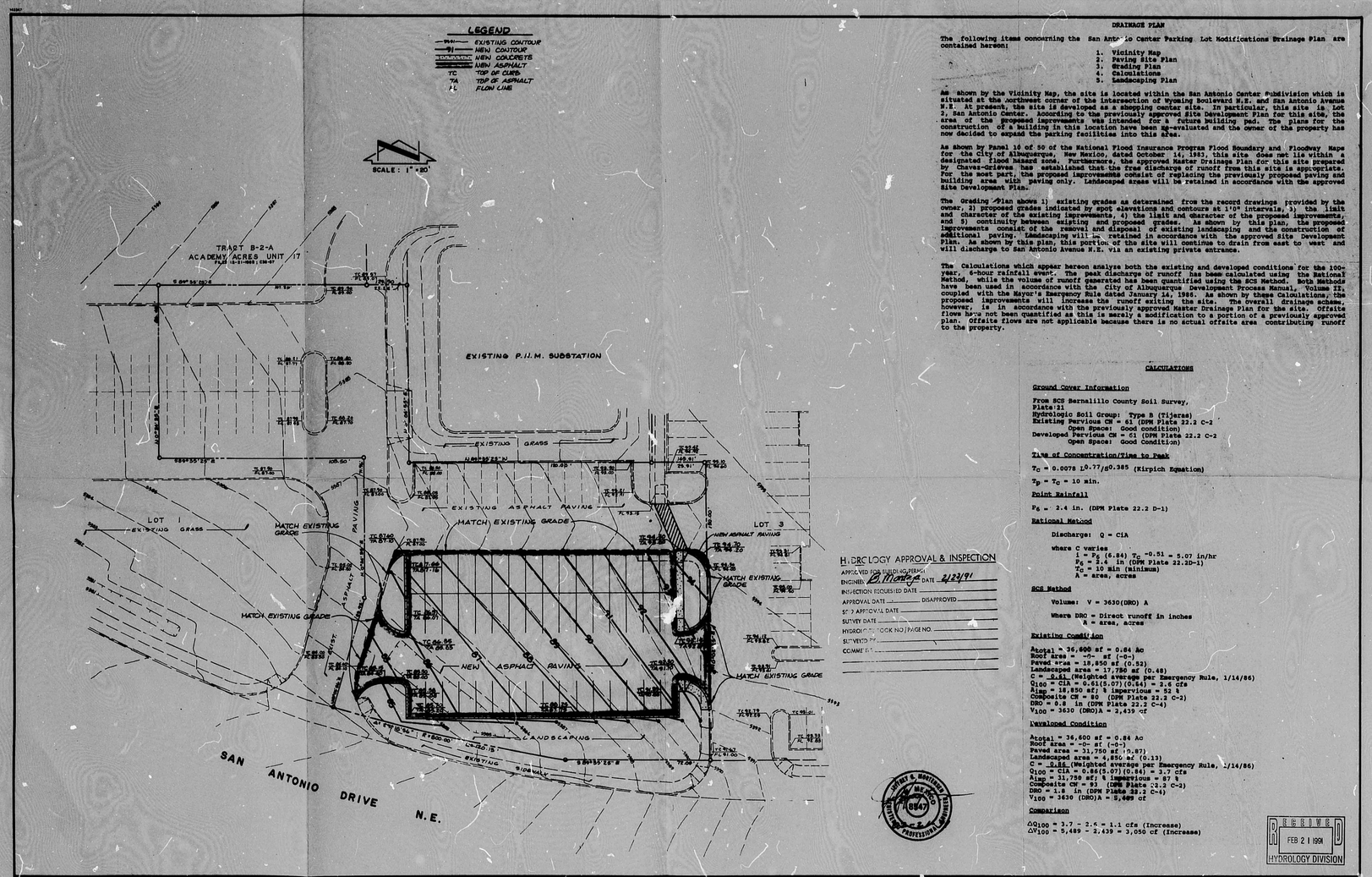
PUBLIC WORKS/HYDROLOGY

E19/D25B1



HYDROLOGY APPROVAL & INSPECTION
APPROVED FOR RECORD DRAWING
ENGINEER DATE 2/22/91
INSPECTION REQUESTED DATE
APPROVAL DATE DISAPPROVED
SCP APPROVAL DATE
SURVEY DATE
HYDROLOGY BOOK NO / PAGE NO.
SURVEYED BY
COMMENTS

