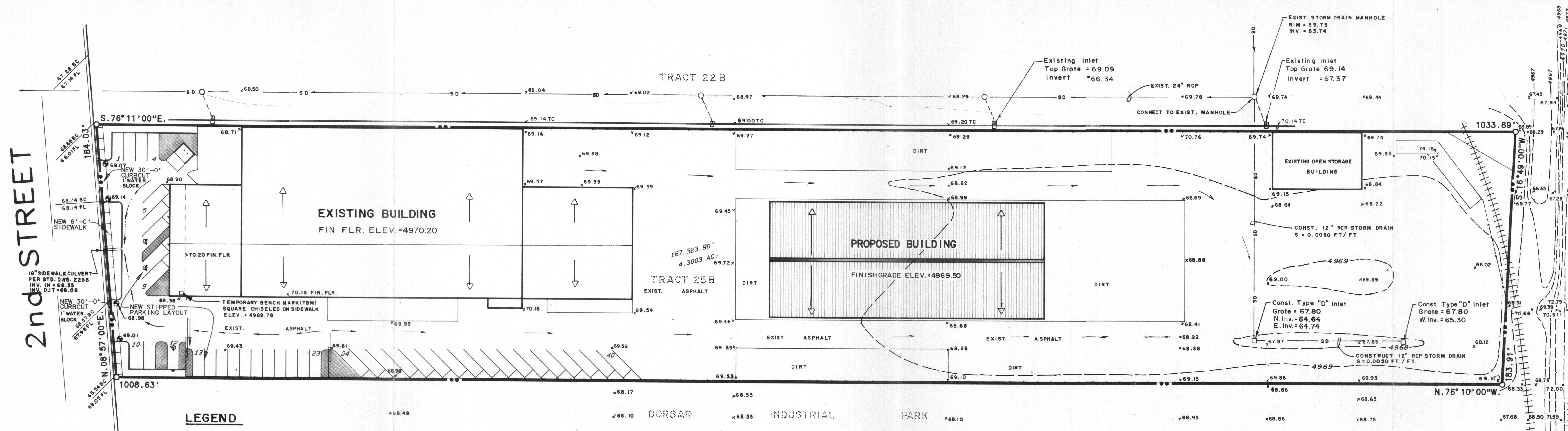


LEGEND

EXIST. CONTOUR	— 4969 —
NEW CONTOUR	— 69 —
EXIST. SPOT ELEV.	× 69.54
NEW SPOT ELEV.	
PROP. LINE	
ROOF SLOPE	
SHEET FLOW	
TOP OF CURB	TC
FLOW LINE	FL

DRAINAGE PLAN

1" = 40.00'

DRAINAGE

EXISTING CONDITIONS:

The site is located on the east side of Second Street and extends eastward as far as the A.T. & S.F. right-of-way. The site has one large building near Second Street and two small open storage buildings near the rear of the site. Other than the buildings the surfaces are either asphalt or dirt. An aerial photograph of the site taken on March 21, 1976 shows the site was paved to within about 240 feet of the southeast corner. The rest appears to have been dirt. This will be used as the existing surface condition. There is no off-site flow from any direction. North of the site there is a storm drain which discharges into the Alameda Drain. This storm drain serves Tract 22B and also the south end of Los Hermanos Street and Carlton Street. The site runoff breaks near the west end of the lot; the front portion of the lot drains to Second Street and the rear portion drains to the east end of the lot where it ponds in a very large, shallow depression. The Floodway maps indicate that a 100-year flood zone exists in Second Street, but that the site itself does not lie within a 100-year flood zone.

PROPOSED CONDITIONS:

It is proposed to construct an open storage building on the site as shown on the plan. The building will have a dirt floor. The area where the building will be constructed is presently dirt. In accordance with pre-design conference finding No. 2, the existing depression where runoff is presently contained will remain. It is proposed to drain this area by installing storm drain inlets and drain line which will discharge into the existing storm drain on Tract 22B.

DRAINAGE CRITERIA:

The calculations shown on this plan have been prepared in accordance with Section 22.2, Hydrology of the Development Process Manual, Volume 2, Design Criteria for the City of Albuquerque, New Mexico in cooperation with Bernalillo County, New Mexico and the Albuquerque Metropolitan Arroyo Flood Control Authority.

PRECIPITATION ZONE:

The site is between the Rio Grande River and San Mateo Boulevard and is, therefore, in Precipitation Zone 2.

