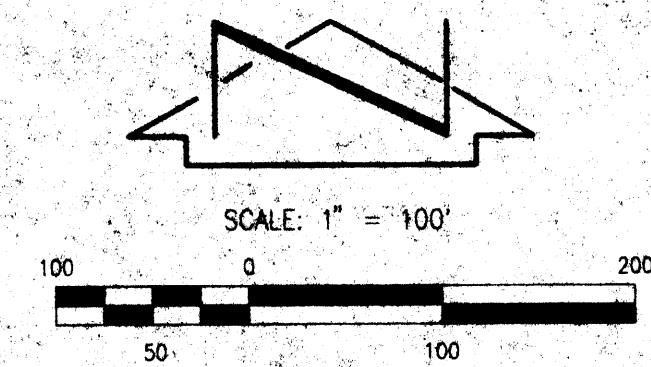


SUBDIVISION PLAT OF LA CUEVA VILLAGE, UNIT 1 ALBUQUERQUE, NEW MEXICO JULY, 1997

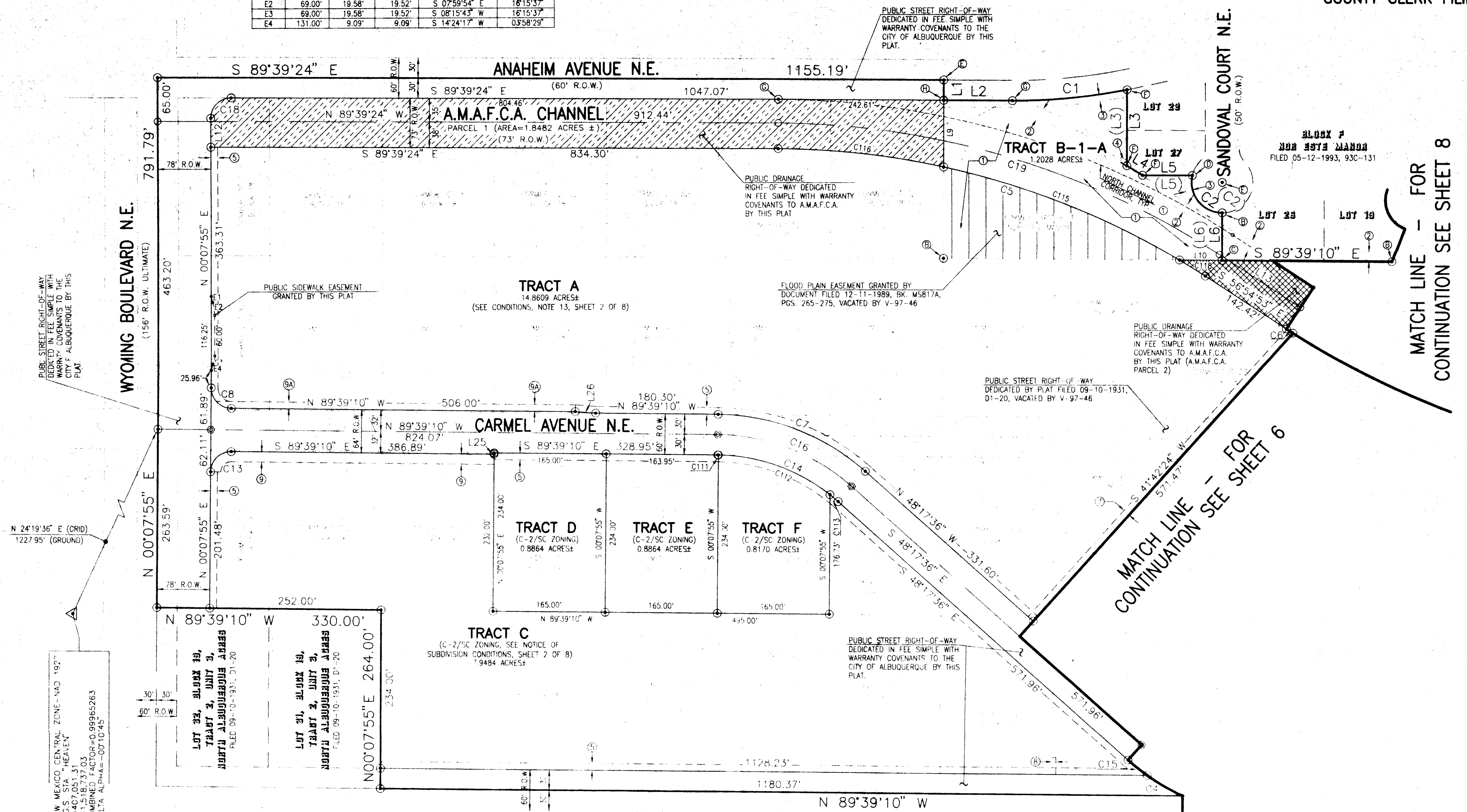
97097105

State of New Mexico: SS
County of Bernalillo: SS
his instrument was filed for record on
9:39 SEP 15 1997 97C
at the office of said County Clerk
J. D. Woodhouse, Clerk & Recorder
Deputy Clerk

COUNTY CLERK FILING DATA



CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
E1	131.00'	9.09'	9.09'	S 14°08'28" E	0°58'29"
E2	69.00'	19.58'	19.52'	S 07°59'54" E	16°15'37"
E3	69.00'	19.58'	19.52'	S 08°15'43" W	16°15'37"
E4	131.00'	9.09'	9.09'	S 14°24'17" W	0°58'29"

