**Construction Notes:**

- Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System, 260-1990, for location of existing utilities.
- 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.
- All work on this project shall be performed in accordance with applicable federal, state and local laws, rules and regulations concerning safety and health.
- All construction within public right-of-way shall be performed in accordance with applicable City of Albuquerque Standards and Procedures.
- If any utility lines, pipelines, or underground utility lines are shown on these drawings, they are shown in an approximate manner only, and such lines may exist where none are shown. If any such existing lines are shown, the location is based upon information provided by the owner of said utility, and the information may be incomplete, or may be obsolete by the time construction commences. The engineer has undertaken no field verification of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines, makes no representation pertaining thereto, and assumes no responsibility or liability therefor. The contractor shall inform itself of the location of any utility line, pipeline, or underground utility line in or near the area of the work in advance of and during excavation work. The contractor is fully responsible for any and all damage caused by its failure to locate, identify and preserve any and all existing utilities, pipelines, and underground utility lines. In planning and conducting excavation, the contractor shall comply with state statutes, municipal and local ordinances, rules and regulations, if any, pertaining to the location of these lines and facilities.
- The design of planters and landscaped areas is not part of this plan. All planters and landscaped areas adjacent to the building(s) shall be provided with positive drainage to avoid any ponding adjacent to structures. For construction details, refer to landscaping plan.

**Erosion Control Measures:**

- 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.
- 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.
- The contractor shall secure "topsoil disturbance permit" Prior to beginning construction.



08-21-91

**DRAINAGE PLAN**

The following items concerning the National Lighting Grading and Drainage Plan are contained hereon:

- Vicinity Map
- Grading Plan
- Calculations

As shown by the Vicinity Map, the site is located on the northwest corner of the intersection of Princeton Drive N.E. and Candelaria Road N.E. The site is presently developed with warehouse buildings, paving and landscaping. The site slopes to the southwest and presently discharges into Candelaria Road N.E. The adjacent lots are also developed, making this a modification to an existing site within an infill area.

As shown by Panel 23 of 50 of the National Flood Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, New Mexico, dated October 14, 1983, this site does not lie within a designated Flood Hazard Zone. Further review of this map indicates that this site does not appear to contribute runoff to a designated downstream flooding condition.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals; 2) the limit and character of the existing improvements; 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 an addition to an existing warehouse/showroom, modifications to an existing parking area, and the installation of new landscaping. The site presently discharges its runoff into Candelaria Road N.E. This drainage pattern will not be altered by the proposed site modifications.

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 SCS Method has been used to quantify the volume of runoff generated. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, coupled with the Mayor's Emergency Rule adopted January 14, 1985. As shown by these calculations, the proposed improvements will result in a slight decrease in both the peak discharge and volume of runoff. The free discharge of runoff from the site is appropriate because: 1) this is a modification to an existing site in an infill area; 2) the proposed improvements will result in a slight decrease in runoff; 3) the new drainage pattern is consistent with the existing drainage pattern; and 4) the proposed improvements will not adversely impact downstream conditions.

**CALCULATIONS****Ground Cover Information**

From SCS Bernalillo County Soil Survey, Plate 21: Good Cut and Fill Land  
Hydrologic Soil Group: A  
Existing Pervious CN = 39 (DPM Plate 22.2 C-3)  
Open Space: good condition  
Developed Pervious CN = 39 (DPM Plate 22.2 C-3)  
Open Space: good condition

**Time of Concentration/Time to Peak**

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

$T_p = T_c = 10 \text{ min.}$

**Point Rainfall**

$P_6 = 2.2 \text{ in.}$  (DPM Plate 22.2 D-1)

**Rational Method**

Discharge:  $Q = C i A$

where C varies

$i = P_6 (6.84) T_c^{-0.51} = 4.65 \text{ in/hr}$   
 $P_6 = 2.2 \text{ in}$  (DPM Plate 22.2D-1)  
 $T_c = 10 \text{ min}$  (minimum)  
 $A = \text{area, acres}$