EXCESS PRECIPITATION AND PEAK DISCHARGE PER ACRE:

Land Treatment	Excess Precipitation (Inches)		Unit Peak Discharge (cfs/acre)	
	100-Yr.	10-Yr.	100-Yr.	10-Yr.
A	0.53	0.13	1.56	0.38
B	0.78	0.28	2.28	0.95
C	1.13	0.52	3.14	1.71
D	2.12	1.34	4.70	3.14

SITE IMPERVIOUSNESS:

Land Treatment	Existing Areas Sq.Ft.	Existing Areas Acres	Developed Areas Sq.Ft.	Developed Areas Acres
A	-	-	-	-
B	-	-	1425	0.032
C	44956	1.032	18278	0.420
D	141872	3.257	167125	3.837
Totals	186828	4.289	186828	4.289

PEAK DISCHARGE, 100-YEAR AND 10-YEAR:

Existing Conditions:

$q_{100} = (1.032 \times 3.14 + 3.257 \times 4.70) / 4.289 = 4.32$ cfs / acre

CALCULATIONS

$q_{10} = (1.032 \times 1.71 + 3.257 \times 3.14) / 4.289 = 2.80$ cfs / acre

$Q_{100} = 4.32 \times 4.289 = 18.53$ cfs $\quad Q_{10} = 2.80 \times 4.289 = 12.01$ cfs

Proposed Conditions:

$q_{100} = (0.032 \times 2.28 + 0.420 \times 3.14 + 3.837 \times 4.70)/4.289 = 4.53$ cfs/acre

$q_{10} = (0.032 \times 0.95 + 0.420 \times 1.71 + 3.837 \times 3.14)/4.289 = 2.98$ cfs/acre

$Q_{100} = 4.53 \times 4.289 = 19.43$ cfs $\quad Q_{10} = 2.98 \times 4.289 = 12.78$ cfs

VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

Existing Conditions:

$E_{100} = (1.032 \times 1.13 + 3.257 \times 2.12) / 4.289 = 1.88$ in.

$E_{10} = (1.032 \times 0.52 + 3.257 \times 1.34) / 4.289 = 1.14$ in.

$V_{100} = 186828 (1.88 / 12) = 29270$ cf $\quad V_{10} = 186828 (1.14 / 12) = 17749$ cf

Proposed Conditions:

$E_{100} = (0.032 \times 0.78 + 0.420 \times 1.13 + 3.837 \times 2.12) / 4.289 = 2.01$ in.

$E_{10} = (0.032 \times 0.28 + 0.420 \times 0.52 + 3.837 \times 1.34) / 4.289 = 1.25$ in.

$V_{100} = 186828 (2.01 / 12) = 31294$ cf $\quad V_{10} = 186828 (1.25 / 12) = 19461$ cf

SUMMARY OF RUNOFF QUANTITIES:

	Existing	Proposed	Increase
Q_{100}	18.53 cfs	19.43 cfs	0.90 cfs
Q_{10}	12.01	12.78	0.77
V_{100}	29270 cf	31294 cf	2024 cf
V_{10}	17749 cf	19461	1712 cf

ACTUAL POND VOLUME:

Use the average-end-area method to calculate volume of ponding that exists at the east end of the site. The high water level is assumed to be contour 4969. The calculations are shown in the following tabulations:

Section*	Area (sq.ft.)	Ave. Area (Sq.Ft.)	Dist.	Volume
400	14.56			
		30.32	168	5093.8
232	46.08			
		45.39	62	2814.2
170	44.70			
		51.48	66	3397.7
104	58.25			
		67.87	84	5701.1
20	77.49			
		38.75	18	697.5
2	0.0			
Total				17704.3

*Distance west of the SE corner of the site.

The existing ponding area on the site provides the following percentages of the 100-year and 10-year runoff volumes:

100-year $\quad 100(17704.3 / 31294) = 56.6$ %

10-year $\quad 100(17704.3 / 19461) = 91.0$ %

P=2B+2LR
2(2.125) + 2(3.20)
4.25 + 6.40
10.65
2.125
Q=CPH3/2
(3)(10.65)(.2) 3/2
C=3.0
(3)(10.65)(.0167) .15

S.O. 19

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

NOTICE TO CONTRACTOR

1. 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.
2. All work detailed on these plans to be performed under contract, except as otherwise stated or provided hereon, shall be constructed in accordance with Standard Specifications for Public Works Construction, 1986.
3. Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System, Inc. (260-1990), for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer or surveyor so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to ARTERIAL street use.
6. Maintenance of these facilities shall be the responsibility of the owner of the property served.
7. The address of the property served is 4300 SECOND ST. N.W.