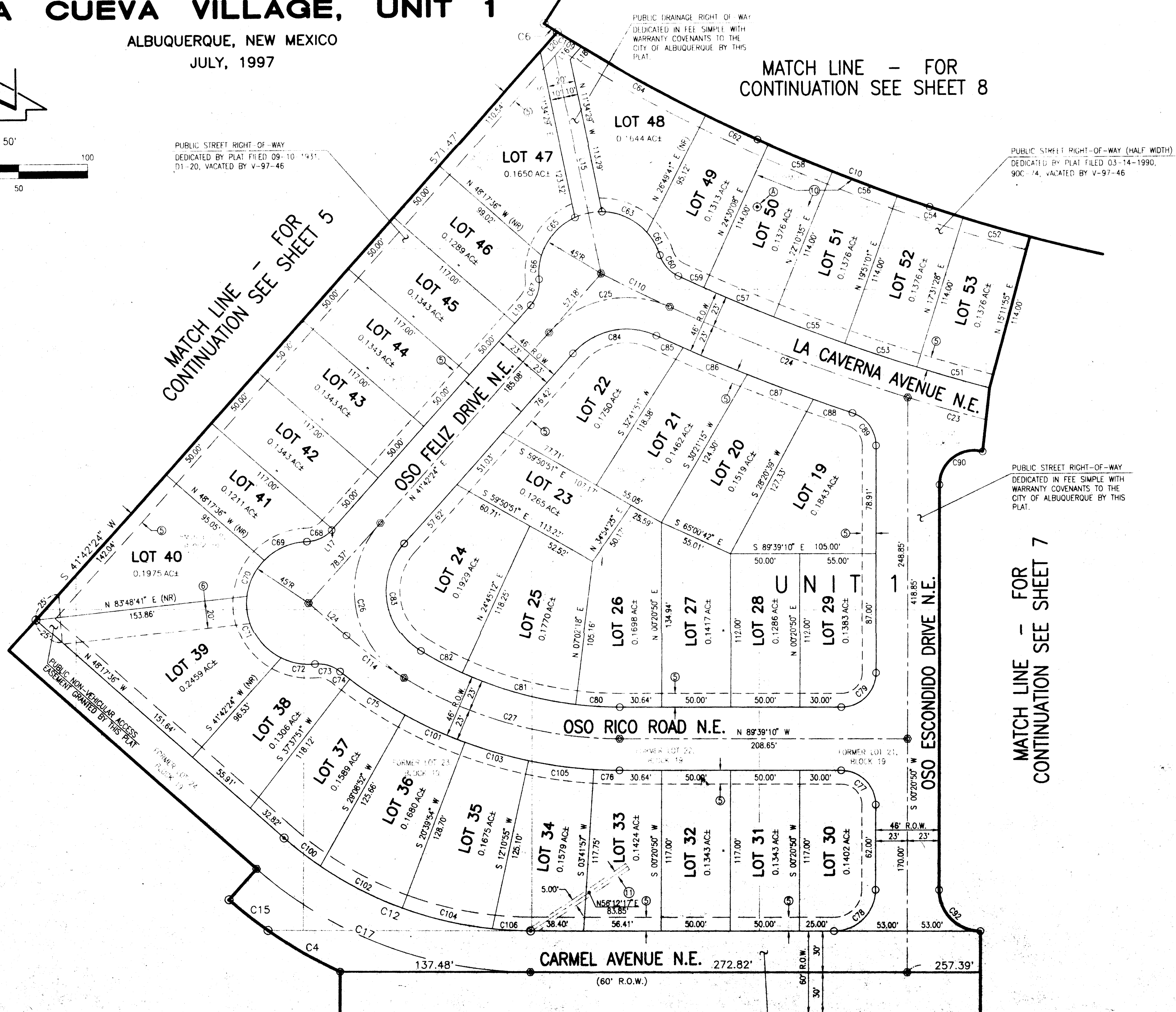
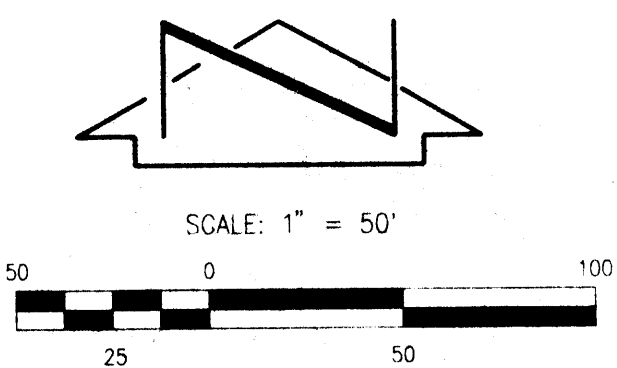


Jma

JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. NE
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505) 345-4250
JOB #940955

SHEET 5 OF 8

SUBDIVISION PLAT OF LA CUEVA VILLAGE, UNIT 1 ALBUQUERQUE, NEW MEXICO JULY, 1997



Jma

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ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505) 345-4250
JOB #940955

SHEET 6 OF 8

SUBDIVISION PLAT OF LA CUEVA VILLAGE, UNIT 1

ALBUQUERQUE, NEW MEXICO

JULY, 1997

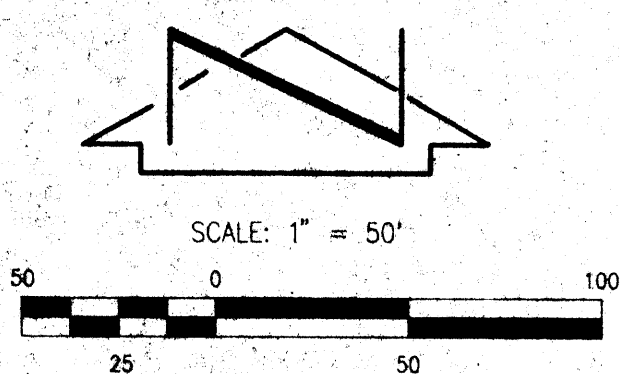
MATCH LINE - FOR
CONTINUATION SEE SHEET 8

EASEMENT TABLES					
LINE	DIRECTION	DISTANCE			
E6	N 89°39'10" W	14.05'			
CURVE	RADIUS	LENGTH	CHORD	BEARING	DELTA
E5	200.00'	202.41'	193.88'	S 40°39'37" E	57°59'06"

