HYDROLOGY

G19/D19

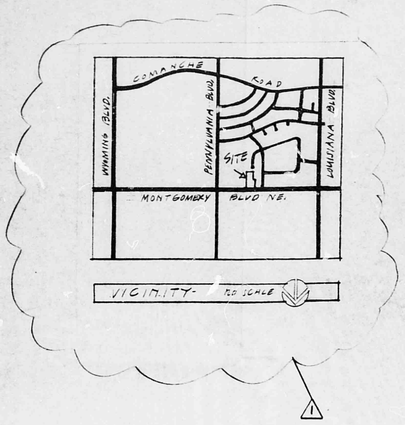
ONE PLAN

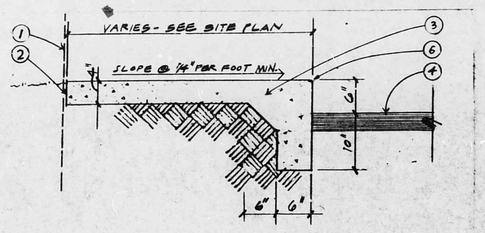
I PLAN FOR

MOSSMAN OFFICE

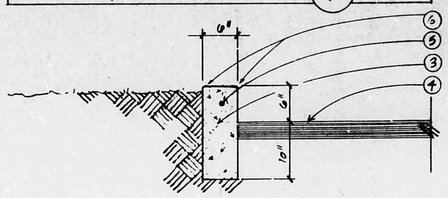
BIDG.

G19-D19





SIDEWALK / CURB DETAIL (1) 1"=1'-0"



CURB DETAIL (2) 1"=1'-0"

DRAINAGE REPORT

Determination of runoff and its disposal for Tract E-2, Unit No. 4, Standard Skies Addition, 2700 Montgomery Boulevard, N.E.

Runoff:

Total area 1.299 Ac.	56,584 sq. ft.	
Landscaping	9,665 sq. ft.	= 0.22 Ac.
Impervious surfaces	46,919 sq. ft.	= 1.08 "

6 hour - 100 year storm volume of 2.4' from Plate 22.2D-1, DPM.

Intensity = I = [(6 hr rain) 6.84 x tc] - 0.51 where tc = time of concentration assumed to be 10 minutes from Plate 22.2D-2, DPM.
I = (2.4 x 6.84 x 10) - 0.51 = 4.2 inches/hour.

Using the Rational formula, Q=CIA, where Q = runoff produced C = 0.9, factor depending upon type of surface; I = 4.2, rainfall intensity in inches per hour; and A = 1.08 in acres.
Q = 0.9 x 4.2 x 1.08 = 4.1 cfs (impervious surfaces)
Q = 0.5 x 4.2 x 0.22 = 0.5 cfs (landscaping)
Total runoff Q = 5.0 cfs

Disposal: Discharged into south gutter of Montgomery Boulevard, N.E.

1. Diagonal flow west across drive pad access to this property. Refer to drainage plan.
2. Slope 0.038
3. Assumed depth of flow of inches, or one half of height of curb on east side of drive pad, and width of 9 feet.
4. a. Flow area = $9 \times \frac{0.33}{2}$ = 1.50 ' Triangular shape flow

p, wetted perimeter = 9.33 feet.
n, hydraulic radius = $\frac{1.50}{9.33}$ = 0.16

n = 0.014 for reasonably smooth concrete.
These constants will be used with the Manning Formula,

$Q = \frac{1.486}{n} = n\ 2/3 \times s\ 1/2$

$Q = \frac{1.486 \times 1.5}{0.014} \times (0.16)\ 2/3 \times (0.038)\ 1/2 = 8.76$ cfs

Conclusion:

Since the channel provided by the drive pad will handle almost twice the estimated flow expected, there will be adequate discharge area from this site.