APPROVALS:

HYDROLOGY ______ (Name) ______ (Date)

INSPECTOR ______ (Name) ______ (Date)

CONSTRUCTION ______ (Name) ______ (Date)

EROSION CONTROL NOTES:

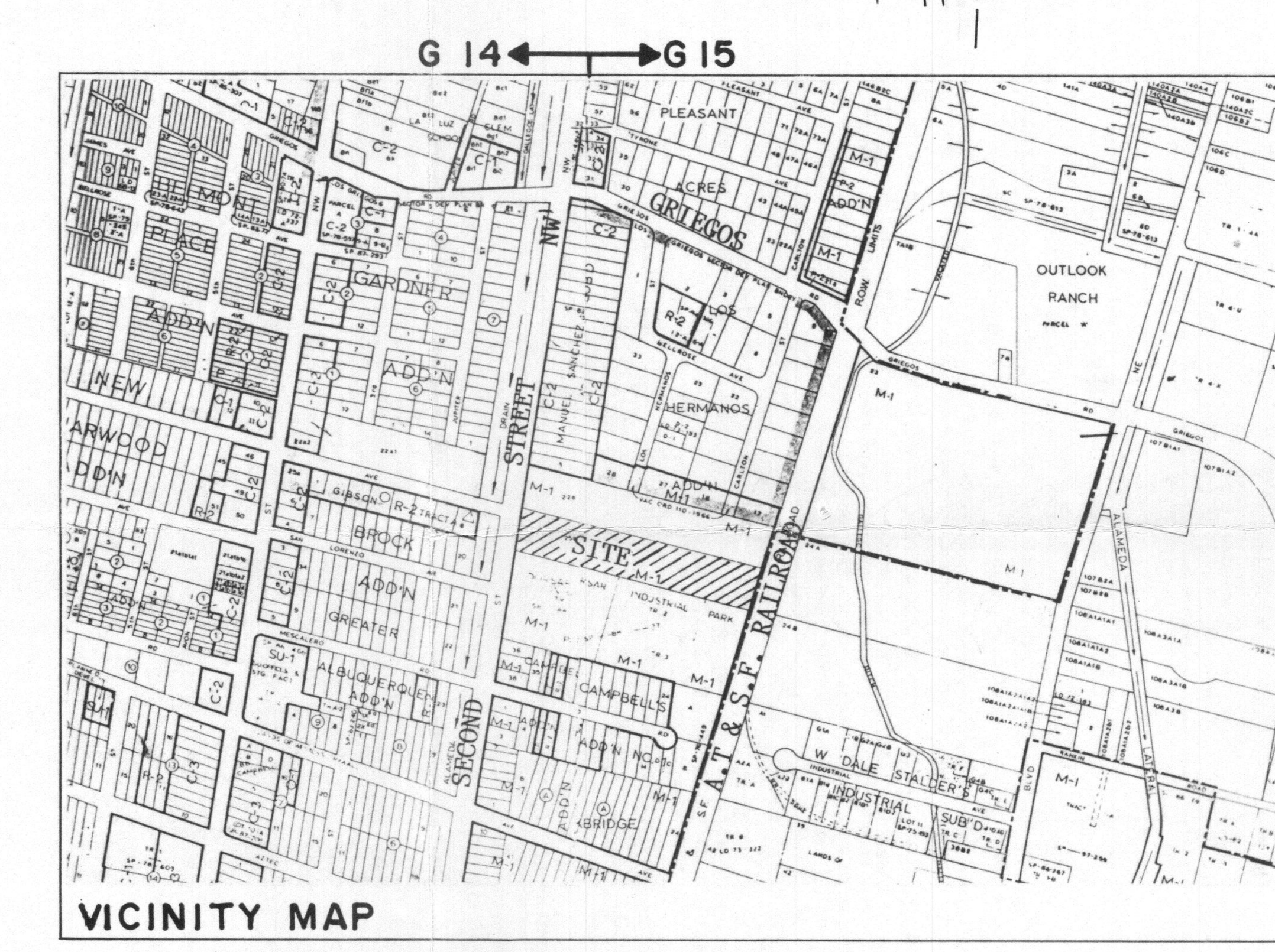
The contractor shall be responsible for compliance with the following:

1. No sediment-bearing water shall be allowed to discharge from the site during construction.
2. During grading operations and until the project has been completed. All adjacent property, rights-of-way, and easements shall be protected from flooding by runoff from the site.
3. Should the contractor fail to prevent sediment-bearing water from entering public right-of-way, he shall promptly remove from the public right-of-way, any and all sediment originating from the site.
4. Control of sediment-laden waters will be accomplished by use of a compacted earth berm of adequate height. The berm shall be located along the downstream perimeter of the property.