97097105

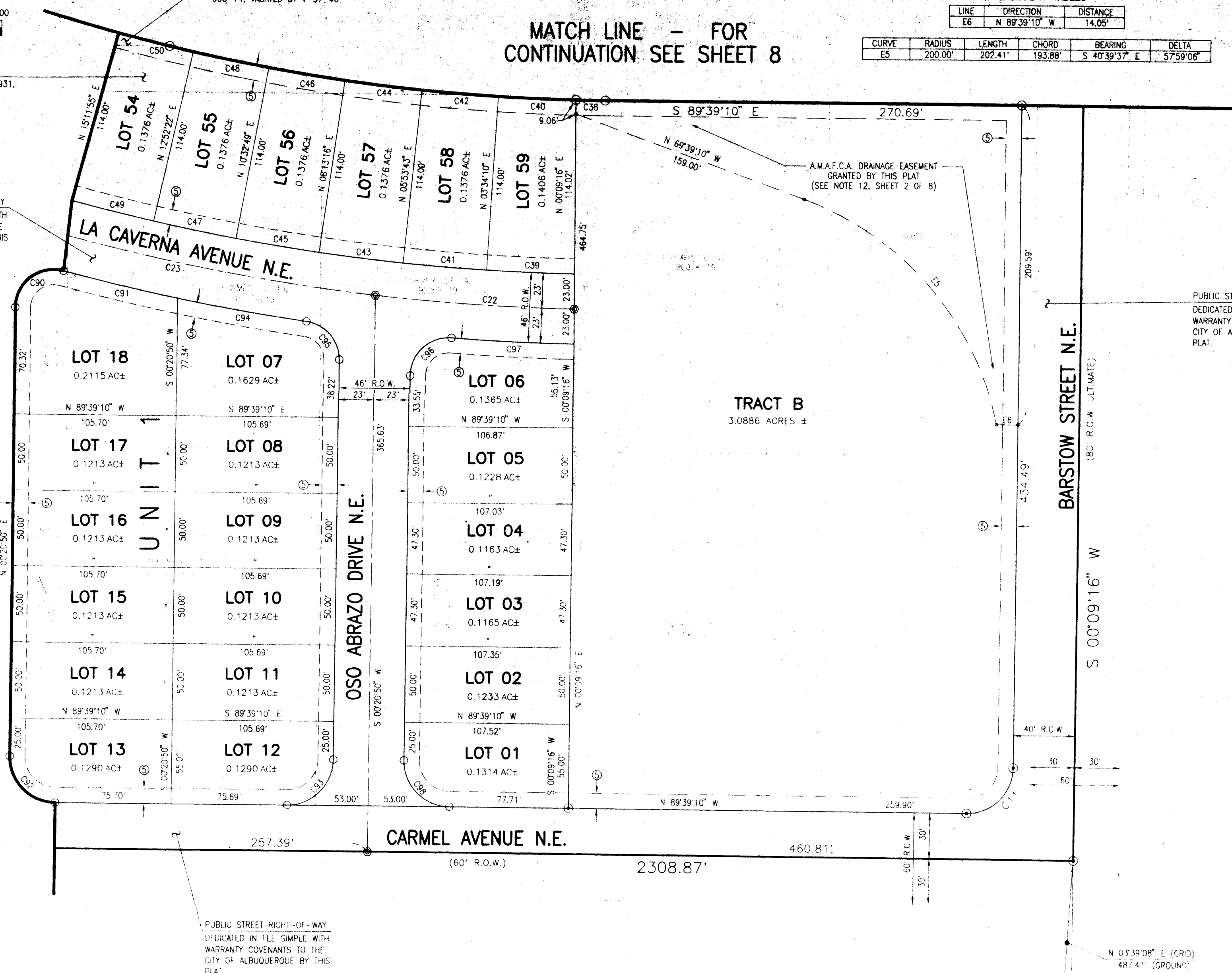
State of New Mexico) SS
County of Bernalillo)
This instrument was filed for record on
9:39 AM 7/15/97 Recorded 287
of records of said County Filed 287

COUNTY CLERK FILING DATA



PUBLIC STREET RIGHT-OF-WAY
DEDICATED BY PLAT FILED 09-10-1931,
D1-20, VACATED BY V-97-46

PUBLIC STREET RIGHT-OF-WAY
DEDICATED IN FEE SIMPLE WITH
WARRANTY COVENANTS TO THE
CITY OF ALBUQUERQUE BY THIS
PLAT

MATCH LINE - FOR
CONTINUATION SEE SHEET 6

NEW MEXICO, CENTRAL ZONE NAD 1927
ACCS: STA. 16+01.97
X=410,163.71
Y=1,118,825.94
COMBINED FACTOR=0.9996473
DELTA ALPHA=0°01'02.3"

