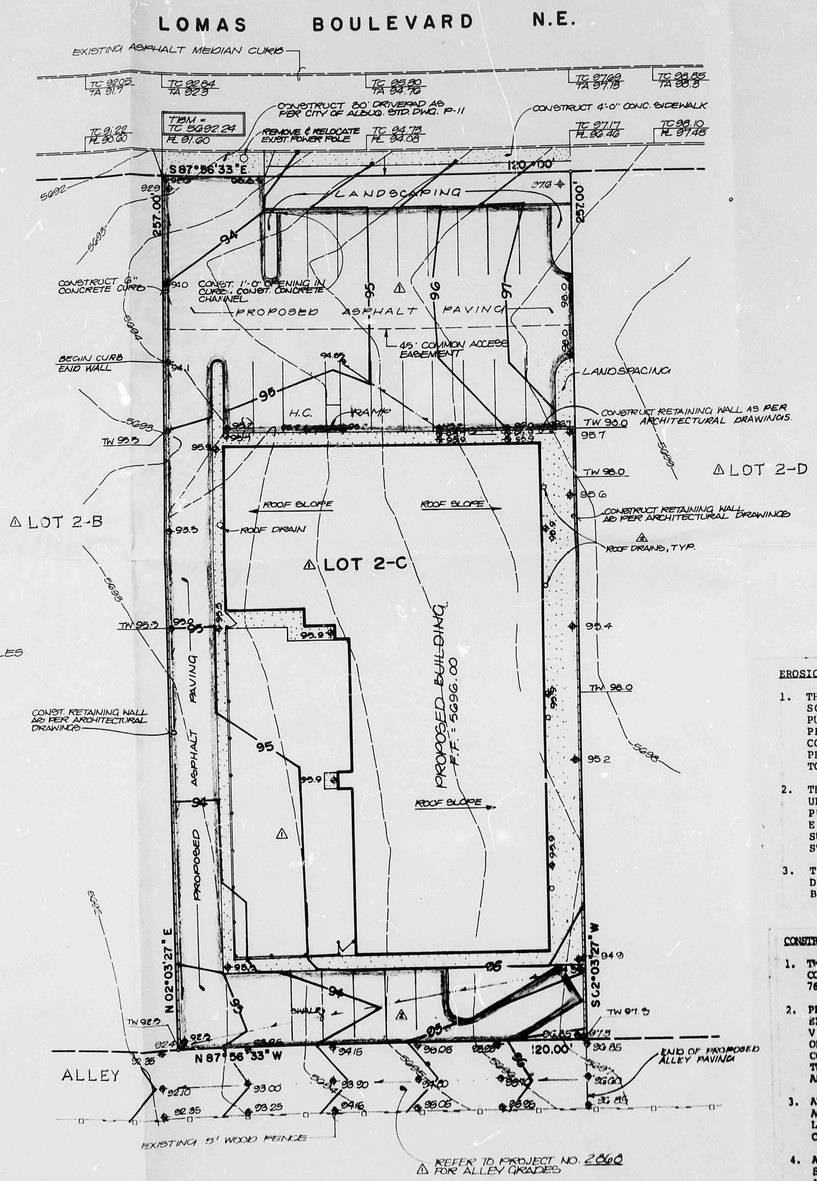
KIDS-R-US

K22-D38



VICINITY MAP K·22

SCALE : 1" = 800'



SCALE 1" = 20'

LEGEND

- 5685 — EXISTING CONTOUR
- 95 — PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING WOOD FENCE
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- SWALE

TEMPORARY BENCHMARK

TOP OF CURB ELEVATION @ THE PROJECTION OF THE NORTHWEST PROPERTY CORNER, AS SHOWN ON THE DRAWING.
ELEVATION = 5692.24 FEET (MSL D)

PROJECT BENCHMARK

ACS BENCHMARK "11-J22" A SQUARE "D" CHISELED ON TOP OF CONCRETE CURB @ WNW CURB RETURN LOCATED @ THE INTERSECTION OF LOMAS BLVD. NE & LA CHARLES DR NE IN THE NORTH-WEST QUADRANT OF THE INTERSECTION.
ELEVATION = 5685.20 FEET (MSL D)

LEGAL DESCRIPTION

LOT 2-C, BLOCK 2-A, CHELWOOD PARK

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

DRAINAGE PLAN

The following items concerning the Kids-R-Us Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the south side of Lomas Boulevard N.E. between Georgene Drive N.E. and Nakomis Drive N.E. At present, the site is undeveloped. Many of the adjacent sites to the east and west are also undeveloped. There is an existing residential subdivision to the south of the site which is currently developed. Overall, this is an infill site.

