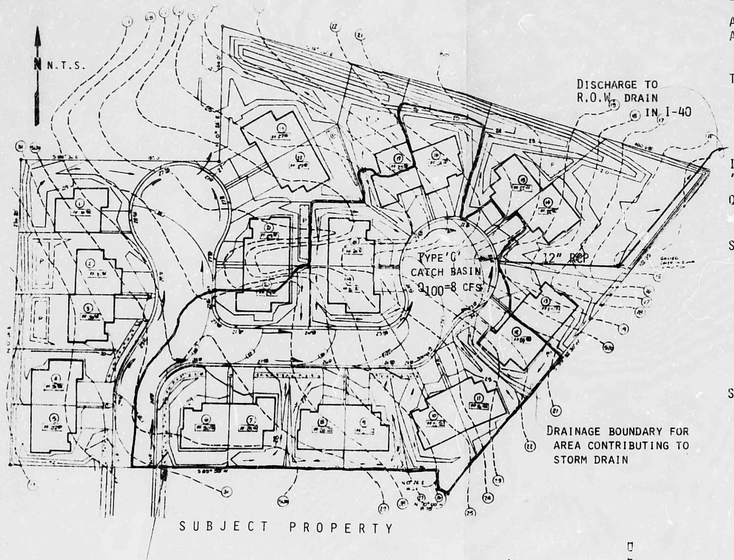
HYDROLOGY

H16/D27A
1 PLAN

H16/D27A

1 PLAN



INVESTIGATION OF THE DOWNSTREAM FLOW CARRYING CAPACITY

AREA CONTRIBUTING FROM SITE: 0.94 AC.
AREA CONTRIBUTING OFFSITE: 1.25 AC.
TOTAL AREA: 2.19 AC.

TIME OF CONCENTRATION

OVERLAND = 30' @ 0.55 '/s = 0.9 MIN.
ST. FLOW = 364' @ 1.90'/s= 3.2 MIN.
4.1 MIN. (USE 10 MIN.)

I = (2.24)(2.16) = 4.84
'C'=(SOILS GROUP B)=0.76

Q_{100}=CIA
=(0.76)(4.84)(2.19) = 8.1 CFS

STORM DRAIN CAPACITY

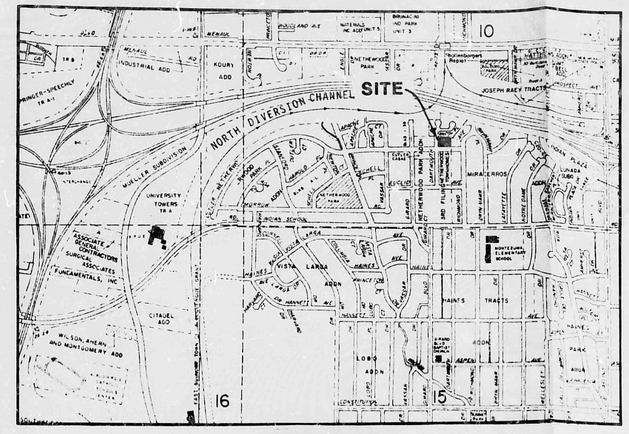
DEPTH OF FLOW ABOVE FLOWLINE = 0.77'
SUMP CONDITION
FROM DPM, PLATE 22.3, D-5 FOR APPROXIMATION OF SUMP CONDITION ONLY

CAPACITY @ 0.002 '/'= 8.8 CFS
CAPACITY (8.8 CFS) > Q_{100}(8.1 CFS)-- O.K.