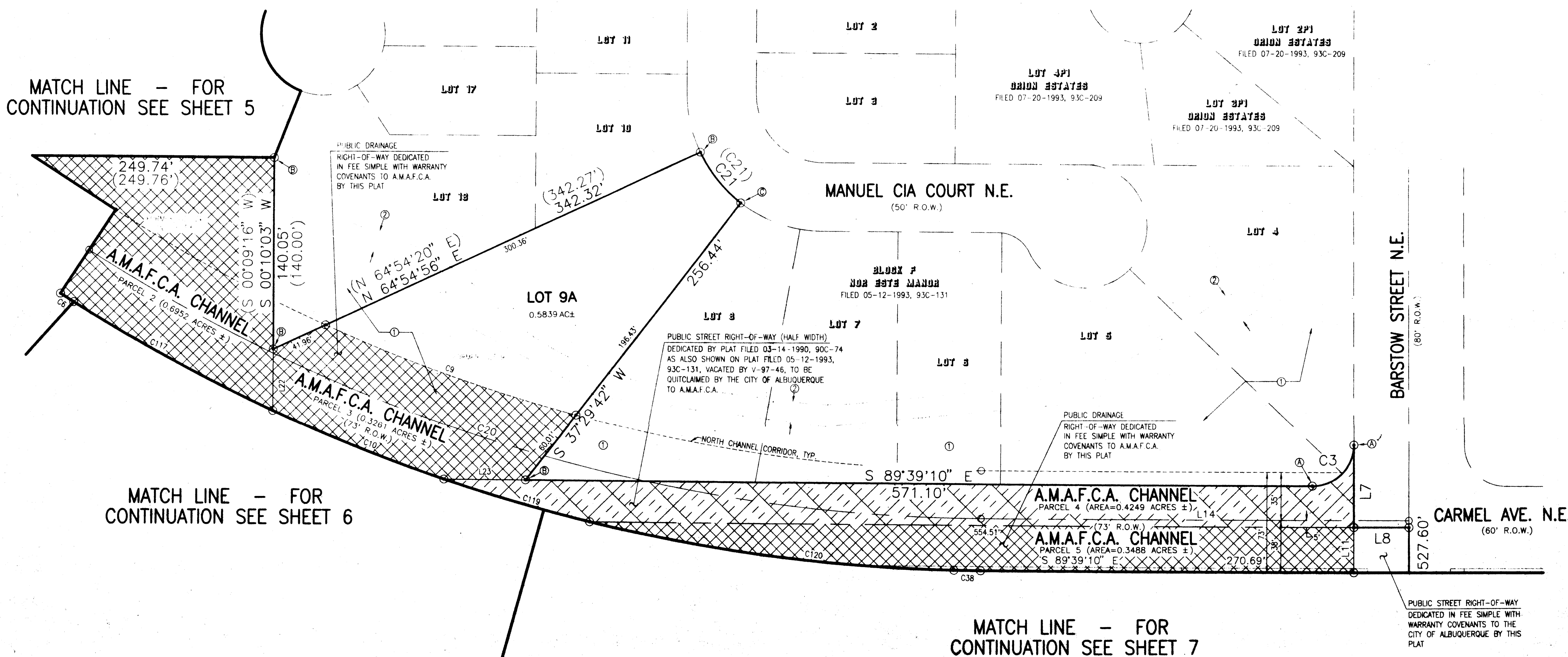
JEFF MORTENSEN & ASSOCIATES, INC.
6810-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (905) 345-4250
JOB #940955

SHEET 7 OF 8

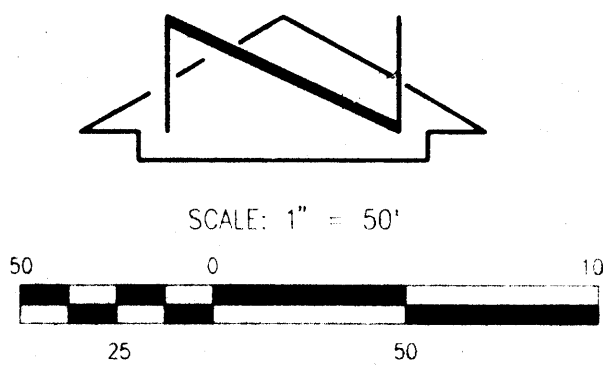
SUBDIVISION PLAT OF LA CUEVA VILLAGE, UNIT 1

ALBUQUERQUE, NEW MEXICO

JULY, 1997

MATCH LINE - FOR
CONTINUATION SEE SHEET 5MATCH LINE - FOR
CONTINUATION SEE SHEET 6MATCH LINE - FOR
CONTINUATION SEE SHEET 7

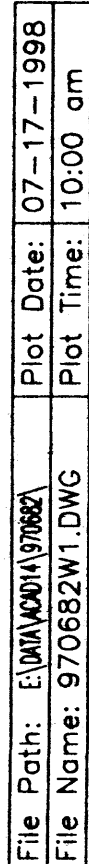
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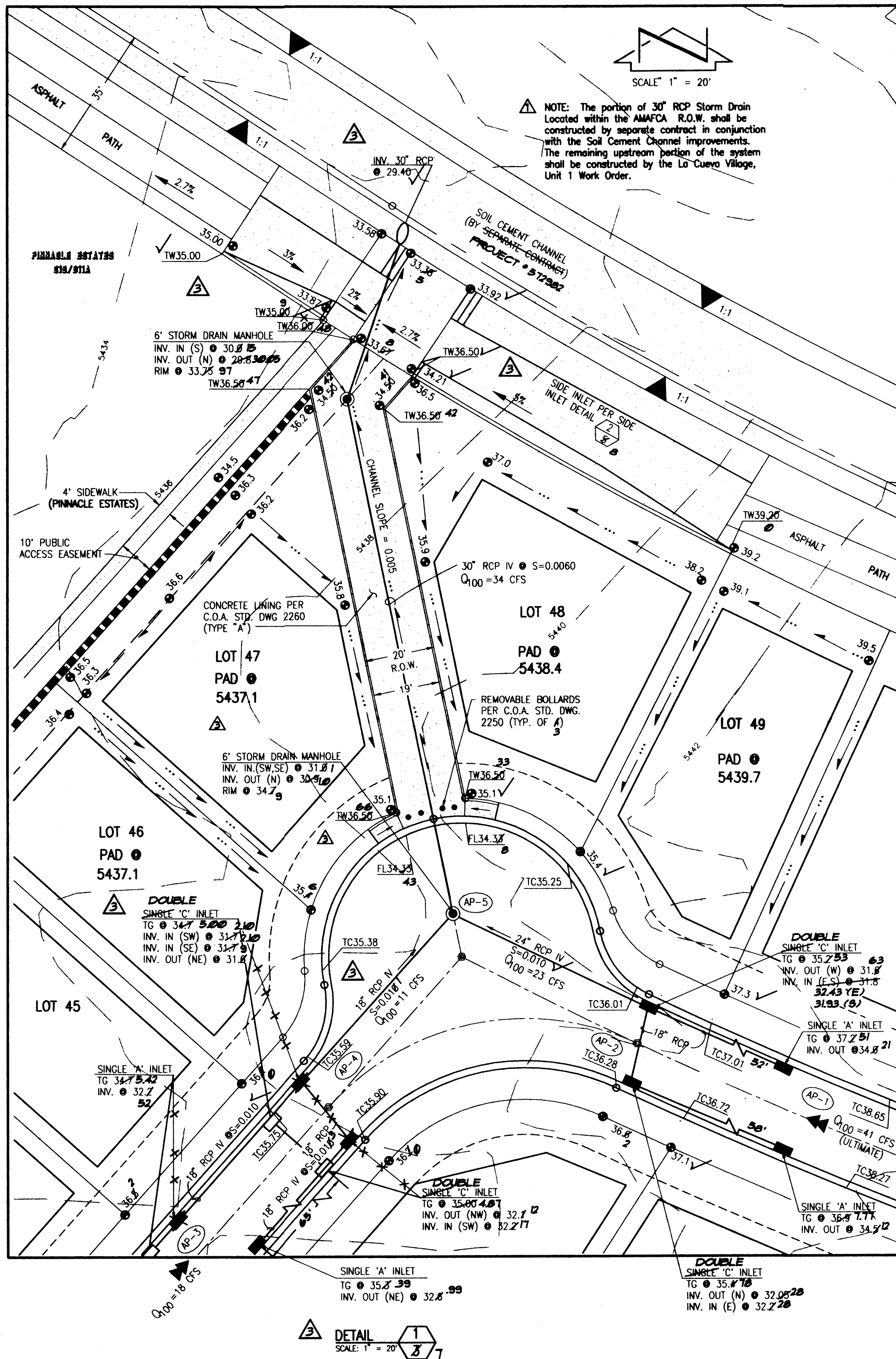


