



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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BILL MUELLER

March 28, 1988

Bill Towers  
Resource Technology  
2129 Osuna Road, NE  
Albuquerque, New Mexico 87113

RE: REVISED DRAINAGE & GRADING PLAN OF MILLERS ORCHARD SUBDIVISION  
RECEIVED MARCH 18, 1988 FOR "AS-BUILT" ACCEPTANCE (G-13/D13)

Dear Mr. Towers:

The above referenced submittal dated March 17, 1988 is approved as meeting minimum Drainage Ordinance and DPM requirements. Any public infrastructures constructed under City Work Order must be accepted by the Construction Division.

If you have any questions, call me at 768-2650.

Cordially,

Roger A. Green, P.E.  
C.E./Hydrology Section

RAG/bsj

SCALE: 1" = 40'

NOTE: SEE DETAIL SHEET 6 FOR CUL-DE-SAC TRANSITION & NON-TANGENT C.R. OF MEDIAN C&G.

PROPOSED 24' WIDE PAVED ROAD. (SEE DETAIL SAT. 6 FOR TYPICAL CROSS-SECTION)

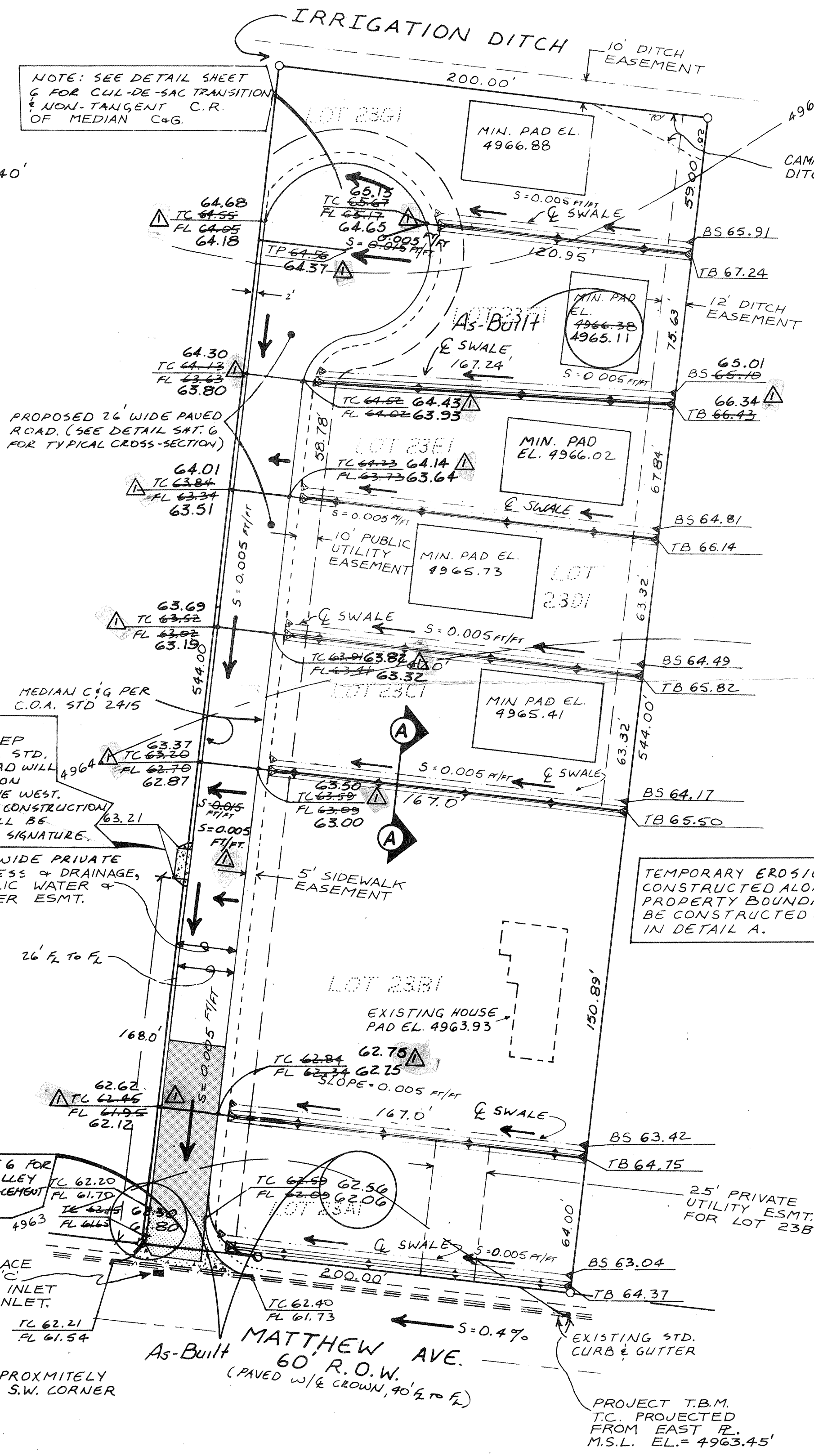
NOTE: BUILD A 14" WIDE x 7.0' DEEP CONC. DRIVEPAD PER C.O.A. STD. 24.5, 5.0' OF THE DRIVEPAD WILL NEED TO BE CONSTRUCTED ON ADJOINERS PROPERTY TO THE WEST. A WRITTEN AGREEMENT FOR CONSTRUCTION ON ADJOINERS PROPERTY WILL BE PROVIDED WITH SAID OWNERS SIGNATURE.