JEFFREY S. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

RECEIVED FEB 21 1991 HYDROLOGY DIVISION

JMA JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505)345-4250

GRADING AND DRAINAGE PLAN
SAN ANTONIO CENTER PARKING LOT MODIFICATIONS

DESIGNED BY J.G.M.	NO.	DATE	BY	REVISIONS	JOB NO. 900584
DRAWN BY S.G.H.					DATE 02/1991
APPROVED BY J.G.M.					SHEET 2 OF 3

DRAINAGE PLAN

The following items concerning the San Antonio Center Parking Lot Modifications Drainage Plan are contained hereon:

1. Vicinity Map
2. Paving Site Plan
3. Grading Plan
4. Calculations
5. Landscaping Plan

As shown by the Vicinity Map, the site is located within the San Antonio Center Subdivision which is situated at the northwest corner of the intersection of Wyoming Boulevard N.E. and San Antonio Avenue N.E. At present, the site is developed as a shopping center site. In particular, this site is Lot 2, San Antonio Center. According to the previously approved Site Development Plan for this site, the area of the proposed improvements was intended for a future building pad. The plans for the construction of a building in this location have been re-evaluated and the owner of the property has now decided to expand the parking facilities into this area.

As shown by Panel 16 of 50 of the National Flood Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, New Mexico, dated October 16, 1983, this site does not lie within a designated flood hazard zone. Furthermore, the approved Master Drainage Plan for this site prepared by Chavez-Grieves has established that the free discharge of runoff from this site is appropriate. For the most part, the proposed improvements consist of replacing the previously proposed paving and building area with paving only. Landscaped areas will be retained in accordance with the approved Site Development Plan.

The Grading Plan shows 1) existing grades as determined from the record drawings provided by the owner, 2) proposed grades indicated by spot elevations and contours at 1'0" intervals, 3) the limit and character of the existing improvements, 4) the limit and character of the proposed improvements, and 5) continuity between existing and proposed grades. As shown by this plan, the proposed improvements consist of the removal and disposal of existing landscaping and the construction of additional paving. Landscaping will be retained in accordance with the approved Site Development Plan. As shown by this plan, this portion of the site will continue to drain from east to west and will discharge to San Antonio Avenue N.E. via an existing private entrance.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method, while the volume of runoff generated has been quantified using the SCS Method. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, coupled with the Mayor's Emergency Rule dated January 14, 1986. As shown by these Calculations, the proposed improvements will increase the runoff exiting the site. The overall drainage scheme, however, is in accordance with the previously approved Master Drainage Plan for the site. Offsite flows have not been quantified as this is merely a modification to a portion of a previously approved plan. Offsite flows are not applicable because there is no actual offsite area contributing runoff to the property.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate:21
Hydrologic Soil Group: Type B (Tijeras)
Existing Pervious CN = 61 (DPM Plate 22.2 C-2
Open Space: Good condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2
Open Space: Good Condition)

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

$P_6 = 2.4$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$

where C varies
$I = P_6\ (6.84)\ T_c^{-0.51} = 5.07$ in/hr
$P_6 = 2.4$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (Minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)\ A$

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

$A_{total} = 36,600$ sf = 0.84 Ac
Roof area = -0- sf (-0-)
Paved area = 18,850 sf (0.52)
Landscaped area = 17,750 sf (0.48)
C = 0.61 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = 0.61(5.07)(0.84) = 2.6$ cfs
$A_{imp} = 18,850$ sf; % impervious = 52 %
Composite CN = 80 (DPM Plate 22.2 C-2)
DRO = 0.8 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 2,439$ cf

Developed Condition

$A_{total} = 36,600$ sf = 0.84 Ac
Roof area = -0- sf (-0-)
Paved area = 31,750 sf (0.87)
Landscaped area = 4,850 sf (0.13)
C = 0.86 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = 0.86(5.07)(0.84) = 3.7$ cfs
$A_{imp} = 31,750$ sf; % impervious = 87 %
Composite CN = 93 (DPM Plate 22.2 C-2)
DRO = 1.8 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 5,489$ cf

Comparison

$\Delta Q_{100} = 3.7 - 2.6 = 1.1$ cfs (Increase)
$\Delta V_{100} = 5,489 - 2,439 = 3,050$ cf (Increase)

REF. 25 DATE 3-15-92 OR ESP.