9:39 AM 7/15/97 Recorded 287
of records of said County Filed 287

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JOB #940955

SHEET 8 OF 8





STORM DRAIN CALCULATIONS

Analysis Point (cfs)	Q ₁₀₀ (cfs)	Inlet Capacities* (cfs)	Max. Storm Drain** (cfs)	Available Storm Drain Capacity (cfs)	Residual Overland Flow (cfs)	Storm Drain Flow (cfs)
AP-1	41	17	23	23	24	17
AP-2	24	12	23	6	18	23
AP-3	18	10	11	11	8	10
AP-4	8	5	11	1	7	11
AP-5	59	N/A	34	0	25	34

* Inlet Capacities Determined from DPM Table 22.3 D-5 as follows:

AP-1: s = 2.9%, d = 0.5 ft; 2 Single "A" inlets x 8.5 cfs = 17 cfs
 AP-2: s = 2.9%, d = 0.4 ft; 2 Single "C" inlets x 6 cfs = 12 cfs
 AP-3: s = 0.5%, d = 0.5 ft; 2 Single "A" inlets x 5 cfs = 10 cfs
 AP-4: s = 0.5%, d = 0.35 ft; 2 Single "C" inlets x 2.5 cfs = 5 cfs

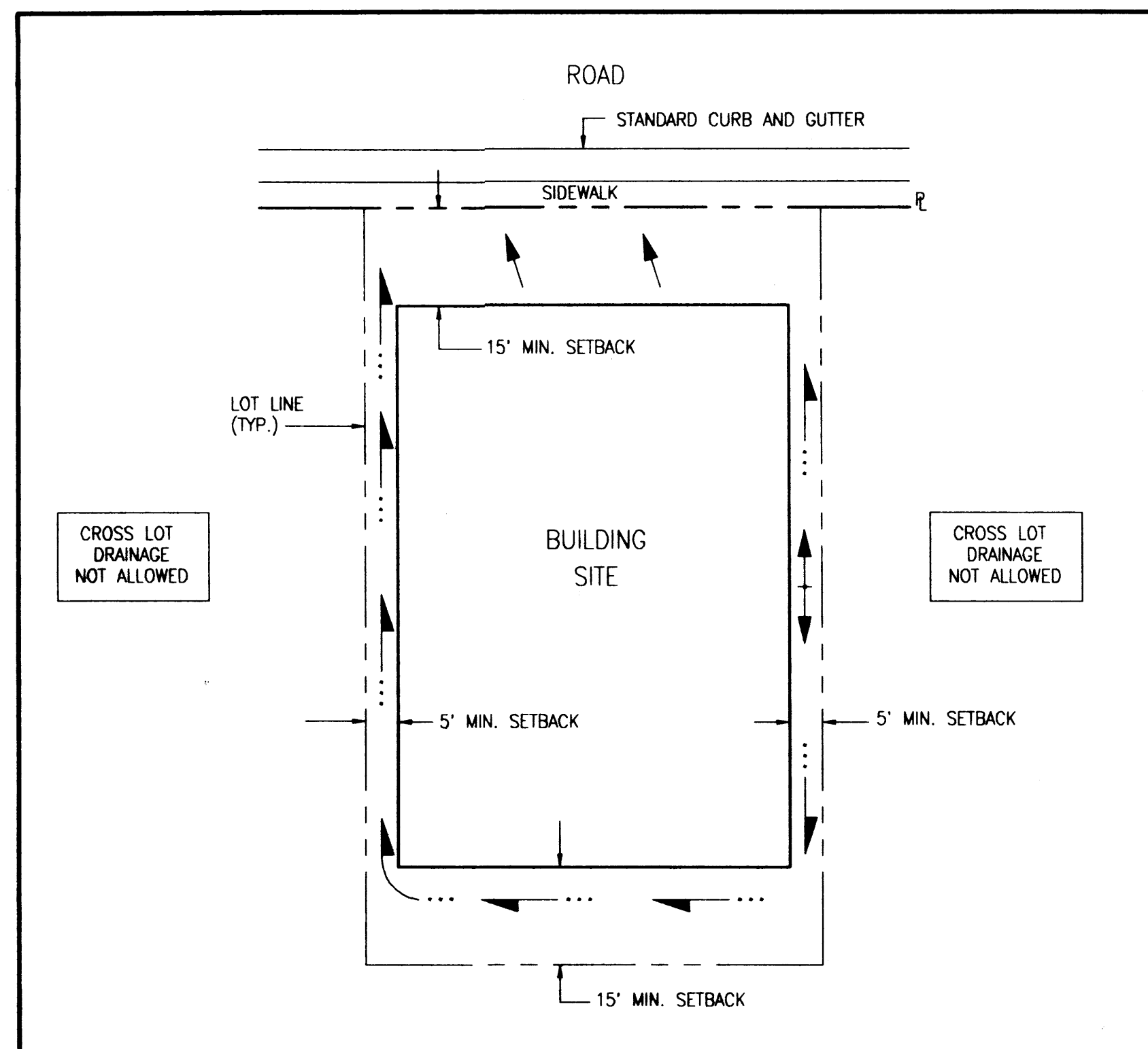
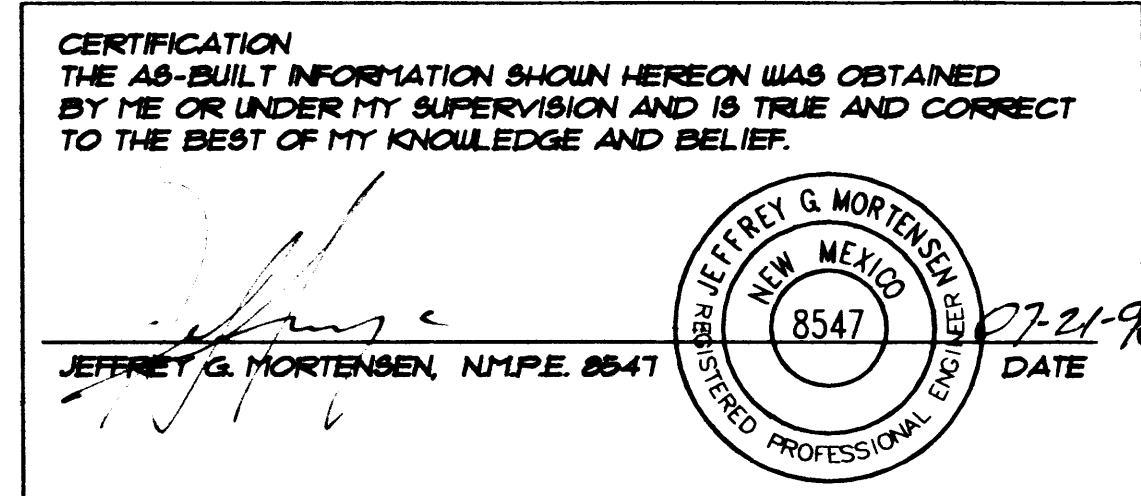
** Storm Drain Capacities Calculated using Gravity Flow