26' WIDE PRIVATE ACCESS & DRAINAGE, PUBLIC WATER & SEWER ESMT.

NOTE: SEE DETAIL SHEET 6 FOR STREET TRANSITION, VALLEY GUTTER & REMOVAL/REPLACEMENT OF STORM INLET.

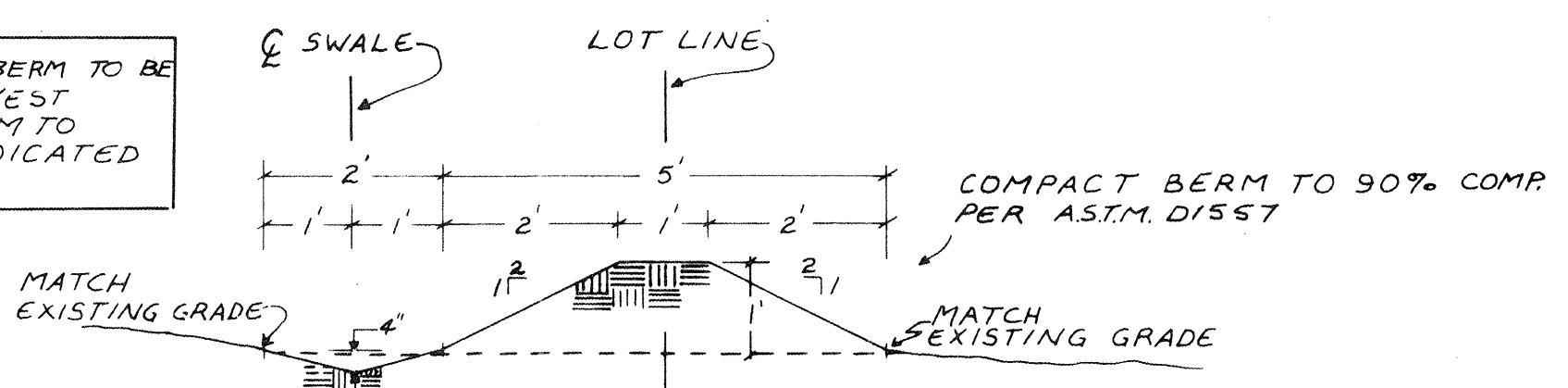
REMOVE & REPLACE EXIST. SINGLE C STREET SEWER INLET W/ SINGLE 'D' INLET.

BENCHMARK DATA:  
"3-G12"  
A.C.S. BRASS CAP APPROXIMATELY 107' WEST FROM S.W. CORNER OF LOT 23.  
EL = 4963.22'



LEGAL DESCRIPTION  
LOT 23 OF ALVARADO GARDENS,  
ALBUQUERQUE, NEW MEXICO.

- LEGEND
- EXISTING CONTOUR
  - Q OF SWALE
  - FLOW DIRECTION
  - TC 10.0 TOP OF CURB ELEVATION
  - TP 10.0 TOP OF PAVEMENT ELEVATION
  - TB 10.0 TOP OF BERM ELEVATION
  - BS 10.0 BOTTOM OF SWALE ELEVATION
  - TRANSITION AREA
  - FL 10.0 FLOW LINE ELEVATION



TYPICAL SWALE & BERM DETAIL  
SCALE: 1" = 2'

GENERAL

LAND USE

Existing - Single family residential home site in A1 Zoning  
Proposed - Minor Subdivision with the addition of five single family dwellings and a 28-foot private access and drainage, public water and sewer easement; with a 26-foot paved private street.

