

VICINITY MAP
SCALE: 1"=800' (APPROX.)

LEGAL DESCRIPTION
TRACT 65 3A-3B LAND DIVISION
OF J. BRUNACINI, MENAUL DEVELOPMENT
AREA

PROJECT BENCHMARK
A SQUARE "O" CHISELED ON THE TOP OF
CONCRETE CURB AT THE WNW CORNER
RETURN. STATION IS LOCATED IN THE
NORTHWEST QUADRANT OF THE INTERSECTION
OF CANDELARIA RD. NE & STANFORD DR. NE.
ELEV. = 5095.13 FEET (M.S.L.D.)

T.B.M.
A SQUARE "O" CHISELED ON THE TOP OF
CURB AT THE N.E. PROPERTY CORNER
AS SHOWN BELOW.
ELEV. = 5092.25 FEET (M.S.L.D.)

LEGEND

- EXIST. SPOT ELEVATION
- EXIST. CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- EXIST. FLOWLINE
- PROPOSED FLOWLINE
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- TC TOP OF CURB / TOP OF CONCRETE
- TA TOP OF ASPHALT
- FL FLOWLINE
- DRAINAGE BASIN BOUNDARY

DRAINAGE PLAN

The following items concerning the Blumenthal Warehouse Addition are contained hereon:

- Vicinity Map
- Grading Plan
- Calculations

As shown by the Vicinity Map, the site is located on the west side of Vassar Drive N.E. between Claremont Avenue N.E. and Phoenix Avenue N.E. At present, the site is developed for commercial use.

As shown by Panel 23 of 50 of the National Flood Insurance Program Flood Insurance Rate 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 Panel indicates that the site does not contribute runoff to an existing downstream flood hazard zone. At present, the site drains from east to west and exits the property onto an adjacent downstream property. From this point, runoff flows toward and eventually enters Phoenix Avenue N.E. Phoenix Avenue N.E. drains from east to west to an existing sump condition within Princeton Drive N.E. At this point, public drainage facilities have been constructed which accept and convey the runoff to the Menaul Detention Pond.

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 existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. In the existing condition, the entire site drains to the southwest corner of the property. In the developed condition, the runoff generated by the impervious areas will be diverted to the east to discharge to Vassar Drive N.E. Basin 'A' represents that area which drains to the southwest corner of the site. Basin 'B', on the other hand, is that area which drains to the southeast corner of the site, to the southeast corner of the site to discharge to Vassar Drive N.E. Vassar Drive N.E. drains south to Phoenix Avenue N.E. As discussed above, Phoenix Avenue N.E. drains to the west to the above referenced sump condition. Based upon the fact that this is a modification to an existing site within an infill area, the proximity of the site to public drainage facilities, and that other sites in this area freely drain developed runoff to the streets, the free discharge of runoff from this site is appropriate.

The Calculations which appear hereon analyze the existing and developed conditions for the 100-year, 6-hour rainfall event. The Procedure for 40-acre and Smaller Basins as set forth in the Revision of Section 22.2, Hydrology of the Development Process Manual, Volume 2, Design Criteria, dated August 1991, has been used to perform these calculations. The calculations quantify the volume of runoff generated along with the peak discharge for the respective basins. As shown by these calculations, the runoff generated by Basin 'A', which discharges onto private property, is being reduced, while the discharge to Vassar Drive N.E., public right-of-way, is being increased. The capacity of the sidewalk culvert has been analyzed using the Orifice Equation.

CALCULATIONS

Site Characteristics

1. Precipitation Zone	2	
2. $P_{2,100} = P_{360} =$	2.35"	
3. Total Area (A_T)	0.84 Ac	
4. Existing Land Treatment		
Treatment	Area (sf/ac)	%
C	30,500/0.70	83
D	6,000/0.14	17
5. Developed Land Treatment		
A. Basin A		
Treatment	Area (sf/ac)	%
C	18,000/0.41	100
B. Basin B		
Treatment	Area (sf/ac)	%
C	1,600/0.04	10
D	12,000/0.39	90

Existing Condition (BASIN A)