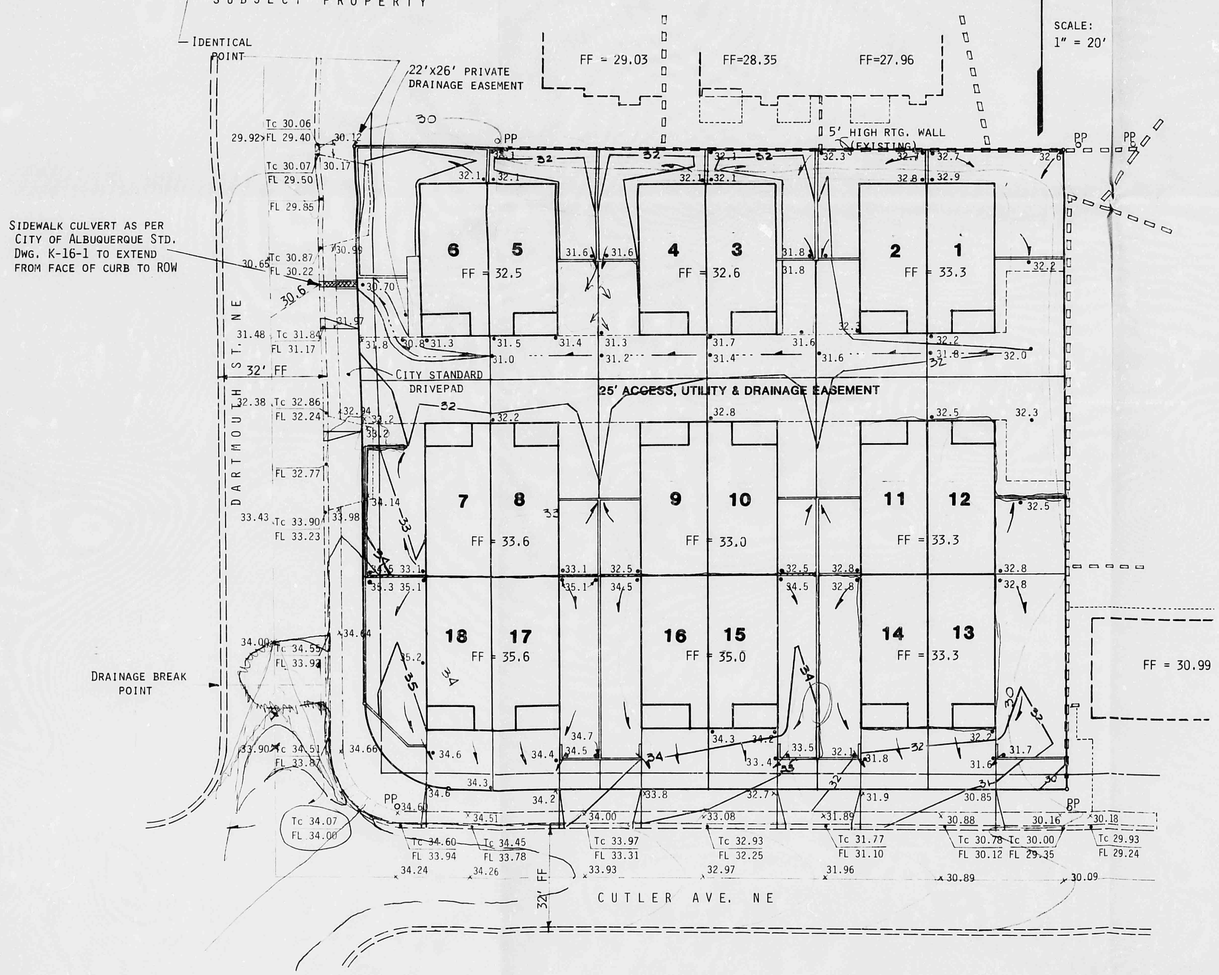
STREET CARRYING CAPACITY (HALF SECTION)

FROM DPM, PLATE 22.3, D-1 FOR S=0.02 @ D=0.4'

CAPACITY = 9.5 CFS--O.K.



VICINITY MAP
Zone Atlas No. H-16



GENERAL INFORMATION

LEGAL DESCRIPTION: REPLAT OF BLOCK 1A OF NETHERWOOD PARK 3RD FILING ADDITION AS FILED IN VOL. B-17, PAGE 156 IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO.

ZONING: R-3

ACREAGE: 0.907 ACRES

OWNER: CENTENNIAL HOMES, INC.
3736 EUBANK BLVD, N.E. SUITE A
ALBUQUERQUE, NEW MEXICO 87111
(292-1024)

ENGINEER: ISAACSON & ARFMAN, P.A.
128 MONROE ST. NE (268-8828)

ARCHITECT: DEKKER & ASSOCIATES (247-2888)

SURVEYOR: RON FORSTBAUER SURVEYING CO.
510 CHAMA N.E. (268-0248)

CONTRACTOR: CENTENNIAL HOMES, INC. (SEE ABOVE)

FLOOD HAZARD: THERE ARE NO FLOOD HAZARD AREAS ON THIS SITE AS DEFINED ON PLATE 23 OF FIRM'S FLOOD BOUNDARY MAPS

WATERSHED SOILS: SITE SOILS ARE TWO LAYERED WITH THE ORIGINAL SOILS BEING CLASSIFIED AS (WEB) WINK. IT HAS A LOW SHRINK SWALE POTENTIAL AND DRAINS WELL. THE OVERLYING 2-3 FEET OF TOP SOILS WAS IMPORTED TO THE SITE FROM AN UNKNOWN LOCATION. IT CONSISTS OF A SMALL PERCENTAGE OF CONCRETE AND ASPHALT RUBBLE IN A SILTY-SAND SOIL. THE FIRM OF F.M. FOX & ASSOC. HAS BEEN CONTRACTED TO PERFORM A COMPREHENSIVE SOIL INVESTIGATION. SOILS ARE CLASSIFIED AS TYPE 'B'.