SOIL TYPE

Agua Silty Clay Loam, Hydrologic Soil Group B

HYDROLOGY

6-HR. RAINFALL DEPTH  
2-yr. = 0.98 in.  
10-yr. = 1.45 in.  
100-yr. = 2.20 in.

RAINFALL INTENSITY  
2-yr. = 2.13 in./hr.  
10-yr. = 3.15 in./hr.  
100-yr. = 4.77 in./hr.

TIME OF CONCENTRATION  
Tc = 0.0078 (L\*\*0.77/S\*\*0.385) Kirpich Eq.  
L = 540'; S = 0.005 ft./ft.  
Tc = 4.74 min.  
Assume Tc = 10 min.

RUNOFF COEFFICIENTS  
Total lot area = 2,500 ac.  
Existing dwelling = 1,500 SF  
Existing C = 0.22

Proposed dwellings = 11,400 SF, C = 0.90  
Proposed roadway & sidewalks = 19,200 SF, C = 0.95  
Proposed landscaping = 78,300 SF, C = 0.25  
Weighted C = 0.44

RUNOFF VOLUMES (cu. ft.)

Event	Existing	Proposed
2-yr.	454	1,815
10-yr.	2,723	3,630
100-yr.	6,353	8,168

RUNOFF RATES (cfs)

Event	Existing	Proposed
2-yr.	1.29	2.28
10-yr.	1.91	3.37
100-yr.	2.90	5.12

OFF-SITE FLOWS

There are no off-site flows. The lot is bounded on the north, east and west by small irrigation ditches that prevent any off-site flows from entering the lot.

EXISTING STORM SEWER CAPACITY

The existing storm sewer in Matthew Boulevard is a 24-inch RCP that discharges into the Griggs Drain. The watershed area serviced by the storm drain is approximately 270 acres. The 100-yr. runoff for the watershed is approximately 645 cfs. The outfall capacity of the storm sewer assuming gravity flow is 12.34 cfs, or less than 2 percent of the 100-yr. requirement. The change in runoff rate from existing conditions to proposed conditions for the 2,500 acre/lot is a 2.22 cfs increase. Given the limited capacity of the storm sewer system and the marginal increase in runoff, no on-site ponding will be provided.

The existing single "C" storm inlet at the intersection of Matthew Avenue and the proposed private street will remain in place and be re-built as required, to a single "D" storm inlet. A concrete swale through a valley gutter fillet will direct all nuisance flows from the site toward the single "D" storm inlet. Major flows will overspill the swale section and flow west along curb and gutter approximately 600' into an existing single "C" storm inlet. The proposed single "D" and existing single "C" inlets discharge into the same storm drain system.

HYDRAULICS

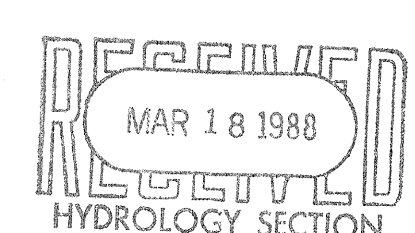
The following hydraulic parameters were computed based on the following Equation.

Street hydraulics - triangular flow area  
s = 0.005 ft./ft.  
n = 0.017  
Q = 4.28 cfs.

velocity = 1.91 fps  
area = 2.31 sq. ft.  
depth = 0.34 ft.  
top width = 1.36 ft.

Swale Hydraulics - trapezoidal flow area (Detail A)  
s = 0.005 ft./ft.  
n = 0.025  
Q = 0.30 cfs.

velocity = 1.16 fps  
area = 0.27 sq. ft.  
depth = 0.330 ft.  
top width = 1.8 ft.



CITY OF ALBUQUERQUE MUNICIPAL DEVELOPMENT DEPARTMENT ENGINEERING DIVISION					
TITLE: MILLERS ORCHARD SUBDIVISION DRAINAGE & GRADING PLAN					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer	[Signature]	11/2/87	Liquid Waste	JE	9/23/87
A.C.E. Design	[Signature]	11/2/87	Traffic	NADW H	9/23/87
A.C.E. Hydrology	[Signature]	11/2/87	Water	JE	9/23/87
DRAWING NO	3311	MAP NO	G-13	SHEET	3 OF 7