AP-1,2: n = 0.013, s = 0.01, d = 24", Q = 23 cfs
 AP-3,4: n = 0.013, s = 0.01, d = 18", Q = 11 cfs
 AP-5: n = 0.013, s = 0.006, d = 30", Q = 34 cfs

Entrance Capacity at Channel: $Q = CLH^{3/2}$ (Rectangular Weir)
 L = 19', H = 0.67' (curb height), C = 2.6; Q = 27 cfs > Q_{residual}

Concrete Channel Calculations (Manning's Equation):

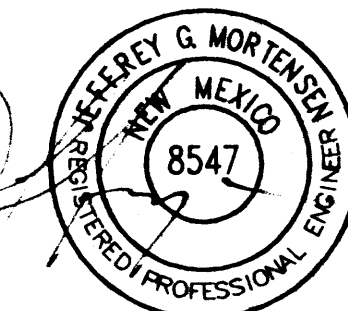
- A. RESIDUAL FLOW
 Q = 25 cfs
 W = 19' (ignoring invert and assuming rectangular section)
 n = 0.013
 s = 0.008
 depth = 0.36 ft
 velocity = 3.86 fps
- B. 100-YEAR FLOW
 Q₁₀₀ = 59 cfs
 DEPTH = 0.58 ft
 VELOCITY = 5.38 fps
- C. FULL CAPACITY
 DEPTH = 1.40 ft (FULL)
 Q_{cap} = 246 cfs



TYPICAL LOT DRAINAGE
 SCALE: 1" = 20'

GRADING NOTES:

- ALL FILL WITHIN EXISTING FLOODPLAIN SHALL BE COMPACTED TO A MINIMUM OF 95% ASTM D-1557; HOUSE PADS SHALL BE COMPACTED AT 95% ASTM D-1557. ALL OTHER FILL SHALL BE COMPACTED TO A MINIMUM OF 90% ASTM D-1557.
- THE PAD ELEVATIONS SHOWN HEREON ARE FOR ROUGH GRADING PURPOSES.
- FINISHED FLOOR ELEVATIONS MAY VARY FROM THE PAD ELEVATIONS AND WILL BE DETERMINED AS A FUNCTION OF INDIVIDUAL HOUSE DESIGN.
- FINISHED FLOOR ELEVATIONS SHOULD BE ESTABLISHED AT A MINIMUM OF SIX INCHES ABOVE PAD ELEVATIONS; DEVIATIONS FROM THESE GUIDELINES MUST BE BASED ON THE RECOMMENDATIONS AND/OR DESIGN OF A COMPETENT DESIGN PROFESSIONAL.
- CROSS-LOT DRAINAGE WILL NOT BE PERMITTED.
- RETAINING WALLS SHALL BE CONSTRUCTED BY THE DEVELOPER.
- YARD (GARDEN) WALLS SHALL BE CONSTRUCTED BY THE LOT OWNER OR ITS BUILDER.
- THE FINISHED GRADING OF EACH LOT SHALL BE ACCOMPLISHED BY THE LOT OWNER OR ITS BUILDER. RUNOFF SHOULD BE DIRECTED TO THE STREETS.
- MAXIMUM UNPROTECTED SLOPES SHALL BE 3:1; MINIMUM SLOPES SHALL BE 1%.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 280-1990, FOR LOCATION OF EXISTING UTILITIES.
- 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.
- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY.
- 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 OR ONTO PRIVATE PROPERTY.
- THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION. AN EXCAVATION PERMIT IS REQUIRED FOR ALL WORK WITHIN PUBLIC RIGHT-OF-WAY.
- SHOULD A CONFLICT EXIST BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY FOR ALL PARTIES.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING SAFETY AND HEALTH.
- A DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL (CONTAMINATED OR OTHERWISE), ASPHALTIC PAVING, CONCRETE PAVING, ETC. SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE REGULATIONS. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND IN HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT SHALL BE MADE.
- A BORROW SITE FOR IMPORT MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE REGULATIONS. ALL COSTS INCURRED IN OBTAINING A BORROW SITE AND IN HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION, THEREFORE, NO SEPARATE PAYMENT SHALL BE MADE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFELY OBTAINING THE REQUIRED COMPACTION. THE CONTRACTOR SHALL SELECT AND USE METHODS WHICH SHALL NOT BE INJURIOUS OR DAMAGING TO THE EXISTING FACILITIES AND STRUCTURES WHICH SURROUND THE WORK AREAS.
- THE CONTRACTOR SHALL CONFINE HIS WORK WITHIN THE CONSTRUCTION LIMITS IN ORDER TO PRESERVE THE EXISTING IMPROVEMENTS AND SO AS NOT TO INTERFERE WITH THE OPERATIONS OF THE EXISTING FACILITIES.