- Volume
$$E_w = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$$
$$E_w = (1.13)(0.70) + (2.12)(0.14) / 0.84 = 1.30"$$
$$V_{100} = (E_w / 12) A_T$$
$$V_{100} = (1.30 / 12) 0.84 = 0.0910 \text{ ac.ft.}; 4,000 \text{ cf}$$
- Peak Discharge
$$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$$
$$Q_p = Q_{100} = (3.14)(0.70) + (4.70)(0.14) = 2.9 \text{ cfs}$$

Developed Condition

- Basin A
- Volume
$$E_w = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$$
$$E_w = (1.13)(0.41) + (2.12)(0.43) / 0.84 = 1.13$$
$$V_{100} = (E_w / 12) A_T$$
$$V_{100} = (1.13 / 12) 0.84 = 0.0386 \text{ ac.ft.}; 1,700 \text{ cf}$$
- Peak Discharge
$$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$$
$$Q_p = Q_{100} = (3.14)(0.41) + (4.70)(0.43) = 2.9 \text{ cfs}$$
- Basin B
- Volume
$$E_w = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$$
$$E_w = (1.13)(0.04) + (2.12)(0.39) / 0.43 = 2.03"$$
$$V_{100} = (E_w / 12) A_T$$
$$V_{100} = (2.12 / 12) 0.43 = 0.0760 \text{ ac.ft.}; 3,300 \text{ cf}$$
- Peak Discharge
$$Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D$$
$$Q_p = Q_{100} = (3.14)(0.04) + (4.70)(0.39) = 2.0 \text{ cfs}$$

Comparison

- Basin A
- $\Delta V_{100} = 4000 - 1700 = 2300 \text{ cf (decrease)}$
- $\Delta Q_{100} = 2.9 - 1.3 = 1.6 \text{ cfs (decrease)}$
- Basin B
- $\Delta V_{100} = 3300 - 0 = 3300 \text{ cf (increase)}$
- $\Delta Q_{100} = 2.0 - 0 = 2.0 \text{ cfs (increase)}$

Hydraulic Calculations

Sidewalk Culvert - Entry Condition

$$Q = CA 2gh \text{ (Orifice Equation)}$$

Where:

- $C = 0.6$
- $A = 0.67(2.0) = 1.34 \text{ sf}$
- $g = 32.2 \text{ ft/sec}^2$
- $h = 0.33 \text{ ft}$

$$Q_{cap} = 3.7 > Q_{100}$$

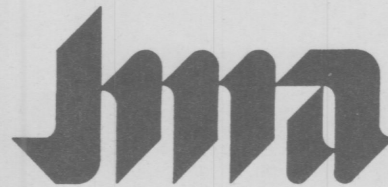
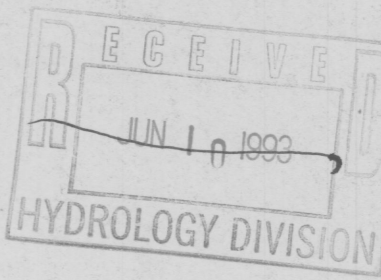
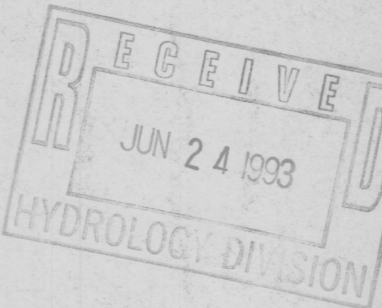
CONSTRUCTION NOTES:

- 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 in writing 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 construction 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 conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, 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.
- An Excavation/Construction Permit will be required before beginning any work within city right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
- Backfill compaction shall be according to ARTERIAL street use.
- Maintenance of these facilities shall be the responsibility of the owner of the property served.
- 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 the structure. For construction details, refer to landscaping plan.

APPROVALS	NAME	DATE
A.C.E. / DESIGN	B. Montoya	4/3/93
INSPECTOR		
A.C.E. / FIELD		

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.



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

GRADING & DRAINAGE PLAN BLUMENTHAL WAREHOUSE ADDITION

DESIGNED BY	JGM	NO.	DATE	BY	REVISIONS	JOB NO.	930441
DRAWN BY	CEN					DATE	05-1993
APPROVED BY	JGM					SHEET	OF