

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: J-22 DATE: 12-28-84

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: MST Trust Building between Eastridge & Tranning

LEGAL DESCRIP.: Pandora Heights tract H

APPROVAL REQUESTED

____ PRELIMINARY PLAT _____ FINAL PLAT
____ SITE DEVELOPMENT PLAN X BUILDING PERMIT
____ ROUGH GRADING

WHO:

REPRESENTING:

ATTENDANCE: Larry Kreen _____
Carla A. Monty _____

____ Conceptual Drainage Plan/Report required for Preliminary Plat and/or Site Development Plan sign-off.

X Approved Drainage Plan/Report required for Final Plat and/or Building Permit sign-off.

____ Subdivision Improvements Agreement or Financial Security required.

FINDINGS: ① Drainage plan per DPM ② Free draining
from site ③ w/11 site ④ minimum shading direction

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Carla A. Monty SIGNED: Larry Kreen
TITLE: Civil Engineer TITLE: Architect
DATE: 12-28-84 DATE: 12-28-84

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

8510

DRAINAGE SUBMITTAL INFORMATION SHEET

PROJECT TITLE M & T Trust Building TYPE OF SUBMITTAL Grading Drainage Plan
ZONE ATLAS PAGE NO. J-22 CITY ADDRESS Eastridge Drive
LEGAL DESCRIPTION Tract "H" Panorama Heights Subdivision
ENGINEERING FIRM Scanlon & Assoc CONTACT DENNIS BRAND
ADDRESS 8008 Penn Circle NE PHONE 265-6941
OWNER _____ CONTACT _____
ADDRESS _____ PHONE _____
ARCHITECT Dorman / Nelson / Brum CONTACT Larry Breen
ADDRESS _____ PHONE (11)-282-9196
SURVEYOR Scanlon & Assoc. CONTACT Tam Wagner
ADDRESS 8008 Penn Circle NE PHONE 265-6941
CONTRACTOR N/A CONTACT _____
ADDRESS _____ PHONE _____

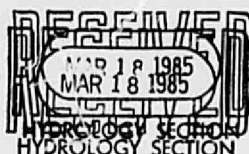
PRE-DESIGN MEETING:

☐ YES
☐ NO
☐ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB No _____
EPC No _____

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ SITE DEVELOPMENT PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ ROUGH GRADING PERMIT APPROVAL
☐ GRADING/PAVING PERMIT APPROVAL
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: Jan 11, 85BY: Dennis Brand



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

March 25, 1985

Dennis Brand
Scanlon & Associates
8008 Penn Circle, NE
Albuquerque, New Mexico 87110

RE: GRADING/DRAINAGE PLAN FOR M & T TRUST BUILDING
(J-22/D43) RECEIVED MARCH 18, 1985

Dear Mr. Brand:

The referenced plan dated February 8, 1985, is approved.

Please attach a copy of this approved plan to the construction set prior to Hydrology sign-off.

If you have any questions or comments regarding this project, please call me at 766-7644.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

MUNICIPAL DEVELOPMENT DEPARTMENT

C. Dwayne Sheppard, P.E., City Engineer

ENGINEERING DIVISION

Telephone (505) 766-7467

AN EQUAL OPPORTUNITY EMPLOYER

Missing from drawings:

Vicinity Map

Legal description

Engineers stamp

- dated

- signed

Approved form 1

Date 2-8-85

Carla

J221043

DRAINAGE PLAN
FOR
M & T TRUST BUILDING
(TRACT H, PANORAMA HEIGHTS SUBDIVISION)

January, 1985

Prepared By:

SCANLON AND ASSOCIATES
8008 Pennsylvania Circle NE
Albuquerque, New Mexico 87110


Dennis D. Brand
Jan 11, 1985

1. Purpose and Scope.

This report is in accordance with the Albuquerque Development Process Manual requirements for a drainage report and plan for all new development.

2. Site Location.

Tract H of Panorama Heights Subdivision is located in Northeast Albuquerque, approximately at Tramway Boulevard and 1/4 mile North of Indian School Road. The site is zoned O-1 and fronts on Eastridge Drive, just West of Tramway, with backing on Tramway Boulevard. The lot is an "infill" lot as the adjacent lands to the North have been previously developed and the adjacent lot to the South is approved for development.