CITY OF ALBUQUERQUE

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NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires

PLAN SHOT TWICE ONCE ON LIGHT ONCE ON DARK

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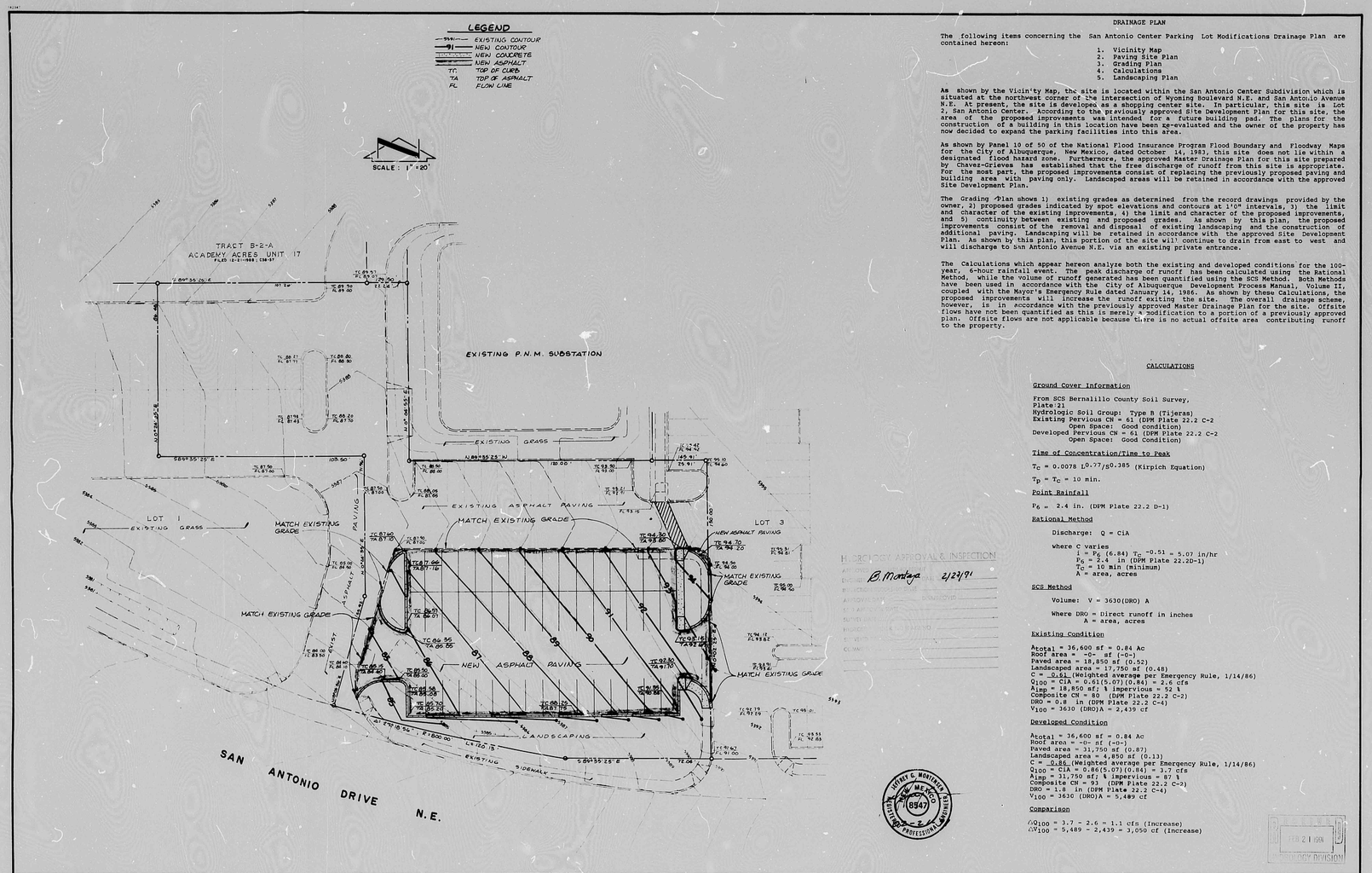
PLANS/PLATS ON FILE

FILE DESC: E19/D25B1

PLANS/PLATS 2

E 30 D 24 C 20 B 16 A 12 CITY OF ALBUQUERQUE C D F



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HYDROLOGY APPROVAL & INSPECTION
B. Montoya 2/27/91

JEFFREY C. MORTENSEN NEW MEXICO 8947 REGISTERED PROFESSIONAL ENGINEER

FEB 21 1991 HYDROLOGY DIVISION

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ONCE ON DARK

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ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505) 345-4250