BENCH MARK: CITY OF ALBUQUERQUE BENCH MARK 4-H16, LOCATED ON THE NW CORNER OF INDIAN SCHOOL RD. AND GIRARD. A Ø ON THE WNW RETURN.
ELEVATION: 5117.14

LEGEND

30	EXISTING INDEX CONTOUR
	INTERMEDIATE CONTOUR (ONE FT. INTERVALS)
Tc / FL	TOP OF CURB ELEVATION / FLOW LINE ELEVATION
	EXISTING CURB AND GUTTER
×30.89	EXISTING SPOT ELEVATION
32	PROPOSED CONTOUR
•30.1	PROPOSED SPOT ELEVATION
FF = 33.3	FINISH FLOOR ELEVATION
	EXISTING BLOCK/RTG. WALLS
	FLOW DIRECTIONAL ARROW
	DRAINAGE SWALE
	SIDEWALK CULVERT

DRAINAGE CHARACTERISTICS

OFFSITE CONDITIONS: THIS SITE DOES NOT AND WILL NOT ACCEPT ANY STORM WATER FLOWS FROM THE ADJACENT PROPERTIES OR PUBLIC R.O.W.(S)

ONSITE CONDITIONS
UNDEVELOPED: SITE CONSISTS OF LOOSE IMPORTED FILL OVER A MAJORITY OF THE SITE. IT HAS A CORRESPONDING 'C' FACTOR OF 0.34.

Q_{100} = (0.34)(2.3)(2.16)(0.907) = 1.53 CFS
Q_{10} = (0.657)(1.53) = 1.01 CFS
V_{100} = (0.34)(0.1917)(39,509) = 2,574 CU.FT.
V_{10} = (0.657)(2,574) = 1,692 CU.FT.

IN THIS SITE'S UNDEVELOPED STATE, THESE STORM WATERS WILL OVERLAND FLOW TO THE NORTH AND EAST UNTIL THEY ARE BLOCKED BY THE EXISTING BLOCK WALLS OF THE ADJACENT PROPERTY OWNERS.

DEVELOPED: WHEN THIS SITE IS DEVELOPED, IT WILL HAVE TWO DRAINAGE BASINS. LOTS 1-12 ARE ALLOWED TO DISCHARGE THEIR STORM WATERS ONTO THE ACCESS/DRAINAGE EASEMENT WHERE THEY ARE THEN ROUTED TO A DISCHARGE SIDEWALK CULVERT ALONG THE EAST R.O.W. OF DARTMOUTH ST. THE PROJECTED FLOWS AND VOLUMES ARE AS FOLLOWS:

Q_{100} = (0.78)(2.3)(2.16)(0.597) = 2.31 CFS
Q_{10} = (0.657)(2.31) = 1.52 CFS
V_{100} = (0.78)(0.1917)(26,000) = 3,888 CU.FT.
V_{10} = (0.657)(3,888) = 2,554 CU.FT.

DISCHARGE THROUGH SIDEWALK CULVERT IS COMPUTED BY:

$Q = CA\sqrt{2GH}$, WHERE C=0.7
A=1.0 S.F.
H=0.67'
$= (0.7)(1.0)[(2)(32.2)(0.67)]^{\frac{1}{2}}$
= 4.6 CFS > 2.31 CFS ----O.K.

THESE STORM WATER FLOWS ENTER ONTO THE DRIVING SURFACE OF DARTMOUTH ST. AND ARE CONVEYED NORTHWARD. THESE FLOWS ALONG WITH OTHER CONTRIBUTING STORM WATERS ARE ANALYZED IN THE INVESTIGATION OF THE DOWNSTREAM FLOW CARRYING CAPACITY SHOWN ON THIS SHEET.

LOTS 13-18 SHALL DISCHARGE THEIR STORM WATERS ONTO CUTLER AVE. VIA THEIR DRIVEPADS. THE TOTAL DISCHARGE FROM THESE LOTS IS AS FOLLOWS:

Q_{100} = (0.78)(2.3)(2.16)(0.31) = 1.2 CFS
Q_{10} = (0.657)(1.2) = 0.79 CFS
V_{100} = (0.78)(0.1917)(13,509) = 2,020 CU.FT.
V_{10} = (0.657)(2,020) = 1,327 CU.FT.

THESE STORM WATERS ARE ACCEPTED BY CUTLER AND CONVEYED EASTERLY TO RICHMOND AVE. WATERS ARE DISCHARGED INTO THE RIGHT-OF-WAY OF I-40 AND THEN RELEASED INTO THE NORTH DIVERSION CHANNEL.

APPROVED FOR DRAINAGE
9/27/84
SIGNATURE DATE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

RECEIVED
AUG 30 1984
HYDROLOGY SECTION

Date
Designed
Checked

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

DRAINAGE & GRADING PLAN

Centennial Villas Townhomes
Dartmouth St. and Cutler Ave.

Sheet
of