3. Existing Drainage Conditions.

The land slopes from East to West at an average rate of 5 1/2%. Soils consist of alluvial silty sand of the Embudo-Tijeras complex. Primary vegetative cover consists of a light growth of brush and grass. The site contains one existing swale which tends to concentrate water to the center of the lot as it flows West.

The construction of Tramway Boulevard to the East and a residential rear retaining wall for the properties abutting to the North effectively block any offsite drainage from above.

4. Hydrology.

The proposed development plan consists of 1.265 acres. Approximately 60% of the site will be left in its natural state, with the building and parking areas occupying the front 40%. The method used to investigate the runoff condition is the Rational Method ($Q=CiA$).

Procedures and criteria used were taken from the Albuquerque Development Process Manual (DPM), Volume 2, Section 22. Drainage computations are summarized in the attached addendum.

The results of computational analysis indicate the developed versus undeveloped peak runoff for the 100 year recurrence, 6-hour duration rainfall to be 3.20 cfs versus 2.37 cfs.

We believe this slight increase warrants allowing the drainage from this site to flow freely to the street (Eastridge Drive). Minor revisions to grading have been provided to assure that onsite drainage is directed to the street. Also, the nature of this development (infill lot between planned areas) and the minimum flooding duration point to utilizing free discharge to the public street.

ADDENDUM

DRAINAGE COMPUTATIONS

AND

EXHIBITS

 SCANLON ASSOCIATES CONSULTING ENGINEERS 8008 Pennsylvania Circle NE Albuquerque, New Mexico 87110-7897 (505) 265-6941	Project <u>M & T Trust Building</u>
	Location <u>Eastridge Drive (Tramway & Indian School)</u>
	Job No. <u>85107</u> Date <u>Jan 9, 1985</u>
	By <u>DDB</u> Sheet <u>1</u> of <u>1</u>

Hydrologic and Hydraulic Computations
 Using City of Albuquerque DPM Criteria
Section 22.2

I Hydrologic

A. Existing Conditions

H of Panorama Heights Subdivision
 1.0⁺ Acreage = 1.263 Acres (55,103 sq ft)
 Soil is Embudo-Tijeras complex - (0 to 9% slope)
 (Hydrologic Soil Group B)

This site contains 5 1/2% to 7% Slopes
 and Sparse Vegetation

Existing CN (from Plate 22.2 C-2)
 = 79. Post pasture (of Albuja DPM
 land)

B. C-factors Existing: Plate 22.2 C-1 = 0.34
 Modifications to produce C-factors
 for further calculations
Calculate % Impervious (See Site Plan)

Area of Building = 3968 SF

Parking lots & Misc = 10340 SF

Total Impervious 14,308 SF

$$\% = \frac{14,308}{55,103} = \underline{25.97\%}$$

Now: Using Hydr. Group B, % Impervious
 of 26% and Plate 22.2 C-1

the "C" factor for use
 in the Rational Equation is 0.46

 SCANLON & ASSOCIATES CONSULTING ENGINEERS 8008 Pennsylvania Circle NE Albuquerque, New Mexico 87110-7897 (505) 265-6941	Project <u>M & T Trust Building</u>
	Location <u>Footway Drive</u>
	Job No. <u>85107</u> Date <u>Jan 9, 85</u>
	By <u>DOB</u> Sheet <u>2</u> of <u> </u>

C. Time of Concentration

As Per DPM Procedure

Use Kirpich relationship Length $L = 470$ feet
 diff in height $\Delta H = 26$ feet

$$T_c = 0.0078 \frac{L^{0.77}}{S^{0.385}} = 0.0078 \frac{(470)^{0.77}}{(0.055319)^{0.385}}$$

$$= 0.0078 \frac{114.160}{0.3281} = 2.71 \text{ min}$$

but we utilize a minimum of $T_c = 10$ minutes
 (See Sec 22.2 sheet 4)