**SCS Method**

Volume:  $V = 3630 (\text{DRO}) A$

Where DRO = Direct runoff in inches  
 $A = \text{area, acres}$

**Existing Condition**

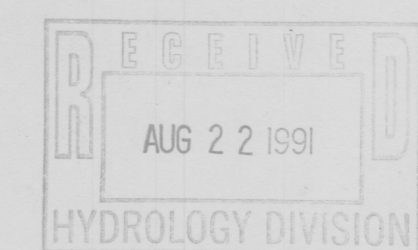
$A_{\text{total}} = 66,300 \text{ sf} = 1.52 \text{ Ac}$   
Roof area = 23,800 sf (0.36)  
Paved area = 37,900 sf (0.57)  
Landscaped area = 4,600 sf (0.07)  
 $C = 0.88$  (Weighted average per Emergency Rule, 1/14/86)  
 $Q_{100} = C i A = 0.88 (4.65) 1.52 = 6.2 \text{ cfs}$   
% impervious = 93 %  
Composite CN = 93 (DPM Plate 22.2 C-3)  
DRO = 1.55 in (DPM Plate 22.2 C-4)  
 $V_{100} = 3630 (\text{DRO}) A = 8,600 \text{ cf}$

**Developed Condition**

$A_{\text{total}} = 66,300 \text{ sf} = 1.52 \text{ Ac}$   
Roof area = 24,800 sf (0.37)  
Paved area = 36,000 sf (0.54)  
Landscaped area = 5,500 sf (0.09)  
 $C = 0.87$  (Weighted average per Emergency Rule, 1/14/86)  
 $Q_{100} = C i A = 0.87 (4.65) 1.52 = 6.1 \text{ cfs}$   
% impervious = 91 %  
Composite CN = 92 (DPM Plate 22.2 C-3)  
DRO = 1.45 in (DPM Plate 22.2 C-4)  
 $V_{100} = 3630 (\text{DRO}) A = 8,000 \text{ cf}$

**Comparison**

$\Delta Q_{100} = 6.2 - 6.1 = 0.1 \text{ cfs}$  (decrease)  
 $\Delta V_{100} = 8,600 - 8,000 = 600 \text{ cf}$  (decrease)



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

GRADING & DRAINAGE PLAN  
NATIONAL LIGHTING

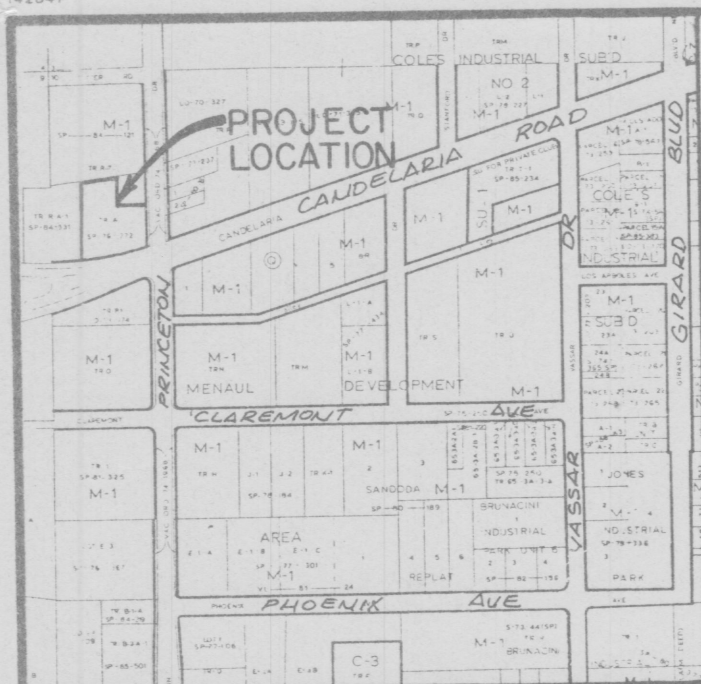
DESIGNED BY J.P.K.

DRAWN BY C.L.B./SGH

APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS	JOB NO.
				910621
				DATE 08-1991
				SHEET 1 OF 1





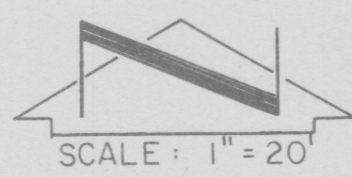
VICINITY MAP  
SCALE: 1" = 800'

### PROJECT BENCHMARK

ACS BRASS TABLE STAMPED "10-HIG 1979 SET  
FLUSH WITH THE CURB LOCATED AT THE  
INTERSECTION OF CANDELARIA ROAD AND  
PRINCETON DRIVE  
ELEVATION = 5088.32 FEET (MS.L.D.)