03-24-97
 05-05-97

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 Plot Date: 06-08-1998
 Plot Time: 09:18 am

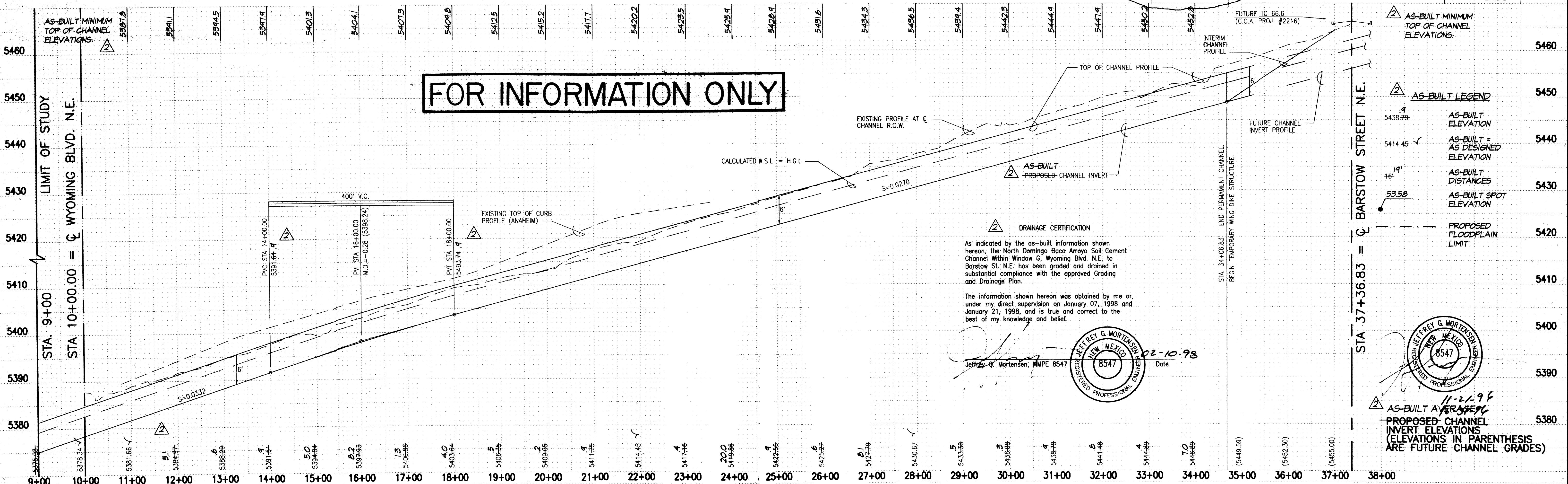
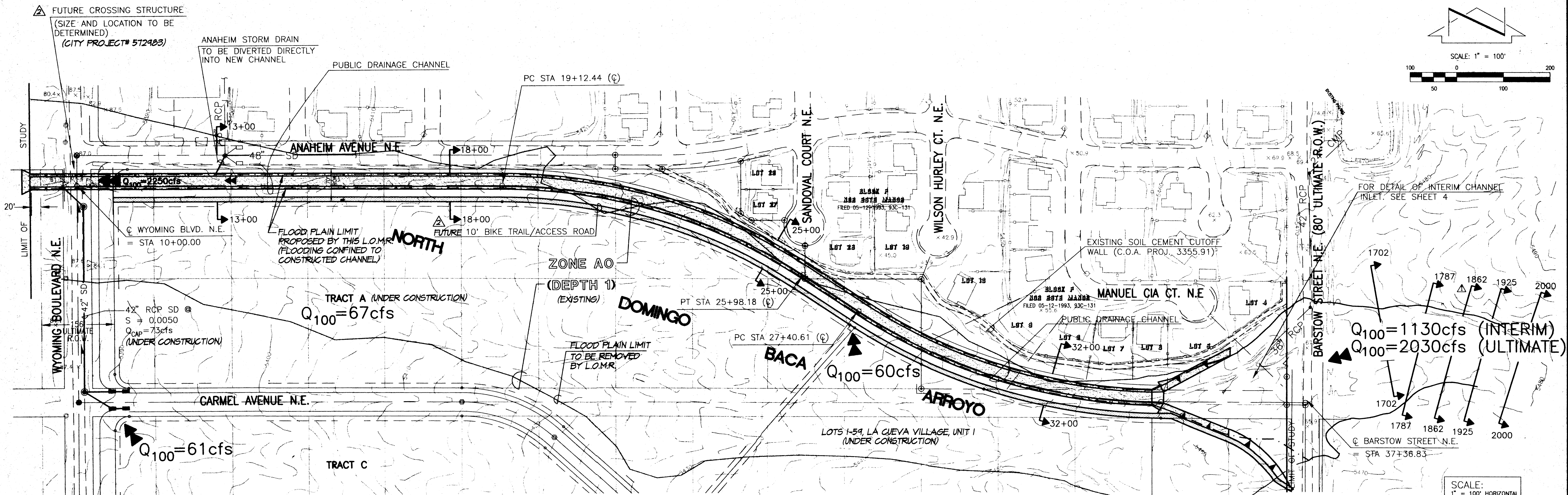


JEFF MORTENSEN & ASSOCIATES, INC.
 6800-B MIDWAY PARK, BLVD. NE
 ALBUQUERQUE, NEW MEXICO 87109
 ENGINEERS & SURVEYORS (980) 345-4250