John E. McNerney
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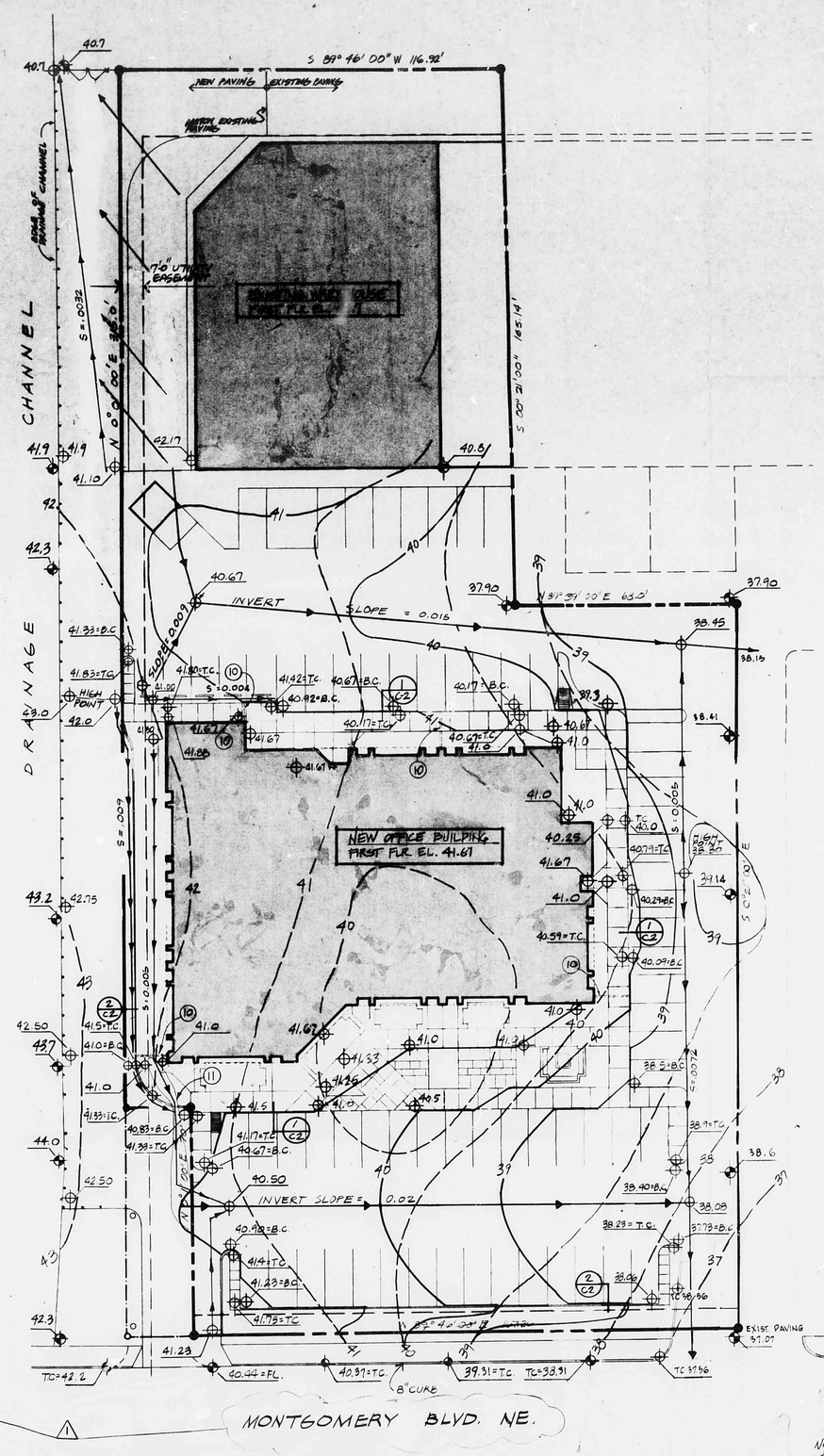
Reg. PE & LS No 1104



GRADING AND DRAINAGE PLAN 1" = 20'-0"

NORTH

G19/D19

KEYED NOTES:

1. LINE OF BUILDING WHERE OCCURRING.
2. 1/2" EXPANSION MATERIAL AT BUILDING.
3. 3000 P.S.I. CONCRETE.
4. 2" ASPHALT PAVING ON 6" SCARIFIED AND RECOMPACTED SUBGRADE. SEE SPECIFICATIONS.
5. #4 CONTINUOUS.
6. CHAMFER OR TOOLED EDGES - CONTRACTOR'S OPTION.
7. 1/4" STEEL CHECKERED PLATE (WIDTH OF SIDEWALK). 1/4" DIA. EXPANSION BOLTS 12" O.C. MIN. WITH COUNTERSUNK HEADS THRU ANGLE INTO CONCRETE. PAINT, COLOR AS SELECTED BY ARCHITECT.
8. 1/4" X 1/2" X WIDTH OF SIDEWALK STEEL BAR WELDED TO ANGLE. PAINT, COLOR BY ARCHITECT.
9. 2" X 2" X 3/16" STEEL ANGLE WITH WELDING STUDS 16" O.C. MIN. CONTINUOUS FOR WIDTH OF SIDEWALK. PAINT, COLOR BY ARCHITECT.
10. 4" PVC PIPE FROM RAINLEADER UNDERGROUND. INSTALL FLUSH WITH FACE OF CURB. INVERT OF PIPE TO BE FLUSH WITH CURB AND GUTTER INVERT. PROVIDE CONTROL JOINT CONTINUOUS ACROSS SIDEWALK AND CURB - LOCATE ON CENTERLINE OF PIPE.
11. 16" WIDE CURB CUT FLUSH WITH PAVING

LEGEND:

41	EXISTING CONTOUR
41	NEW CONTOUR
41.0	EXISTING SPOT ELEVATION
41.0	NEW SPOT ELEVATION
	INVERT - ARROW INDICATES DIRECTION OF FLOW
T.C.	TOP OF CURB
B.C.	BOTTOM OF CURB

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PROJECT MANAGER CHARLES RICK GREEN	job no 0584	date 9-16-85
sheet title GRADING AND DRAINAGE	by RBM CRG	

1104 N.M.

delatorre • nannant pa
architects aia
52 north school road ne / suite 101
albuquerque, nm 87102 505 881 0550

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