### T.B.M.

"D" CHISELED ON TOP OF CURB AT SOUTHWEST  
PROPERTY CORNER  
ELEVATION = 5088.46 FEET (MSLD)



### LEGAL DESCRIPTION

TRACT A, MENAUL DEVELOPMENT AREA

### LEGEND

- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- EXISTING DIRECTION OF FLOW
- PROPOSED DIRECTION OF FLOW
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- TC TOP OF CURB
- TA TOP OF ASPHALT
- FL FLOWLINE
- HIGH POINT

ENGINEER'S CERTIFICATION

As indicated by the as-built elevations shown hereon, the building addition has been constructed in substantial conformance with the approved Grading and Drainage Plan. The parking lot, however, has not been constructed in conformance with that same approved plan. The approved plan specifies the removal and replacement of existing asphalt paving. From visual observation, it appears that the existing asphalt paving was retained with minor patching as shown. The intent of the approved design was to discharge the developed runoff into Candelaria Road N.E. and to avoid discharging developed runoff onto adjacent properties or across the public sidewalk. The project, as constructed, does not discharge runoff onto adjacent properties, but only discharges a portion of the developed runoff to Candelaria Road N.E. via the existing driveway. The as-built grades indicate that a portion of the site runoff will puddle within a portion of the parking lot. This does not present an adverse situation for adjacent property owners, however, may present a maintenance and/or liability concern for the property owner. Maintenance and liability issues shall remain the responsibility of the property owner and are hereby excluded from this certification. This certification addresses only the drainage of stormwater from this site. Stormwater which accumulates in the parking lot will eventually discharge to Candelaria Road N.E. via the existing driveway. A relatively small puddle may remain on the asphalt paving surface to eventually infiltrate into the adjacent landscaped area and/or evaporate. In general, the plan satisfies the intent of the approved Grading and Drainage Plan, however, the engineer does not effect the drainage of developed runoff from the site as intended by the approved design.

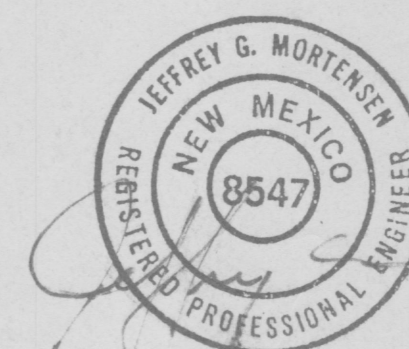
Jeffrey G. Mortensen, P.E.  
REGISTERED PROFESSIONAL ENGINEER  
NEW MEXICO  
8547  
03-14-93  
Date

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Open Space: good condition  
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$T_c = 0.0078 L^{0.77} / S^{0.385}$  (Kirpich Equation)

$T_p = T_c = 10$  min.

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$P_6 = 2.2$  in. (DPM Plate 22.2 D-1)

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Discharge:  $Q = CiA$

where C varies  
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#### SCS Method

Volume:  $V = 3630 (DRO) A$

Where DRO = Direct runoff in inches  
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 $V_{100} = 3630 (DRO)A = 8,000$  cf

#### Comparison

$\Delta Q_{100} = 6.2 - 6.1 = 0.1$  cfs (decrease)  
 $\Delta V_{100} = 8,600 - 8,000 = 600$  cf (decrease)

EXIST. CONCRETE  
TO BE REMOVED.  
GRADE FOR  
POSITIVE DRAINAGE  
TO THE SOUTH

EXIST. ASPHALT

EXIST. ASPHALT

EXIST. ASPHALT

EXIST. ASPHALT

EXIST. ASPHALT

EXIST. ASPHALT

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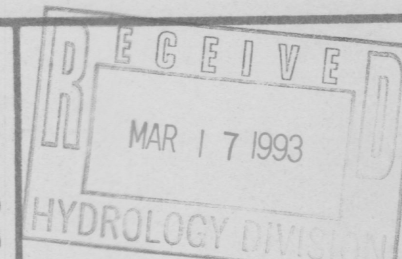
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6010-B MIDWAY PARK BLVD. N.E.  
ALBUQUERQUE, NEW MEXICO 87109  
ENGINEERS & SURVEYORS (505)345-4250



### GRADING & DRAINAGE PLAN NATIONAL LIGHTING

DESIGNED BY	NO.	DATE	BY	REVISIONS	JOB NO.
J.P.K.	03/93	JGM	AS-BUILT & CERTIFY		910621
DRAWN BY					DATE
C.L.B./SGH					08-1991
APPROVED BY					SHEET
J.G.M.					1 OF 1