GRADING AND DRAINAGE PLAN
SAN ANTONIO CENTER PARKING LOT MODIFICATIONS

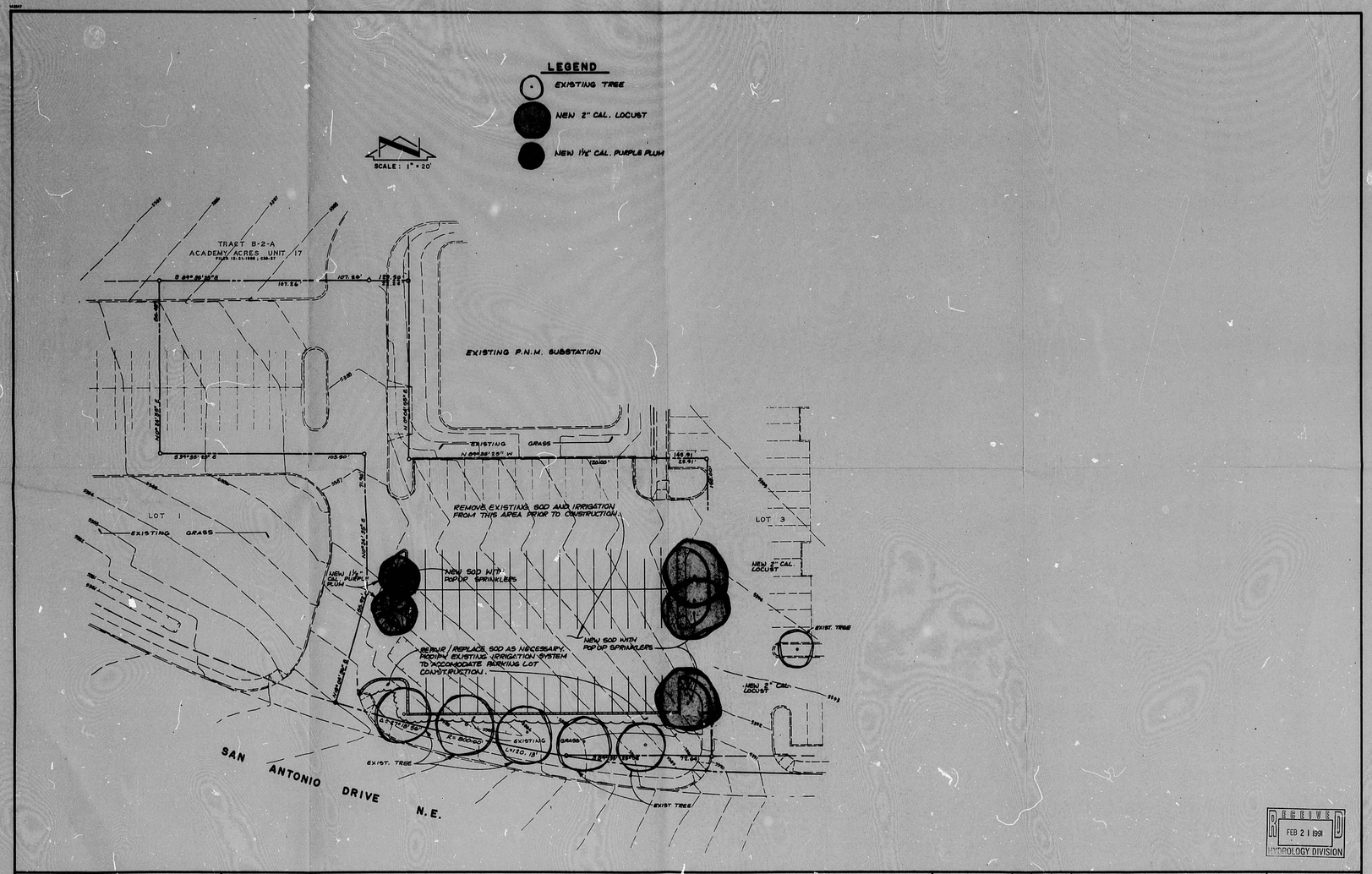
DESIGNED BY J.G.M.
DRAWN BY S.G.H.
APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS

JOB NO. 900584
DATE 02/1991
SHEET 2 OF 3

E 30 D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE C D F



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LANDSCAPING PLAN

SAN ANTONIO CENTER PARKING LOT MODIFICATIONS

DESIGNED BY J.G.M.	NO.	DATE	BY	REVISIONS	JOB NO. 900584
DRAWN BY S.G.H.					DATE 02/1991
APPROVED BY J.G.M.					SHEET 3 OF 3

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