LEGAL DESCRIPTION:

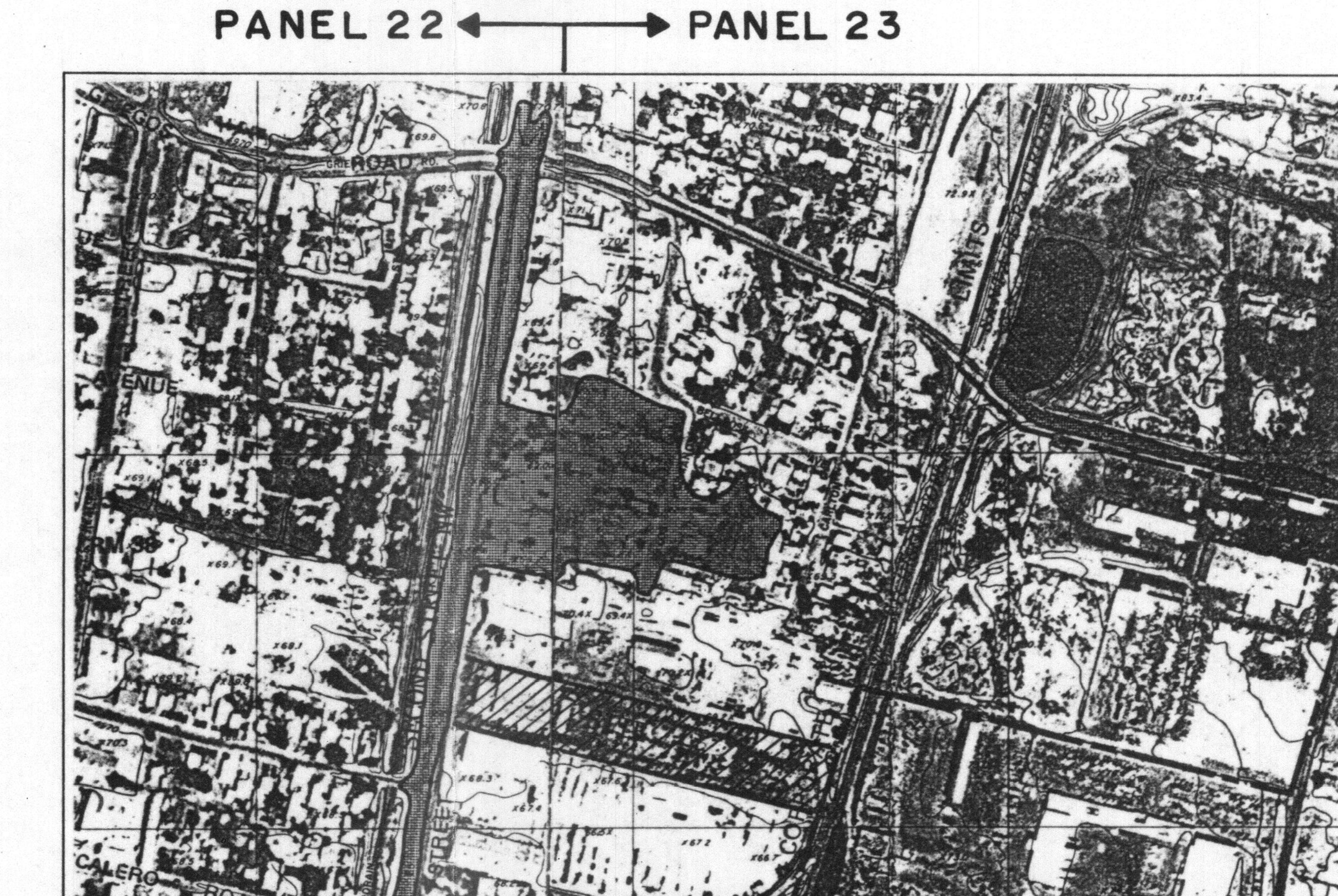
Tract 25B, M.R.G.C.D. Map No. 33, City of Albuquerque, Bernalillo County, New Mexico.

G 14 ⟷ G 15



VICINITY MAP

PANEL 22 ⟷ PANEL 23



FLOODWAY MAP

PRE-DESIGN CONFERENCE FINDINGS:

1. An approved drainage plan is required for building permit approval.
2. Ponding not required (i.e. additional) if the existing ponding at the rear is maintained and this existing pond is connected to the storm drain located along the north property line.
3. The proposed drivepads along 2nd Street must have the required water block (12").
4. Include calculations showing drainage basin to pond and pond capacity for information on future development.

BENCH MARK:

Station NM 47-10 located at the intersection of Second Street and Mescalero Road, NW. The station mark is a standard NMSHC brass tablet, stamped "STA. NM 47-10", set in top of a concrete post projecting 0.1 foot above the ground. Elevation = 4967.469 feet.

THUNDERBIRD STEEL

4300 2ND ST. N.W.

ALBUQUERQUE, NEW MEXICO 87122

FRANK D. LOVELADY
NEW MEXICO
6512
REGISTERED PROFESSIONAL ENGINEER
9/14/93