As shown by Plate K-22 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. This Plate does show, however, that there is an existing downstream flooding condition identified at the intersection of Juan Tabo Boulevard N.E. and Lomas Boulevard N.E. Review of the City of Albuquerque Storm Drainage Facilities Map indicates that there is a public storm drain system within Lomas Boulevard N.E. with inlets approximately one block downstream from this site. Due to the fact that this site discharges its runoff to this storm drain system, that it is an infill site, that is located at the bottom of the watershed and that it is a relatively small site, the free discharge of runoff from this site is appropriate. Furthermore, the detention of runoff generated by this site will most probably have a more deleterious impact on the peak discharge of runoff from this site than freely discharging the runoff.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) alley grades as determined by City Project No. 2868, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As shown by this Plan, the proposed improvements consist of a building and associated landscaping and paved parking. In addition, retaining walls will be constructed along the majority of the east and west property lines. These retaining walls are necessary for this site in particular, due to the design of the building and the utilization of so much of the available site area. Neighboring sites to the east and west can be developed without the construction of retaining walls by "stepping" the floor levels and/or leaving a buffer along the side lot lines. At present, the site drains from east to west and discharges onto the neighboring lot to the west, Lot 2-B. In the proposed scheme of drainage, runoff will be discharged to both Lomas Boulevard N.E. and the public alley at the rear of the site. The majority of this runoff, will be discharged to Lomas Boulevard N.E. That runoff conveyed by the alley will be discharged to Georgene Drive N.E., whence it will turn to the north and discharge to Lomas Boulevard N.E.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The SCS Method has been used for this analysis in accordance with City of Albuquerque Development Process Manual, Volume II. As shown by these Calculations, the proposed improvements will result in an increase in runoff from this site.

Lot 2-C is part of a six-lot subdivision known as "Lots 2-A - Lots 2-F, Block 2-A, Chelwood Park. Each of these lots can be graded similar to this project. With this in mind, Lot 2-C can be viewed as a "typical" lot within this subdivision and hence establishes drainage criteria for the remaining lots if and when they develop. The proposed developments for the remaining lots are unknown at this time, however, should be similar to Lot 2-C. With this in mind, this grading plan for Lot C shall establish the concept in grading and drainage for the remainder of this subdivision.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Embudo Etc
Plate 32 :
Hydrologic Soil Group B
Existing Pervious CN = 70 (DPM Plate 22.2 C-2;
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2

Time of Concentration/Time to Peak

$T_c = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_p = T_c =$ 10 min.

Point Rainfall

$P_6 =$ 2.5 in. (DPM Plate 22.2 D-1)

Existing Condition

$A_{total} =$ 30840 sf = 0.71 Ac

$A_{imp} =$ 0 sf; % impervious = 0 %

Composite CN = 70 (DPM Plate 22.2 C-3)
DRO = 0.5 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p =$ 3.22 cfs/in runoff
$Q_{100} = Q_{peak} = q_p$ (DRO) = 1.6 cfs
$V_{100} = 3630$ (DRO) A = 1290 cf

Developed Condition

$A_{total} =$ 30840 sf = 0.71 Ac

$A_{imp} =$ 26895 sf; % impervious = 87 %

Composite CN = 94 (DPM Plate 22.2 C-3)
DRO = 1.85 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p =$ 3.22 cfs/in runoff
$Q_{100} = Q_{peak} = q_p$ (DRO) = 6.0 cfs
$V_{100} = 3630$ (DRO) A = 4770 cf

Comparison

$\Delta Q_{100} = 6.0 - 1.6 = 4.4$ cfs (INCREASE)

$\Delta V_{100} = 4770 - 1290 = 3480$ cf (INCREASE)

RECEIVED JUN 11 1986 HYDROLOGY SECTION

RECEIVED JUN 04 1986 HYDROLOGY SECTION

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO THOMAS T. MARK, JR. 3792 AND LAND SURVEYOR

6-10-86

REVISED 04-18-86

NO	DATE	BY	REVISIONS
1	4/86	JGM	ADD ALLEY GRADES, REVISE TEXT; ADJUST GRADES; ADJOINERS
2	6/86	TTM	REVISED EAST SIDEWALK & REAR PARKING

TRUMAN ARNOLD & ASSOC. INC. ENGINEERS
811 DALLAS, N.E. - ALBUQUERQUE - NEW MEXICO - 87110

DESIGNED BY TTM
DRAWN BY LBD
APPROVED TTM

JOB NO 60012
DATE 1·86

GRADING & DRAINAGE PLAN
KIDS-R-US

K22/D38

FILE NO
SHEET 1 OF 1