D Intensity i

10 year frequency

100 year frequency

From 22.2 Plates D-1 and D-2
 rainfall Volving from Plate D-1 = 6/hour rainfall
 $I_{100} = 2.55$ inches/hr

$$I_{10} = 0.657 (2.55) = 1.68 \text{ inches/hour}$$

for $t_c = 10$ minutes (from Plate 22.2 D-2)

$$i_{10} = 1.68 (2.16) = 3.62 \text{ in/hr}$$

$$i_{100} = 2.55 (2.16) = 5.51 \text{ in/hr}$$

 SCANLON & ASSOCIATES CONSULTING ENGINEERS 8008 Pennsylvania Circle NE Albuquerque, New Mexico 87110-7897 (505) 265-6941	Project <u>M&T Building</u>
	Location <u>Eastridge Drive</u>
	Job No. <u>85107</u> Date <u>Jan 10, 85</u>
	By <u>DDB</u> Sheet <u>3</u> of <u> </u>

Peak Flows $Q = ciA$

Existing Conditions (for comparison)

$$Q_{10} = 0.34(3.62) 1.265 = 1.55 \text{ cfs}$$

$$Q_{100} = 0.34(5.51) 1.265 = 2.37 \text{ cfs}$$

Proposed Improvements

$$Q_{10} = 0.46(3.62) 1.265 = 2.11 \text{ cfs}$$

$$Q_{100} = 0.46(5.51) 1.265 = 3.20 \text{ cfs}$$

Runoff Volumes

Use SCS Method as Allowed by DPM

From Plate 22.2 D-1 and

22.2 C-2

Direct runoff $q = 0.55 \text{ in/hr}$
for 10yr

$q = 1.25 \text{ in/hr}$
for 100yr

Volume of Runoff

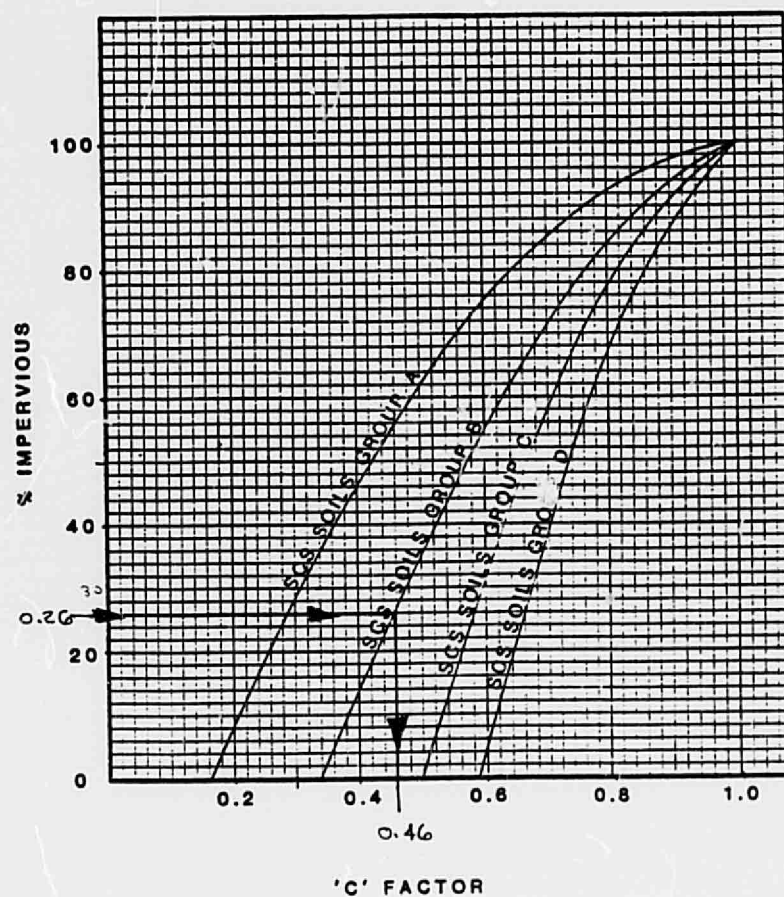
$$\text{Vol} = q \times A / 12$$

$$\text{Vol}_{10} = 0.55 \times 1.265 \times \frac{1}{12} = 0.058 \text{ Acre ft}$$

$$\text{Vol}_{100} = 1.25 \times 1.265 \times \frac{1}{12} = 0.13 \text{ Acre ft}$$

DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR



RUNOFF CURVE NUMBER (CN) CALCULATION

LAND USE DESCRIPTION	Hydrologic Soil Group				Present Area				Future Area			
	A	B	C	D	A	B	C	D	A	B	C	D
Cultivated land ^{1/} : without conservation treatment	72	81	86	81								
: with conservation treatment	62	71	76	71								
: poor condition	68	78	83	78								
Pasture or range land: fair condition	64	73	78	73								
: good condition	59	68	73	68								
Marshes: good condition	30	39	44	39								
Wood or Forest land: thin stand, poor cover, no mulch	45	54	59	54								
good cover ^{2/}	25	34	39	34								
Open Space, lawns, parks, golf courses, cemeteries, etc.												
good condition: grass cover on 75% or more of the area	38	47	52	47								
fair condition: grass cover on 50% to 75% of the area	48	57	62	57								
Commercial and business areas (80% impervious)	80	89	94	89								
Industrial districts (75% impervious)	81	90	95	90								
Residential ^{3/}												
Average lot size Average % impervious ^{4/}												
1/8 acre 66	77	86	91	86								
1/4 acre 59	68	77	82	77								
1/2 acre 50	59	68	73	68								
1 acre 40	49	58	63	58								
Partial parking lots, roofs, driveways, etc. ^{5/}	80	89	94	89								
Streets and roads:												
paved with curbs and storm sewers ^{6/}	80	89	94	89								
gravel	78	87	92	87								
dirt	72	81	86	81								

^{1/} For a more detailed description of agricultural land use curve numbers, refer to National Engineering Handbook, Section 4, Hydrology, Chapter 9, August 1973

^{2/} Good cover is protected from erosion and litter and brush cover and

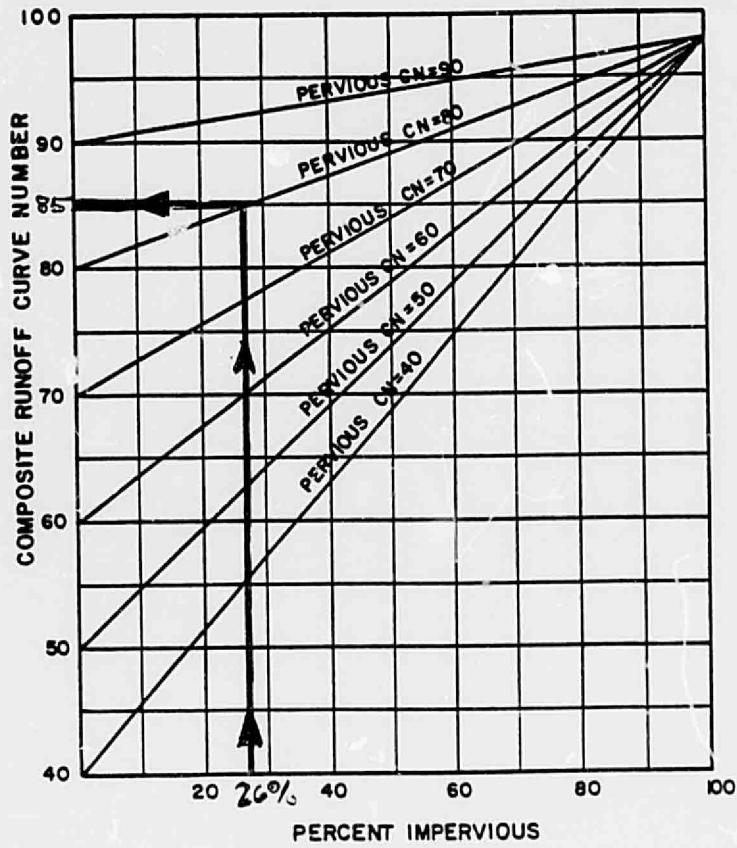
^{3/} Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of roof water directed to lawn where additional runoff could occur.

^{4/} The remaining pervious area (lawn) are considered to be in good pasture condition for these curve numbers.

^{5/} In some warmer climates of the country, a curve number of 90 may be used

Present CN <u>70</u>	Future CN <u>85</u>
Runoff Volume = _____ in.	Runoff Volume = _____ in.
-DAIACI = <u>80</u> in.	-DAIACI = <u>80</u> in.
Area, Acres <u>1.265</u>	Date <u>Jan 10, 85</u>
Project <u>MET Building</u>	
Approved By <u>IS</u>	

PERCENTAGE OF IMPERVIOUS AREAS
VS.
COMPOSITE CN'S FOR GIVEN PERVIOUS
AREA CN'S



HYDROLOGY: SOLUTION OF RUNOFF EQUATION