SECTIONS AND DETAILS, GRADING NOTES AND CALCULATIONS
LA CUEVA VILLAGE PATIO HOMES, UNIT 1

DESIGNED BY	DRAWN BY	APPROVED BY	DATE	BY	REVISIONS	JOB NO.
G.M.	S.G.H.	J.G.M.	5/97	G.M.	ADD CALCULATIONS, NOTE AND SHEET B	970682
			6/98	G.M.	AS-BUILT AND CERTIFY	DATE 06-1998
						SHEET 9 OF 11

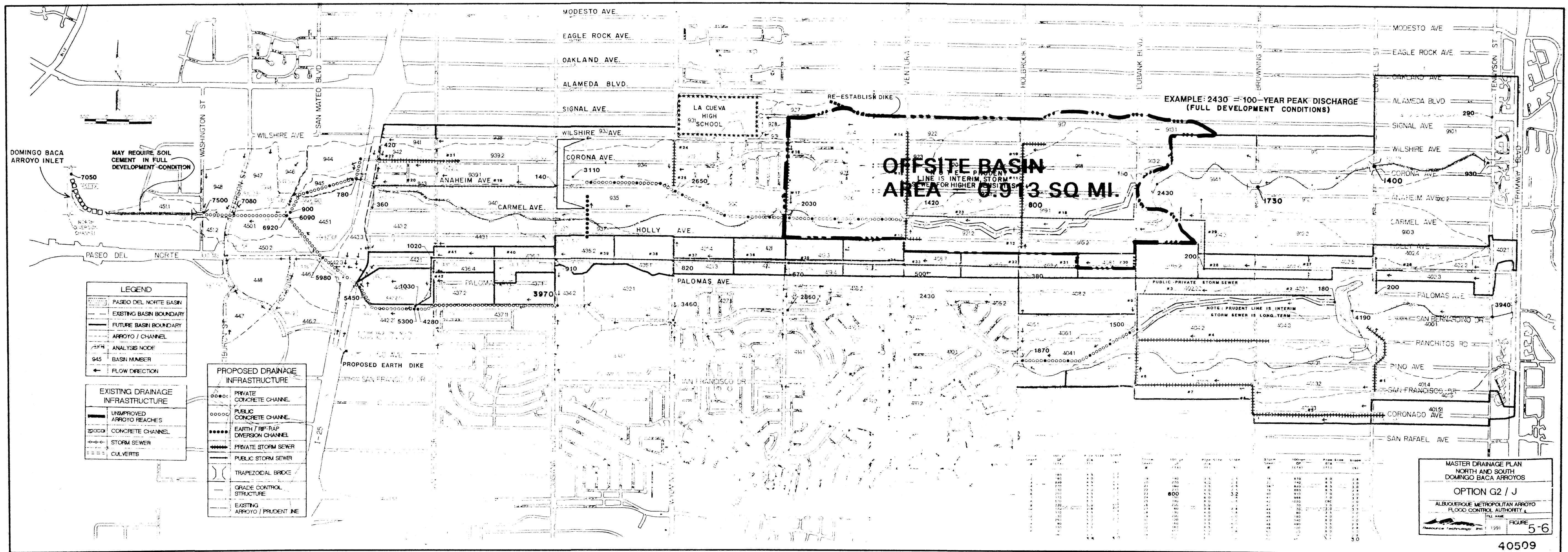
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6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, N.M. 87109
ENGINEERS & SURVEYORS (505) 345-4250

PLAN AND PROFILE
NORTH DOMINGO BACA ARROYO -
SOIL CEMENT CHANNEL WITHIN WINDOW "G"
WYOMING BLVD. N.E. TO BARSTOW STREET N.E.

DESIGNED BY: G.M.	NO. DATE BY	12/96 G.M. Add upstream sections	REVISIONS	JOB NO. 970682
DRAWN BY: T.N.T./M.L.S.	01/98 G.M. AS-BUILT & CERTIFY			DATE 05-1998
APPROVED BY: J.G.M.				SHEET 10 OF 11



BARSTOW STREET INTERIM DESIGN FLOW

From RTI Plan, Developed Drainage Area @ Barstow = 2.9821 mi²
 Developed Drainage Area @ North Dam = 2.0691 mi²
 Area of Contributing Basin = 0.913 mi² = 584.32 ac

Precipitation Zone = 3

P₁₄₀₀ = 3.10 in., P₆₀ = 2.14 in.

Total Area = 584.32 ac. = 0.913 sq. mi.

DEVELOPED LAND TREATMENT

Treatment	Area (ac)	%
A	251.26	43
B	116.84	20
C	116.84	20
D	99.33	17

L = 8,300 feet (Barstow to Hamilton Dam)

$$L_c = ((12000 - L) / (72,000 \cdot K \cdot S^{0.5})) + ((L - 4000) \cdot K_N \cdot (L_{CA} / L)^{0.33} / (552.2 \cdot S^{0.165}))$$

P₆₀ = 2.14

K_N = 0.033

S = 0.03

L = 8,300 ft

L_{CA} = 4,500 ft

K = 3

c = 0.099 + 0.372 = 0.471 hr

p = 2/3 tc = 0.314 hr

Q = 986 cfs (from ARHMO)

Jsc Q = 1130 cfs for open channel calculations
 Bulking Factor of 15%

RECORD DRAWING



JEFF MORTENSEN & ASSOCIATES, INC.
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 ALBUQUERQUE, N.M. 87109
 ENGINEERS SURVEYORS (505) 345-4250

**MASTER DRAINAGE PLAN - NORTH ARROYO DE DOMINGO BACA
 OFFSITE BASIN MAP AND CALCULATIONS**

DESIGNED BY	J.G.M.	NO.	DATE	BY	REVISIONS	JOB NO.
DRAWN BY	J.M.A.	1	5/97	G.M.	ADD THIS SHEET	970682
APPROVED BY	J.G.M.	2	5/98	G.M.	RECORD DRAWING	DATE 05-1998
						SHEET 11 OF 11

